

APPENDIX G

SECOND QUARER 2012 ANALYTICAL LABORATORY REPORTS,  
CHAIN-OF-CUSTODY, AND VALIDATION REPORTS



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# **APPENDIX G**

## **Section 1**

Outfall 001 – April 13, 2012

MEC<sup>X</sup> Data Validation Report





# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8621-1

Prepared by

MEC<sup>x</sup>, 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: 440-8621-1  
 Project Manager: B. Kelly  
 Matrix: Water  
 QC Level: IV  
 No. of Samples: 2  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica-Irvine

**Table 1. Sample Identification**

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 001 Grab	440-8621-1	N/A	Water	4/13/2012 2:25:00 PM	120.1, 8015B
Outfall 001 Composite	440-8689-1	S204068-01	Water	4/13/2012 2:12:00 PM	1613B, 180.1, 200.7, 200.8, 245.1, 314.0, 900. 901.1, 903.1, 904, 905, 906, SM 2540D, SM 5310B, SM 2340B, ASTM D5174

## II. Sample Management

No anomalies were observed regarding sample management. The samples were received at Truesdail at 7.6°C; however, due to the nonvolatile nature of the analytes, no qualifications were required. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were necessary. The remaining samples in this SDG were received at the 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 TestAmerica-West Sacramento. As the samples were delivered by courier to TestAmerica-Irvine and Truesdail, custody seals were not required. No custody seals were utilized by TestAmerica-Irvine to ship the samples via FedEx to Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.



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### Data Qualifier Reference Table

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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.

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### 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.**

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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.

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### III. Method Analyses

#### A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: June 4, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> 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: Blanks: The following were not detected in the method blank: 2,3,7,8-TCDD, 2,3,7,8-TCDF, 1,2,3,7,8-PeCDD, total TCDF, and total PeCDD. The method blank had detects reported above the EDL for all remaining target compounds and totals. Several of the method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample

results. Individual isomer results detected in the sample between the EDL and the reporting limit were qualified as nondetected "U," at the level of contamination. The method blank concentrations of OCDD and 1,2,3,4,6,7,8-HpCDD were insufficient to qualify the sample results. The same peaks comprised the method blank and sample totals for HpCDF; therefore, total HpCDF was qualified as nondetected, "U," in the sample. Totals for TCDD, HxCDD, HpCDD, PeCDF, and total HxCDF were qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: 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: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613 for all internal standards.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. A confirmation analysis was performed for 2,3,7,8-TCDF; however, the original result was not confirmed. The original result was rejected, "R," in favor of the nondetected confirmation result.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any reportable sample concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects reported between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

Results reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. The result for 2,3,7,8-TCDD reported as an EMPC was qualified as an estimated nondetect, "UJ," at the level of the EMPC. Totals containing isomers reported as EMPCs or other EMPC peaks were qualified as estimated, "J."

## B. EPA METHODS 200.7, 200.8, and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: June 5, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 200.7, 200.8, 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: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were  $\leq 5\%$ , and all masses of interest were calibrated to  $\leq 0.1$  amu and  $\leq 0.9$  amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110% for the ICP and ICP-MS metals and 85-115% for mercury. The 2  $\mu\text{g/L}$  total selenium CRI was recovered at 68%; therefore, nondetected total selenium in the sample was qualified as estimated, "UJ." The remaining CRI recoveries were within the control limits of 70-130%.
- Blanks: Dissolved boron was detected in the method blank at 31.7  $\mu\text{g/L}$ ; therefore, dissolved boron in the sample was qualified as nondetected, "U." Method blanks and CCBs had no detects.
- Interference Check Samples: Recoveries were within 80-120%. There were target compounds present in the ICSA solution, but no interferences were present at concentrations indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: Recoveries 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.
- Internal Standards Performance: All sample internal standard intensities were within 60-125% of the internal standard intensities measured in the initial calibration.

- **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. EPA METHODS 8015Mod—Gasoline Range Organics (GRO), and 8015B—Diesel Range Organics (DRO)**

Reviewed By: L. Calvin

Date Reviewed: June 4, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Total Fuel Hydrocarbons (DVP-8, Rev. 0)*, *EPA Method 8015B*, and the *National Functional Guidelines for Organic Data Review (10/99)*.

- **Holding Times:** Extraction and analytical holding times were met. The GRO sample was analyzed within 14 days of collection and the DRO sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- **Calibration:** The initial calibration %RSD for GRO was less than 20%, the DRO  $r^2$  was  $\geq 0.995$ , and all ICV and continuing calibration %Ds were less than 15%.
- **Blanks:** The method blanks had no GRO or DRO detects above the MDL.
- **Blank Spikes and Laboratory Control Samples:** Recoveries for all LCSs and RPDs for the DRO LCS/LCSD were within laboratory-established QC limits.
- **Surrogate Recovery:** The surrogate recoveries were within laboratory-established QC limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed for GRO on the sample of this SDG. Recoveries and the RPD were within the laboratory-established QC limits. Method accuracy and precision for DRO were evaluated based on the blank spike/blank spike duplicate results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Compound Identification: Compound identification was verified. Two hydrocarbon ranges were reported: GRO (C4-C12) and DRO (C13-C28). Review of the sample chromatograms and retention time ranges indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibrations and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

#### D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks  
Date Reviewed: June 4, 2012

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. All remaining aliquots were preserved within the five-day holding time.
- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha detector efficiency was less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." 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. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.
- Blank Spikes and Laboratory Control Samples: Total uranium was recovered nominally above the control limit; therefore, total uranium detected in the sample was qualified as estimated, "J." The strontium recovery was below the control limit; therefore, nondetected strontium in the sample was qualified as estimated, "UJ." 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 by the laboratory 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. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-20, Rev. 0)*, *EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration  $r^2$  values were  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110%. IPC recoveries were within the method-established control limit of 80-120%. The ICCS was recovered within the method control limits of 75-125%.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. The MS recovery was below the control limit at 78%; therefore, perchlorate detected in the sample was qualified as estimated, "J." The MSD recovery and the RPD were within method-established QC limits of 80-120% and  $\leq 15\%$ , respectively.
- 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. Reported nondetects are valid to the reporting limit.
- 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.

## F. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Methods 120.1, 180.1, Standard Methods 2540D, 2340B, and 5310B*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: Analytical holding times, 48 hours for turbidity, seven days for TSS, and 28 days for conductivity and TOC, were met.
- Calibration: Calibration criteria were met. Initial calibration  $r^2$  values were  $\geq 0.995$ . The turbidity ICV was recovered at 80% therefore, turbidity detected in the sample was qualified as estimated, "J." The remaining initial and all continuing calibration recoveries were within 90-110%. The balance calibration check logs were acceptable.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed for TSS and turbidity. The RPDs were within the laboratory-established control limits.
- 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.

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# Validated Sample Result Forms 440-8621-1

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*Analysis Method*    120.1

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**Sample Name**    Outfall 001 Grab                      **Matrix Type:**    Water                      **Validation Level:**    IV

**Lab Sample Name:**    440-8621-1                      **Sample Date:**    4/13/2012 2:25:00 PM

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<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Specific Conductance	STL00244	79	1.0	1.0	umhos/c			

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*Analysis Method 1613B*

Sample Name	Outfall 001 Composite	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	440-8689-1	Sample Date:	4/13/2012 2:12:00 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	0.000050	0.000048	0.0000001	ug/L	B		
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000048	0.0000002	ug/L	J Q B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000048	0.0000002	ug/L	J Q B	U	B
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000048	0.0000000	ug/L	J Q B	U	B
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000048	0.0000000	ug/L	J B	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000048	0.0000000	ug/L	J Q B	U	B
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000048	0.0000000	ug/L	J B	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000048	0.0000000	ug/L	J B	U	B
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000048	0.0000007	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000048	0.0000009	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000048	0.0000003	ug/L	J Q B	U	B
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000048	0.0000000	ug/L	J Q B	U	B
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000048	0.0000003	ug/L	J B	U	B
2,3,7,8-TCDD	1746-01-6	ND	0.0000096	0.0000000	ug/L	J Q	UJ	*III
2,3,7,8-TCDF	51207-31-9	ND	0.0000096	0.0000020	ug/L		U	
2,3,7,8-TCDF	51207-31-9	0.000001	0.0000096	0.0000004	ug/L	J Q	R	D
OCDD	3268-87-9	0.00047	0.000096	0.0000003	ug/L	B		
OCDF	39001-02-0	ND	0.000096	0.0000002	ug/L	J B	U	B
Total HpCDD	37871-00-4	0.000095	0.000048	0.0000001	ug/L	J Q B	J	*III, lab incorrectly J qualified
Total HpCDF	38998-75-3	ND	0.000048	0.0000002	ug/L	J Q B	U	B
Total HxCDD	34465-46-8	0.000022	0.000048	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total HxCDF	55684-94-1	0.000023	0.000048	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total PeCDD	36088-22-9	0.000003	0.000048	0.0000004	ug/L	J	J	DNQ
Total PeCDF	30402-15-4	0.000005	0.000048	0.0000003	ug/L	J Q B	J	B, DNQ, *III
Total TCDD	41903-57-5	0.000003	0.0000096	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total TCDF	55722-27-5	0.000001	0.0000096	0.0000004	ug/L	J Q	J	*III, lab incorrectly J qualified

*Analysis Method 180.1*

Sample Name	Outfall 001 Composite	Matrix Type:	Water	Validation Level:	IV			
Lab Sample Name:	440-8689-1	Sample Date:	4/13/2012 2:12:00 PM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	STL00189	390	1.0	0.40	NTU		J	R

*Analysis Method 200.7 Rev 4.4*

**Sample Name** Outfall 001 Composite **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8689-1 **Sample Date:** 4/13/2012 2:12:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	11000	50	40	ug/L			
Aluminum, Dissolved	7429-90-5	660	50	40	ug/L			
Arsenic	7440-38-2	7.9	10	7.0	ug/L	J,DX	J	DNQ
Arsenic, Dissolved	7440-38-2	ND	10	7.0	ug/L		U	
Barium	7440-39-3	110	10	6.0	ug/L			
Barium, Dissolved	7440-39-3	11	10	6.0	ug/L			
Beryllium	7440-41-7	ND	2.0	0.90	ug/L		U	
Beryllium, Dissolved	7440-41-7	ND	2.0	0.90	ug/L		U	
Boron	7440-42-8	0.046	0.050	0.020	mg/L	J,DX	J	DNQ
Boron, Dissolved	7440-42-8	ND	0.050	0.020	mg/L	J,DX MB	U	B
Chromium	7440-47-3	15	5.0	2.0	ug/L			
Chromium, Dissolved	7440-47-3	ND	5.0	2.0	ug/L		U	
Cobalt	7440-48-4	5.0	10	2.0	ug/L	J,DX	J	DNQ
Cobalt, Dissolved	7440-48-4	ND	10	2.0	ug/L		U	
Iron	7439-89-6	14	0.040	0.015	mg/L			
Iron, Dissolved	7439-89-6	0.56	0.040	0.015	mg/L			
Manganese	7439-96-5	260	20	7.0	ug/L			
Manganese, Dissolved	7439-96-5	7.7	20	7.0	ug/L	J,DX	J	DNQ
Nickel	7440-02-0	12	10	2.0	ug/L			
Nickel, Dissolved	7440-02-0	3.4	10	2.0	ug/L	J,DX	J	DNQ
Silver	7440-22-4	ND	10	6.0	ug/L		U	
Silver, Dissolved	7440-22-4	ND	10	6.0	ug/L		U	
Vanadium	7440-62-2	27	10	3.0	ug/L			
Vanadium, Dissolved	7440-62-2	ND	10	3.0	ug/L		U	
Zinc	7440-66-6	55	20	6.0	ug/L			
Zinc, Dissolved	7440-66-6	12	20	6.0	ug/L	J,DX	J	DNQ

### Analysis Method 200.8

**Sample Name** Outfall 001 Composite **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8689-1 **Sample Date:** 4/13/2012 2:12:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	ND	4.0	0.60	ug/L		U	
Antimony, Dissolved	7440-36-0	ND	10	1.5	ug/L		U	
Cadmium	7440-43-9	0.27	2.0	0.20	ug/L	J,DX	J	DNQ
Cadmium, Dissolved	7440-43-9	ND	5.0	0.50	ug/L		U	
Copper	7440-50-8	10	4.0	1.0	ug/L			
Copper, Dissolved	7440-50-8	3.0	10	2.5	ug/L	J,DX	J	DNQ
Lead	7439-92-1	10	2.0	0.40	ug/L			
Lead, Dissolved	7439-92-1	ND	5.0	1.0	ug/L		U	
Selenium	7782-49-2	ND	4.0	1.0	ug/L		UJ	C
Selenium, Dissolved	7782-49-2	ND	10	2.5	ug/L		U	
Thallium	7440-28-0	ND	2.0	0.40	ug/L		U	
Thallium, Dissolved	7440-28-0	ND	5.0	1.0	ug/L		U	

### Analysis Method 245.1

**Sample Name** Outfall 001 Composite **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8689-1 **Sample Date:** 4/13/2012 2:12:00 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	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	

### Analysis Method 314.0

**Sample Name** Outfall 001 Composite **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8689-1 **Sample Date:** 4/13/2012 2:12:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	1.4	4.0	0.95	ug/L	J,DX	J	Q, DNQ

### Analysis Method 8015B

**Sample Name** Outfall 001 Grab **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8621-1 **Sample Date:** 4/13/2012 2:25:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
C13-C28	STL01628	0.14	0.66	0.13	mg/L	J,DX	J	DNQ
GRO (C4-C12)	STL00350	ND	0.050	0.025	mg/L		U	



*Analysis Method*    *Gamma Spec K-40 CS-137*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Cesium-137	10045973	-1.43	20	3.99	pCi/L	U	U	
Potassium-40	13966002	-1.04	25	35.8	pCi/L	U	U	

---

*Analysis Method*    *Gross Alpha and Beta*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Gross Alpha	12587461	17.1	3	1.02	pCi/L		J	C
Gross Beta	12587472	16.2	4	1.37	pCi/L			

---

*Analysis Method*    *Radium 226*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-226	13982633	0.611	1	0.628	pCi/L	U	U	

---

*Analysis Method*    *Radium 228*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-228	15262201	0.715	1	0.423	pCi/L	J	J	DNQ

---

*Analysis Method*    *SM 2340B*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Hardness, as CaCO3	STL00009	42	0.33	0.17	mg/L			
Hardness, as CaCO3, Dissolved	STL00009	20	0.33	0.17	mg/L			

---

*Analysis Method SM 2540D*

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<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Total Suspended Solids	STL00161	63	10	10	mg/L			

---

*Analysis Method SM 5310B*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Total Organic Carbon	7440-44-0	13	1.0	0.75	mg/L			

---

*Analysis Method Strontium 90*

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<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Strontium-90	10098972	-0.104	2	0.935	pCi/L	U	UJ	L

---

*Analysis Method Tritium*

---

<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Tritium	10028178	-36.3	500	150	pCi/L	U	U	

---

*Analysis Method Uranium, Combined*

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<b>Sample Name</b>	Outfall 001 Composite	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8689-1	<b>Sample Date:</b>	4/13/2012 2:12:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Uranium, Total		0.687	1	0.018	pCi/L	J	J	L, DNQ

---

# **APPENDIX G**

## **Section 2**

Outfall 001 – April 13, 2012

Test America Analytical Laboratory Report



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-8621-1

Client Project/Site: Annaul Outfall 001 Grab

Sampling Event: Annual Outfall 001

For:

MWH Americas Inc

618 Michillinda Avenue, Suite 200

Arcadia, California 91007

Attn: Bronwyn Kelly



Authorized for release by:

5/20/2012 4:02:12 PM

Debby Wilson

Project Manager I

[debby.wilson@testamericainc.com](mailto:debby.wilson@testamericainc.com)

### LINKS

Review your project  
results through  
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Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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



---

Debby Wilson  
Project Manager I  
5/20/2012 4:02:13 PM



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# Sample Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-8621-1	Outfall 001 Grab	Water	04/13/12 14:25	04/13/12 18:46
440-8621-2	Trip Blanks	Water	04/13/12 14:25	04/13/12 18:46
440-8689-1	Outfall 001 Composite	Water	04/13/12 14:12	04/14/12 16:15

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# Case Narrative

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Job ID: 440-8621-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-8621-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/13/2012 6:46 PM and 4/14/2012 4:15 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6 C and 3.7 C.

#### GC/MS VOA

Method(s) 624: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 19861 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8260B SIM: Surrogate recovery for the following sample(s) was outside the upper control limit: 440-8277-1, 440-8689-1, and 440-8282-1. These sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

#### GC/MS Semi VOA

Method(s) 625: Surrogate recovery for the following sample(s) was outside control limits: Grab (440-8891-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625: The continuing calibration verification (CCV) for 2-nitroaniline, 4-nitrophenol, hexachlorocyclopentadiene, and n-nitrosodi-n-propylamine associated with batch 21217 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 625: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 21041 exceeded control limits for the following analytes: 4-nitrophenol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 21041 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 625: The following sample(s) was diluted due to the abundance of non-target analytes: Grab (440-8891-1). Elevated reporting limits (RLs) are provided.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 8891 was outside control limits for 4-Chloroaniline and 4-Nitroaniline. Non-homogeneity of the sample matrix is suspected.

No other analytical or quality issues were noted.

#### HPLC

Method(s) 218.6: The following sample(s) was received outside of holding time: Outfall 001 Composite (440-8689-1).

Method(s) 314.0, 314.0 LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for perchlorate batch 20654 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

#### GC VOA

No analytical or quality issues were noted.

#### GC Semi VOA

Method(s) 608: The continuing calibration verification (CCV) for 1260 associated with batch 20064 recovered above the upper control limit.

# Case Narrative

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Job ID: 440-8621-1 (Continued)

### Laboratory: TestAmerica Irvine (Continued)

The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19875. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19875. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: The continuing calibration verification (CCV) for DDE, a-BHC, d-BHC ,DDD ,DDT, Endosulf sulfate associated with batch 20597 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8015B: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 20808. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8015B: Elevated reporting limits are provided for the following samples due to insufficient sample provided for for sample preparation: Outfall 001 Grab (440-8621-1)

No other analytical or quality issues were noted.

### Metals

No analytical or quality issues were noted.

### General Chemistry

Method(s) 1664A: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 21846. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

### Biology

No analytical or quality issues were noted.

### 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.

This sample was analyzed for confirmation of 2,3,7,8-TCDF on the DB225 column (5D2). The continuing calibration verification (CCV) ST0424B from 5D2 analyzed on April 24, 2012 at 23:19 is out of control for the Cleanup Recovery Standard (CRS) 37Cl-2,3,7,8-TCDD with a high bias. All samples meet control limits for the CRS in both the DB225 confirmation analysis and the initial DB5 analysis. The CRS is in control in the CCV from the initial DB5 analysis. The CRS is not used in the calculation of 2,3,7,8-TCDF. The high bias of the CRS in the confirmation run is isolated to that compound only. The CRS is not reported from this run. For these reasons there is no impact on the data.

### Organic Prep

No analytical or quality issues were noted.

### VOA Prep

No analytical or quality issues were noted.

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Client Sample ID: Outfall 001 Grab**

**Lab Sample ID: 440-8621-1**

**Date Collected: 04/13/12 14:25**

**Matrix: Water**

**Date Received: 04/13/12 18:46**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 03:25	1
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/15/12 19:32	1
1,1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 03:25	1
Acrolein	ND		5.0	4.0	ug/L			04/15/12 19:32	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 03:25	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/15/12 19:32	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 03:25	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			04/17/12 03:25	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 03:25	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 03:25	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 03:25	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 03:25	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 03:25	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/17/12 03:25	1
Benzene	ND		0.50	0.28	ug/L			04/17/12 03:25	1
Bromoform	ND		0.50	0.40	ug/L			04/17/12 03:25	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.1	ug/L			04/17/12 03:25	1
Bromomethane	ND		0.50	0.42	ug/L			04/17/12 03:25	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/17/12 03:25	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/17/12 03:25	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/17/12 03:25	1
Chloroethane	ND		0.50	0.40	ug/L			04/17/12 03:25	1
Chloroform	ND		0.50	0.33	ug/L			04/17/12 03:25	1
Chloromethane	ND		0.50	0.40	ug/L			04/17/12 03:25	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/17/12 03:25	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/17/12 03:25	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 03:25	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 03:25	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 03:25	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 03:25	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 03:25	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 03:25	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 03:25	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 03:25	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 03:25	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/17/12 03:25	1
Cyclohexane	ND		2.0	0.40	ug/L			04/17/12 03:25	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 03:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		04/15/12 19:32	1
Dibromofluoromethane (Surr)	103		80 - 120		04/15/12 19:32	1
4-Bromofluorobenzene (Surr)	100		80 - 120		04/17/12 03:25	1
Dibromofluoromethane (Surr)	95		80 - 120		04/17/12 03:25	1
Toluene-d8 (Surr)	104		80 - 120		04/17/12 03:25	1

**Method: 8015B - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		0.050	0.025	mg/L			04/18/12 16:21	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Outfall 001 Grab

Lab Sample ID: 440-8621-1

Date Collected: 04/13/12 14:25

Matrix: Water

Date Received: 04/13/12 18:46

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		65 - 140		04/18/12 16:21	1

### Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	0.14	J,DX	0.66	0.13	mg/L		04/19/12 15:08	04/20/12 06:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	75		45 - 120	04/19/12 15:08	04/20/12 06:27	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.9	1.4	mg/L		04/25/12 06:36	04/25/12 11:28	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	79		1.0	1.0	umhos/cm			04/19/12 08:44	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			04/14/12 11:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	900		2.0	2.0	MPN/100mL			04/13/12 19:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	900		2.0	2.0	MPN/100mL			04/13/12 19:00	1

## Client Sample ID: Trip Blanks

Lab Sample ID: 440-8621-2

Date Collected: 04/13/12 14:25

Matrix: Water

Date Received: 04/13/12 18:46

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 03:52	1
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/15/12 19:59	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 03:52	1
Acrolein	ND		5.0	4.0	ug/L			04/15/12 19:59	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 03:52	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/15/12 19:59	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 03:52	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 03:52	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 03:52	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 03:52	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 03:52	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 03:52	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/17/12 03:52	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/17/12 03:52	1
Benzene	ND		0.50	0.28	ug/L			04/17/12 03:52	1
Bromoform	ND		0.50	0.40	ug/L			04/17/12 03:52	1
Bromomethane	ND		0.50	0.42	ug/L			04/17/12 03:52	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/17/12 03:52	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/17/12 03:52	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/17/12 03:52	1
Chloroethane	ND		0.50	0.40	ug/L			04/17/12 03:52	1
Chloroform	ND		0.50	0.33	ug/L			04/17/12 03:52	1
Chloromethane	ND		0.50	0.40	ug/L			04/17/12 03:52	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Trip Blanks

Lab Sample ID: 440-8621-2

Date Collected: 04/13/12 14:25

Matrix: Water

Date Received: 04/13/12 18:46

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/17/12 03:52	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/17/12 03:52	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 03:52	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 03:52	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 03:52	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 03:52	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 03:52	1
tert-Butanol	ND		10	6.5	ug/L			04/17/12 03:52	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 03:52	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 03:52	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 03:52	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 03:52	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/17/12 03:52	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/17/12 03:52	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/17/12 03:52	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L			04/17/12 03:52	1
Naphthalene	ND		0.50	0.41	ug/L			04/17/12 03:52	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L			04/17/12 03:52	1
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L			04/17/12 03:52	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		04/15/12 19:59	1
Dibromofluoromethane (Surr)	106		80 - 120		04/15/12 19:59	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/17/12 03:52	1
Dibromofluoromethane (Surr)	90		80 - 120		04/17/12 03:52	1
Toluene-d8 (Surr)	102		80 - 120		04/17/12 03:52	1

## Client Sample ID: Outfall 001 Composite

Lab Sample ID: 440-8689-1

Date Collected: 04/13/12 14:12

Matrix: Water

Date Received: 04/14/12 16:15

### Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0	1.0	ug/L			04/18/12 23:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	126	AY	80 - 120		04/18/12 23:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Acenaphthylene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Aniline	ND		9.48	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
Anthracene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzidine	ND		4.74	0.948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzo[a]anthracene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzo[b]fluoranthene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzo[k]fluoranthene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzoic acid	ND		19.0	2.84	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzo[a]pyrene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Bis(2-chloroethoxy)methane	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1

# Client Sample Results

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Client Sample ID: Outfall 001 Composite**

**Lab Sample ID: 440-8689-1**

**Date Collected: 04/13/12 14:12**

**Matrix: Water**

**Date Received: 04/14/12 16:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Bis(2-ethylhexyl) phthalate	ND		4.74	1.61	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Bromophenyl phenyl ether	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Butyl benzyl phthalate	ND		4.74	0.664	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Chloro-3-methylphenol	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
2-Chloronaphthalene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
2-Chlorophenol	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Chlorophenyl phenyl ether	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Chrysene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Dibenz(a,h)anthracene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Di-n-butyl phthalate	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
1,2-Dichlorobenzene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
1,3-Dichlorobenzene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
1,4-Dichlorobenzene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
3,3'-Dichlorobenzidine	ND		4.74	0.474	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,4-Dichlorophenol	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Diethyl phthalate	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,4-Dimethylphenol	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
Dimethyl phthalate	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
4,6-Dinitro-2-methylphenol	ND		4.74	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,4-Dinitrophenol	ND		4.74	0.853	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,4-Dinitrotoluene	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,6-Dinitrotoluene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Di-n-octyl phthalate	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Fluoranthene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Fluorene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Hexachlorobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Hexachlorobutadiene	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Hexachloroethane	ND		2.84	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Hexachlorocyclopentadiene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Indeno[1,2,3-cd]pyrene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Isophorone	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Methylphenol	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1
Naphthalene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Nitrobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
2-Nitrophenol	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Nitrophenol	ND	LQ	4.74	2.37	ug/L		04/20/12 14:44	04/23/12 00:28	1
N-Nitrosodimethylamine	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
N-Nitrosodiphenylamine	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
N-Nitrosodi-n-propylamine	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Pentachlorophenol	ND		1.90	0.379	ug/L		04/20/12 14:44	04/23/12 00:28	1
Phenanthrene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Phenol	ND		0.948	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
Pyrene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
1,2,4-Trichlorobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
2,4,6-Trichlorophenol	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
2-Methylphenol	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Chloroaniline	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:28	1
2-Methylnaphthalene	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:28	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Outfall 001 Composite

Lab Sample ID: 440-8689-1

Date Collected: 04/13/12 14:12

Matrix: Water

Date Received: 04/14/12 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
3-Nitroaniline	ND		4.74	0.948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Dibenzofuran	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
4-Nitroaniline	ND		4.74	0.474	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzo[g,h,i]perylene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
Benzyl alcohol	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1
bis (2-chloroisopropyl) ether	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	87		50 - 120	04/20/12 14:44	04/23/12 00:28	1
2-Fluorophenol	72		30 - 120	04/20/12 14:44	04/23/12 00:28	1
2,4,6-Tribromophenol	98		40 - 120	04/20/12 14:44	04/23/12 00:28	1
Nitrobenzene-d5	91		45 - 120	04/20/12 14:44	04/23/12 00:28	1
Terphenyl-d14	120		50 - 125	04/20/12 14:44	04/23/12 00:28	1
Phenol-d6	79		35 - 120	04/20/12 14:44	04/23/12 00:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1221	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1232	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1242	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1248	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1254	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1
Aroclor 1260	ND		0.49	0.24	ug/L		04/15/12 14:34	04/17/12 00:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	91		45 - 120	04/15/12 14:34	04/17/12 00:42	1

### Method: 608 Pesticides - Organochlorine Pesticides Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0049	0.0015	ug/L		04/15/12 14:34	04/18/12 22:27	1
alpha-BHC	ND		0.0049	0.0024	ug/L		04/15/12 14:34	04/18/12 22:27	1
beta-BHC	ND		0.0097	0.0039	ug/L		04/15/12 14:34	04/18/12 22:27	1
Chlordane (technical)	ND		0.097	0.0078	ug/L		04/15/12 14:34	04/18/12 22:27	1
delta-BHC	ND		0.0049	0.0034	ug/L		04/15/12 14:34	04/18/12 22:27	1
Dieldrin	ND		0.0049	0.0019	ug/L		04/15/12 14:34	04/18/12 22:27	1
Endosulfan I	ND		0.0049	0.0029	ug/L		04/15/12 14:34	04/18/12 22:27	1
Endosulfan II	ND		0.0049	0.0019	ug/L		04/15/12 14:34	04/18/12 22:27	1
Endosulfan sulfate	ND		0.0097	0.0029	ug/L		04/15/12 14:34	04/18/12 22:27	1
Endrin	ND		0.0049	0.0019	ug/L		04/15/12 14:34	04/18/12 22:27	1
Endrin aldehyde	ND		0.0097	0.0019	ug/L		04/15/12 14:34	04/18/12 22:27	1
gamma-BHC (Lindane)	ND		0.0097	0.0029	ug/L		04/15/12 14:34	04/18/12 22:27	1
Heptachlor	ND		0.0097	0.0029	ug/L		04/15/12 14:34	04/18/12 22:27	1
Heptachlor epoxide	ND		0.0049	0.0024	ug/L		04/15/12 14:34	04/18/12 22:27	1
Toxaphene	ND		0.49	0.24	ug/L		04/15/12 14:34	04/18/12 22:27	1
4,4'-DDD	ND		0.0049	0.0039	ug/L		04/15/12 14:34	04/18/12 22:27	1
4,4'-DDE	ND		0.0049	0.0029	ug/L		04/15/12 14:34	04/18/12 22:27	1
4,4'-DDT	ND		0.0097	0.0039	ug/L		04/15/12 14:34	04/18/12 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		35 - 115	04/15/12 14:34	04/18/12 22:27	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Client Sample ID: Outfall 001 Composite**

**Lab Sample ID: 440-8689-1**

Date Collected: 04/13/12 14:12

Matrix: Water

Date Received: 04/14/12 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND	BU BV	1.0	0.25	ug/L			04/14/12 20:38	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.9		0.50	0.40	mg/L			04/14/12 17:34	1
Nitrate as N	0.64		0.11	0.080	mg/L			04/14/12 17:34	1
Nitrate Nitrite as N	0.64		0.26	0.19	mg/L			04/14/12 17:34	1
Sulfate	5.0		0.50	0.40	mg/L			04/14/12 17:34	1
Nitrite as N	ND		0.15	0.11	mg/L			04/14/12 17:34	1

**Method: 314.0 - Perchlorate (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1.4	J,DX	4.0	0.95	ug/L			04/19/12 20:23	1

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.0000072	J Q	0.0000096	0.00000060	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total TCDD	0.0000034	J Q B	0.0000096	0.00000060	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,7,8-PeCDD	ND		0.000048	0.00000094	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total PeCDD	0.0000032	J	0.000048	0.00000046	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,4,7,8-HxCDD	0.0000012	J Q B	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,6,7,8-HxCDD	0.0000026	J Q B	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,7,8,9-HxCDD	0.0000028	J B	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total HxCDD	0.000022	J Q B	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,4,6,7,8-HpCDD	0.000050	B	0.000048	0.00000019	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total HpCDD	0.000095	J Q B	0.000048	0.00000019	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
OCDD	0.00047	B	0.000096	0.00000037	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
2,3,7,8-TCDF	0.0000014	J Q	0.0000096	0.00000043	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
2,3,7,8-TCDF	ND		0.000096	0.0000020	ug/L		04/23/12 09:00	04/25/12 06:07	0.96
Total TCDF	0.0000014	J Q	0.000096	0.00000043	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,7,8-PeCDF	0.0000025	J Q B	0.000048	0.00000034	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
2,3,4,7,8-PeCDF	0.0000096	J B	0.000048	0.00000035	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total PeCDF	0.000051	J Q B	0.000048	0.00000034	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,4,7,8-HxCDF	0.0000053	J B	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,6,7,8-HxCDF	0.0000023	J B	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
2,3,4,6,7,8-HxCDF	0.0000013	J Q B	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000073	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total HxCDF	0.000023	J Q B	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,4,6,7,8-HpCDF	0.000017	J Q B	0.000048	0.00000021	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
1,2,3,4,7,8,9-HpCDF	0.0000032	J Q B	0.000048	0.00000026	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
Total HpCDF	0.000043	J Q B	0.000048	0.00000023	ug/L		04/23/12 09:00	04/24/12 23:39	0.96
OCDF	0.000036	J B	0.000096	0.00000029	ug/L		04/23/12 09:00	04/24/12 23:39	0.96

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	83		35 - 197	04/23/12 09:00	04/24/12 23:39	0.96
37Cl4-2,3,7,8-TCDD	107		35 - 197	04/23/12 09:00	04/25/12 06:07	0.96

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	50		25 - 164	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,7,8-PeCDD	54		25 - 181	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	04/23/12 09:00	04/24/12 23:39	0.96



# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Outfall 001 Composite

Lab Sample ID: 440-8689-1

Date Collected: 04/13/12 14:12

Matrix: Water

Date Received: 04/14/12 16:15

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

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140	04/23/12 09:00	04/24/12 23:39	0.96
13C-OCDD	54		17 - 157	04/23/12 09:00	04/24/12 23:39	0.96
13C-2,3,7,8-TCDF	43		24 - 169	04/23/12 09:00	04/24/12 23:39	0.96
13C-2,3,7,8-TCDF	63		24 - 169	04/23/12 09:00	04/25/12 06:07	0.96
13C-1,2,3,7,8-PeCDF	43		24 - 185	04/23/12 09:00	04/24/12 23:39	0.96
13C-2,3,4,7,8-PeCDF	46		21 - 178	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,6,7,8-HxCDF	53		26 - 123	04/23/12 09:00	04/24/12 23:39	0.96
13C-2,3,4,6,7,8-HxCDF	47		28 - 136	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,7,8,9-HxCDF	50		29 - 147	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,4,7,8,9-HpCDF	57		26 - 138	04/23/12 09:00	04/24/12 23:39	0.96
13C-1,2,3,4,7,8-HxCDF	47		26 - 152	04/23/12 09:00	04/24/12 23:39	0.96

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	11000		50	40	ug/L		04/23/12 08:06	04/24/12 14:34	1
Arsenic	7.9	J,DX	10	7.0	ug/L		04/23/12 08:06	04/25/12 20:41	1
Boron	0.046	J,DX	0.050	0.020	mg/L		04/23/12 08:06	04/24/12 14:34	1
Beryllium	ND		2.0	0.90	ug/L		04/23/12 08:06	04/24/12 14:34	1
Chromium	15		5.0	2.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Iron	14		0.040	0.015	mg/L		04/23/12 08:06	04/24/12 14:34	1
Nickel	12		10	2.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Vanadium	27		10	3.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Zinc	55		20	6.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Silver	ND		10	6.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Cobalt	5.0	J,DX	10	2.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Manganese	260		20	7.0	ug/L		04/23/12 08:06	04/24/12 14:34	1
Barium	110		10	6.0	ug/L		04/23/12 08:06	04/24/12 14:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	660		50	40	ug/L		04/23/12 10:11	04/24/12 13:02	1
Arsenic	ND		10	7.0	ug/L		04/23/12 10:11	04/29/12 16:39	1
Boron	0.035	J,DX MB	0.050	0.020	mg/L		04/23/12 10:11	04/24/12 13:02	1
Beryllium	ND		2.0	0.90	ug/L		04/23/12 10:11	04/24/12 13:02	1
Chromium	ND		5.0	2.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Iron	0.56		0.040	0.015	mg/L		04/23/12 10:11	04/24/12 13:02	1
Nickel	3.4	J,DX	10	2.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Vanadium	ND		10	3.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Zinc	12	J,DX	20	6.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Silver	ND		10	6.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Cobalt	ND		10	2.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Manganese	7.7	J,DX	20	7.0	ug/L		04/23/12 10:11	04/24/12 13:02	1
Barium	11		10	6.0	ug/L		04/23/12 10:11	04/24/12 13:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.27	J,DX	2.0	0.20	ug/L		04/23/12 17:06	04/27/12 00:09	2
Copper	10		4.0	1.0	ug/L		04/23/12 17:06	04/27/12 00:09	2
Lead	10		2.0	0.40	ug/L		04/23/12 17:06	04/27/12 00:09	2
Antimony	ND		4.0	0.60	ug/L		04/23/12 17:06	04/27/12 00:09	2

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Outfall 001 Composite

Lab Sample ID: 440-8689-1

Date Collected: 04/13/12 14:12

Matrix: Water

Date Received: 04/14/12 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		4.0	1.0	ug/L		04/23/12 17:06	04/27/12 00:09	2
Thallium	ND		2.0	0.40	ug/L		04/23/12 17:06	04/28/12 18:58	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.0	0.50	ug/L		04/23/12 20:14	04/27/12 01:09	5
Copper	3.0	J,DX	10	2.5	ug/L		04/23/12 20:14	04/27/12 19:04	5
Lead	ND		5.0	1.0	ug/L		04/23/12 20:14	04/27/12 01:09	5
Antimony	ND		10	1.5	ug/L		04/23/12 20:14	04/27/12 01:09	5
Selenium	ND		10	2.5	ug/L		04/23/12 20:14	04/27/12 01:09	5
Thallium	ND		5.0	1.0	ug/L		04/23/12 20:14	04/27/12 19:04	5

### Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/16/12 15:03	04/17/12 12:49	1

### Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/17/12 08:33	04/18/12 13:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	42		0.33	0.17	mg/L			04/18/12 13:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	20		0.33	0.17	mg/L			05/01/12 14:53	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	390		1.0	0.40	NTU			04/14/12 17:41	10
Total Dissolved Solids	76		10	10	mg/L			04/16/12 10:21	1
Total Suspended Solids	63		10	10	mg/L			04/19/12 23:17	1
Cyanide, Total	ND		5.0	3.0	ug/L		04/26/12 18:24	04/26/12 21:25	1
Fluoride	0.061	J,DX	0.10	0.020	mg/L			04/18/12 06:34	1
Ammonia (as N)	0.840		0.400	0.157	mg/L		04/25/12 20:35	04/25/12 22:00	1
Total Organic Carbon	13		1.0	0.75	mg/L			04/19/12 07:02	1
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			04/14/12 21:16	1
Biochemical Oxygen Demand	3.6		2.0	0.50	mg/L			04/15/12 12:00	1

### Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-1.43	U	20		pCi/L		04/26/12 00:00	04/26/12 00:00	1
Potassium-40	-1.04	U	25		pCi/L		04/26/12 00:00	04/26/12 00:00	1

### Method: Gross Alpha and Beta - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	17.1		3		pCi/L		04/26/12 00:00	04/30/12 08:20	1
Gross Beta	16.2		4		pCi/L		04/26/12 00:00	04/30/12 08:20	1

### Method: Radium 226 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.611	U	1		pCi/L		05/04/12 00:00	05/04/12 13:45	1

# Client Sample Results

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Client Sample ID: Outfall 001 Composite**

**Lab Sample ID: 440-8689-1**

**Date Collected: 04/13/12 14:12**

**Matrix: Water**

**Date Received: 04/14/12 16:15**

**Method: Radium 228 - RAD-226-228 combined**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	0.715	J	1		pCi/L		04/30/12 00:00	04/30/12 14:11	1

**Method: Strontium 90 - General Sub Contract Method**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	-0.104	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	1

**Method: Tritium - General Sub Contract Method**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	-36.3	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1

**Method: Uranium, Combined - General Sub Contract Method**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.687	J	1		pCi/L		04/27/12 00:00	04/27/12 08:52	1

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Client Sample ID: Outfall 001 Grab

Date Collected: 04/13/12 14:25

Date Received: 04/13/12 18:46

## Lab Sample ID: 440-8621-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	19861	04/15/12 19:32	MR	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20084	04/17/12 03:25	YK	TAL IRV
Total/NA	Analysis	8015B		1	10 mL	10 mL	20433	04/18/12 16:21	KS	TAL IRV
Total/NA	Prep	3510C			760 mL	1 mL	20808	04/19/12 15:08	EC	TAL IRV
Total/NA	Analysis	8015B		1			20888	04/20/12 06:27	ES	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	19792	04/14/12 11:53	EC	TAL IRV
Total/NA	Analysis	120.1		1			20701	04/19/12 08:44	XL	TAL IRV
Total/NA	Prep	1664A			1020 mL	1000 mL	21756	04/25/12 06:36	DA	TAL IRV
Total/NA	Analysis	1664A		1			21846	04/25/12 11:28	DA	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	20001		AK	TAL IRV
							(Start)	04/13/12 19:00		
							(End)	04/16/12 14:15		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	20003		AK	TAL IRV
							(Start)	04/13/12 19:00		
							(End)	04/16/12 14:15		

## Client Sample ID: Trip Blanks

Date Collected: 04/13/12 14:25

Date Received: 04/13/12 18:46

## Lab Sample ID: 440-8621-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	19861	04/15/12 19:59	MR	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20084	04/17/12 03:52	YK	TAL IRV

## Client Sample ID: Outfall 001 Composite

Date Collected: 04/13/12 14:12

Date Received: 04/14/12 16:15

## Lab Sample ID: 440-8689-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	10 mL	10 mL	20473	04/18/12 23:45	GK	TAL IRV
Total/NA	Prep	625			1055 mL	2 mL	21041	04/20/12 14:44	LA	TAL IRV
Total/NA	Analysis	625		1			21217	04/23/12 00:28	AI	TAL IRV
Total/NA	Prep	608			1030 mL	2 mL	19875	04/15/12 14:34	AB	TAL IRV
Total/NA	Analysis	608 PCB LL		1			20064	04/17/12 00:42	CN	TAL IRV
Total/NA	Analysis	608 Pesticides		1			20597	04/18/12 22:27	DD	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	19784	04/14/12 17:34	KS	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	19785	04/14/12 17:34	KS	TAL IRV
Total/NA	Analysis	218.6		1	10 mL	10 mL	19833	04/14/12 20:38	SL	TAL IRV
Total/NA	Analysis	314.0		1	5 mL	1.0 mL	20654	04/19/12 20:23	MN	TAL IRV
Total	Prep	3542			1045.25 mL	20 uL	2114077_P	04/23/12 09:00	TL	TAL WSC
Total	Analysis	1613B		0.96			2114077	04/24/12 23:39	LLH	TAL WSC
Total	Analysis	1613B		0.96			2114077	04/25/12 06:07	LLH	TAL WSC
Total/NA	Prep	245.1			20 mL	20 mL	20031	04/16/12 15:03	SN	TAL IRV

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Client Sample ID: Outfall 001 Composite**

**Lab Sample ID: 440-8689-1**

**Date Collected: 04/13/12 14:12**

**Matrix: Water**

**Date Received: 04/14/12 16:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	245.1		1			20257	04/17/12 12:49	MP	TAL IRV
Total/NA	Analysis	SM 2340B		1			20492	04/18/12 13:18	FR	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	20049	04/17/12 08:33	SN	TAL IRV
Dissolved	Analysis	245.1		1			20502	04/18/12 13:13	MP	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	21302	04/23/12 10:11	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			21614	04/24/12 13:02	VS	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	21269	04/23/12 08:06	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			21678	04/24/12 14:34	DP	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			22090	04/25/12 20:41	NH	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	21438	04/23/12 20:14	SC	TAL IRV
Dissolved	Analysis	200.8		5			22326	04/27/12 01:09	RC	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	21402	04/23/12 17:06	SC	TAL IRV
Total Recoverable	Analysis	200.8		2			22342	04/27/12 00:09	NH	TAL IRV
Dissolved	Analysis	200.8		5			22566	04/27/12 19:04	NH	TAL IRV
Total Recoverable	Analysis	200.8		2			22628	04/28/12 18:58	RC	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			22671	04/29/12 16:39	DP	TAL IRV
Dissolved	Analysis	SM 2340B		1			23040	05/01/12 14:53	DT	TAL IRV
Total/NA	Analysis	180.1		10			19825	04/14/12 17:41	EC	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	19842	04/14/12 21:16	NEA	TAL IRV
Total/NA	Analysis	SM5210B		1			19862	04/15/12 12:00	RS	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	19957	04/16/12 10:21	XL	TAL IRV
Total/NA	Analysis	SM 4500 F C		1			20387	04/18/12 06:34	FZ	TAL IRV
Total/NA	Analysis	SM 5310B		1	1.0 mL	1.0 mL	20723	04/19/12 07:02	FZ	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	20891	04/19/12 23:17	DK	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	22248	04/26/12 18:24	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			22273	04/26/12 21:25	PQI	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	22283	04/25/12 20:35	PQI	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1			22286	04/25/12 22:00	PQI	TAL IRV
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8610	04/26/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8610_P	04/26/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8610	04/30/12 08:20	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8610_P	05/04/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8610	05/04/12 13:45	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8610_P	04/30/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8610	04/30/12 14:11	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8610	04/26/12 12:35	TSC	Eber-Rich
Total/NA	Prep	General Prep		1			8610_P	04/19/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1			8610	04/19/12 20:21	WL	Eber-Rich
Total/NA	Prep	General Prep		1			8610_P	04/27/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8610	04/27/12 08:52	LS	Eber-Rich

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

**Laboratory References:**

- = Truesdail Laboratories Inc, 14201 Franklin Ave, Tustin, CA 92780
- Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804
- EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077
- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-19861/4**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/15/12 14:54	1
Acrolein	ND		5.0	4.0	ug/L			04/15/12 14:54	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/15/12 14:54	1
Surrogate	MB MB		Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	106		80 - 120					04/15/12 14:54	1
Dibromofluoromethane (Surr)	104		80 - 120					04/15/12 14:54	1

**Lab Sample ID: LCS 440-19861/5**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Surrogate	LCS LCS		Limits						
	%Recovery	Qualifier							
Toluene-d8 (Surr)	106		80 - 120						
Dibromofluoromethane (Surr)	106		80 - 120						

**Lab Sample ID: LCS 440-19861/6**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Surrogate	LCS LCS		Limits						
	%Recovery	Qualifier							
Toluene-d8 (Surr)	104		80 - 120						
Dibromofluoromethane (Surr)	103		80 - 120						

**Lab Sample ID: 440-7721-A-1 MS**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Surrogate	MS MS		Limits						
	%Recovery	Qualifier							
Toluene-d8 (Surr)	106		80 - 120						
Dibromofluoromethane (Surr)	103		80 - 120						

**Lab Sample ID: 440-7721-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-7721-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>MSD Limits</i>
<i>Toluene-d8 (Surr)</i>	105		80 - 120
<i>Dibromofluoromethane (Surr)</i>	102		80 - 120

**Lab Sample ID: MB 440-20084/4**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

<b>Analyte</b>	<b>MB Result</b>	<b>MB Qualifier</b>	<b>RL</b>	<b>MDL</b>	<b>Unit</b>	<b>D</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			04/16/12 21:06	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/16/12 21:06	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/16/12 21:06	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/16/12 21:06	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/16/12 21:06	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/16/12 21:06	1
Benzene	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Bromoform	ND		0.50	0.40	ug/L			04/16/12 21:06	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.1	ug/L			04/16/12 21:06	1
Bromomethane	ND		0.50	0.42	ug/L			04/16/12 21:06	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/16/12 21:06	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Chloroethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Chloroform	ND		0.50	0.33	ug/L			04/16/12 21:06	1
Chloromethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/16/12 21:06	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/16/12 21:06	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/16/12 21:06	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Toluene	ND		0.50	0.36	ug/L			04/16/12 21:06	1
tert-Butanol	ND		10	6.5	ug/L			04/16/12 21:06	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/16/12 21:06	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/16/12 21:06	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Trichloroethene	ND		0.50	0.26	ug/L			04/16/12 21:06	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Cyclohexane	ND		2.0	0.40	ug/L			04/16/12 21:06	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/16/12 21:06	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Naphthalene	ND		0.50	0.41	ug/L			04/16/12 21:06	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L			04/16/12 21:06	1



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

Lab Sample ID: MB 440-20084/4

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/16/12 21:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120		04/16/12 21:06	1
Dibromofluoromethane (Surr)	90		80 - 120		04/16/12 21:06	1
Toluene-d8 (Surr)	104		80 - 120		04/16/12 21:06	1

Lab Sample ID: LCS 440-20084/5

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	24.8		ug/L		99	65 - 135
1,1,2,2-Tetrachloroethane	25.0	27.7		ug/L		111	55 - 130
1,1,2-Trichloroethane	25.0	24.6		ug/L		98	70 - 125
1,1-Dichloroethane	25.0	24.2		ug/L		97	70 - 125
1,1-Dichloroethene	25.0	23.8		ug/L		95	70 - 125
1,2-Dichlorobenzene	25.0	27.0		ug/L		108	75 - 120
1,2-Dichloroethane	25.0	25.5		ug/L		102	60 - 140
1,2-Dichloropropane	25.0	25.0		ug/L		100	70 - 125
1,2,3-Trichloropropane	25.0	25.5		ug/L		102	60 - 130
1,3-Dichlorobenzene	25.0	27.3		ug/L		109	75 - 120
1,4-Dichlorobenzene	25.0	25.6		ug/L		102	75 - 120
Benzene	25.0	22.9		ug/L		92	70 - 120
Bromoform	25.0	20.3		ug/L		81	55 - 130
Bromomethane	25.0	29.0		ug/L		116	65 - 140
Carbon tetrachloride	25.0	27.8		ug/L		111	65 - 140
Chlorobenzene	25.0	22.3		ug/L		89	75 - 120
Dibromochloromethane	25.0	26.9		ug/L		108	70 - 140
Chloroethane	25.0	24.2		ug/L		97	60 - 140
Chloroform	25.0	23.8		ug/L		95	70 - 130
Chloromethane	25.0	28.2		ug/L		113	50 - 140
cis-1,3-Dichloropropene	25.0	24.3		ug/L		97	75 - 125
Bromodichloromethane	25.0	25.6		ug/L		102	70 - 135
Ethylbenzene	25.0	21.1		ug/L		84	75 - 125
Methylene Chloride	25.0	21.5		ug/L		86	55 - 130
Tetrachloroethene	25.0	25.0		ug/L		100	70 - 125
Toluene	25.0	22.3		ug/L		89	70 - 120
tert-Butanol	125	131		ug/L		105	70 - 135
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	70 - 125
trans-1,3-Dichloropropene	25.0	25.7		ug/L		103	70 - 125
Trichlorofluoromethane	25.0	25.8		ug/L		103	65 - 145
Vinyl chloride	25.0	27.8		ug/L		111	55 - 135
Trichloroethene	25.0	27.1		ug/L		108	70 - 125
cis-1,2-Dichloroethene	25.0	25.8		ug/L		103	70 - 125
1,2-Dibromoethane (EDB)	25.0	24.9		ug/L		100	75 - 125
Diisopropyl ether	25.0	24.6		ug/L		98	60 - 135
Methyl tert-butyl ether	25.0	22.7		ug/L		91	60 - 135

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: LCS 440-20084/5**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	25.0	27.1		ug/L		108	55 - 135
Tert-amyl methyl ether	25.0	21.8		ug/L		87	60 - 135
Ethyl tert-butyl ether	25.0	22.2		ug/L		89	65 - 135
Xylenes, Total	75.0	66.8		ug/L		89	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	102		80 - 120

**Lab Sample ID: 440-8626-A-3 MS**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	26.1		ug/L		104	65 - 140
1,1,1,2-Tetrachloroethane	ND		25.0	28.6		ug/L		114	55 - 135
1,1,1,2-Trichloroethane	ND		25.0	26.5		ug/L		106	65 - 130
1,1-Dichloroethane	ND		25.0	25.3		ug/L		101	65 - 130
1,1-Dichloroethene	16		25.0	41.5		ug/L		104	60 - 130
1,2-Dichlorobenzene	ND		25.0	27.8		ug/L		111	75 - 125
1,2-Dichloroethane	0.61		25.0	28.9		ug/L		113	60 - 140
1,2-Dichloropropane	ND		25.0	27.1		ug/L		108	65 - 130
1,2,3-Trichloropropane	ND		25.0	25.9		ug/L		104	55 - 135
1,3-Dichlorobenzene	ND		25.0	27.6		ug/L		110	75 - 125
1,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	75 - 125
Benzene	ND		25.0	24.3		ug/L		97	65 - 125
Bromoform	ND		25.0	20.5		ug/L		82	55 - 135
Bromomethane	ND		25.0	30.0		ug/L		120	55 - 145
Carbon tetrachloride	0.30	J,DX	25.0	30.3		ug/L		120	65 - 140
Chlorobenzene	ND		25.0	23.2		ug/L		93	75 - 125
Dibromochloromethane	ND		25.0	27.7		ug/L		111	65 - 140
Chloroethane	ND		25.0	24.7		ug/L		99	55 - 140
Chloroform	0.99		25.0	26.2		ug/L		101	65 - 135
Chloromethane	ND		25.0	27.9		ug/L		112	45 - 145
cis-1,3-Dichloropropene	ND		25.0	25.5		ug/L		102	70 - 130
Bromodichloromethane	ND		25.0	27.4		ug/L		110	70 - 135
Ethylbenzene	ND		25.0	21.1		ug/L		84	65 - 130
Methylene Chloride	ND		25.0	22.7		ug/L		91	50 - 135
Tetrachloroethene	0.33	J,DX	25.0	27.0		ug/L		107	65 - 130
Toluene	ND		25.0	23.7		ug/L		95	70 - 125
tert-Butanol	ND		125	143		ug/L		114	65 - 140
trans-1,2-Dichloroethene	ND		25.0	25.9		ug/L		104	65 - 130
trans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	65 - 135
Trichlorofluoromethane	ND		25.0	27.1		ug/L		108	60 - 145
Vinyl chloride	ND		25.0	28.0		ug/L		112	45 - 140
Trichloroethene	29		25.0	56.2		ug/L		111	65 - 125
cis-1,2-Dichloroethene	ND		25.0	26.5		ug/L		106	65 - 130
1,2-Dibromoethane (EDB)	ND		25.0	26.5		ug/L		106	70 - 130

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8626-A-3 MS**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Diisopropyl ether	ND		25.0	25.6		ug/L		102	60 - 140
Methyl tert-butyl ether	ND		25.0	24.0		ug/L		96	55 - 145
Naphthalene	ND		25.0	27.5		ug/L		110	50 - 140
Tert-amyl methyl ether	ND		25.0	22.0		ug/L		88	60 - 140
Ethyl tert-butyl ether	ND		25.0	23.7		ug/L		95	60 - 135
Xylenes, Total	ND		75.0	67.9		ug/L		91	60 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	105		80 - 120

**Lab Sample ID: 440-8626-A-3 MSD**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier					Limit	
1,1,1-Trichloroethane	ND		25.0	24.9		ug/L		100	65 - 140	4.71	20
1,1,1,2,2-Tetrachloroethane	ND		25.0	28.3		ug/L		113	55 - 135	1.05	30
1,1,2-Trichloroethane	ND		25.0	24.0		ug/L		96	65 - 130	9.90	25
1,1-Dichloroethane	ND		25.0	24.8		ug/L		99	65 - 130	2.00	20
1,1-Dichloroethene	16		25.0	39.5		ug/L		96	60 - 130	4.94	20
1,2-Dichlorobenzene	ND		25.0	27.1		ug/L		108	75 - 125	2.55	20
1,2-Dichloroethane	0.61		25.0	26.7		ug/L		104	60 - 140	7.91	20
1,2-Dichloropropane	ND		25.0	25.1		ug/L		100	65 - 130	7.66	20
1,2,3-Trichloropropane	ND		25.0	25.7		ug/L		103	55 - 135	1.00	30
1,3-Dichlorobenzene	ND		25.0	27.1		ug/L		108	75 - 125	1.83	20
1,4-Dichlorobenzene	ND		25.0	25.7		ug/L		103	75 - 125	3.82	20
Benzene	ND		25.0	22.8		ug/L		91	65 - 125	6.37	20
Bromoform	ND		25.0	21.6		ug/L		86	55 - 135	5.23	25
Bromomethane	ND		25.0	28.2		ug/L		113	55 - 145	6.19	25
Carbon tetrachloride	0.30	J,DX	25.0	28.2		ug/L		112	65 - 140	7.18	25
Chlorobenzene	ND		25.0	23.7		ug/L		95	75 - 125	2.13	20
Dibromochloromethane	ND		25.0	28.3		ug/L		113	65 - 140	2.14	25
Chloroethane	ND		25.0	23.4		ug/L		94	55 - 140	5.41	25
Chloroform	0.99		25.0	24.4		ug/L		94	65 - 135	7.11	20
Chloromethane	ND		25.0	26.8		ug/L		107	45 - 145	4.02	25
cis-1,3-Dichloropropene	ND		25.0	24.3		ug/L		97	70 - 130	4.82	20
Bromodichloromethane	ND		25.0	25.9		ug/L		104	70 - 135	5.63	20
Ethylbenzene	ND		25.0	21.8		ug/L		87	65 - 130	3.26	20
Methylene Chloride	ND		25.0	21.5		ug/L		86	50 - 135	5.43	20
Tetrachloroethene	0.33	J,DX	25.0	27.5		ug/L		109	65 - 130	1.83	20
Toluene	ND		25.0	22.0		ug/L		88	70 - 125	7.44	20
tert-Butanol	ND		125	137		ug/L		110	65 - 140	4.36	25
trans-1,2-Dichloroethene	ND		25.0	24.4		ug/L		98	65 - 130	5.96	20
trans-1,3-Dichloropropene	ND		25.0	25.4		ug/L		102	65 - 135	8.66	25
Trichlorofluoromethane	ND		25.0	25.4		ug/L		102	60 - 145	6.48	25
Vinyl chloride	ND		25.0	27.0		ug/L		108	45 - 140	3.64	30
Trichloroethene	29		25.0	53.3		ug/L		99	65 - 125	5.30	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8626-A-3 MSD**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
cis-1,2-Dichloroethene	ND		25.0	25.6		ug/L		102	65 - 130	3.45	20
1,2-Dibromoethane (EDB)	ND		25.0	26.4		ug/L		106	70 - 130	0.000	25
Diisopropyl ether	ND		25.0	24.3		ug/L		97	60 - 140	5.21	25
Methyl tert-butyl ether	ND		25.0	23.1		ug/L		92	55 - 145	3.82	25
Naphthalene	ND		25.0	25.4		ug/L		102	50 - 140	7.94	30
Tert-amyl methyl ether	ND		25.0	21.7		ug/L		87	60 - 140	1.37	30
Ethyl tert-butyl ether	ND		25.0	22.3		ug/L		89	60 - 135	6.09	25
Xylenes, Total	ND		75.0	69.3		ug/L		92	60 - 130	2.04	20
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
4-Bromofluorobenzene (Surr)	101		80 - 120								
Dibromofluoromethane (Surr)	98		80 - 120								
Toluene-d8 (Surr)	103		80 - 120								

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-20473/2**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		2.0	1.0	ug/L			04/18/12 15:08	1
<b>MB MB</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>	
Dibromofluoromethane (Surr)	115		80 - 120				04/18/12 15:08	1	

**Lab Sample ID: LCS 440-20473/3**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
		Added	Result				Qualifier
1,4-Dioxane	10.0	9.22		ug/L		92	70 - 125
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
Dibromofluoromethane (Surr)	112		80 - 120				

**Lab Sample ID: 440-8769-A-2 MS**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
1,4-Dioxane	ND		10.0	9.25		ug/L		93	70 - 130
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Dibromofluoromethane (Surr)	114		80 - 120						

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-8769-A-2 MSD**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		10.0	9.58		ug/L		96	70 - 130	3.51	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD</b>	<b>Limits</b>							
Dibromofluoromethane (Surr)	117			80 - 120							

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

**Lab Sample ID: MB 440-21041/1-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 21041**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Acenaphthylene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Aniline	ND		10.0	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
Anthracene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzidine	ND		5.00	1.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[a]anthracene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[b]fluoranthene	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[k]fluoranthene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzoic acid	ND		20.0	3.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[a]pyrene	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Bis(2-chloroethoxy)methane	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Bis(2-chloroethyl)ether	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Bromophenyl phenyl ether	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Butyl benzyl phthalate	ND		5.00	0.700	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Chloronaphthalene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Chlorophenol	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Chrysene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dibenz(a,h)anthracene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Di-n-butyl phthalate	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2-Dichlorobenzene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,3-Dichlorobenzene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
3,3'-Dichlorobenzidine	ND		5.00	0.500	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dichlorophenol	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Diethyl phthalate	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dimethylphenol	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dimethyl phthalate	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
4,6-Dinitro-2-methylphenol	ND		5.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dinitrophenol	ND		5.00	0.900	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,6-Dinitrotoluene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Di-n-octyl phthalate	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-21041/1-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 21041**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoranthene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Fluorene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorobutadiene	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachloroethane	ND		3.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorocyclopentadiene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Indeno[1,2,3-cd]pyrene	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Isophorone	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Methylphenol	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Naphthalene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Nitrobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Nitrophenol	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Nitrophenol	ND		5.00	2.50	ug/L		04/20/12 14:44	04/22/12 17:08	1
N-Nitrosodimethylamine	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
N-Nitrosodiphenylamine	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
N-Nitrosodi-n-propylamine	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Pentachlorophenol	ND		2.00	0.400	ug/L		04/20/12 14:44	04/22/12 17:08	1
Phenanthrene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Phenol	ND		1.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
Pyrene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2,4-Trichlorobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4,6-Trichlorophenol	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Methylphenol	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chloroaniline	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Methylnaphthalene	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Nitroaniline	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
3-Nitroaniline	ND		5.00	1.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dibenzofuran	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Nitroaniline	ND		5.00	0.500	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[g,h,i]perylene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzyl alcohol	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
bis (2-chloroisopropyl) ether	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	90		50 - 120	04/20/12 14:44	04/22/12 17:08	1
2-Fluorophenol	75		30 - 120	04/20/12 14:44	04/22/12 17:08	1
2,4,6-Tribromophenol	118		40 - 120	04/20/12 14:44	04/22/12 17:08	1
Nitrobenzene-d5	90		45 - 120	04/20/12 14:44	04/22/12 17:08	1
Terphenyl-d14	101		50 - 125	04/20/12 14:44	04/22/12 17:08	1
Phenol-d6	89		35 - 120	04/20/12 14:44	04/22/12 17:08	1

**Lab Sample ID: LCS 440-21041/2-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 21041**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Acenaphthene	10.0	9.040		ug/L		90	60 - 120
Acenaphthylene	10.0	10.94		ug/L		109	60 - 120
Aniline	10.0	9.260	J,DX	ug/L		93	35 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: LCS 440-21041/2-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 21041**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	10.0	10.18		ug/L		102	65 - 120
Benzidine	10.0	3.160	J,DX	ug/L		32	30 - 160
Benzo[a]anthracene	10.0	10.68		ug/L		107	65 - 120
Benzo[b]fluoranthene	10.0	10.54		ug/L		105	55 - 125
Benzo[k]fluoranthene	10.0	9.740		ug/L		97	50 - 125
Benzoic acid	10.0	10.56	J,DX	ug/L		106	25 - 120
Benzo[a]pyrene	10.0	10.32		ug/L		103	55 - 130
Bis(2-chloroethoxy)methane	10.0	9.460		ug/L		95	55 - 120
Bis(2-chloroethyl)ether	10.0	8.320		ug/L		83	50 - 120
Bis(2-ethylhexyl) phthalate	10.0	11.26		ug/L		113	65 - 130
4-Bromophenyl phenyl ether	10.0	8.840		ug/L		88	60 - 120
Butyl benzyl phthalate	10.0	11.64		ug/L		116	55 - 130
4-Chloro-3-methylphenol	10.0	10.76		ug/L		108	60 - 120
2-Chloronaphthalene	10.0	9.280		ug/L		93	60 - 120
2-Chlorophenol	10.0	8.400		ug/L		84	45 - 120
4-Chlorophenyl phenyl ether	10.0	8.820		ug/L		88	65 - 120
Chrysene	10.0	9.500		ug/L		95	65 - 120
Dibenz(a,h)anthracene	10.0	9.100		ug/L		91	50 - 135
Di-n-butyl phthalate	10.0	12.00		ug/L		120	60 - 125
1,2-Dichlorobenzene	10.0	6.960		ug/L		70	40 - 120
1,3-Dichlorobenzene	10.0	6.600		ug/L		66	35 - 120
1,4-Dichlorobenzene	10.0	6.720		ug/L		67	35 - 120
3,3'-Dichlorobenzidine	10.0	8.180		ug/L		82	45 - 135
2,4-Dichlorophenol	10.0	9.140		ug/L		91	55 - 120
Diethyl phthalate	10.0	10.18		ug/L		102	55 - 120
2,4-Dimethylphenol	10.0	7.600		ug/L		76	40 - 120
Dimethyl phthalate	10.0	9.560		ug/L		96	30 - 120
4,6-Dinitro-2-methylphenol	10.0	11.62		ug/L		116	45 - 120
2,4-Dinitrophenol	10.0	7.500		ug/L		75	40 - 120
2,4-Dinitrotoluene	10.0	9.900		ug/L		99	65 - 120
2,6-Dinitrotoluene	10.0	9.340		ug/L		93	65 - 120
Di-n-octyl phthalate	10.0	11.86		ug/L		119	65 - 135
1,2-Diphenylhydrazine(as Azobenzene)	10.0	10.58		ug/L		106	60 - 120
Fluoranthene	10.0	10.68		ug/L		107	60 - 120
Fluorene	10.0	9.260		ug/L		93	65 - 120
Hexachlorobenzene	10.0	8.980		ug/L		90	60 - 120
Hexachlorobutadiene	10.0	5.960		ug/L		60	40 - 120
Hexachloroethane	10.0	6.360		ug/L		64	35 - 120
Hexachlorocyclopentadiene	10.0	4.580	J,DX	ug/L		46	25 - 120
Indeno[1,2,3-cd]pyrene	10.0	9.820		ug/L		98	45 - 135
Isophorone	10.0	10.48		ug/L		105	50 - 120
4-Methylphenol	10.0	9.760		ug/L		98	50 - 120
Naphthalene	10.0	8.000		ug/L		80	55 - 120
Nitrobenzene	10.0	9.200		ug/L		92	55 - 120
2-Nitrophenol	10.0	9.040		ug/L		90	50 - 120
4-Nitrophenol	10.0	13.82	LQ	ug/L		138	45 - 120
N-Nitrosodimethylamine	10.0	8.320		ug/L		83	45 - 120
N-Nitrosodiphenylamine	10.0	9.180		ug/L		92	60 - 120
N-Nitrosodi-n-propylamine	10.0	10.98		ug/L		110	45 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: LCS 440-21041/2-A**  
**Matrix: Water**  
**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21041**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	10.0	9.320		ug/L		93	24 - 121
Phenanthrene	10.0	9.640		ug/L		96	65 - 120
Phenol	10.0	8.940		ug/L		89	40 - 120
Pyrene	10.0	10.26		ug/L		103	55 - 125
1,2,4-Trichlorobenzene	10.0	6.940		ug/L		69	45 - 120
2,4,6-Trichlorophenol	10.0	10.26		ug/L		103	55 - 120
2-Methylphenol	10.0	8.560		ug/L		86	50 - 120
4-Chloroaniline	10.0	9.520		ug/L		95	55 - 120
2-Methylnaphthalene	10.0	9.160		ug/L		92	55 - 120
2-Nitroaniline	10.0	11.72		ug/L		117	65 - 120
3-Nitroaniline	10.0	9.560		ug/L		96	60 - 120
Dibenzofuran	10.0	9.360		ug/L		94	65 - 120
4-Nitroaniline	10.0	10.04		ug/L		100	55 - 125
Benzo[g,h,i]perylene	10.0	9.260		ug/L		93	45 - 135
Benzyl alcohol	10.0	9.860		ug/L		99	50 - 120
bis (2-chloroisopropyl) ether	10.0	9.200		ug/L		92	45 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	97		50 - 120
2-Fluorophenol	74		30 - 120
2,4,6-Tribromophenol	105		40 - 120
Nitrobenzene-d5	96		45 - 120
Terphenyl-d14	105		50 - 125
Phenol-d6	89		35 - 120

**Lab Sample ID: 440-8891-A-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21041**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	ND		9.48	8.569		ug/L		90	60 - 120
Acenaphthylene	ND		9.48	9.858		ug/L		104	60 - 120
Aniline	ND		9.48	5.516	J,DX	ug/L		58	35 - 120
Anthracene	ND		9.48	8.948		ug/L		94	65 - 120
Benzidine	ND		9.48	ND	LN	ug/L		0	30 - 160
Benzo[a]anthracene	ND		9.48	9.100	J,DX	ug/L		96	65 - 120
Benzo[b]fluoranthene	ND		9.48	9.327		ug/L		98	55 - 125
Benzo[k]fluoranthene	ND		9.48	8.038		ug/L		85	55 - 125
Benzoic acid	ND		9.48	19.56	J,DX	ug/L		NC	25 - 125
Benzo[a]pyrene	ND		9.48	8.872		ug/L		94	55 - 130
Bis(2-chloroethoxy)methane	ND		9.48	8.493		ug/L		90	50 - 120
Bis(2-chloroethyl)ether	ND		9.48	7.886		ug/L		83	50 - 120
Bis(2-ethylhexyl) phthalate	ND		9.48	13.50	J,DX AY	ug/L		142	65 - 130
4-Bromophenyl phenyl ether	ND		9.48	8.493		ug/L		90	60 - 120
Butyl benzyl phthalate	ND		9.48	11.00	J,DX	ug/L		116	55 - 130
4-Chloro-3-methylphenol	ND		9.48	11.60	AY	ug/L		122	60 - 120
2-Chloronaphthalene	ND		9.48	8.493		ug/L		90	60 - 120
2-Chlorophenol	ND		9.48	8.417		ug/L		89	45 - 120
4-Chlorophenyl phenyl ether	ND		9.48	7.735		ug/L		82	65 - 120



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

Lab Sample ID: 440-8891-A-1-A MS

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 21041

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Chrysene	ND		9.48	8.190		ug/L		86	65 - 120
Dibenz(a,h)anthracene	ND		9.48	10.46		ug/L		110	45 - 135
Di-n-butyl phthalate	ND		9.48	11.98	AY	ug/L		126	60 - 125
1,2-Dichlorobenzene	ND		9.48	6.969		ug/L		74	40 - 120
1,3-Dichlorobenzene	ND		9.48	6.447		ug/L		68	35 - 120
1,4-Dichlorobenzene	ND		9.48	6.413		ug/L		68	35 - 120
3,3'-Dichlorobenzidine	ND		9.48	ND	LN	ug/L		0	45 - 135
2,4-Dichlorophenol	ND		9.48	8.948		ug/L		94	55 - 120
Diethyl phthalate	ND		9.48	8.720		ug/L		92	55 - 120
2,4-Dimethylphenol	ND		9.48	8.948		ug/L		94	40 - 120
Dimethyl phthalate	ND		9.48	8.948		ug/L		94	30 - 120
4,6-Dinitro-2-methylphenol	ND		9.48	8.341	J,DX	ug/L		88	45 - 120
2,4-Dinitrophenol	ND		9.48	3.675	J,DX LN	ug/L		39	40 - 120
2,4-Dinitrotoluene	ND		9.48	8.114	J,DX	ug/L		86	65 - 120
2,6-Dinitrotoluene	ND		9.48	8.872	J,DX	ug/L		94	65 - 120
Di-n-octyl phthalate	ND		9.48	18.96	J,DX AY	ug/L		200	65 - 135
1,2-Diphenylhydrazine(as Azobenzene)	ND		9.48	10.16		ug/L		107	60 - 120
Fluoranthene	ND		9.48	10.16		ug/L		107	60 - 120
Fluorene	ND		9.48	8.569		ug/L		90	65 - 120
Hexachlorobenzene	ND		9.48	9.100		ug/L		96	60 - 120
Hexachlorobutadiene	ND		9.48	5.938	J,DX	ug/L		63	40 - 120
Hexachloroethane	ND		9.48	6.132	J,DX	ug/L		65	35 - 120
Hexachlorocyclopentadiene	ND		9.48	2.630	J,DX	ug/L		28	25 - 120
Indeno[1,2,3-cd]pyrene	ND		9.48	10.62		ug/L		112	40 - 135
Isophorone	ND		9.48	11.68	AY	ug/L		123	50 - 120
4-Methylphenol	ND		9.48	9.403	J,DX	ug/L		99	50 - 120
Naphthalene	ND		9.48	7.886		ug/L		83	55 - 120
Nitrobenzene	ND		9.48	10.09		ug/L		106	55 - 120
2-Nitrophenol	ND		9.48	8.417		ug/L		89	50 - 120
4-Nitrophenol	ND	LQ	9.48	16.61	J,DX	ug/L		NC	45 - 120
N-Nitrosodimethylamine	ND		9.48	6.781	J,DX	ug/L		72	45 - 120
N-Nitrosodiphenylamine	ND		9.48	9.327		ug/L		98	60 - 120
N-Nitrosodi-n-propylamine	ND		9.48	9.782		ug/L		103	45 - 120
Pentachlorophenol	ND		9.48	7.886		ug/L		83	24 - 121
Phenanthrene	ND		9.48	8.569		ug/L		90	65 - 120
Phenol	1.16	J,DX	9.48	9.782		ug/L		91	40 - 120
Pyrene	ND		9.48	11.53		ug/L		122	55 - 125
1,2,4-Trichlorobenzene	ND		9.48	6.791		ug/L		72	45 - 120
2,4,6-Trichlorophenol	ND		9.48	9.782		ug/L		103	55 - 120
2-Methylphenol	ND		9.48	8.872		ug/L		94	50 - 120
4-Chloroaniline	ND		9.48	4.712	J,DX LN	ug/L		50	55 - 120
2-Methylnaphthalene	ND		9.48	8.265		ug/L		87	55 - 120
2-Nitroaniline	ND		9.48	9.555	J,DX	ug/L		101	65 - 120
3-Nitroaniline	ND		9.48	ND	LN	ug/L		0	60 - 120
Dibenzofuran	ND		9.48	8.417		ug/L		89	65 - 120
4-Nitroaniline	ND		9.48	4.363	J,DX LN	ug/L		46	55 - 125
Benzo[g,h,i]perylene	ND		9.48	10.46	J,DX	ug/L		110	45 - 135
Benzyl alcohol	ND		9.48	9.479	J,DX	ug/L		100	40 - 120
bis (2-chloroisopropyl) ether	ND		9.48	8.872		ug/L		94	45 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annular Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8891-A-1-A MS**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 21041**

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
2-Fluorobiphenyl	93		50 - 120
2-Fluorophenol	76		30 - 120
2,4,6-Tribromophenol	120		40 - 120
Nitrobenzene-d5	95		45 - 120
Terphenyl-d14	121		50 - 125
Phenol-d6	90		35 - 120

**Lab Sample ID: 440-8891-A-1-B MSD**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 21041**

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i>		<i>RPD</i>	
				<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>	<i>RPD</i>	<i>Limit</i>	
Acenaphthene	ND		9.52	8.762		ug/L		92	60 - 120	2	25	
Acenaphthylene	ND		9.52	9.981		ug/L		105	60 - 120	1	25	
Aniline	ND		9.52	5.803	J,DX	ug/L		61	35 - 120	5	30	
Anthracene	ND		9.52	9.371		ug/L		98	65 - 120	5	25	
Benzidine	ND		9.52	ND	AY	ug/L		0	30 - 160	NC	35	
Benzo[a]anthracene	ND		9.52	9.981	J,DX	ug/L		105	65 - 120	9	20	
Benzo[b]fluoranthene	ND		9.52	9.752		ug/L		102	55 - 125	4	25	
Benzo[k]fluoranthene	ND		9.52	8.686		ug/L		91	55 - 125	8	30	
Benzoic acid	ND		9.52	19.73	J,DX	ug/L		NC	25 - 125	1	30	
Benzo[a]pyrene	ND		9.52	9.219		ug/L		97	55 - 130	4	25	
Bis(2-chloroethoxy)methane	ND		9.52	8.914		ug/L		94	50 - 120	5	25	
Bis(2-chloroethyl)ether	ND		9.52	8.152		ug/L		86	50 - 120	3	25	
Bis(2-ethylhexyl) phthalate	ND		9.52	14.32	J,DX LM	ug/L		150	65 - 130	6	25	
4-Bromophenyl phenyl ether	ND		9.52	9.600		ug/L		101	60 - 120	12	25	
Butyl benzyl phthalate	ND		9.52	11.81	J,DX	ug/L		124	55 - 130	7	25	
4-Chloro-3-methylphenol	ND		9.52	11.43		ug/L		120	60 - 120	2	25	
2-Chloronaphthalene	ND		9.52	8.686		ug/L		91	60 - 120	2	20	
2-Chlorophenol	ND		9.52	8.381		ug/L		88	45 - 120	0	25	
4-Chlorophenyl phenyl ether	ND		9.52	7.771		ug/L		82	65 - 120	0	25	
Chrysene	ND		9.52	8.990		ug/L		94	65 - 120	9	25	
Dibenz(a,h)anthracene	ND		9.52	10.21		ug/L		107	45 - 135	2	30	
Di-n-butyl phthalate	ND		9.52	13.03	LM	ug/L		137	60 - 125	8	25	
1,2-Dichlorobenzene	ND		9.52	6.934		ug/L		73	40 - 120	0	25	
1,3-Dichlorobenzene	ND		9.52	6.329		ug/L		66	35 - 120	2	25	
1,4-Dichlorobenzene	ND		9.52	6.346		ug/L		67	35 - 120	1	25	
3,3'-Dichlorobenzidine	ND		9.52	ND	AY	ug/L		0	45 - 135	NC	25	
2,4-Dichlorophenol	ND		9.52	9.143		ug/L		96	55 - 120	2	25	
Diethyl phthalate	ND		9.52	8.762		ug/L		92	55 - 120	0	30	
2,4-Dimethylphenol	ND		9.52	9.829		ug/L		103	40 - 120	9	25	
Dimethyl phthalate	ND		9.52	8.381		ug/L		88	30 - 120	7	30	
4,6-Dinitro-2-methylphenol	ND		9.52	9.676	J,DX	ug/L		102	45 - 120	15	25	
2,4-Dinitrophenol	ND		9.52	ND	AY	ug/L		0	40 - 120	NC	25	
2,4-Dinitrotoluene	ND		9.52	7.924	J,DX	ug/L		83	65 - 120	2	25	
2,6-Dinitrotoluene	ND		9.52	8.533	J,DX	ug/L		90	65 - 120	4	20	
Di-n-octyl phthalate	ND		9.52	19.20	LM	ug/L		202	65 - 135	1	20	
1,2-Diphenylhydrazine(as Azobenzene)	ND		9.52	9.676		ug/L		102	60 - 120	5	25	
Fluoranthene	ND		9.52	11.05		ug/L		116	60 - 120	8	25	

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8891-A-1-B MSD**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 21041**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Fluorene	ND		9.52	8.381		ug/L		88	65 - 120	2	25
Hexachlorobenzene	ND		9.52	9.295		ug/L		98	60 - 120	2	25
Hexachlorobutadiene	ND		9.52	5.610	J,DX	ug/L		59	40 - 120	6	25
Hexachloroethane	ND		9.52	5.746	J,DX	ug/L		60	35 - 120	6	25
Hexachlorocyclopentadiene	ND		9.52	2.686	J,DX	ug/L		28	25 - 120	2	30
Indeno[1,2,3-cd]pyrene	ND		9.52	11.58		ug/L		122	40 - 135	9	30
Isophorone	ND		9.52	12.19	LM	ug/L		128	50 - 120	4	25
4-Methylphenol	ND		9.52	9.524	J,DX	ug/L		100	50 - 120	1	25
Naphthalene	ND		9.52	8.000		ug/L		84	55 - 120	1	25
Nitrobenzene	ND		9.52	10.67		ug/L		112	55 - 120	6	25
2-Nitrophenol	ND		9.52	8.457		ug/L		89	50 - 120	0	25
4-Nitrophenol	ND	LQ	9.52	ND	AY	ug/L		0	45 - 120	NC	30
N-Nitrosodimethylamine	ND		9.52	7.476	J,DX	ug/L		78	45 - 120	10	25
N-Nitrosodiphenylamine	ND		9.52	9.829		ug/L		103	60 - 120	5	25
N-Nitrosodi-n-propylamine	ND		9.52	10.36		ug/L		109	45 - 120	6	25
Pentachlorophenol	ND		9.52	7.253	J,DX	ug/L		76	24 - 121	8	25
Phenanthrene	ND		9.52	9.067		ug/L		95	65 - 120	6	25
Phenol	1.16	J,DX	9.52	9.524		ug/L		88	40 - 120	3	25
Pyrene	ND		9.52	11.81		ug/L		124	55 - 125	2	25
1,2,4-Trichlorobenzene	ND		9.52	6.815		ug/L		72	45 - 120	0	20
2,4,6-Trichlorophenol	ND		9.52	9.981		ug/L		105	55 - 120	2	30
2-Methylphenol	ND		9.52	8.914		ug/L		94	50 - 120	0	25
4-Chloroaniline	ND		9.52	3.434	J,DX AY RA	ug/L		36	55 - 120	31	25
2-Methylnaphthalene	ND		9.52	9.067		ug/L		95	55 - 120	9	20
2-Nitroaniline	ND		9.52	8.305	J,DX	ug/L		87	65 - 120	14	25
3-Nitroaniline	ND		9.52	ND	AY	ug/L		0	60 - 120	NC	25
Dibenzofuran	ND		9.52	8.610		ug/L		90	65 - 120	2	25
4-Nitroaniline	ND		9.52	2.482	J,DX AY RA	ug/L		26	55 - 125	55	25
Benzo[g,h,i]perylene	ND		9.52	10.51	J,DX	ug/L		110	45 - 135	0	30
Benzyl alcohol	ND		9.52	9.981	J,DX	ug/L		105	40 - 120	5	30
bis (2-chloroisopropyl) ether	ND		9.52	8.838		ug/L		93	45 - 120	0	25

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	94		50 - 120
2-Fluorophenol	80		30 - 120
2,4,6-Tribromophenol	120		40 - 120
Nitrobenzene-d5	99		45 - 120
Terphenyl-d14	124		50 - 125
Phenol-d6	88		35 - 120

## Method: 8015B - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 440-20433/3**

**Matrix: Water**

**Analysis Batch: 20433**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GRO (C4-C12)	ND		0.050	0.025	mg/L			04/18/12 10:25	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 8015B - Gasoline Range Organics - (GC) (Continued)

**Lab Sample ID: MB 440-20433/3**  
**Matrix: Water**  
**Analysis Batch: 20433**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	106		65 - 140		04/18/12 10:25	1

**Lab Sample ID: LCS 440-20433/2**  
**Matrix: Water**  
**Analysis Batch: 20433**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	0.800	0.747		mg/L		93	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	127		65 - 140

**Lab Sample ID: 440-8149-B-5 MS**  
**Matrix: Water**  
**Analysis Batch: 20433**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	0.046	J,DX	0.800	0.738		mg/L		87	65 - 140

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	117		65 - 140

**Lab Sample ID: 440-8149-B-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 20433**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	0.046	J,DX	0.800	0.735		mg/L		86	65 - 140	0.000	20

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	123		65 - 140

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

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1221	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1232	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1242	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1248	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1254	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1260	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr)	48		45 - 120	04/15/12 14:34	04/16/12 21:52	1

**Lab Sample ID: LCS 440-19875/4-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Aroclor 1016	4.00	3.75		ug/L		94	50 - 115	
Aroclor 1260	4.00	3.70		ug/L		93	60 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	94		45 - 120

**Lab Sample ID: LCSD 440-19875/5-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	
							Limits	RPD	Limit	RPD
Aroclor 1016	4.00	3.25		ug/L		81	50 - 115	14	30	
Aroclor 1260	4.00	3.60		ug/L		90	60 - 120	3	25	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	94		45 - 120

## Method: 608 Pesticides - Organochlorine Pesticides Low level

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aldrin	ND		0.0050	0.0015	ug/L		04/15/12 14:34	04/16/12 12:21	1
alpha-BHC	ND		0.0050	0.0025	ug/L		04/15/12 14:34	04/16/12 12:21	1
beta-BHC	ND		0.010	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1
Chlordane (technical)	ND		0.10	0.0080	ug/L		04/15/12 14:34	04/16/12 12:21	1
delta-BHC	ND		0.0050	0.0035	ug/L		04/15/12 14:34	04/16/12 12:21	1
Dieldrin	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan I	ND		0.0050	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan II	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endrin	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Heptachlor	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		04/15/12 14:34	04/16/12 12:21	1
Toxaphene	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 12:21	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
4,4'-DDT	ND		0.010	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Surrogate	MB MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery Qualifier				
Tetrachloro-m-xylene	82	35 - 115	04/15/12 14:34	04/16/12 12:21	1

**Lab Sample ID: LCS 440-19875/2-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Aldrin	0.500	0.467		ug/L		93	40 - 115	
alpha-BHC	0.500	0.489		ug/L		98	45 - 115	
beta-BHC	0.500	0.480		ug/L		96	55 - 115	
delta-BHC	0.500	0.497		ug/L		99	55 - 115	
Dieldrin	0.500	0.497		ug/L		99	55 - 115	
Endosulfan I	0.500	0.482		ug/L		96	55 - 115	
Endosulfan II	0.500	0.463		ug/L		93	55 - 120	
Endosulfan sulfate	0.500	0.469		ug/L		94	60 - 120	
Endrin	0.500	0.504		ug/L		101	55 - 115	
Endrin aldehyde	0.500	0.514		ug/L		103	50 - 120	
gamma-BHC (Lindane)	0.500	0.488		ug/L		98	45 - 115	
Heptachlor	0.500	0.481		ug/L		96	45 - 115	
Heptachlor epoxide	0.500	0.486		ug/L		97	55 - 115	
4,4'-DDD	0.500	0.538		ug/L		108	55 - 120	
4,4'-DDE	0.500	0.508		ug/L		102	50 - 120	
4,4'-DDT	0.500	0.549		ug/L		110	55 - 120	

Surrogate	LCS LCS	Limits
	%Recovery Qualifier	
Tetrachloro-m-xylene	80	35 - 115

**Lab Sample ID: LCSD 440-19875/3-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD Limit	
									RPD	Limit
Aldrin	0.500	0.439		ug/L		88	40 - 115	6.10	30	
alpha-BHC	0.500	0.460		ug/L		92	45 - 115	6.11	30	
beta-BHC	0.500	0.461		ug/L		92	55 - 115	4.04	30	
delta-BHC	0.500	0.471		ug/L		94	55 - 115	5.41	30	
Dieldrin	0.500	0.470		ug/L		94	55 - 115	5.63	30	
Endosulfan I	0.500	0.456		ug/L		91	55 - 115	5.54	30	
Endosulfan II	0.500	0.438		ug/L		88	55 - 120	5.68	30	
Endosulfan sulfate	0.500	0.449		ug/L		90	60 - 120	4.31	30	
Endrin	0.500	0.479		ug/L		96	55 - 115	5.05	30	
Endrin aldehyde	0.500	0.502		ug/L		100	50 - 120	2.28	30	
gamma-BHC (Lindane)	0.500	0.461		ug/L		92	45 - 115	5.77	30	
Heptachlor	0.500	0.454		ug/L		91	45 - 115	5.65	30	
Heptachlor epoxide	0.500	0.461		ug/L		92	55 - 115	5.41	30	
4,4'-DDD	0.500	0.508		ug/L		102	55 - 120	5.62	30	
4,4'-DDE	0.500	0.481		ug/L		96	50 - 120	5.46	30	
4,4'-DDT	0.500	0.520		ug/L		104	55 - 120	5.28	30	

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: LCSD 440-19875/3-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Tetrachloro-m-xylene	76		35 - 115

## Method: 8015B - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 440-20808/1-A**  
**Matrix: Water**  
**Analysis Batch: 20888**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 20808**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C13-C28	ND		0.50	0.10	mg/L		04/19/12 15:08	04/19/12 22:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
n-Octacosane	75		45 - 120			04/19/12 15:08	04/19/12 22:39	1	

**Lab Sample ID: LCS 440-20808/2-A**  
**Matrix: Water**  
**Analysis Batch: 20888**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 20808**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
C10-C28	1.00	0.773		mg/L		77	40 - 115
Surrogate	LCS LCS		Limits				
n-Octacosane	%Recovery	Qualifier	45 - 120				
	75						

**Lab Sample ID: LCSD 440-20808/3-A**  
**Matrix: Water**  
**Analysis Batch: 20888**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 20808**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	
		Result	Qualifier					RPD	Limit
C10-C28	1.00	0.800		mg/L		80	40 - 115	3	25
Surrogate	LCSD LCSD		Limits						
n-Octacosane	%Recovery	Qualifier	45 - 120						
	75								

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

**Lab Sample ID: MB 440-19833/3**  
**Matrix: Water**  
**Analysis Batch: 19833**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chromium, hexavalent	ND		1.0	0.25	ug/L			04/14/12 18:59	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

**Lab Sample ID: LCS 440-19833/5**

**Matrix: Water**

**Analysis Batch: 19833**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	50.0	51.2		ug/L		102	90 - 110

**Lab Sample ID: 440-8689-1 MS**

**Matrix: Water**

**Analysis Batch: 19833**

**Client Sample ID: Outfall 001 Composite**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	ND	BU BV	50.0	51.1	BV	ug/L		102	90 - 110

**Lab Sample ID: 440-8689-1 MSD**

**Matrix: Water**

**Analysis Batch: 19833**

**Client Sample ID: Outfall 001 Composite**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	ND	BU BV	50.0	50.1	BV	ug/L		100	90 - 110	2	10

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-19784/2**

**Matrix: Water**

**Analysis Batch: 19784**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			04/14/12 10:38	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/14/12 10:38	1
Nitrite as N	ND		0.15	0.11	mg/L			04/14/12 10:38	1

**Lab Sample ID: LCS 440-19784/3**

**Matrix: Water**

**Analysis Batch: 19784**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.09		mg/L		97	90 - 110
Nitrate Nitrite as N	2.65	2.53		mg/L		95	90 - 110
Nitrite as N	1.52	1.44		mg/L		95	90 - 110

**Lab Sample ID: 440-8670-A-1 MS**

**Matrix: Water**

**Analysis Batch: 19784**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.26		1.13	1.30		mg/L		92	80 - 120
Nitrate Nitrite as N	0.39		2.65	2.80		mg/L		91	80 - 120
Nitrite as N	0.13	J,DX	1.52	1.50		mg/L		90	80 - 120

**Lab Sample ID: 440-8670-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 19784**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.26		1.13	1.27		mg/L		89	80 - 120	2	20



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 440-8670-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19784**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Nitrate Nitrite as N	0.39		2.65	2.75		mg/L		89	80 - 120	2	20
Nitrite as N	0.13	J,DX	1.52	1.48		mg/L		89	80 - 120	1	20

**Lab Sample ID: MB 440-19785/2**  
**Matrix: Water**  
**Analysis Batch: 19785**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.40	mg/L			04/14/12 10:38	1
Sulfate	ND		0.50	0.40	mg/L			04/14/12 10:38	1

**Lab Sample ID: LCS 440-19785/3**  
**Matrix: Water**  
**Analysis Batch: 19785**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Chloride	5.00	4.68		mg/L		94	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110

**Lab Sample ID: 440-8670-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 19785**

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Chloride	0.93		5.00	5.48		mg/L		91	80 - 120
Sulfate	1.4		10.0	10.7		mg/L		93	80 - 120

**Lab Sample ID: 440-8670-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19785**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	0.93		5.00	5.46		mg/L		90	80 - 120	0	20
Sulfate	1.4		10.0	10.8		mg/L		94	80 - 120	1	20

## Method: 314.0 - Perchlorate (IC)

**Lab Sample ID: MB 440-20654/36**  
**Matrix: Water**  
**Analysis Batch: 20654**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perchlorate	ND		4.0	0.95	ug/L			04/19/12 19:22	1

**Lab Sample ID: LCS 440-20654/37**  
**Matrix: Water**  
**Analysis Batch: 20654**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Perchlorate	25.0	26.6		ug/L		106	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 440-8689-1 MS  
Matrix: Water  
Analysis Batch: 20654

Client Sample ID: Outfall 001 Composite  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.4	J,DX	25.0	20.8	LN	ug/L		78	80 - 120

Lab Sample ID: 440-8689-1 MSD  
Matrix: Water  
Analysis Batch: 20654

Client Sample ID: Outfall 001 Composite  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	1.4	J,DX	25.0	22.8		ug/L		86	80 - 120	9.17	20

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

Lab Sample ID: G2D23000077B  
Matrix: Water  
Analysis Batch: 2114077

Client Sample ID: Method Blank  
Prep Type: Total  
Prep Batch: 2114077\_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000093	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total TCDD	0.0000038	J Q	0.000010	0.00000041	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8-HxCDD	0.0000011	J Q	0.000050	0.0000013	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,6,7,8-HxCDD	0.0000017	J	0.000050	0.0000013	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8,9-HxCDD	0.0000024	J	0.000050	0.0000011	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HxCDD	0.0000053	J Q	0.000050	0.0000012	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,6,7,8-HpCDD	0.0000037	J	0.000050	0.0000057	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HpCDD	0.0000064	J	0.000050	0.0000057	ug/L		04/23/12 09:00	04/24/12 16:35	1
OCDD	0.000016	J	0.00010	0.00000040	ug/L		04/23/12 09:00	04/24/12 16:35	1
2,3,7,8-TCDF	ND		0.000010	0.00000088	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total TCDF	ND		0.000010	0.00000088	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8-PeCDF	0.0000031	J Q	0.000050	0.00000049	ug/L		04/23/12 09:00	04/24/12 16:35	1
2,3,4,7,8-PeCDF	0.0000019	J Q	0.000050	0.00000048	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total PeCDF	0.0000050	J Q	0.000050	0.00000048	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8-HxCDF	0.0000037	J Q	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,6,7,8-HxCDF	0.0000020	J	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
2,3,4,6,7,8-HxCDF	0.0000020	J	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8,9-HxCDF	0.0000016	J Q	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HxCDF	0.000011	J Q	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,6,7,8-HpCDF	0.0000035	J	0.000050	0.00000016	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8,9-HpCDF	0.0000041	J	0.000050	0.00000018	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HpCDF	0.0000094	J	0.000050	0.00000017	ug/L		04/23/12 09:00	04/24/12 16:35	1
OCDF	0.0000070	J	0.00010	0.00000031	ug/L		04/23/12 09:00	04/24/12 16:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	86		35 - 197	04/23/12 09:00	04/24/12 16:35	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	41		25 - 164	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8-PeCDD	50		25 - 181	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	04/23/12 09:00	04/24/12 16:35	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: G2D230000077B**  
**Matrix: Water**  
**Analysis Batch: 2114077**

**Client Sample ID: Method Blank**  
**Prep Type: Total**  
**Prep Batch: 2114077\_P**

Internal Standard	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140	04/23/12 09:00	04/24/12 16:35	1
13C-OCDD	56		17 - 157	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,7,8-TCDF	34		24 - 169	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8-PeCDF	39		24 - 185	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,7,8-PeCDF	43		21 - 178	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,6,7,8-HxCDF	50		26 - 123	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,6,7,8-HxCDF	47		28 - 136	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8,9-HxCDF	50		29 - 147	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8,9-HpCDF	58		26 - 138	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8-HxCDF	47		26 - 152	04/23/12 09:00	04/24/12 16:35	1

**Lab Sample ID: G2D230000077C**  
**Matrix: Water**  
**Analysis Batch: 2114077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total**  
**Prep Batch: 2114077\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8-PeCDD	0.00100	0.000877		ug/L		88	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000920	B	ug/L		92	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000904	B	ug/L		90	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000924	B	ug/L		92	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000954	B	ug/L		95	70 - 140
OCDD	0.00200	0.00188	B	ug/L		94	78 - 144
2,3,7,8-TCDF	0.000200	0.000194		ug/L		97	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000945	B	ug/L		94	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000869	B	ug/L		87	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000957	B	ug/L		96	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000963	B	ug/L		96	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000955	B	ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.00101	B	ug/L		101	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000948	B	ug/L		95	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000904	B	ug/L		90	78 - 138
OCDF	0.00200	0.00173	B	ug/L		87	63 - 170

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	85		31 - 191

Internal Standard	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	41		20 - 175
13C-1,2,3,7,8-PeCDD	48		21 - 227
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	71		26 - 166
13C-OCDD	58		13 - 199
13C-2,3,7,8-TCDF	34		22 - 152
13C-1,2,3,7,8-PeCDF	36		21 - 192

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: G2D230000077C**  
**Matrix: Water**  
**Analysis Batch: 2114077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total**  
**Prep Batch: 2114077\_P**

<i>Internal Standard</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
13C-2,3,4,7,8-PeCDF	40		13 - 328
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-2,3,4,6,7,8-HxCDF	44		22 - 176
13C-1,2,3,7,8,9-HxCDF	48		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186
13C-1,2,3,4,7,8-HxCDF	43		19 - 202

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

**Lab Sample ID: MB 440-21269/1-A**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		50	40	ug/L		04/23/12 08:06	04/24/12 14:17	1
Boron	ND		0.050	0.020	mg/L		04/23/12 08:06	04/24/12 14:17	1
Beryllium	ND		2.0	0.90	ug/L		04/23/12 08:06	04/24/12 14:17	1
Chromium	ND		5.0	2.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Iron	ND		0.040	0.015	mg/L		04/23/12 08:06	04/24/12 14:17	1
Nickel	ND		10	2.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Vanadium	ND		10	3.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Zinc	ND		20	6.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Silver	ND		10	6.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Cobalt	ND		10	2.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Manganese	ND		20	7.0	ug/L		04/23/12 08:06	04/24/12 14:17	1
Barium	ND		10	6.0	ug/L		04/23/12 08:06	04/24/12 14:17	1

**Lab Sample ID: MB 440-21269/1-A**  
**Matrix: Water**  
**Analysis Batch: 22090**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	7.0	ug/L		04/23/12 08:06	04/25/12 20:27	1

**Lab Sample ID: LCS 440-21269/2-A**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	500	479		ug/L		96	85 - 115
Boron	0.500	0.504		mg/L		101	85 - 115
Beryllium	500	486		ug/L		97	85 - 115
Chromium	500	525		ug/L		105	85 - 115
Iron	0.500	0.490		mg/L		98	85 - 115
Nickel	500	476		ug/L		95	85 - 115
Vanadium	500	510		ug/L		102	85 - 115
Zinc	500	489		ug/L		98	85 - 115
Silver	250	249		ug/L		100	85 - 115
Cobalt	500	465		ug/L		93	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: LCS 440-21269/2-A**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	500	490		ug/L		98	85 - 115
Barium	500	501		ug/L		100	85 - 115

**Lab Sample ID: LCS 440-21269/2-A**  
**Matrix: Water**  
**Analysis Batch: 22090**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	500	526		ug/L		105	85 - 115

**Lab Sample ID: 440-8616-A-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	42	J,DX	500	534		ug/L		98	70 - 130
Boron	0.083		0.500	0.613		mg/L		106	70 - 130
Beryllium	ND		500	505		ug/L		101	70 - 130
Chromium	ND		500	525		ug/L		105	70 - 130
Iron	ND		0.500	0.498		mg/L		100	70 - 130
Nickel	ND		500	472		ug/L		94	70 - 130
Vanadium	ND		500	534		ug/L		107	70 - 130
Zinc	ND		500	510		ug/L		102	70 - 130
Silver	ND		250	255		ug/L		102	70 - 130
Cobalt	ND		500	473		ug/L		95	70 - 130
Manganese	ND		500	494		ug/L		99	70 - 130
Barium	23		500	527		ug/L		101	70 - 130

**Lab Sample ID: 440-8616-A-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 22090**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		500	549		ug/L		110	70 - 130

**Lab Sample ID: 440-8616-A-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aluminum	42	J,DX	500	543		ug/L		100	70 - 130	2	20
Boron	0.083		0.500	0.622		mg/L		108	70 - 130	1	20
Beryllium	ND		500	500		ug/L		100	70 - 130	1	20
Chromium	ND		500	530		ug/L		106	70 - 130	1	20
Iron	ND		0.500	0.508		mg/L		102	70 - 130	2	20
Nickel	ND		500	485		ug/L		97	70 - 130	3	20
Vanadium	ND		500	539		ug/L		108	70 - 130	1	20
Zinc	ND		500	522		ug/L		104	70 - 130	2	20
Silver	ND		250	258		ug/L		103	70 - 130	1	20
Cobalt	ND		500	476		ug/L		95	70 - 130	1	20
Manganese	ND		500	498		ug/L		100	70 - 130	1	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8616-A-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 21678**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	23		500	532		ug/L		102	70 - 130	1	20

**Lab Sample ID: 440-8616-A-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 22090**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21269**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		500	553		ug/L		111	70 - 130	1	20

**Lab Sample ID: MB 440-21302/1-A**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21302**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		50	40	ug/L		04/23/12 10:11	04/24/12 11:42	1
Arsenic	ND		10	7.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Boron	0.0317	J,DX	0.050	0.020	mg/L		04/23/12 10:11	04/24/12 11:42	1
Beryllium	ND		2.0	0.90	ug/L		04/23/12 10:11	04/24/12 11:42	1
Chromium	ND		5.0	2.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Iron	ND		0.040	0.015	mg/L		04/23/12 10:11	04/24/12 11:42	1
Nickel	ND		10	2.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Vanadium	ND		10	3.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Zinc	ND		20	6.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Silver	ND		10	6.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Cobalt	ND		10	2.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Manganese	ND		20	7.0	ug/L		04/23/12 10:11	04/24/12 11:42	1
Barium	ND		10	6.0	ug/L		04/23/12 10:11	04/24/12 11:42	1

**Lab Sample ID: LCS 440-21302/2-A**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21302**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	500	502		ug/L		100	85 - 115
Arsenic	500	491		ug/L		98	85 - 115
Boron	0.500	0.548		mg/L		110	85 - 115
Beryllium	500	506		ug/L		101	85 - 115
Chromium	500	527		ug/L		105	85 - 115
Iron	0.500	0.506		mg/L		101	85 - 115
Nickel	500	502		ug/L		100	85 - 115
Vanadium	500	520		ug/L		104	85 - 115
Zinc	500	502		ug/L		100	85 - 115
Silver	250	258		ug/L		103	85 - 115
Cobalt	500	489		ug/L		98	85 - 115
Manganese	500	506		ug/L		101	85 - 115
Barium	500	515		ug/L		103	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8609-F-12-F MS**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Aluminum	120		500	618		ug/L		100		70 - 130
Arsenic	ND		500	480		ug/L		96		70 - 130
Boron	0.033	J,DX MB	0.500	0.540		mg/L		101		70 - 130
Beryllium	ND		500	494		ug/L		99		70 - 130
Chromium	ND		500	519		ug/L		104		70 - 130
Iron	0.13		0.500	0.613		mg/L		97		70 - 130
Nickel	3.5	J,DX	500	480		ug/L		95		70 - 130
Vanadium	ND		500	516		ug/L		103		70 - 130
Zinc	ND		500	495		ug/L		99		70 - 130
Silver	ND		250	252		ug/L		101		70 - 130
Cobalt	ND		500	467		ug/L		93		70 - 130
Manganese	ND		500	495		ug/L		99		70 - 130
Barium	20		500	515		ug/L		99		70 - 130

**Lab Sample ID: 440-8609-F-12-G MSD**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
Aluminum	120		500	632		ug/L		103		70 - 130	2	20
Arsenic	ND		500	488		ug/L		98		70 - 130	2	20
Boron	0.033	J,DX MB	0.500	0.552		mg/L		104		70 - 130	2	20
Beryllium	ND		500	493		ug/L		99		70 - 130	0	20
Chromium	ND		500	528		ug/L		106		70 - 130	2	20
Iron	0.13		0.500	0.632		mg/L		101		70 - 130	3	20
Nickel	3.5	J,DX	500	484		ug/L		96		70 - 130	1	20
Vanadium	ND		500	521		ug/L		104		70 - 130	1	20
Zinc	ND		500	499		ug/L		100		70 - 130	1	20
Silver	ND		250	256		ug/L		102		70 - 130	2	20
Cobalt	ND		500	472		ug/L		94		70 - 130	1	20
Manganese	ND		500	499		ug/L		100		70 - 130	1	20
Barium	20		500	521		ug/L		100		70 - 130	1	20

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

**Lab Sample ID: MB 440-21402/1-A**  
**Matrix: Water**  
**Analysis Batch: 22342**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Cadmium	ND		1.0	0.10	ug/L		04/23/12 17:06	04/26/12 22:09		1
Copper	ND		2.0	0.50	ug/L		04/23/12 17:06	04/26/12 22:09		1
Lead	ND		1.0	0.20	ug/L		04/23/12 17:06	04/26/12 22:09		1
Antimony	ND		2.0	0.30	ug/L		04/23/12 17:06	04/26/12 22:09		1
Selenium	ND		2.0	0.50	ug/L		04/23/12 17:06	04/26/12 22:09		1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-21402/1-A**  
**Matrix: Water**  
**Analysis Batch: 22628**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.0	0.20	ug/L		04/23/12 17:06	04/28/12 18:39	1

**Lab Sample ID: LCS 440-21402/2-A**  
**Matrix: Water**  
**Analysis Batch: 22342**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	77.7		ug/L		97	85 - 115
Copper	80.0	80.1		ug/L		100	85 - 115
Lead	80.0	80.8		ug/L		101	85 - 115
Antimony	80.0	78.9		ug/L		99	85 - 115
Selenium	80.0	79.7		ug/L		100	85 - 115

**Lab Sample ID: LCS 440-21402/2-A**  
**Matrix: Water**  
**Analysis Batch: 22628**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	80.0	80.0		ug/L		100	85 - 115

**Lab Sample ID: 440-8779-K-1-D MS**  
**Matrix: Water**  
**Analysis Batch: 22628**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	ND		80.0	83.3		ug/L		104	70 - 130

**Lab Sample ID: 440-8779-K-1-E MSD**  
**Matrix: Water**  
**Analysis Batch: 22628**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	ND		80.0	83.9		ug/L		105	70 - 130	1	20

**Lab Sample ID: 440-9171-A-5-B MS ^5**  
**Matrix: Water**  
**Analysis Batch: 22342**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	1.6	J,DX	80.0	75.7		ug/L		93	70 - 130
Copper	5.2	J,DX	80.0	80.3		ug/L		94	70 - 130
Lead	ND		80.0	76.2		ug/L		95	70 - 130
Antimony	1.5	J,DX	80.0	79.1		ug/L		97	70 - 130
Selenium	31		80.0	103		ug/L		91	70 - 130

**Lab Sample ID: 440-9171-A-5-C MSD ^5**  
**Matrix: Water**  
**Analysis Batch: 22342**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	1.6	J,DX	80.0	76.2		ug/L		93	70 - 130	1	20



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

Lab Sample ID: 440-9171-A-5-C MSD ^5

Matrix: Water

Analysis Batch: 22342

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 21402

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Copper	5.2	J,DX	80.0	80.4		ug/L		94	70 - 130	0	20
Lead	ND		80.0	77.0		ug/L		96	70 - 130	1	20
Antimony	1.5	J,DX	80.0	78.9		ug/L		97	70 - 130	0	20
Selenium	31		80.0	103		ug/L		90	70 - 130	1	20

Lab Sample ID: MB 440-20333/1-D

Matrix: Water

Analysis Batch: 22326

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21438

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.10	ug/L		04/23/12 20:10	04/27/12 00:57	1
Copper	0.728	J,DX IB	2.0	0.50	ug/L		04/23/12 20:10	04/27/12 00:57	1
Lead	ND		1.0	0.20	ug/L		04/23/12 20:10	04/27/12 00:57	1
Antimony	ND		2.0	0.30	ug/L		04/23/12 20:10	04/27/12 00:57	1
Selenium	ND		2.0	0.50	ug/L		04/23/12 20:10	04/27/12 00:57	1

Lab Sample ID: MB 440-20333/1-D

Matrix: Water

Analysis Batch: 22566

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21438

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Copper	ND		2.0	0.50	ug/L		04/23/12 20:10	04/27/12 18:52	1
Thallium	ND		1.0	0.20	ug/L		04/23/12 20:10	04/27/12 18:52	1

Lab Sample ID: LCS 440-20333/2-E

Matrix: Water

Analysis Batch: 22326

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 21438

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Cadmium	80.0	85.5		ug/L		107	85 - 115
Copper	80.0	96.5	IB LQ	ug/L		121	85 - 115
Lead	80.0	88.3		ug/L		110	85 - 115
Antimony	80.0	85.6		ug/L		107	85 - 115
Selenium	80.0	88.0		ug/L		110	85 - 115

Lab Sample ID: LCS 440-20333/2-E

Matrix: Water

Analysis Batch: 22566

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 21438

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Copper	80.0	88.2		ug/L		110	85 - 115
Thallium	80.0	83.2		ug/L		104	85 - 115

Lab Sample ID: 440-8693-S-1-G MS ^5

Matrix: Water

Analysis Batch: 22326

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 21438

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Cadmium	ND		80.0	86.8		ug/L		109	70 - 130
Copper	3.8		80.0	97.0	IB	ug/L		117	70 - 130
Lead	ND		80.0	85.6		ug/L		107	70 - 130

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: 440-8693-S-1-G MS ^5**  
**Matrix: Water**  
**Analysis Batch: 22326**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 21438**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Antimony	ND		80.0	84.2		ug/L		105	70 - 130	
Selenium	ND		80.0	97.3		ug/L		122	70 - 130	

**Lab Sample ID: 440-8693-S-1-G MS ^5**  
**Matrix: Water**  
**Analysis Batch: 22566**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 21438**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Copper	3.6	J,DX	80.0	90.1		ug/L		108	70 - 130	
Thallium	1.2	J,DX	80.0	81.2		ug/L		100	70 - 130	

**Lab Sample ID: 440-8693-S-1-H MSD ^5**  
**Matrix: Water**  
**Analysis Batch: 22326**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 21438**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Cadmium	ND		80.0	85.5		ug/L		107	70 - 130		2	20
Copper	3.8		80.0	94.2	IB	ug/L		113	70 - 130		3	20
Lead	ND		80.0	83.9		ug/L		105	70 - 130		2	20
Antimony	ND		80.0	84.1		ug/L		105	70 - 130		0	20
Selenium	ND		80.0	95.4		ug/L		119	70 - 130		2	20

**Lab Sample ID: 440-8693-S-1-H MSD ^5**  
**Matrix: Water**  
**Analysis Batch: 22566**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 21438**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Copper	3.6	J,DX	80.0	88.3		ug/L		106	70 - 130		2	20
Thallium	1.2	J,DX	80.0	78.9		ug/L		97	70 - 130		3	20

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 440-20031/1-A**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20	0.10	ug/L		04/16/12 15:03	04/17/12 12:34	1

**Lab Sample ID: LCS 440-20031/2-A**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	
							Result	Qualifier
Mercury	8.00	8.15		ug/L		102	85 - 115	

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 245.1 - Mercury (CVAA) (Continued)

**Lab Sample ID: 440-8609-G-14-B MS**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	7.88		ug/L		98	70 - 130

**Lab Sample ID: 440-8609-G-14-C MSD**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.03		ug/L		100	70 - 130	1.86	20

**Lab Sample ID: MB 440-19679/1-C**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/16/12 15:30	04/18/12 12:13	1

**Lab Sample ID: LCS 440-19679/2-C**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.17		ug/L		102	85 - 115

**Lab Sample ID: 440-8443-G-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	8.10		ug/L		101	70 - 130

**Lab Sample ID: 440-8443-G-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.18		ug/L		102	70 - 130	1.00	20

## Method: 120.1 - Conductivity, Specific Conductance

**Lab Sample ID: MB 440-20701/1**  
**Matrix: Water**  
**Analysis Batch: 20701**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			04/19/12 08:44	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 120.1 - Conductivity, Specific Conductance (Continued)

Lab Sample ID: LCS 440-20701/2  
Matrix: Water  
Analysis Batch: 20701

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	501	531		umhos/cm		106	90 - 110

Lab Sample ID: 440-8812-B-1 DU  
Matrix: Water  
Analysis Batch: 20701

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	78		79.8		umhos/cm		2.00	5

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-21756/1-A  
Matrix: Water  
Analysis Batch: 21846

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 21756

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		04/25/12 06:36	04/25/12 11:29	1

Lab Sample ID: LCS 440-21756/2-A  
Matrix: Water  
Analysis Batch: 21846

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 21756

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	19.0		mg/L		95	78 - 114

Lab Sample ID: LCSD 440-21756/3-A  
Matrix: Water  
Analysis Batch: 21846

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 21756

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	18.6		mg/L		93	78 - 114	2	11

## Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-19825/6  
Matrix: Water  
Analysis Batch: 19825

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			04/14/12 17:41	1

Lab Sample ID: MRL 440-19825/4 MRL  
Matrix: Water  
Analysis Batch: 19825

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	1.00	1.06		NTU		106	

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: 180.1 - Turbidity, Nephelometric (Continued)

Lab Sample ID: 440-8689-1 DU  
Matrix: Water  
Analysis Batch: 19825

Client Sample ID: Outfall 001 Composite  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	390		381		NTU		1	20

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

Lab Sample ID: MB 440-19957/1  
Matrix: Water  
Analysis Batch: 19957

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			04/16/12 10:21	1

Lab Sample ID: LCS 440-19957/2  
Matrix: Water  
Analysis Batch: 19957

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	934		mg/L		93	90 - 110

Lab Sample ID: 440-8418-B-1 DU  
Matrix: Water  
Analysis Batch: 19957

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2600		2710		mg/L		3.00	10

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

Lab Sample ID: MB 440-20891/1  
Matrix: Water  
Analysis Batch: 20891

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			04/19/12 23:17	1

Lab Sample ID: LCS 440-20891/2  
Matrix: Water  
Analysis Batch: 20891

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	1000		mg/L		100	85 - 115

Lab Sample ID: 440-8689-1 DU  
Matrix: Water  
Analysis Batch: 20891

Client Sample ID: Outfall 001 Composite  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	63		64.0		mg/L		2.00	10

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

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

**Lab Sample ID: MB 440-22248/1-A**  
**Matrix: Water**  
**Analysis Batch: 22273**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22248**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		04/26/12 18:24	04/26/12 21:25	1

**Lab Sample ID: LCS 440-22248/2-A**  
**Matrix: Water**  
**Analysis Batch: 22273**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22248**

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

**Lab Sample ID: 440-9403-A-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 22273**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 22248**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	104		ug/L		104	70 - 115

**Lab Sample ID: 440-9403-A-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 22273**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 22248**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	108		ug/L		108	70 - 115	4	15

## Method: SM 4500 F C - Fluoride

**Lab Sample ID: MB 440-20387/10**  
**Matrix: Water**  
**Analysis Batch: 20387**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.020	mg/L			04/18/12 06:29	1

**Lab Sample ID: LCS 440-20387/9**  
**Matrix: Water**  
**Analysis Batch: 20387**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.00		mg/L		100	90 - 110

**Lab Sample ID: 440-8744-J-1 MS**  
**Matrix: Water**  
**Analysis Batch: 20387**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.12		1.00	1.08		mg/L		96	80 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 440-8744-J-1 MSD  
Matrix: Water  
Analysis Batch: 20387

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.12		1.00	1.06		mg/L		95	80 - 120	1.20	20

## Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-22283/1-A  
Matrix: Water  
Analysis Batch: 22286

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 22283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.400	0.157	mg/L		04/25/12 20:35	04/25/12 22:00	1

Lab Sample ID: LCS 440-22283/2-A  
Matrix: Water  
Analysis Batch: 22286

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 22283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	10.0	9.520		mg/L		95	85 - 115

Lab Sample ID: 440-8616-M-1-E MS  
Matrix: Water  
Analysis Batch: 22286

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 22283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.280	J,DX	10.0	9.800		mg/L		95	70 - 120

Lab Sample ID: 440-8616-M-1-F MSD  
Matrix: Water  
Analysis Batch: 22286

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 22283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.280	J,DX	10.0	9.800		mg/L		95	70 - 120	0	15

## Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-20723/5  
Matrix: Water  
Analysis Batch: 20723

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.75	mg/L			04/19/12 06:04	1

Lab Sample ID: LCS 440-20723/6  
Matrix: Water  
Analysis Batch: 20723

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.91		mg/L		99	90 - 110

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

**Lab Sample ID: 440-8729-B-2 MS**  
**Matrix: Water**  
**Analysis Batch: 20723**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	7.0		5.00	12.3		mg/L		107	80 - 120

**Lab Sample ID: 440-8729-B-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 20723**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	7.0		5.00	12.3		mg/L		107	80 - 120	0.000	20

## Method: SM 5540C - Methylene Blue Active Substances (MBAS)

**Lab Sample ID: MB 440-19842/3**  
**Matrix: Water**  
**Analysis Batch: 19842**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			04/14/12 21:15	1

**Lab Sample ID: LCS 440-19842/4**  
**Matrix: Water**  
**Analysis Batch: 19842**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.272		mg/L		109	90 - 110

**Lab Sample ID: 440-8672-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 19842**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.13		0.250	0.370		mg/L		97	50 - 125

**Lab Sample ID: 440-8672-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 19842**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	0.13		0.250	0.387		mg/L		104	50 - 125	5	20

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-19862/1 USB**  
**Matrix: Water**  
**Analysis Batch: 19862**

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

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			04/15/12 12:00	1



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: SM5210B - BOD, 5 Day (Continued)

**Lab Sample ID:** LCS 440-19862/4  
**Matrix:** Water  
**Analysis Batch:** 19862

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	210		mg/L		106	85 - 115

**Lab Sample ID:** LCSD 440-19862/5  
**Matrix:** Water  
**Analysis Batch:** 19862

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	214		mg/L		108	85 - 115	1.89	20

## Method: Gross Alpha and Beta - Gross Alpha/Beta

**Lab Sample ID:** S204070-04  
**Matrix:** WATER  
**Analysis Batch:** 8610

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 8610\_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	60	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1

**Lab Sample ID:** S204070-04  
**Matrix:** WATER  
**Analysis Batch:** 8610

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 8610\_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.067	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	1

**Lab Sample ID:** S204070-04  
**Matrix:** WATER  
**Analysis Batch:** 8610

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 8610\_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.94	U	20		pCi/L		04/26/12 00:00	04/27/12 00:00	1
Potassium-40	1.73	U	25		pCi/L		04/26/12 00:00	04/27/12 00:00	1

**Lab Sample ID:** S204070-04  
**Matrix:** WATER  
**Analysis Batch:** 8610

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 8610\_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/27/12 00:00	04/27/12 09:20	1

**Lab Sample ID:** S204070-04  
**Matrix:** WATER  
**Analysis Batch:** 8610

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 8610\_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.192	U	3		pCi/L		04/26/12 00:00	04/30/12 08:23	1
Gross Beta	0.051	U	4		pCi/L		04/26/12 00:00	04/30/12 08:23	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

**Lab Sample ID: S204070-04**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.122	U	1		pCi/L		04/30/12 00:00	04/30/12 14:11	1

**Lab Sample ID: S204070-04**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.182	U	1		pCi/L		05/04/12 00:00	05/04/12 13:45	1

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tritium	2440	2380		pCi/L		98	80 - 120

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cesium-137	147	149		pCi/L		101	80 - 120
Cobalt-60	130	126		pCi/L		97	80 - 120

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Strontium-90	9.34	7.84		pCi/L		84	80 - 120

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium, Total	56.5	64.2		pCi/L		114	80 - 120

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-228	4.41	4.73		pCi/L		107	60 - 140

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Alpha	37	40.4		pCi/L		109	70 - 130

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Beta	34	32.6		pCi/L		96	70 - 130

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-226	50.1	48.5		pCi/L		97	80 - 120

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Tritium	19.4		18.5	U	pCi/L		0	

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Strontium-90	-0.131		0.038	U	pCi/L		0	

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Cesium-137	0.152		-0.761	U	pCi/L		0	
Potassium-40	-4.54		3.82	U	pCi/L		0	

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Uranium, Total	0.172		0.183	J	pCi/L		6	

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Radium-228	0.295		0.333	U	pCi/L		0	

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8610**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8610\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Gross Alpha	1.34		2.68	J	pCi/L		67	

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

Lab Sample ID: S204070-05  
Matrix: WATER  
Analysis Batch: 8610

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 8610\_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Gross Beta	4.81		5.29		pCi/L		10	

Lab Sample ID: S204070-05  
Matrix: WATER  
Analysis Batch: 8610

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 8610\_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Radium-226	0.266		0.08	U	pCi/L		0	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## GC/MS VOA

### Analysis Batch: 19861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7721-A-1 MS	Matrix Spike	Total/NA	Water	624	
440-7721-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-8621-1	Outfall 001 Grab	Total/NA	Water	624	
440-8621-2	Trip Blanks	Total/NA	Water	624	
LCS 440-19861/5	Lab Control Sample	Total/NA	Water	624	
LCS 440-19861/6	Lab Control Sample	Total/NA	Water	624	
MB 440-19861/4	Method Blank	Total/NA	Water	624	

### Analysis Batch: 20084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	624	
440-8621-2	Trip Blanks	Total/NA	Water	624	
440-8626-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-8626-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-20084/5	Lab Control Sample	Total/NA	Water	624	
MB 440-20084/4	Method Blank	Total/NA	Water	624	

### Analysis Batch: 20473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	8260B SIM	
440-8769-A-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
440-8769-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	
LCS 440-20473/3	Lab Control Sample	Total/NA	Water	8260B SIM	
MB 440-20473/2	Method Blank	Total/NA	Water	8260B SIM	

## GC/MS Semi VOA

### Prep Batch: 21041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	625	
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	

### Analysis Batch: 21217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	625	21041
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	21041
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	21041
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	21041
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	21041

## GC VOA

### Analysis Batch: 20433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8149-B-5 MS	Matrix Spike	Total/NA	Water	8015B	
440-8149-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
440-8621-1	Outfall 001 Grab	Total/NA	Water	8015B	
LCS 440-20433/2	Lab Control Sample	Total/NA	Water	8015B	
MB 440-20433/3	Method Blank	Total/NA	Water	8015B	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## GC Semi VOA

### Prep Batch: 19875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	608	
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-19875/4-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCS 440-19875/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-19875/1-A	Method Blank	Total/NA	Water	608	

### Analysis Batch: 19946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	19875
LCS 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 Pesticides	19875

### Analysis Batch: 20064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	608 PCB LL	19875
LCS 440-19875/4-A	Lab Control Sample	Total/NA	Water	608 PCB LL	19875
LCS 440-19875/5-A	Lab Control Sample Dup	Total/NA	Water	608 PCB LL	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 PCB LL	19875

### Analysis Batch: 20597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	608 Pesticides	19875

### Prep Batch: 20808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	3510C	
LCS 440-20808/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 440-20808/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 440-20808/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 20888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	8015B	20808
LCS 440-20808/2-A	Lab Control Sample	Total/NA	Water	8015B	20808
LCS 440-20808/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	20808
MB 440-20808/1-A	Method Blank	Total/NA	Water	8015B	20808

## HPLC/IC

### Analysis Batch: 19784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8689-1	Outfall 001 Composite	Total/NA	Water	300.0	
LCS 440-19784/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19784/2	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 19785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## HPLC/IC (Continued)

### Analysis Batch: 19785 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	300.0	
LCS 440-19785/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19785/2	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 19833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	218.6	
440-8689-1 MS	Outfall 001 Composite	Total/NA	Water	218.6	
440-8689-1 MSD	Outfall 001 Composite	Total/NA	Water	218.6	
LCS 440-19833/5	Lab Control Sample	Total/NA	Water	218.6	
MB 440-19833/3	Method Blank	Total/NA	Water	218.6	

### Analysis Batch: 20654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	314.0	
440-8689-1 MS	Outfall 001 Composite	Total/NA	Water	314.0	
440-8689-1 MSD	Outfall 001 Composite	Total/NA	Water	314.0	
LCS 440-20654/37	Lab Control Sample	Total/NA	Water	314.0	
MB 440-20654/36	Method Blank	Total/NA	Water	314.0	

## Specialty Organics

### Analysis Batch: 2114077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total	Water	1613B	
G2D230000077B	Method Blank	Total	Water	1613B	
G2D230000077C	Lab Control Sample	Total	Water	1613B	

### Prep Batch: 2114077\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total	Water	3542	
G2D230000077B	Method Blank	Total	Water	3542	
G2D230000077C	Lab Control Sample	Total	Water	3542	

## Metals

### Prep Batch: 20031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-8689-1	Outfall 001 Composite	Total/NA	Water	245.1	
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	

### Prep Batch: 20049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	
440-8689-1	Outfall 001 Composite	Dissolved	Water	245.1	
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	

# QC Association Summary

Client: MWH Americas Inc  
 Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Metals (Continued)

### Analysis Batch: 20257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	20031
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	20031
440-8689-1	Outfall 001 Composite	Total/NA	Water	245.1	20031
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	20031
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	20031

### Analysis Batch: 20492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 2340B	

### Analysis Batch: 20502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	20049
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	20049
440-8689-1	Outfall 001 Composite	Dissolved	Water	245.1	20049
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	20049
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	20049

### Prep Batch: 21269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8616-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.2	
LCS 440-21269/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21269/1-A	Method Blank	Total Recoverable	Water	200.2	

### Prep Batch: 21302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.2	
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.2	
LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21302/1-A	Method Blank	Total Recoverable	Water	200.2	

### Prep Batch: 21402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.2	
440-8779-K-1-D MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8779-K-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-9171-A-5-B MS ^5	Matrix Spike	Total Recoverable	Water	200.2	
440-9171-A-5-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.2	

### Prep Batch: 21438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.2	
440-8693-S-1-G MS ^5	Matrix Spike	Dissolved	Water	200.2	
440-8693-S-1-H MSD ^5	Matrix Spike Duplicate	Dissolved	Water	200.2	
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.2	
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.2	



# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Metals (Continued)

### Analysis Batch: 21614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	21302
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	21302
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.7 Rev 4.4	21302
LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21302
MB 440-21302/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21302

### Analysis Batch: 21678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8616-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.7 Rev 4.4	21269
LCS 440-21269/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21269
MB 440-21269/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21269

### Analysis Batch: 22090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8616-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.7 Rev 4.4	21269
LCS 440-21269/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21269
MB 440-21269/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21269

### Analysis Batch: 22326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.8	21438
440-8693-S-1-G MS ^5	Matrix Spike	Dissolved	Water	200.8	21438
440-8693-S-1-H MSD ^5	Matrix Spike Duplicate	Dissolved	Water	200.8	21438
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.8	21438
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.8	21438

### Analysis Batch: 22342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.8	21402
440-9171-A-5-B MS ^5	Matrix Spike	Total Recoverable	Water	200.8	21402
440-9171-A-5-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	200.8	21402
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.8	21402
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.8	21402

### Analysis Batch: 22566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.8	21438
440-8693-S-1-G MS ^5	Matrix Spike	Dissolved	Water	200.8	21438
440-8693-S-1-H MSD ^5	Matrix Spike Duplicate	Dissolved	Water	200.8	21438
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.8	21438
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.8	21438

### Analysis Batch: 22628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total Recoverable	Water	200.8	21402
440-8779-K-1-D MS	Matrix Spike	Total Recoverable	Water	200.8	21402
440-8779-K-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	21402
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.8	21402

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Metals (Continued)

### Analysis Batch: 22628 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.8	21402

### Analysis Batch: 22671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Dissolved	Water	200.7 Rev 4.4	21302

### Analysis Batch: 23040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Dissolved	Water	SM 2340B	

## General Chemistry

### Analysis Batch: 19792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	SM 2540F	

### Analysis Batch: 19825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	180.1	
440-8689-1 DU	Outfall 001 Composite	Total/NA	Water	180.1	
MB 440-19825/6	Method Blank	Total/NA	Water	180.1	
MRL 440-19825/4 MRL	Lab Control Sample	Total/NA	Water	180.1	

### Analysis Batch: 19842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8672-A-2 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-8672-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 5540C	
LCS 440-19842/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-19842/3	Method Blank	Total/NA	Water	SM 5540C	

### Analysis Batch: 19862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM5210B	
LCS 440-19862/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-19862/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-19862/1 USB	Method Blank	Total/NA	Water	SM5210B	

### Analysis Batch: 19957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8418-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 2540C	
LCS 440-19957/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-19957/1	Method Blank	Total/NA	Water	SM 2540C	

### Analysis Batch: 20387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 4500 F C	
440-8744-J-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
440-8744-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
LCS 440-20387/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-20387/10	Method Blank	Total/NA	Water	SM 4500 F C	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## General Chemistry (Continued)

### Analysis Batch: 20701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	120.1	
440-8812-B-1 DU	Duplicate	Total/NA	Water	120.1	
LCS 440-20701/2	Lab Control Sample	Total/NA	Water	120.1	
MB 440-20701/1	Method Blank	Total/NA	Water	120.1	

### Analysis Batch: 20723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 5310B	
440-8729-B-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-8729-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
LCS 440-20723/6	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-20723/5	Method Blank	Total/NA	Water	SM 5310B	

### Analysis Batch: 20891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 2540D	
440-8689-1 DU	Outfall 001 Composite	Total/NA	Water	SM 2540D	
LCS 440-20891/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-20891/1	Method Blank	Total/NA	Water	SM 2540D	

### Prep Batch: 21756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	1664A	
LCS 440-21756/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-21756/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-21756/1-A	Method Blank	Total/NA	Water	1664A	

### Analysis Batch: 21846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	1664A	21756
LCS 440-21756/2-A	Lab Control Sample	Total/NA	Water	1664A	21756
LCSD 440-21756/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	21756
MB 440-21756/1-A	Method Blank	Total/NA	Water	1664A	21756

### Prep Batch: 22248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	Distill/CN	
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-22248/1-A	Method Blank	Total/NA	Water	Distill/CN	

### Analysis Batch: 22273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	22248
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	22248
MB 440-22248/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	22248

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## General Chemistry (Continued)

### Prep Batch: 22283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-M-1-E MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-8616-M-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 4500 NH3 B	
LCS 440-22283/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-22283/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 22286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-M-1-E MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 C	22283
440-8616-M-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 C	22283
440-8689-1	Outfall 001 Composite	Total/NA	Water	SM 4500 NH3 C	22283
LCS 440-22283/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	22283
MB 440-22283/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	22283

## Biology

### Analysis Batch: 20001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	SM 9221E	

### Analysis Batch: 20003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8621-1	Outfall 001 Grab	Total/NA	Water	SM 9221F	

## Subcontract

### Analysis Batch: 8610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	Gamma Spec	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	K-40 CS-137	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Gross Alpha and Beta	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Radium 226	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Radium 228	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Strontium 90	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Tritium	8610_P
440-8689-1	Outfall 001 Composite	Total/NA	Water	Uranium, Combined	8610_P
S204070-03	Lab Control Sample	Total/NA	WATER	Gross Alpha and Beta	8610_P
S204070-04	Method Blank	Total/NA	WATER	Gross Alpha and Beta	8610_P
S204070-05	Duplicate	Total/NA	WATER	Gross Alpha and Beta	8610_P

### Prep Batch: 8610\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-1	Outfall 001 Composite	Total/NA	Water	General Prep	
S204070-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204070-04	Method Blank	Total/NA	WATER	General Prep	
S204070-05	Duplicate	Total/NA	WATER	General Prep	

# Definitions/Glossary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
AY	Matrix Interference suspected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

### GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
AY	Matrix Interference suspected
RA	RPD exceeds limits due to matrix interference. % recoveries were within limits
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
BU	Analyzed out of holding time
BV	Sample received after holding time expired
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

### DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

### Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
IB	CCV recovery above limit; analyte not detected
LQ	LCS/LCSD recovery above method control limits

### General Chemistry

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

### Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample

## Definitions/Glossary

Client: MWH Americas Inc  
Project/Site: Annaul Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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# Certification Summary

Client: MWH Americas Inc  
 Project/Site: Annular Outfall 001 Grab

TestAmerica Job ID: 440-8621-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 12.002r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080
TestAmerica West Sacramento	A2LA	DoD ELAP		2928-01
TestAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
TestAmerica West Sacramento	Arizona	State Program	9	AZ0708
TestAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica West Sacramento	California	NELAC	9	1119CA
TestAmerica West Sacramento	Colorado	State Program	8	N/A
TestAmerica West Sacramento	Connecticut	State Program	1	PH-0691
TestAmerica West Sacramento	Florida	NELAC	4	E87570
TestAmerica West Sacramento	Georgia	State Program	4	960
TestAmerica West Sacramento	Guam	State Program	9	N/A
TestAmerica West Sacramento	Hawaii	State Program	9	N/A
TestAmerica West Sacramento	Illinois	NELAC	5	200060
TestAmerica West Sacramento	Kansas	NELAC	7	E-10375
TestAmerica West Sacramento	Louisiana	NELAC	6	30612
TestAmerica West Sacramento	Michigan	State Program	5	9947
TestAmerica West Sacramento	Nevada	State Program	9	CA44
TestAmerica West Sacramento	New Jersey	NELAC	2	CA005
TestAmerica West Sacramento	New Mexico	State Program	6	N/A
TestAmerica West Sacramento	New York	NELAC	2	11666
TestAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
TestAmerica West Sacramento	Oregon	NELAC	10	CA200005
TestAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
TestAmerica West Sacramento	South Carolina	State Program	4	87014
TestAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
TestAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
TestAmerica West Sacramento	USDA	Federal		P330-09-00055
TestAmerica West Sacramento	Utah	NELAC	8	QUAN1
TestAmerica West Sacramento	Virginia	State Program	3	178
TestAmerica West Sacramento	Washington	State Program	10	C581
TestAmerica West Sacramento	West Virginia	State Program	3	9930C
TestAmerica West Sacramento	West Virginia DEP	State Program	3	334
TestAmerica West Sacramento	Wisconsin	State Program	5	998204680
TestAmerica West Sacramento	Wyoming	State Program	8	8TMS-Q

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

# EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675/ 786-0262

<http://www.emsl.com> E-mail: [MicrobiologyLab@emsl.com](mailto:MicrobiologyLab@emsl.com)



<b>Client:</b> TestAmerica Irvine 17461 Derian Avenue Suite 100 Irvine , CA 92614 <b>Attn.</b> Debby Wilson <b>Project:</b> 44002624/Annual Outfall 001 Grab-Boeing SSFL	<b>EMSL Order ID:</b> 371205915 <b>Date Received:</b> 4/17/2012 <b>Date Analyzed:</b> 4/17/2012 <b>Date Reported:</b> 4/20/2012 <b>Date Amended:</b>
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## Real-Time PCR Analysis for Human *Bacteroides*

(Based on a published method SAM: 348 - 357, 2010), EMSL Test Code: M199, Revision No. 3, 04/18/2011)

Lab Sample Number	Client Sample ID	Sample Date and Time	Amount Received	Amount Sampled	CEs /100 mL
5915-1	Outfall 001 Grab ( 440-8621-1 )	4/13/12 14:25 Pacific	Water 250 ml	Water 250 ml	None Detected

EMSL maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method limitations.

Note: The PCR primer is HF183 and the qPCR probe and primer was evaluated in 2010 by EPA scientists. The real-time PCR based on HF183 detects human specific total bacteroides predominantly with minor cross-detections on chicken and dog fecal materials. CEs: Cell Equivalents, measured by PCR using genomic DNA standards.

USEPA License No: 0240-02

Quanyi "Charlie" Li, Ph.D.  
Director, PCR and DNA Analysis Lab





# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

4350 Transport Street, Unit 107  
Ventura, CA 93003  
(805) 650-0546 FAX (805) 650-0756  
CA DOHS ELAP Cert. No.: 1775

**Date:** April 18, 2012  
**Client:** Test America - Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-12041305-001  
**Job No.:** 440-8621-1  
**Sample ID.:** Outfall 001 (440-8621-1)

**Sample Control:** The sample was received by ATL in a chilled state, within the recommended hold time and with the chain of custody record attached. Temperature acceptable as sample was received directly from field.

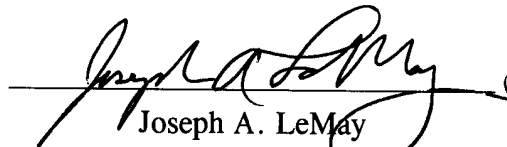
Date Sampled: 04/13/12  
Date Received: 04/13/12  
Temp. Received: 8.0°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 04/14/12 to 04/18/12

**Sample Analysis:** The following analyses were performed on your sample:  
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).  
Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

<u>Sample ID.</u>	<u>Results</u>
Outfall 001 (404-8621-1)	100% Survival (TUa = 0.0)

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

# FATHEAD MINNOW PERCENT SURVIVAL TEST

## EPA Method 2000.0



Lab No.: A-12041305-001  
 Client/ID: TestAmerica Outfall 001  
 -140-8621-1

Start Date: 04/14/2012

### 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-120403.

### TEST DATA

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	19.2	9.0	8.2	0	0	JM 1000
	100%	19.8	9.6	7.4	0	0	
24 Hr	Control	19.3	8.5	8.0	0	0	Z 1100
	100%	19.6	8.5	7.9	0	0	
48 Hr	Control	19.4	7.4	7.9	0	0	JM 1000
	100%	19.7	7.7	7.8	0	0	
Renewal	Control	19.7	7.9	8.0	0	0	JM 1000
	100%	19.8	8.5	7.8	0	0	
72 Hr	Control	19.4	7.3	7.8	0	0	Z 1000
	100%	19.4	7.3	7.6	0	0	
96 Hr	Control	19.8	7.4	7.9	0	0	JM 1000
	100%	19.8	7.5	7.7	0	0	

**Comments:**

Sample as received: Chlorine: 0.0 mg/l; pH: 7.4; Conductivity: 57 umho; Temp: 8.0°C;  
 DO: 9.0 mg/l; Alkalinity: 47 mg/l; Hardness: 55 mg/l; NH<sub>3</sub>-N: 0.4 mg/l.  
 Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No  
 Control: Alkalinity: 65 mg/l; Hardness: 95 mg/l; Conductivity: 739 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 O<sub>2</sub>.

### RESULTS

Percent Survival In:	Control: <u>100</u> %	100% Sample: <u>100</u> %
----------------------	-----------------------	---------------------------

CHAIN OF CUSTODY FORM

Client Name/Address: MWH Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project: Boeing-SSFL NPDES Annual Outfall 001 GRAB		ANALYSIS REQUIRED														
Test America Contact: Debby Wilson		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Field readings: (Log in and include in report Temp and pH) Temp °F = 11 pH = 7.2 DO = 10.65 mg/L Total Residual Chlorine = 0														
Project Manager: Bronwyn Kelly Sampler: Rick Savaris				Time of readings = 14:25 Comments														
Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservative	Bottle #	VOCs 624 + xylenes + Freon 113, Freon 123A, Cyclohexane + PP	VOCs 624 +A+A+2CVE	Settleable Solids	Conductivity	Oil & Grease (1664-HEM)	8015 - gas	8015 - diesel/jet fuel	Fecal coliform (SM9221)	E. coli (SM9221)	Acute Toxicity		
Outfall 001	W	VOAS	5	4-13-12 14:25	HCl	1A, 1B, 1C, 1D, 1E	X											
Outfall 001	W	VOAS	3		None	2A, 2B, 2C		X										
Outfall 001	W	1L Poly	1		None	3			X									
Outfall 001	W	500 ml Poly	2		None	4A, 4B				X								
Outfall 001	W	1L Amber	2		HCl	5A, 5B					X							
Outfall 001	W	VOAS	3		HCl	6A, 6B, 6C	X											
Outfall 001	W	VOAS	3		None	7A, 7B, 7C		X										
Outfall 001	W	VOAS	1		HCl	8A												
Outfall 001 Dup	W	VOAS	2		HCl	8B, 8C												
Outfall 001	W	1L Amber	1		None	9A												
Outfall 001 Dup	W	1L Amber	1		None	9B												
Outfall 001 Dup	W	1L Amber	1		None	9B												
Outfall 001	W	125ml Poly	1		Na2S2O3	10												
Outfall 001	W	125ml Poly	1		Na2S2O3	11												
Outfall 001	W	1 Gal Cube	1		None	12												
Outfall 001	W	125 ml	1		None	13												
These Samples are the Grab Portion of Outfall 001 for this storm event. Composite samples will follow and are to be added to this work order.																		
Relinquished By: [Signature]		Date/Time: 4-13-12 15:30		Received By: [Signature]		Date/Time: 4-13-12 15:30		Turn-around time: (Check) 24 Hour ___ 72 Hour ___ 48 Hour ___ 5 Day ___ 10 Day ___		Sample Integrity: (Check) Intact: ___ On Ice: ___		Data Requirements: (Check) No Level IV ___ All Level IV ___		NPDES Level IV: ___				
Relinquished By: [Signature]		Date/Time: 4-13-12 15:30		Received By: [Signature]		Date/Time: 4-13-12 15:30		Turn-around time: (Check) 24 Hour ___ 72 Hour ___ 48 Hour ___ 5 Day ___ 10 Day ___		Sample Integrity: (Check) Intact: ___ On Ice: ___		Data Requirements: (Check) No Level IV ___ All Level IV ___		NPDES Level IV: ___				
Relinquished By: [Signature]		Date/Time: 4/13/12 5:30pm		Received By: [Signature]		Date/Time: 4-13-12 17:30		Turn-around time: (Check) 24 Hour ___ 72 Hour ___ 48 Hour ___ 5 Day ___ 10 Day ___		Sample Integrity: (Check) Intact: ___ On Ice: ___		Data Requirements: (Check) No Level IV ___ All Level IV ___		NPDES Level IV: ___				

**TestAmerica Irvine**  
 17491 Delian Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab Pk:	Carrier Tracking No(s):	COC No:
Company: Aquatic Testing Laboratories		Phone:	Wilson, Dabby		440-4005.1
Address: 4360 Francoport #107		Project #:	debbys.wilson@testamerica.com		Page 1 of 1
City: Ventura		Due Date Requested:	<b>Analysis Requested</b>		
State, Zip: CA, 93003		4/27/2012			
Project Name: Arroyal/Outfall 001 Grab		TAT Requester (dept):	SUBCONTRACT Acute FH unknown, EPA/821-R02-012		
Site: Boiling SSFL		PO #:	Special Instructions/Note:		
Project #:		YTD #:	Preservation Codes:		
Project #:		SSDWF:	A - HCL M - Hexane B - NiOH P - NiSO4 C - Zn Acetate Q - NiSO4S D - NiSO4 R - NiSO4S E - NiSO4 S - NiSO4 F - NiOH T - TSP Dodecylsulfate G - Amidor U - Acetone H - Acetate Acid V - NiCAA I - Ice W - pH 4.5 J - Di Water X - EDTA K - EDTA Z - other (specify) L - EDTA Other:		
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (Co-comp, G-grab)</b>	<b>Matrix (Hydrate, Equal, Overload)</b>
Outfall 001 Grab (440-9821-1)		4/13/12	14:25	Water	X
Possible Hazard Identification		Special Instructions/Note:			
Unconfirmed		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Deliverable Requested: I, II, III, IV, Other (Specify)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months <input type="checkbox"/> Special Instructions/Requirements:			
Empty Kit Relinquished by:		Date:	Method of Shipment: <b>received</b>		
Relinquished by:		Date/Time: 4/16/12	Company:	Date/Time: 4-15-12 12:30	
Retransmitted by:		Date/Time:	Company:	Company: ATZ	
Retransmitted by:		Date/Time:	Company:	Company:	
Curbey Seals Intact		Curbey Seals Intact			



# ***REFERENCE TOXICANT DATA***

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# FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-120403

## TEST SUMMARY

Species: *Pimephales promelas*.

Age: 14 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: Analyst:	INITIAL			24 Hr						48 Hr					
	<u>4-2-12 1130</u>			<u>4-4-12 1130</u>						<u>4-5-12 1130</u>					
	<u>?</u>			<u>?</u>						<u>?</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead			
A							B	A				B			
Control	20.1	8.4	8.0	19.8	8.2	7.9	0	0	19.7	8.2	7.9	0	0		
1.0 mg/l	19.9	8.5	7.9	19.8	8.2	7.9	0	0	19.6	8.1	7.7	0	0		
2.0 mg/l	19.8	8.6	8.0	19.8	8.1	7.9	0	0	19.7	7.9	7.9	0	0		
4.0 mg/l	19.7	8.8	8.0	19.8	8.2	7.9	0	0	19.7	7.8	7.7	1	0		
8.0 mg/l	19.7	8.7	8.0	19.8	8.1	7.8	10	10	-	-	-	-	-		
16.0 mg/l	19.8	8.8	8.1	19.8	7.2	7.6	10	10	-	-	-	-	-		

Date/Time: Analyst:	RENEWAL			72 Hr						96 Hr					
	<u>4-5-12 1130</u>			<u>4-6-12 1130</u>						<u>4-7-12 1130</u>					
	<u>?</u>			<u>?</u>						<u>?</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead			
A							B	A				B			
Control	19.2	6.5	8.2	19.6	7.5	8.0	0	0	19.5	7.6	7.8	0	0		
1.0 mg/l	19.6	6.8	8.1	19.6	7.8	7.9	0	0	19.4	7.8	7.8	0	0		
2.0 mg/l	19.7	6.9	8.0	19.5	8.0	8.0	0	0	19.4	7.7	7.8	0	0		
4.0 mg/l	19.7	6.9	8.0	19.6	8.1	7.9	0	0	19.4	8.0	7.8	0	1		
8.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-		
16.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-		

Comments: Control: Alkalinity: 68 mg/l; Hardness: 97 mg/l; Conductivity: 327 umho.  
SDS: Alkalinity: 69 mg/l; Hardness: 93 mg/l; Conductivity: 331 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**

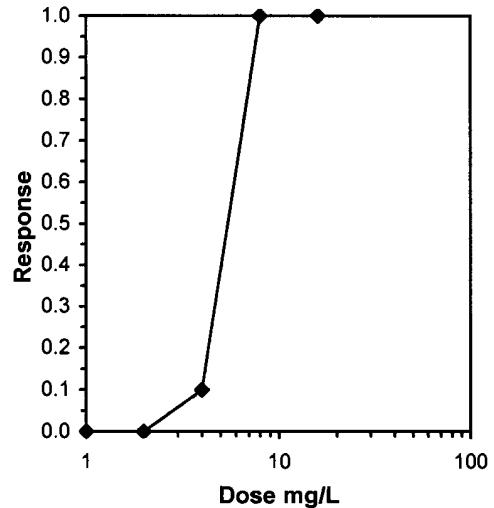
Start Date: 4/3/2012 11:30    Test ID: RT120403    Sample ID: REF-Ref Toxicant  
 End Date: 4/7/2012 11:30    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: SDS-Sodium dodecyl sulfate  
 Sample Date: 4/3/2012    Protocol: ACUTE-EPA-821-R-02-012    Test Species: PP-Pimephales promelas  
 Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1	1.0000	1.0000
2	1.0000	1.0000
4	0.9000	0.9000
8	0.0000	0.0000
16	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							Number Resp	Total Number
	Mean	N-Mean	Mean	Min	Max	CV%	N		
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
4	0.9000	0.9000	1.2490	1.2490	1.2490	0.000	2	2	20
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

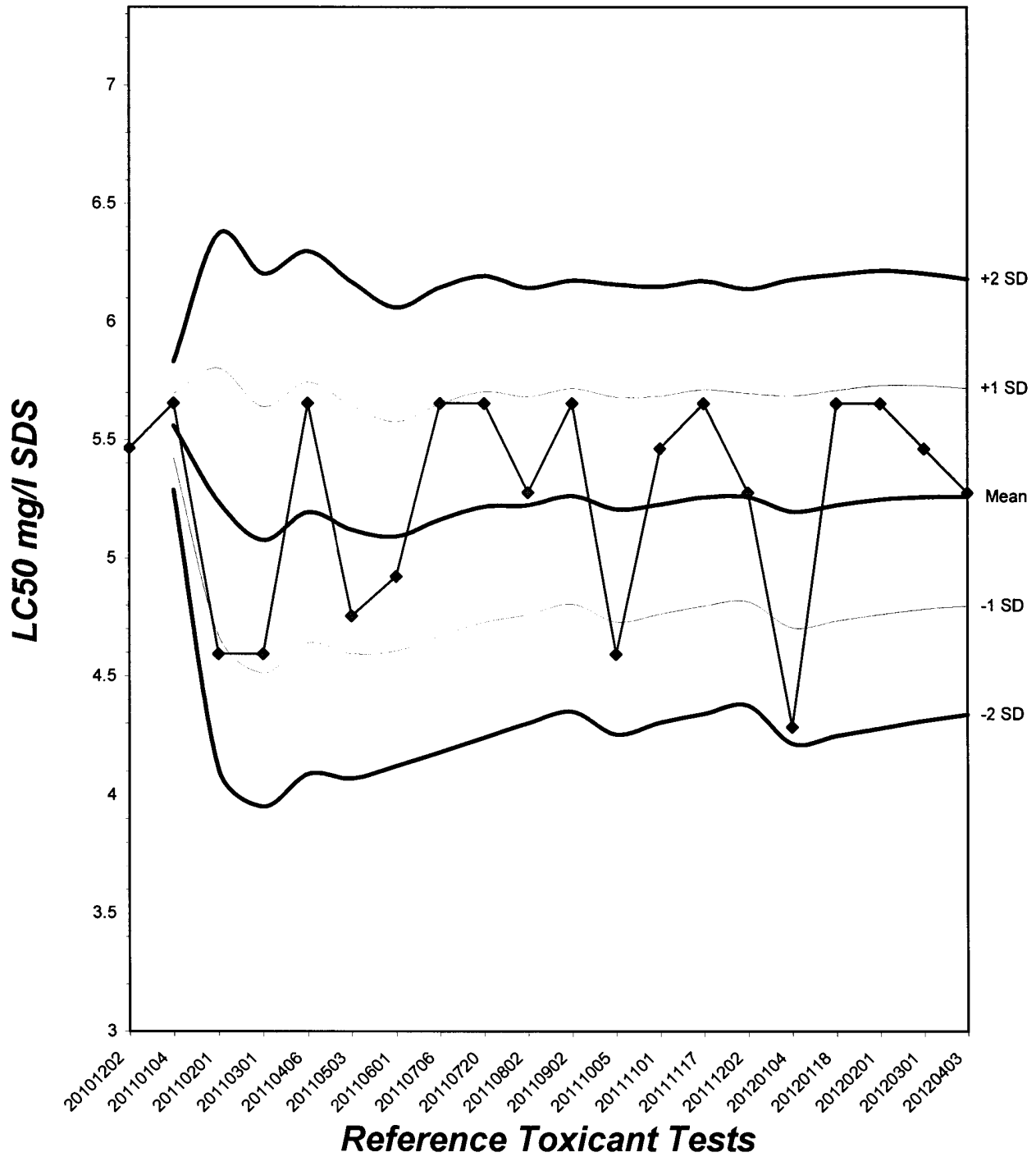
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Trimmed Spearman-Kärber			
Trim Level	EC50	95% CL	
0.0%	5.2780	4.8093	5.7924
5.0%	5.3968	4.8053	6.0611
10.0%	5.4432	5.1395	5.7648
20.0%	5.4432	5.1395	5.7648
Auto-0.0%	5.2780	4.8093	5.7924



# Fathead Minnow Acute Laboratory Control Chart

CV% = 8.75





# TEST ORGANISM LOG

FATHEAD MINNOW - LARVAL  
(*Pimephales promelas*)



QA/QC BATCH NO.: RT120403

SOURCE: In-Lab Culture

DATE HATCHED: 3-20-12

APPROXIMATE QUANTITY: 40

GENERAL APPEARANCE: good

# MORTALITIES 48 HOURS PRIOR TO  
TO USE IN TESTING: 0

DATE USED IN LAB: 4/3/12

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.: 20.1 °C

pH: 8.0

Ammonia: 20.1 mg/l NH<sub>3</sub>-N

DO: 8.4 mg/l

Alkalinity: 68 mg/l

Hardness: 93 mg/l

READINGS RECORDED BY: [Signature]

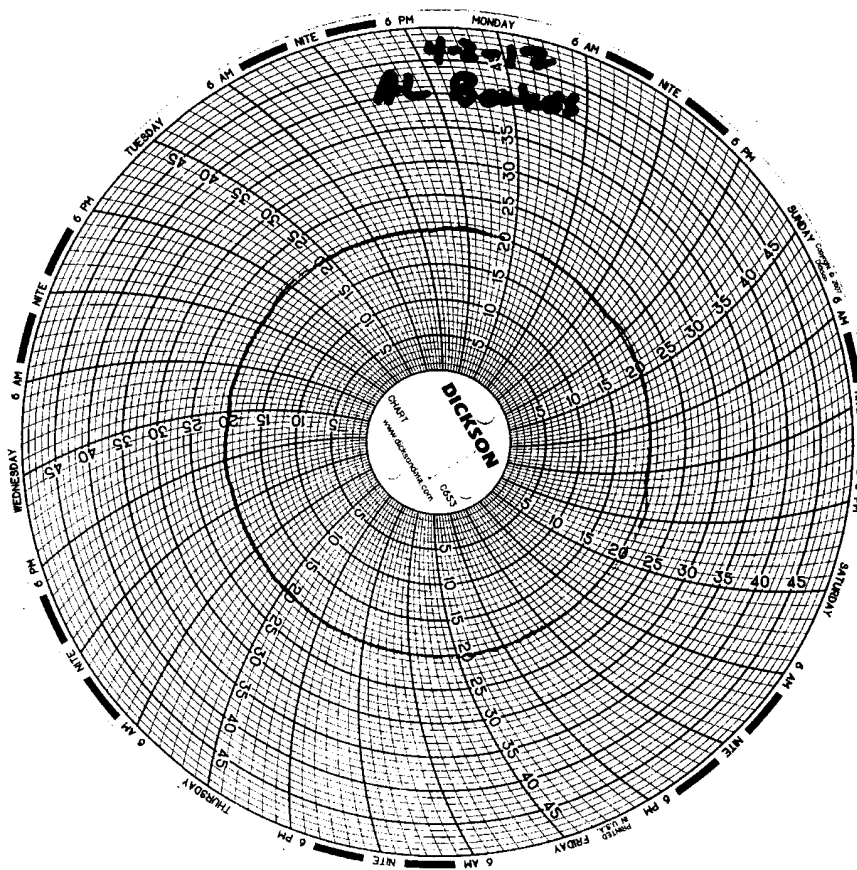
DATE: 4-4-12

# Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/07/06

Acceptable Range: 20 $\pm$ 1 $^{\circ}$ C





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

May 9, 2012

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

**Reference: Test America-Irvine 44002624  
Eberline Analytical Report S204068-8610  
Sample Delivery Group 8610**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Project No. 44002624. The sample was received on April 17, 2012.

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

Sincerely,

Joseph Verville  
Client Services Manager

NJV/mw

Enclosure: Level IV CLP-like Data Package CD



**1.0 General Comments**

Sample delivery group 8610 consists of the analytical results and supporting documentation for one water sample. Sample ID 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 samples as received i.e. the samples were 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**

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate 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.

For QC purposes sample OUTFALL001 (440-8689-1) was batched with other Boeing OUTFALL samples. The duplicate analysis reported herein was a duplicate analysis of sample OUTFALL002 (440-8694-1).

**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.”**

  
\_\_\_\_\_  
**Joseph Verville**  
**Client Services Manager**

5/9/12  
\_\_\_\_\_  
**Date**

EBERLINE ANALYTICAL  
SDG 8610

SDG 8610  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

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

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Mi Wyatt  
Prepared by

J. Guide  
Reviewed by

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8610

SDG 8610  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

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 8610

SDG 8610  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

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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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8610

LAB SAMPLE SUMMARY

SDG 8610  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

LAB	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S204068-01	OUTFALL 001 (440-8689-1)	Boeing-SSFL	WATER			440-4023.1	04/13/12 14:12
S204070-03	Lab Control Sample		WATER				
S204070-04	Method Blank		WATER				
S204070-05	Duplicate (S204070-01)	Boeing-SSFL	WATER				04/13/12 17:54

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LAB SUMMARY  
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 Page 3

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EBERLINE ANALYTICAL

SDG 8610

QC SUMMARY

SDG 8610  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
8610	440-4023.1	OUTFALL 001 (440-8689-1)	WATER		10.0 L		04/17/12 4	S204068-01	8610-001
8612		Method Blank	WATER					S204070-04	8612-004
		Lab Control Sample	WATER					S204070-03	8612-003
		Duplicate (S204070-01)	WATER		10.0 L		04/17/12 4	S204070-05	8612-005

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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8610

SDG 8610  
Contact Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.  
Contract 44002624

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED					QUALI- FIERS
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	
Beta Counting										
AC	WATER	Radium-228 in Water	7271-144	10.4	1			1	1	1/0/1
SR	WATER	Strontium-90 in Water	7271-144	10.4	1			1	1	1/0/1
Gas Proportional Counting										
80A	WATER	Gross Alpha in Water	7271-144	20.6	1			1	1	1/0/1
80B	WATER	Gross Beta in Water	7271-144	11.0	1			1	1	1/0/1
Gamma Spectroscopy										
GAM	WATER	Gamma Emitters in Water	7271-144	7.0	1			1	1	1/0/1
Kinetic Phosphorimetry										
U_T	WATER	Uranium, Total	7271-144		1			1	1	1/0/1
Liquid Scintillation Counting										
H	WATER	Tritium in Water	7271-144	10.0	1			1	1	1/0/1
Radon Counting										
RA	WATER	Radium-226 in Water	7271-144	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.

PREP BATCH SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-PBS  
Version 3.06  
Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8610

LAB WORK SUMMARY

SDG 8610  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S204068-01	OUTFALL 001 (440-8689-1)		8610-001	80A/80		04/30/12	05/01/12	BW	Gross Alpha in Water	
04/13/12	Boeing-SSFL	WATER	8610-001	80B/80		04/30/12	05/01/12	BW	Gross Beta in Water	
04/17/12	440-4023.1		8610-001	AC		04/30/12	05/01/12	BW	Radium-228 in Water	
			8610-001	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water	
			8610-001	H		04/19/12	04/24/12	BW	Tritium in Water	
			8610-001	RA		05/04/12	05/07/12	BW	Radium-226 in Water	
			8610-001	SR		04/26/12	04/27/12	MWT	Strontium-90 in Water	
			8610-001	U_T		04/27/12	04/27/12	TSC	Uranium, Total	
S204070-03	Lab Control Sample		8612-003	80A/80		05/03/12	05/03/12	BW	Gross Alpha in Water	
		WATER	8612-003	80B/80		05/03/12	05/03/12	BW	Gross Beta in Water	
			8612-003	AC		04/30/12	05/01/12	BW	Radium-228 in Water	
			8612-003	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water	
			8612-003	H		04/19/12	04/24/12	BW	Tritium in Water	
			8612-003	RA		05/04/12	05/07/12	BW	Radium-226 in Water	
			8612-003	SR		04/26/12	05/01/12	BW	Strontium-90 in Water	
			8612-003	U_T		04/27/12	04/27/12	TSC	Uranium, Total	
S204070-04	Method Blank		8612-004	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water	
		WATER	8612-004	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water	
			8612-004	AC		04/30/12	05/01/12	BW	Radium-228 in Water	
			8612-004	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water	
			8612-004	H		04/19/12	04/24/12	BW	Tritium in Water	
			8612-004	RA		05/04/12	05/07/12	BW	Radium-226 in Water	
			8612-004	SR		04/26/12	05/01/12	BW	Strontium-90 in Water	
			8612-004	U_T		04/27/12	04/27/12	TSC	Uranium, Total	
S204070-05	Duplicate (S204070-01)		8612-005	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water	
04/13/12	Boeing-SSFL	WATER	8612-005	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water	
04/17/12			8612-005	AC		04/30/12	05/01/12	BW	Radium-228 in Water	
			8612-005	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water	
			8612-005	H		04/19/12	04/24/12	BW	Tritium in Water	
			8612-005	RA		05/04/12	05/07/12	BW	Radium-226 in Water	
			8612-005	SR		04/26/12	05/01/12	BW	Strontium-90 in Water	
			8612-005	U_T		04/27/12	04/27/12	TSC	Uranium, Total	

WORK SUMMARY

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EBERLINE ANALYTICAL

SDG 8610

SDG 8610  
Contact Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.  
Contract 44002624

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

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EBERLINE ANALYTICAL

SDG 8610

8612-004

Method Blank

METHOD BLANK

SDG <u>8610</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204070-04</u>	Client sample id <u>Method Blank</u>
Dept sample id <u>8612-004</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	-0.192	0.30	0.606	3.00	U	80A
Gross Beta	12587472	0.051	0.52	0.863	4.00	U	80B
Tritium	10028178	60.0	92	152	500	U	H
Radium-226	13982633	0.182	0.34	0.593	1.00	U	RA
Radium-228	15262201	-0.122	0.15	0.413	1.00	U	AC
Strontium-90	10098972	0.067	0.22	0.478	2.00	U	SR
Uranium, Total		0	0.008	0.018	1.00	U	U_T
Potassium-40	13966002	1.73	18	<u>32.1</u>	25.0	U	GAM
Cesium-137	10045973	-0.940	1.7	3.07	20.0	U	GAM

QC-BLANK #81586

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>05/09/12</u>

METHOD BLANKS

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EBERLINE ANALYTICAL

SDG 8610

8612-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8610</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204070-03</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>8612-003</u>	Material/Matrix <u>WATER</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMES (TOTAL)	PROTOCOL LIMITS
Gross Alpha	40.4	4.2	1.66	3.00	80A	37.0	1.5	109	74-126	70-130
Gross Beta	32.6	2.5	2.14	4.00	80B	34.0	1.4	96	86-114	70-130
Tritium	2380	150	152	500	H	2440	98	98	88-112	80-120
Radium-226	48.5	2.1	0.687	1.00	RA	50.1	2.0	97	83-117	80-120
Radium-228	4.73	0.45	0.385	1.00	AC	4.41	0.18	107	84-116	60-140
Strontium-90	7.84	0.41	0.174	2.00	SR	9.34	0.37	84	89-111	80-120
Uranium, Total	64.2	7.2	0.181	1.00	U_T	56.5	2.3	114	87-113	80-120
Cobalt-60	126	6.3	6.18	10.0	GAM	130	5.2	97	91-109	80-120
Cesium-137	149	7.1	9.26	20.0	GAM	147	5.9	101	91-109	80-120

QC-LCS #81585

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LCS  
Version 3.06  
Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8610

8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

SDG <u>8610</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
DUPLICATE	ORIGINAL
Lab sample id <u>S204070-05</u>	Lab sample id <u>S204070-01</u>
Dept sample id <u>8612-005</u>	Dept sample id <u>8612-001</u>
	Received <u>04/17/12</u>
	Client sample id <u>OUTFALL 002 (440-8694-1)</u>
	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
	Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u>
	Chain of custody id <u>440-4025.1</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	2.68	0.94	0.940	3.00	J	80A	1.34	0.81	1.26	J	67	103	1.9
Gross Beta	5.29	0.87	1.15	4.00		80B	4.81	0.97	1.44		10	45	0.6
Tritium	18.5	91	152	500	U	H	19.4	88	148	U	-	-	0
Radium-226	0.080	0.33	0.589	1.00	U	RA	0.266	0.35	0.587	U	-	-	0.8
Radium-228	0.333	0.17	0.404	1.00	U	AC	0.295	0.15	0.382	U	-	-	0.3
Strontium-90	0.038	0.35	0.808	2.00	U	SR	-0.131	0.33	0.835	U	-	-	0.7
Uranium, Total	0.183	0.021	0.018	1.00	J	U_T	0.172	0.020	0.018	J	6	25	0.8
Potassium-40	3.82	19	<u>34.2</u>	25.0	U	GAM	-4.54	15	<u>26.9</u>	U	-	-	0.7
Cesium-137	-0.761	1.8	3.22	20.0	U	GAM	0.152	1.3	1.58	U	-	-	0.8

QC-DUP#1 81587

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-DUP  
Version 3.06  
Report date 05/09/12



EBERLINE ANALYTICAL

SDG 8610

8610-001

OUTFALL 001 (440-8689-1)

DATA SHEET

SDG <u>8610</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204068-01</u>	Client sample id <u>OUTFALL 001 (440-8689-1)</u>
Dept sample id <u>8610-001</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
Received <u>04/17/12</u>	Collected/Volume <u>04/13/12 14:12</u> <u>10.0 L</u>
	Chain of custody id <u>440-4023.1</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	17.1	2.0	1.02	3.00		80A
Gross Beta	12587472	16.2	1.2	1.37	4.00		80B
Tritium	10028178	-36.3	87	150	500	U	H
Radium-226	13982633	0.611	0.42	0.628	1.00	U	RA
Radium-228	15262201	0.715	0.20	0.423	1.00	J	AC
Strontium-90	10098972	-0.104	0.39	0.935	2.00	U	SR
Uranium, Total		0.687	0.074	0.018	1.00	J	U_T
Potassium-40	13966002	-1.04	21	<u>35.8</u>	25.0	U	GAM
Cesium-137	10045973	-1.43	2.3	3.99	20.0	U	GAM

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Protocol <u>TA</u>
Version <u>Ver 1.0</u>
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Version <u>3.06</u>
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EBERLINE ANALYTICAL

SDG 8610

Test AC Matrix WATER  
 SDG 8610  
 Contact Joseph Verville

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Client Test America, Inc.  
 Contract 44002624

RESULTS

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

Preparation batch 7271-144

S204068-01	8610-001	OUTFALL 001 (440-8689-1)	0.715 J
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- 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 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

S204068-01	OUTFALL 001 (440-8689-1)	0.423	1.80	80	150	17	04/30/12	04/30	GRB-231
S204070-03	Lab Control Sample	0.385	1.80	78	150		04/30/12	04/30	GRB-223
S204070-04	Method Blank	0.413	1.80	81	150		04/30/12	04/30	GRB-224
S204070-05	Duplicate (S204070-01)	0.404	1.80	83	150	17	04/30/12	04/30	GRB-229

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 0.406 ± 0.032  
 FOR 4 SAMPLES YIELD 80 ± 4

METHOD SUMMARIES

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EBERLINE ANALYTICAL

SDG 8610

Test SR Matrix WATER  
 SDG 8610  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

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 7271-144

S204068-01	8610-001	OUTFALL 001 (440-8689-1)	U
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- 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 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

S204068-01	OUTFALL 001 (440-8689-1)	0.935	<u>0.500</u>				87		50		13	04/26/12	04/26	GRB-227
S204070-03	Lab Control Sample	0.174	1.00				93		120			04/26/12	04/26	GRB-222
S204070-04	Method Blank	0.478	1.00				88		50			04/26/12	04/26	GRB-224
S204070-05	Duplicate (S204070-01)	0.808	<u>0.500</u>				85		50		13	04/26/12	04/26	GRB-229

Nominal values and limits from method 2.00 1.00 30-105 50 180

PROCEDURES REFERENCE 905.0  
 CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD MDA 0.599 ± 0.685  
 FOR 4 SAMPLES YIELD 88 ± 7

METHOD SUMMARIES  
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Lab id EAS  
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**EBERLINE ANALYTICAL**

SDG 8610

Test 80A Matrix WATER  
 SDG 8610  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

**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 7271-144

S204068-01	80	8610-001	OUTFALL 001 (440-8689-1)	17.1
S204070-03	80	8612-003	Lab Control Sample	ok
S204070-04	80	8612-004	Method Blank	U
S204070-05	80	8612-005	Duplicate (S204070-01)	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 7271-144 2σ prep error 20.6 % Reference Lab Notebook No. 7271 pg.012

S204068-01	80	OUTFALL 001 (440-8689-1)	1.02	<u>0.220</u>	86	400	17	04/26/12	04/30	GRB-103
S204070-03	80	Lab Control Sample	1.66	0.300	61	100		04/26/12	05/03	GRB-214
S204070-04	80	Method Blank	0.606	0.300	63	400		04/26/12	04/30	GRB-112
S204070-05	80	Duplicate (S204070-01)	0.940	<u>0.220</u>	93	400	17	04/26/12	04/30	GRB-109

Nominal values and limits from method 3.00 0.300 0-250 100 180

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

AVERAGES ± 2 SD MDA 1.06 ± 0.881  
 FOR 4 SAMPLES RESIDUE 76 ± 32

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Lab id EAS  
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**EBERLINE ANALYTICAL**

SDG 8610

Test 80B Matrix WATER

SDG 8610

Contact Joseph Verville

**LAB METHOD SUMMARY**

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client Test America, Inc.

Contract 44002624

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>PLANCHET</b>	<b>CLIENT SAMPLE ID</b>	<b>Gross Beta</b>

Preparation batch 7271-144

S204068-01	80	8610-001	OUTFALL 001 (440-8689-1)	16.2
S204070-03	80	8612-003	Lab Control Sample	ok
S204070-04	80	8612-004	Method Blank	U
S204070-05	80	8612-005	Duplicate (S204070-01)	ok

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

**METHOD PERFORMANCE**

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

Preparation batch 7271-144      2σ prep error 11.0 %      Reference Lab Notebook No. 7271 pg.012

S204068-01	80	OUTFALL 001 (440-8689-1)	1.37	<u>0.220</u>				86	400				17	04/26/12	04/30	GRB-103
S204070-03	80	Lab Control Sample	2.14	0.300				61	100					04/26/12	05/03	GRB-214
S204070-04	80	Method Blank	0.863	0.300				63	400					04/26/12	04/30	GRB-112
S204070-05	80	Duplicate (S204070-01)	1.15	<u>0.220</u>				93	400				17	04/26/12	04/30	GRB-109

Nominal values and limits from method      4.00      0.300      0-250      100      180

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

AVERAGES ± 2 SD	MDA	<u>1.38</u> ± <u>1.09</u>
FOR 4 SAMPLES	RESIDUE	<u>76</u> ± <u>32</u>

METHOD SUMMARIES

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Lab id	<u>EAS</u>
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-LMS</u>
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EBERLINE ANALYTICAL

SDG 8610

Client Test America, Inc.  
Contract 44002624

Test GAM Matrix WATER  
SDG 8610  
Contact Joseph Verville

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 7271-144

S204068-01	8610-001	OUTFALL 001 (440-8689-1)		U
S204070-03	8612-003	Lab Control Sample	ok	ok
S204070-04	8612-004	Method Blank		U
S204070-05	8612-005	Duplicate (S204070-01)		- 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 7271-144 2σ prep error 7.0 % Reference Lab Notebook No. 7271 pg.012

S204068-01		OUTFALL 001 (440-8689-1)	2.00							400		13	04/26/12	04/26	MB,G2,0
S204070-03		Lab Control Sample	2.00							400			04/26/12	04/26	MB,G6,0
S204070-04		Method Blank	2.00							400			04/26/12	04/27	MB,G3,0
S204070-05		Duplicate (S204070-01)	2.00							400		14	04/26/12	04/27	MB,G4,0

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

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Protocol TA  
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Form DVD-I MS  
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LAB METHOD SUMMARY

URANIUM, TOTAL  
KINETIC PHOSPHORIMETRY

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RESULTS

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7271-144				
S204068-01		8610-001	OUTFALL 001 (440-8689-1)	0.687 J
S204070-03		8612-003	Lab Control Sample	ok
S204070-04		8612-004	Method Blank	U
S204070-05		8612-005	Duplicate (S204070-01)	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 7271-144			2σ prep error		Reference Lab Notebook No. 7271 pg.012										
S204068-01		OUTFALL 001 (440-8689-1)	0.018	0.0200								14	04/27/12	04/27	KPA-001
S204070-03		Lab Control Sample	0.181	0.0200									04/27/12	04/27	KPA-001
S204070-04		Method Blank	0.018	0.0200									04/27/12	04/27	KPA-001
S204070-05		Duplicate (S204070-01)	0.018	0.0200								14	04/27/12	04/27	KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.059 ± 0.163  
FOR 4 SAMPLES YIELD \_\_\_\_\_ ± \_\_\_\_\_

METHOD SUMMARIES

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LAB METHOD SUMMARY  
 TRITIUM IN WATER  
 LIQUID SCINTILLATION COUNTING

RESULTS

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

Preparation batch 7271-144

S204068-01	8610-001	OUTFALL 001 (440-8689-1)	U
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- 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 7271-144 2σ prep error 10.0 % Reference Lab Notebook No. 7271 pg.012

S204068-01	OUTFALL 001 (440-8689-1)	150	0.0100	100	150	6	04/19/12	04/19	LSC-007
S204070-03	Lab Control Sample	152	0.100	10	150		04/19/12	04/19	LSC-007
S204070-04	Method Blank	152	0.100	10	150		04/19/12	04/19	LSC-007
S204070-05	Duplicate (S204070-01)	152	0.0100	100	150	6	04/19/12	04/19	LSC-007

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 152 ± 2.00  
 FOR 4 SAMPLES YIELD 55 ± 104

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**LAB METHOD SUMMARY**

RADIUM-226 IN WATER  
 RADON COUNTING

**RESULTS**

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

Preparation batch 7271-144

S204068-01	8610-001	OUTFALL 001 (440-8689-1)	U
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- 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 7271-144 2σ prep error 16.4 % Reference Lab Notebook No. 7271 pg.012

S204068-01	OUTFALL 001 (440-8689-1)	0.628	0.100	100	105	21	05/04/12	05/04	RN-011
S204070-03	Lab Control Sample	0.687	0.100	100	105		05/04/12	05/04	RN-009
S204070-04	Method Blank	0.593	0.100	100	<u>80</u>		05/04/12	05/04	RN-010
S204070-05	Duplicate (S204070-01)	0.589	0.100	100	105	21	05/04/12	05/04	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 0.624 ± 0.091  
 FOR 4 SAMPLES YIELD 100 ± 0

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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 plachets 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 plachet 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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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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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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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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# Chain of Custody Record

8610  
 S2-04-068

TestAmerica  
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)  
 Client Contact: Shipping/Receiving  
 Company: Eberline Services  
 Address: 2030 Wright Avenue, Richmond, CA, 94804  
 City: Richmond, State: CA, Zip: 94804  
 Phone: PO #: Email:  
 Project Name: Annual Outfall 001 Site: Boeing SSFL

Sampler: Lab PM: Wilson, Debby  
 Phone: E-Mail: debby.wilson@testamericainc.com  
 Carrier Tracking No(s):  
 Lab No: 440-4023-1  
 Page: Page 1 of 1  
 Job #: 440-8689-1  
 Due Date Requested: 4/30/2012  
 TAT Requested (days):  
 PO #:  
 WO #:  
 Project #: 44002624  
 SSOW#:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil)	Analysis Requested	Special Instructions/Note:
Outfall 001 Composite (440-8689-1)	4/13/12	14:12 Pacific	Water	Water	SUBCONTRACT/ Gross Alpha SUBCONTRACT/ Gross Beta SUBCONTRACT/ Radium Combined SUBCONTRACT/ Strontium 90 SUBCONTRACT/ Tritium SUBCONTRACT/ Uranium, Combined SUBCONTRACT/ Gamma Spec K-40 CS-137	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - H2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Z - other (specify)

Possible Hazard Identification  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:  
 Empty Kit Relinquished by:  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Date: 4/19/12 09:00  
 Date: 4/19/12 09:00  
 Date: 4/17/12 10:00  
 Company: TM  
 Company: TM  
 Company: EBERLINE  
 Method of Shipment:  
 Received by: [Signature]  
 Received by: [Signature]  
 Received by: [Signature]  
 Date/Time: 4/19/12 09:00  
 Date/Time: 4/19/12 09:00  
 Date/Time: 4/17/12 10:00  
 Company: EBERLINE  
 Company: EBERLINE  
 Company: EBERLINE  
 Custody Seals Intact: \_\_\_\_\_  
 Δ Yes Δ No  
 Colder Temperature(s) °C and Other Remarks:  
 Page 117 of 146  
 5/20/2012



**RICHMOND, CA LABORATORY**  
SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA  
 Date/Time received 4/17/12 10:00 CoC No. 440-4022.1, 440-4023.1, 440-4025.1, 440-4028.1  
 Container I.D. No. 3 ice chest Requested TAT (Days) STANDARD O. Received Yes [ ] No [ ]

INSPECTION

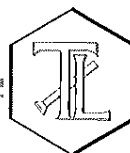
1. Custody seals on shipping container intact? by 4/17/12 Yes [  ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Splitted into Yes [  ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? 4 groups Yes [ ] No [ ] N/A [ ] N/A ✓
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [ ] N/A ✓
5. Packing material is: Wet [ ] Dry [ ] N/A ✓
6. Number of samples in shipping container: 5 Sample Matrix WATER
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 7.6 Preservative \_\_\_\_\_
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
15. Inspected by JFK Date: 4/17/12 Time: 11:20

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All samples &lt; 80</u>							

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Beta/Gamma Meter Ser. No. 100482 Calibration date 6 Dec 2011

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

## REPORT

**Client:** TestAmerica Analytical - Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Laboratory No. 801061

Page 1 of 2

Printed 4/24/2012

**Attention:** Debby Wilson

**Project Name:** Annual Outfall 001

**Project Number:** 44002624

**P.O. Number:** 440-8689-1

**Release Number:** 440-8689-1

Samples Received on 4/16/2012

Field ID	Lab ID	Collected	Matrix
Outfall 001 (440-8689) Outfall 001 (440-8689-1)	801061-001	04/13/2012 14:12	Water

### EPA 8315 M-Hydrazines (water)

Batch 709870

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801061-001 Hydrazine	ug/L	04/17/2012 17:32	1	0.439	1.00	ND
Monomethyl Hydrazine	ug/L	04/17/2012 17:32	1	1.77	5.00	ND
Unsymmetrical Dimethyl Hydrazine	ug/L	04/17/2012 17:32	1	1.13	5.00	ND

#### Method Blank

Parameter	Unit	DF	Result
Hydrazine	ug/L	1	ND
Monomethyl Hydrazine	ug/L	1	ND
Unsymmetrical Dimethyl Hydrazine	ug/L	1	ND

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	10.2	10.0	102	50 - 150
Monomethyl Hydrazine	ug/L	1	52.5	50.0	105	50 - 150
Unsymmetrical Dimethyl Hydrazine	ug/L	1	54.6	50.0	109.	50 - 150

#### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	10.4	10.0	104	50 - 150
Monomethyl Hydrazine	ug/L	1	54.7	50.0	109.	50 - 150
Unsymmetrical Dimethyl Hydrazine	ug/L	1	58.0	50.0	116	50 - 150

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: TestAmerica Analytical - Irvine

Project Name: Annual Outfall 001

Page 2 of 2

Project Number: 44002624

Printed 4/24/2012

Matrix Spike

Lab ID = 801061-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Hydrazine	ug/L	1	6.13	10.0(10.0)	61.3	45 - 146
Monomethyl Hydrazine	ug/L	1	28.5	50.0(50.0)	57.0	7 - 149
Unsymmetrical Dimethyl Hydr:	ug/L	1	39.8	50.0(50.0)	79.6	45 - 137

Matrix Spike Duplicate

Lab ID = 801061-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Hydrazine	ug/L	1	6.62	10.0(10.0)	66.2	45 - 146
Monomethyl Hydrazine	ug/L	1	30.2	50.0(50.0)	60.4	7 - 149
Unsymmetrical Dimethyl Hydr:	ug/L	1	42.6	50.0(50.0)	85.2	45 - 137

MRCSS - Secondary

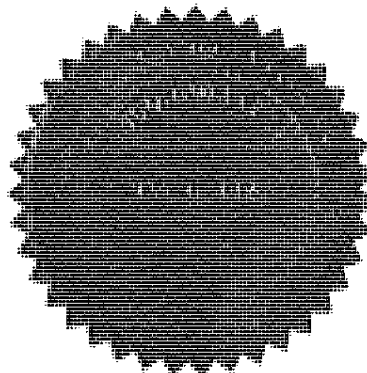
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	11.1	10.0	111	85 - 115
Monomethyl Hydrazine	ug/L	1	55.6	50.0	111.	85 - 115
Unsymmetrical Dimethyl Hydr:	ug/L	1	54.5	50.0	109	85 - 115

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	5.08	5.00	102.	85 - 115
Monomethyl Hydrazine	ug/L	1	22.5	25.0	90.0	85 - 115
Unsymmetrical Dimethyl Hydr:	ug/L	1	24.7	25.0	98.8	85 - 115

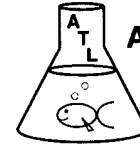
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Jeff Lee  
Assistant Project Manager



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# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

4350 Transport Street, Unit 107  
Ventura, CA 93003  
(805) 650-0546 FAX (805) 650-0756  
CA DOHS ELAP Cert. No.: 1775

**Date:** April 21, 2012

**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-12041401-001  
**Job No.:** 440-8689-1  
**Sample I.D.:** Outfall 001 (440-8689-1)

**Sample Control:** The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample). The temperature was acceptable as sample was received directly from field.

Date Sampled: 04/13/12  
Date Received: 04/14/12  
Temp. Received: 9.3°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 04/14/12 to 04/20/12

**Sample Analysis:** The following analyses were performed on your sample:

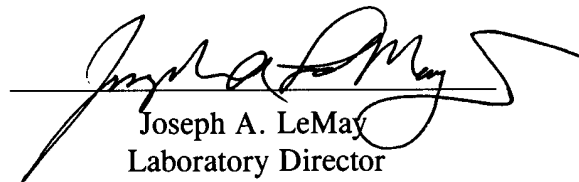
*Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

Chronic:	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-12041401-001  
Client/ID: TestAmerica - Outfall 001 (440-8689-1)

Date Tested: 04/14/12 to 04/20/12

**TEST SUMMARY**

Test type: Daily static-renewal.	Endpoints: Survival and Reproduction.
Species: <i>Ceriodaphnia dubia</i> .	Source: In-laboratory culture.
Age: < 24 hrs; all released within 8 hrs.	Food: .1 ml YTC, algae per day.
Test vessel size: 30 ml.	Test solution volume: 15 ml.
Number of test organisms per vessel: 1.	Number of replicates: 10.
Temperature: 25 +/- 1°C.	Photoperiod: 16/8 hrs. light/dark cycle.
Dilution water: Mod. hard reconstituted (MHRW).	Test duration: 6 days.
QA/QC Batch No.: RT-120403.	Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	22.8
100% Sample	100%	28.1
Sample not statistically significantly less than Control for either endpoint.		

**CHRONIC TOXICITY**

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥ 80%	Pass (100% survival)
≥ 15 young per surviving control female	Pass (22.8 young)
≥ 60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD < 47% for reproduction; if > 47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 13.6%)
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-Survival Day 6**

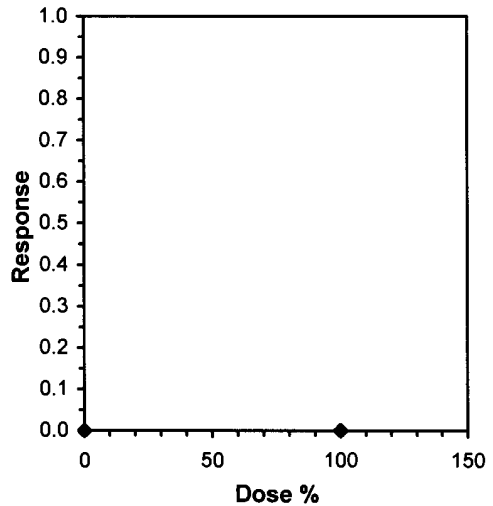
Start Date: 4/14/2012 15:00 Test ID: 12041401c Sample ID: Outfall 001  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 14:12 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 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: 4/14/2012 15:00 Test ID: 12041401c Sample ID: Outfall 001  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 14:12 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	27.000	24.000	24.000	24.000	23.000	16.000	26.000	24.000	25.000	15.000
100	25.000	31.000	28.000	31.000	28.000	29.000	30.000	31.000	30.000	18.000

Conc-%	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	22.800	1.0000	22.800	15.000	27.000	17.641	10			25.450	1.0000
100	28.100	1.2325	28.100	18.000	31.000	14.279	10	144.50	82.00	25.450	1.0000

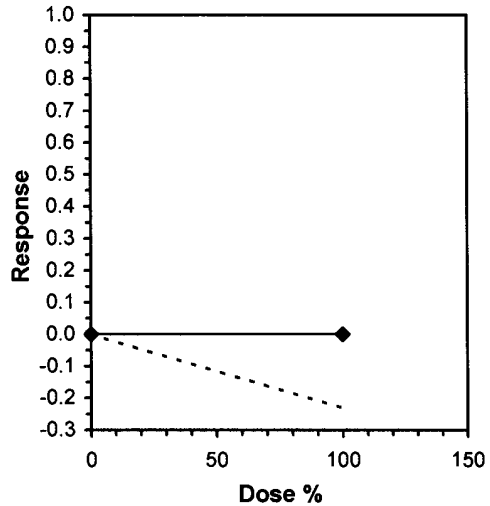
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.78455	0.905	-1.6013	1.72179
F-Test indicates equal variances (p = 0.99)	1.00483	6.54109		

**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates no significant differences

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: 4/14/2012 15:00 Test ID: 12041401c Sample ID: Outfall 001  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 14:12 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	27.000	24.000	24.000	24.000	23.000	16.000	26.000	24.000	25.000	15.000
100	25.000	31.000	28.000	31.000	28.000	29.000	30.000	31.000	30.000	18.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%					
D-Control	22.800	1.0000	22.800	15.000	27.000	17.641	10				
100	28.100	1.2325	28.100	18.000	31.000	14.279	10	-2.950	1.730	3.108	

Auxiliary Tests			Statistic		Critical		Skew		Kurt			
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)			0.78455		0.905		-1.6013		1.72179			
F-Test indicates equal variances (p = 0.99)			1.00483		6.54109							
Hypothesis Test (1-tail, 0.05)			NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test			100	>100		1	3.10812	0.13632	140.45	16.1389	0.00857	1, 18
Treatments vs D-Control												

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0 Raw Data Sheet**



Lab No.: A-12041401-001

Client ID: TestAmerica - Outfall 001

Start Date: 04/14/2012

		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:		J	J	J	J	J	J	J	J	J	J	J	J	-	-	
Time of Readings:		1500	1500	1500	1530	1530	1430	1430	1430	1430	1500	1420	1430	1430	-	-
Control	DO	8.5	8.4	8.7	7.9	8.1	8.0	8.7	7.9	8.1	7.9	9.0	8.1	-	-	
	pH	8.2	8.0	8.1	8.1	8.2	8.1	8.0	8.0	7.9	7.7	8.0	7.8	-	-	
	Temp	24.3	24.4	24.2	24.3	24.3	24.4	24.3	24.2	24.2	24.4	24.3	24.7	-	-	
100%	DO	9.4	7.9	9.1	7.9	9.2	8.0	7.3	7.9	9.4	7.8	8.9	8.7	-	-	
	pH	8.1	8.2	7.5	8.0	7.5	8.0	7.4	7.9	7.2	7.8	7.8	8.1	-	-	
	Temp	24.1	24.3	24.2	24.3	24.3	24.3	24.7	24.3	24.4	24.3	24.4	24.8	-	-	

Additional Parameters	Control	100% Sample
Conductivity (umohms)	376	87
Alkalinity (mg/l CaCO <sub>3</sub> )	68	19
Hardness (mg/l CaCO <sub>3</sub> )	99	29
Ammonia (mg/l NH <sub>3</sub> -N)	<0.1	1.0

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	1A	2A	2B	2B	1C	3C	16	26	24	25	

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	J
	2	0	0	0	0	0	0	0	0	0	0	0	10	J
	3	0	0	3	5	0	0	0	0	0	0	8	10	J
	4	4	3	0	0	5	4	4	3	4	5	32	10	J
	5	8	7	10	9	7	0	10	8	7	0	66	10	J
	6	15	14	11	10	11	12	12	13	14	10	122	10	J
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total		27	24	24	24	23	16	26	24	28	15	228	10
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	J
	2	0	0	0	0	0	0	0	0	0	0	0	10	J
	3	5	5	4	0	0	0	5	0	0	0	19	10	J
	4	0	0	0	5	3	4	0	4	5	4	25	10	J
	5	8	10	9	11	10	10	11	12	10	0	91	10	J
	6	12	16	15	15	15	15	14	15	15	14	146	10	J
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total		25	31	28	31	28	29	30	23	13	18	281	10

Circled fourth brood not used in statistical analysis.

7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

# ***CHAIN OF CUSTODY***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Name/Address: MWH-Arcadia 618 Michilinda Ave, Suite 200 Arcadia, CA 91007			Project: Boeing-SSFL NPDES Annual Outfall 001 COMPOSITE														
Test America Contact: Debby Wilson			Phone Number: (626) 568-6691 Fax Number: (626) 568-6515														
Project Manager: Bronwyn Kelly			Sampler: Rick Sanchez														
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	1,4-Dioxane	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)	PCBs	Monomethyl Hydrazine	Chronic Toxicity	Total Dissolved Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Cr (VI) (218.6)	Cyanide	Comments	
Outfall 001	W	VOAS	3	4-13-2012 14:12	HCl	23A, 23B, 23C	X										
Outfall 001	W	250 mL Glass	1		HCl	24		X									
Outfall 001	W	2.5 Gall Cube	1		None	25A			X								Unfiltered and unpreserved analysis
Outfall 001	W	500 mL Amber	1		None	25B											
Outfall 001	W	1L Amber	2		None	26A, 26B				X							
Outfall 001	W	1L Amber	2		None	27A, 27B					X						
Outfall 001	W	1 Gall Cube	1		None	28						X					
Outfall 001	W	1L Poly	1		None	29							X				
Outfall 001	W	500 mL Poly	1		None	30								X			
Outfall 001	W	500 mL Poly	1		NaOH	31									X		
COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 001 for this storm event.																	
These must be added to the same work order for COC Page 1 of 3 for Outfall 001 for the same event.																	
Relinquished By	Date/Time:	Received By	Date/Time:	Turn-around time: (Check) 24 Hour: ___ 72 Hour: ___ 10 Day: ___ 48 Hour: ___ 5 Day: ___ Normal: ___													
Relinquished By	Date/Time:	Received By	Date/Time:	Sample Integrity: (Check) Intact: ___ On Ice: ___													
Relinquished By	Date/Time:	Received By	Date/Time:	Data Requirements: (Check) No Level IV: ___ All Level IV: ___ NPDES Level IV: ___													

TestAmerica Irvine

17481 Derlan Ave Suite 100  
Irvine, CA 92614-5817  
Phone (949) 261-1022 Fax (949) 260-9292

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Shipping/Receiving Company: Aquatic Testing Laboratories Address: 4360 Transport #707 City: Ventura State, Zip: CA, 93003 Phone: POE: Email: HQ #: Project Name: Annual Outfall 001 Site: SSOVWE Booking SSFL			Sampler: Phone: Lab P#: Wilson, Dabby E Mail: dabby.wilson@testamericainc.com		Courier Tracking Note: COC No: 440-8688-1 Page: Page 1 of 1 Job #: 440-8688-1	
Date Requested: Date Received (day):			Analysis Requested		Preservation Codes: A - HCL B - NiOH C - Zn/Acetic D - Nitric Acid E - NiHSO4 F - NiOH G - Ampher H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDTA Other: M - Hexam N - Horn O - AmlyDZ P - Na2O/S Q - Na2CO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Asulone V - KCl/K W - pH 4.4 Z - other (specify)	
Sample Identification - Client ID (Lab ID) Outfall 001 Composite (440-8688-1)	Sample Date 4/13/12	Sample Time 14:12 Pacific	Matrix (Special, Heavy, Other) Matrix Matrix Matrix	Special Instructions/Notes: SUBCONTRACT Chronic Cerio, EPA#X1-R02-013		
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For    Months					
Empty Kit Requisitioned by: _____ Date: _____ Time: _____		Method of Shipment: _____				
Requisitioned by: _____ Date/Time: 4/16/12		Company: _____		Received by: _____ Date/Time: 4-14-12 1400		
Requisitioned by: _____ Date/Time: _____		Company: _____		Received by: _____ Date/Time: _____		
Requisitioned by: _____ Date/Time: _____		Company: _____		Received by: _____ Date/Time: _____		

***Ceriodaphnia dubia  
Chronic Toxicity Test  
Reference  
Toxicant  
Data***

**CERIODAPHNIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0**  
**REFERENCE TOXICANT - NaCl**



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

**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%		23.5	
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
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	2.1 g/l
Reproduction IC25	0.82 mg/l

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia

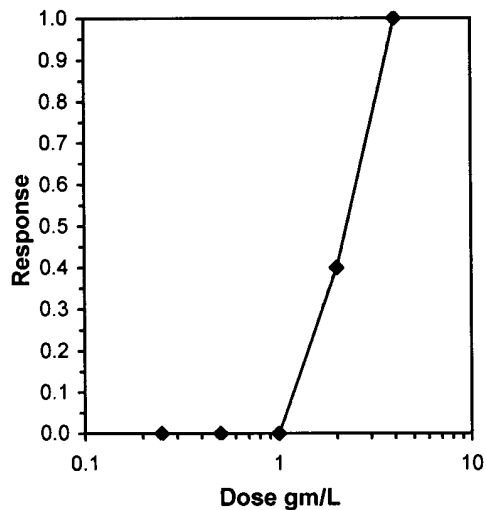
Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000	0.6000	4	6	10	10	0.0433	0.0500	4	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	1	2	1.41421	
Treatments vs D-Control				

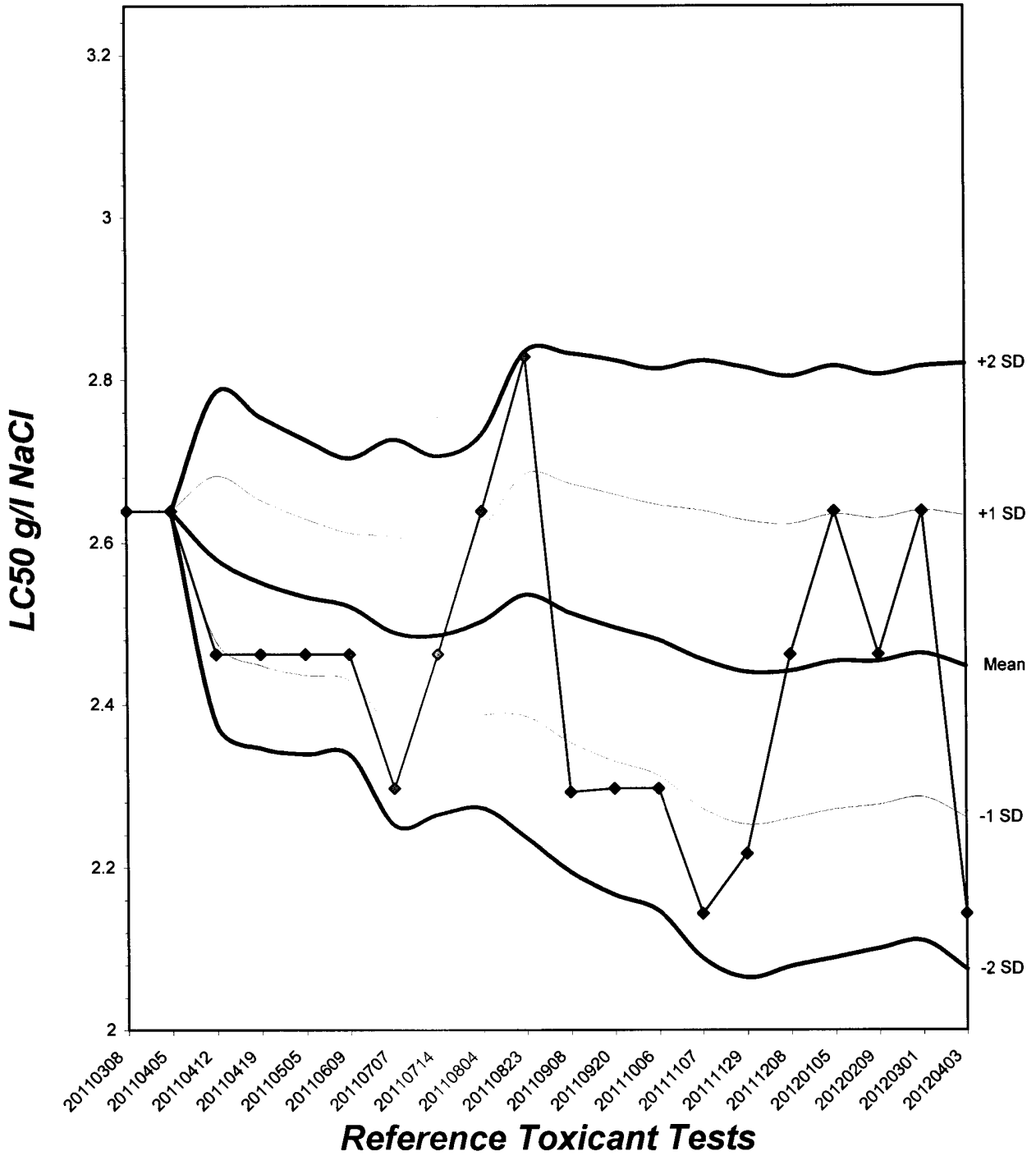
Trim Level	Trimmed Spearman-Kärber		
	EC50	95% CL	
0.0%	2.1435	1.7293	2.6571
5.0%	2.1584	1.6984	2.7429
10.0%	2.1732	1.6538	2.8556
20.0%	2.2021	1.5017	3.2291
Auto-0.0%	2.1435	1.7293	2.6571





# Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 7.61



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia  
 Comments:

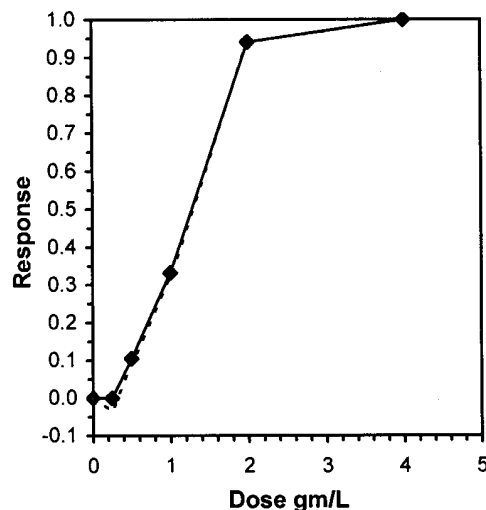
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			23.900	1.0000
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	111.50	77.00	23.900	1.0000
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	87.00	77.00	21.400	0.8954
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	66.00	77.00	16.000	0.6695
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			1.400	0.0586
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)	0.93053	0.94	-0.5964	-0.342
Bartlett's Test indicates equal variances (p = 0.53)	2.22089	11.3449		

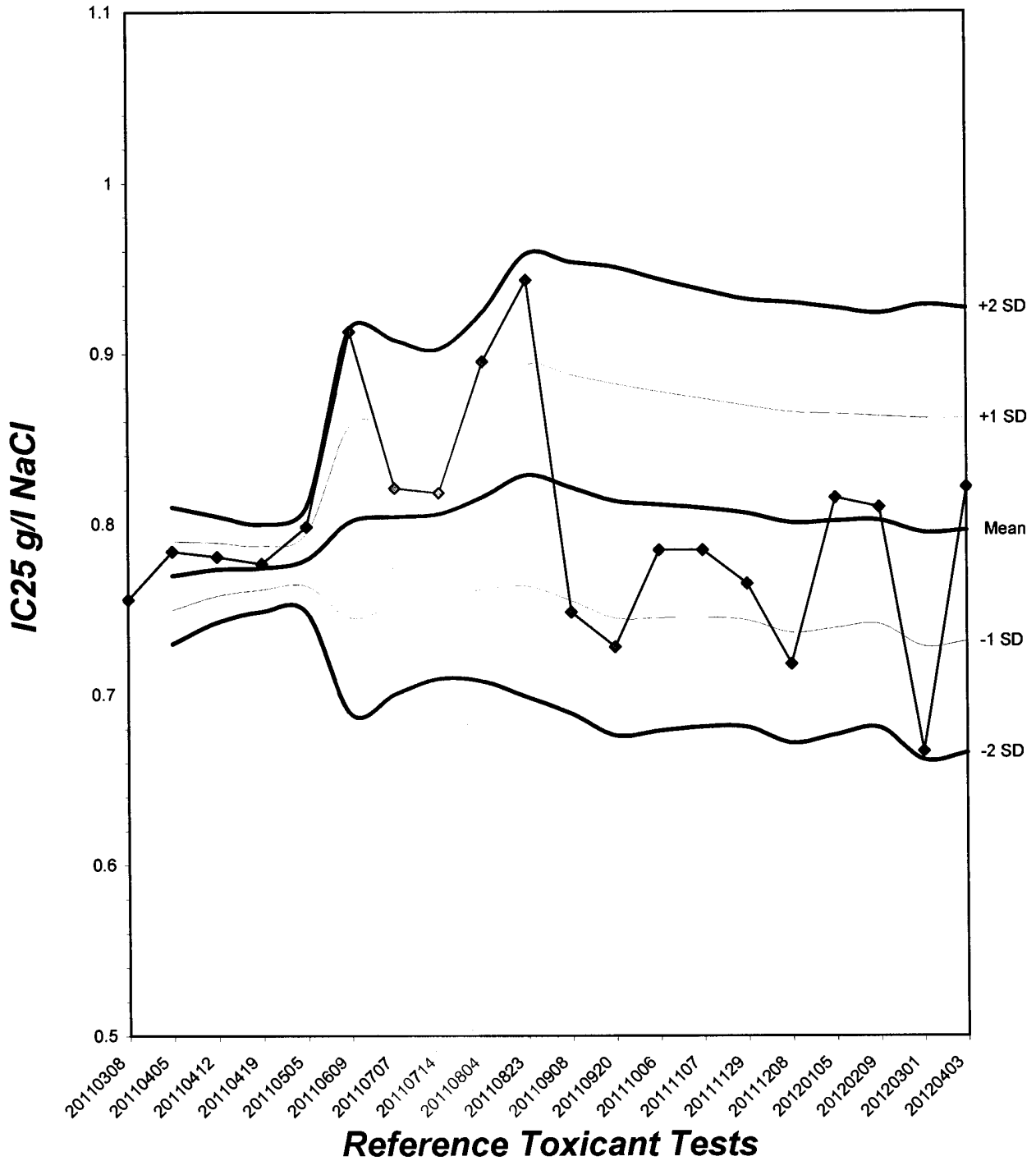
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	0.5	1	0.70711	

Linear Interpolation (200 Resamples)					
Point	gm/L	SD	95% CL		Skew
IC05	0.3695	0.0911	0.1696	0.5686	0.2464
IC10	0.4890	0.0910	0.3077	0.6622	0.1815
IC15	0.6005	0.1009	0.4034	0.7714	0.1407
IC20	0.7111	0.1157	0.4592	0.9579	0.1807
IC25	0.8218	0.1195	0.5745	1.0536	0.0455
IC40	1.1137	0.1010	0.8928	1.2609	-0.5191
IC50	1.2774	0.0905	1.0680	1.4019	-0.8577



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.18



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00      Test ID: RT120403c      Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00      Lab ID: CAATL-Aquatic Testing Labs      Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012      Protocol: FWCH-EPA-821-R-02-013      Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed	
			Mean	Min	Max	CV%	Critical			MSD	
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10				
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819	
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819	
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819	
2	1.400	0.0596	1.400	0.000	5.000	139.646	10				
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests		Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)		0.93053	0.94	-0.5964	-0.342						
Bartlett's Test indicates equal variances (p = 0.53)		2.22089	11.3449								
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control											

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-120403

Start Date: 04/03/2012

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	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	4	3	0	0	10	10	
	4	3	5	4	4	0	4	0	0	3	4	27	10	
	5	0	0	10	8	8	9	9	10	7	8	69	10	
	6	17	12	11	13	13	14	15	14	10	10	129	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	20	17	25	25	24	27	28	27	20	22	235	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	0	0	0	0	4	0	4	0	0	0	8		10
	4	5	4	5	5	0	4	0	5	4	4	36		10
	5	0	0	10	9	10	9	7	9	9	8	71		10
	6	16	13	14	12	13	12	14	13	10	11	128		10
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	21	17	29	26	27	25	25	27	23	23	243		10
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	0	0	0	0	0	0	4	0	0	0	4		10
	4	4	4	3	3	5	4	0	3	4	4	34		10
	5	0	0	7	9	8	7	9	7	7	8	62		10
	6	12	10	13	10	11	12	10	13	12	11	114		10
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	16	14	23	22	24	23	23	23	23	23	214		10

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> 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-120403

Start Date:04/03/2012

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	0	0	0	0	3	10	
	4	3	4	2	3	0	3	4	4	2	3	28	10	
	5	0	0	0	7	7	0	8	7	7	6	47	10	
	6	12	13	6	10	13	12	0	11	0	10	87	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	15	17	8	20	23	15	12	22	9	19	160	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	X	X	0	0	0	0	X	X	0	0	0		6
	3	-	-	0	0	0	0	-	-	0	0	0		6
	4	-	-	0	0	0	0	-	-	0	0	0		6
	5	-	-	0	2	2	3	-	-	0	2	9		6
	6	-	-	0	0	2	0	-	-	0	3	5		6
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	0	0	0	2	4	3	0	0	0	5	14		6
4.0 g/l	1	X	X	X	X	X	X	X	X	X	0	0	[Signature]	
	2	-	-	-	-	-	-	-	-	-	-	-		
	3	-	-	-	-	-	-	-	-	-	-	-		
	4	-	-	-	-	-	-	-	-	-	-	-		
	5	-	-	-	-	-	-	-	-	-	-	-		
	6	-	-	-	-	-	-	-	-	-	-	-		
	7	-	-	-	-	-	-	-	-	-	-	-		
	Total	0	0	0	0	0	0	0	0	0	0	0		0

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Water Chemistries Raw Data Sheet**



QA/QC No.: RT-120403

Start Date: 04/03/2012

		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:		J	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	-	-
Control	DO	8.3	8.2	7.9	8.6	7.8	8.5	7.9	8.4	8.5	8.7	8.3	8.6	-	-
	pH	8.0	8.2	8.1	8.1	8.2	8.2	8.1	8.2	8.1	8.0	8.1	8.0	-	-
	Temp	24.7	24.7	24.3	24.3	24.6	24.7	24.8	24.7	24.8	24.4	24.3	24.5	-	-
0.25 g/l	DO	8.4	8.4	8.2	8.6	8.4	8.3	8.3	8.3	7.9	8.6	8.3	8.7	-	-
	pH	8.0	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.1	8.0	8.1	8.0	-	-
	Temp	24.5	24.7	24.5	24.5	24.7	24.8	24.6	24.7	24.8	24.4	24.5	24.6	-	-
0.5 g/l	DO	8.2	8.3	8.1	8.6	8.2	8.6	8.0	8.4	8.1	8.6	8.4	8.0	-	-
	pH	8.0	8.1	8.2	8.1	8.2	8.2	8.1	8.1	8.1	8.0	8.1	8.0	-	-
	Temp	24.6	24.9	24.5	24.2	24.3	24.8	24.3	24.8	24.8	24.3	24.7	25.2	-	-
1.0 g/l	DO	8.2	8.3	8.1	8.4	8.3	8.5	7.9	8.1	8.0	8.4	8.3	8.1	-	-
	pH	8.0	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.0	-	-
	Temp	24.7	24.7	24.5	24.5	24.5	24.7	24.7	24.6	24.8	24.7	24.5	24.5	-	-
2.0 g/l	DO	8.4	8.2	7.9	8.2	8.1	8.3	7.9	8.2	8.1	8.3	8.1	8.2	-	-
	pH	8.0	8.1	8.2	8.1	8.2	8.1	8.0	8.1	8.1	8.0	8.0	8.0	-	-
	Temp	24.7	25.2	24.5	24.5	24.3	24.5	24.7	24.8	24.8	24.3	24.6	24.6	-	-
4.0 g/l	DO	8.5	8.1	-	-	-	-	-	-	-	-	-	-	-	-
	pH	8.0	8.1	-	-	-	-	-	-	-	-	-	-	-	-
	Temp	24.7	24.5	-	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; 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)	309	319	316	6960	2520	3310
Alkalinity (mg/l CaCO <sub>3</sub> )	69	67	67	68	68	68
Hardness (mg/l CaCO <sub>3</sub> )	90	87	88	90	89	88

**Source of Neonates**

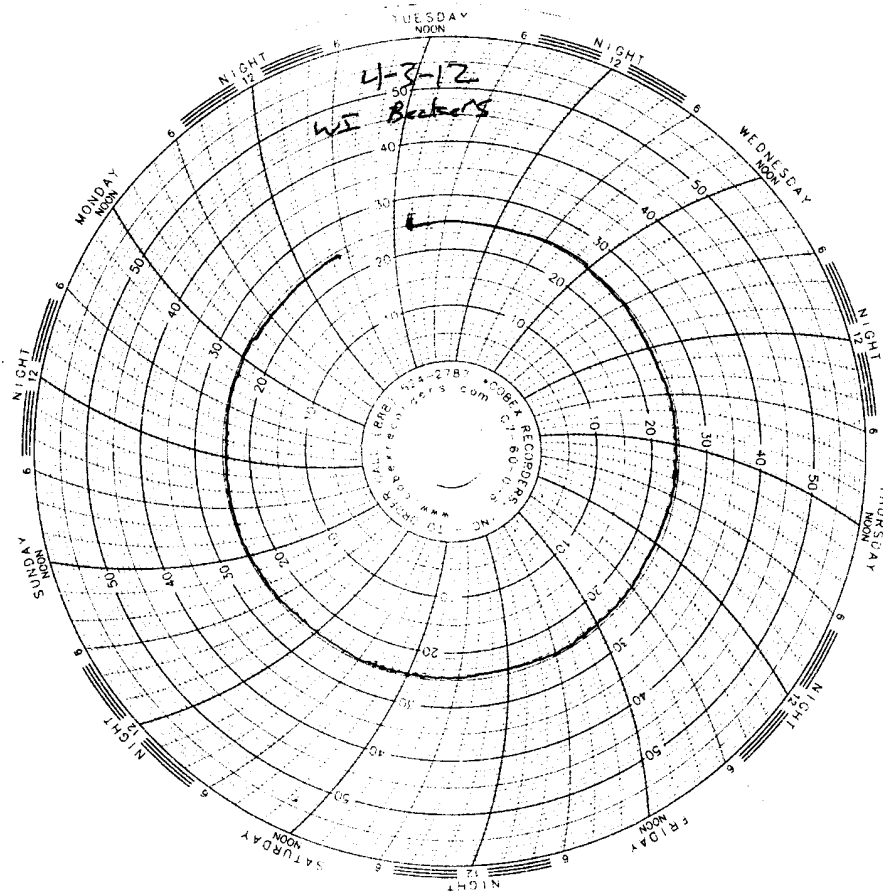
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1B	2C	3C	2D	1E	3E	1F	1G	3H	2I

# Test Temperature Chart

Test No: **RT-120403**

Date Tested: **04/03/12 to 04/09/06**

Acceptable Range: **25+/- 1°C**





440-8621

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:					
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Boeing-SSFL NPDES Annual Outfall 001 GRAB		Phone Number: (626) 568-6691		Preservative		Bottle #		8015 - diesel/jet fuel		Fecal coliform (SM9221)		E. coli (SM9221)		Acute Toxicity		Human	Temp °F = 11 pH = 7.2 DO = 10.65 m% Chlorine = 0
Test America Contact: Debby Wilson		Project Manager: Bronwyn Kelly		Fax Number: (626) 568-6515		None		1A, 1B, 1C, 1D, 1E		8015 - gas		Oil & Grease (1664-HEM)							Time of readings = 14:25
Sampler: Rick Barasa		Sample Matrix		Sampling Date/Time		None		2A, 2B, 2C		8015 - gas		Conductivity							
Sample Description		Container Type		Date/Time		None		3		8015 - gas		Settleable Solids							
Outfall 001		VOAS		4-13-12 14:25		HCl		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		VOAS				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		1L Poly				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		500 mL Poly				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		1L Amber				HCl		3		8015 - gas		VOCs 624 +A+A+2C+E							
Trip Blanks		VOAS				HCl		3		8015 - gas		VOCs 624 +A+A+2C+E							
Trip Blanks		VOAS				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		VOAS				HCl		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001 Dup		VOAS				HCl		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		1L Amber				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001 Dup		1L Amber				None		3		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		125mL Poly				Na2S2O3		10		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		125mL Poly				Na2S2O3		11		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		1 Gal Cube				None		12		8015 - gas		VOCs 624 +A+A+2C+E							
Outfall 001		1.25 m <sup>3</sup>				None		13		8015 - gas		VOCs 624 +A+A+2C+E							

These Samples are the Grab Portion of Outfall 001 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By: *Rick Barasa* Date/Time: 4-13-12 15:30  
 Received By: *Mark Campbell* Date/Time: 4-13-12 15:30  
 Relinquished By: *Mark Campbell* Date/Time: 4-13-12 19:00  
 Received By: *Mark Campbell* Date/Time: 4-13-12 19:00

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

Sample Integrity: (Check)  
 Intact: \_\_\_\_\_  
 On Ice: \_\_\_\_\_

Data Requirements: (Check)  
 No Level IV: \_\_\_\_\_  
 All Level IV: \_\_\_\_\_  
 NPDES Level IV:

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CHAIN OF CUSTODY FORM

Client Name/Address: MWH-Arcadia 618 Michilinda Ave, Suite 200 Arcadia, CA 91007				Project: Boeing-SSFL NPDES Annual Outfall 001 COMPOSITE				ANALYSIS REQUIRED												Comments	
Test America Contact: Debby Wilson				Project Manager: Bronwyn Kelly Sampler: <b>RICK BAWAGN</b>				Total Recoverable Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub>													
Phone Number: (626) 568-6691 Fax Number: (626) 568-6515				Sample Description	Container Type	# of Cont.	Preservative	Bottle #	TCDD (and all congeners)	BOD <sub>5</sub> (20 degrees C)	Surfactants (MBAS)	Cl <sup>-</sup> , SO <sub>4</sub> <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , F <sup>-</sup> , Perchlorate	Nitrate-N, Nitrite-N	Turbidity, TDS, TSS	Ammonia-N (350.2)	Alpha BHC (608) + Pesticides + PP	2,4,6-TCP, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625) + PP				
				Outfall 001	W	1L Poly	1	HNO <sub>3</sub>	13A	X											
				Outfall 001 Dup	W	1L Poly	1	HNO <sub>3</sub>	13B	X											
				Outfall 001	W	1L Amber	2	None	14A, 14B		X										
				Outfall 001	W	1L Poly	1	None	15			X									
				Outfall 001	W	500 mL Poly	2	None	16A, 16B			X									
				Outfall 001	W	500 mL Poly	2	None	17A, 17B				X								
				Outfall 001	W	500 mL Poly	1	None	18				X								
				Outfall 001	W	500 mL Poly	2	None	19A, 19B					X							
				Outfall 001	W	500 mL Poly	1	H <sub>2</sub> SO <sub>4</sub>	20						X						
				Outfall 001	W	1L Amber	2	None	21A, 21B							X					
				Outfall 001	W	1L Amber	2	None	22A, 22B								X				

**Relinquished By:** Rick Bawn Date/Time: 4-14-2012 12:35 Received By: Matt O'Connell Date/Time: 4-14-12 12:35

**Relinquished By:** Matt O'Connell Date/Time: 4-14-12 16:15 Received By: [Signature] Date/Time: 4-14-12 16:15

**Relinquished By:** [Signature] Date/Time: 4-14-12 16:15 Received By: [Signature] Date/Time: 4-14-12 16:15

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

**Sample Integrity: (Check)**  
 Intact:  On Ice:

**Data Requirements: (Check)**  
 No Level IV:  All Level IV:  NPDES Level IV:

**COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 001 for this storm event.**  
 These must be added to the same work order for COC Page 1 of 3 for Outfall 001 for the same event.

Client Name/Address: <b>MWH-Arcadia</b> 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project: <b>Boeing-SSFL NPDES Annual Outfall 001 COMPOSITE</b>													
Test America Contact: Debby Wilson		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515													
Project Manager: Bronwyn Kelly Sampler: <b>Rick Baraga</b>		ANALYSIS REQUIRED													
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	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)	PCBs	Monomethyl Hydrazine	Chronic Toxicity	Total Dissolved Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Ti, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Cr (VI) (218.6)	Cyanide	Comments	
Outfall 001	W	VOAs	3	HCl	23A, 23B, 23C	X									
Outfall 001	W	250 mL Glass	1	HCl	24										
Outfall 001	W	2.5 Gal Cube	1	None	25A		X							Unfiltered and unpreserved analysis	
Outfall 001	W	500 mL Amber	1	None	25B										
Outfall 001	W	1L Amber	2	None	26A, 26B			X							
Outfall 001	W	1L Amber	2	None	27A, 27B				X						
Outfall 001	W	1 Gal Cube	1	None	28					X				Only test if first or second rain events of the year	
Outfall 001	W	1L Poly	1	None	29						X			Filter w/in 24hrs of receipt at lab	
Outfall 001	W	500 mL Poly	1	None	30							X			
Outfall 001	W	500 mL Poly	1	NaOH	31								X		
COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 001 for this storm event. These must be added to the same work order for COC Page 1 of 3 for Outfall 001 for the same event.															
Relinquished By: <b>Ri Bar</b>		Date/Time: <b>4-14-2012 12:35</b>		Received By: <b>Scott Campbell</b>		Date/Time: <b>4-14-12 12:35</b>		Turn-around time: (Check)		24 Hour: ___ 72 Hour: ___ 10 Day: ___		48 Hour: ___ 5 Day: ___ Normal: ___		Sample Integrity: (Check)	
Relinquished By: <b>Scott Campbell</b>		Date/Time: <b>4-14-12 16:15</b>		Received By: <b>Scott Campbell</b>		Date/Time: <b>4-14-12 16:15</b>		Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>		Data Requirements: (Check)		No Level IV: ___ All Level IV: ___ NPDES Level IV: ___		1-61	

CHAIN OF CUSTODY FORM

440-8621

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project: Boeing-SSFL NPDES Annual Outfall 001 GRAB		Project Manager: Bronwyn Kelly Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Field readings: (Log in and include in report Temp and pH) Temp °F = 11 pH = 7.2 DO = 10.65 mg/L Total Residual Chlorine = 0 Time of readings = 14:26											
Test America Contact: Debby Wilson		Project Manager: Bronwyn Kelly Sampler: Rick Barrios		ANALYSIS REQUIRED		Comments											
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Sampling Date/Time	Boil #	123A, Cyclohexane + PP	VOCs 624 + A+A+ZCVE	Settleable Solids	Conductivity	Oil & Grease (1664-HEM)	8015 - gas	8015 - diesel/jet fuel	Fecal coliform (SM9221)	E. coli (SM9221)	Acute Toxicity	
Outfall 001	W	VOAs	5	HCl	4-13-12 14:25	1A, 1B, 1C, 1D, 1E	X	X									
Outfall 001	W	VOAs	3	None		2A, 2B, 2C		X									
Outfall 001	W	1L Poly	1	None		3			X								
Outfall 001	W	500 mL Poly	2	None		4A, 4B			X								
Outfall 001	W	1L Amber	2	HCl		5A, 5B					X						
Trip Blanks	W	VOAs	3	HCl		6A, 6B, 6C	X										
Trip Blanks	W	VOAs	3	None		7A, 7B, 7C	X										
Outfall 001	W	VOAs	1	HCl		8A					X						
Outfall 001 Dup	W	VOAs	2	HCl		8B, 8C					X						
Outfall 001	W	1L Amber	1	None		9A						X					
Outfall 001 Dup	W	1L Amber	1	None		9B						X					
Outfall 001	W	125mL Poly	1	Na2S2O3		10							X				
Outfall 001	W	125mL Poly	1	Na2S2O3		11								X			
Outfall 001	W	1 Gal Cube	f	None		12									X		
Outfall 001	W	1.25 Gal	1	None		13											
These Samples are the Grab Portion of Outfall 001 for this storm event. Composite samples will follow and are to be added to this work order.																	
Relinquished By	Rick Barrios		Date/Time	4-13-12 15:30		Received By	MWH Arcadia		Date/Time	4-13-12 15:30		Turn-around time: (Check)					
												24 Hour: _____		72 Hour: _____		10 Day: _____	
												48 Hour: _____		5 Day: _____		Normal: <input checked="" type="checkbox"/>	
Relinquished By	MWH Arcadia		Date/Time	4-13-12 18:46		Received By	Rick Barrios		Date/Time	4-13-12 18:46		Sample Integrity: (Check)					
												Intact: _____		On Ice: _____		NPDES Level: <input checked="" type="checkbox"/>	
Relinquished By	MWH Arcadia		Date/Time	4-13-12 18:46		Received By	Rick Barrios		Date/Time	4-13-12 18:46		Data Requirements: (Check)					
												No Level IV: _____		All Level IV: _____			

3.7

## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8621-1

**Login Number: 8621**

**List Number: 1**

**Creator: Kim, Will**

**List Source: TestAmerica Irvine**

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



## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8621-1

**Login Number: 8689**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Perez, Angel**

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

## **APPENDIX G**

### **Section 3**

Outfall 002 – April 11, 2012

MEC<sup>X</sup> Data Validation Report







# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8277-1

Prepared by

MEC<sup>x</sup>, 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: 440-8277-1  
 Project Manager: B. Kelly  
 Matrix: Water  
 QC Level: IV  
 No. of Samples: 2  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica-Irvine

**Table 1. Sample Identification**

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 002 Grab	440-8278-1	N/A	Water	4/11/2012 11:00:00 AM	120.1, 8015B
Outfall 002 Composite	440-8277-1	G2D130457-001, S204062-01, 801025-001	Water	4/11/2012 2:50:00 PM	1613B, 180.1, 200.7, 200.8, 245.0, 314.0, 625, 900. 901.1, 903.1, 904, 905, 906, 8315M, SM 2340B, SM 5310B, SM5540C, ASTM D5174

## II. Sample Management

No anomalies were observed regarding sample management. The samples were received at TestAmerica-Irvine above the temperature limits of 4°C  $\pm$ 2°C, at 7.2°C and 8.1°C, and at Truesdail at 7.6°C; however, as the samples were couriered directly to the laboratories from the field, they had insufficient time to cool in transit. The samples were received slightly below the temperature limits at TestAmerica-West Sacramento; however, the samples were not noted to be frozen or damaged. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were necessary. 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 TestAmerica-West Sacramento. As the samples were delivered by courier to TestAmerica-Irvine and Truesdail, custody seals were not required. TestAmerica-Irvine did not utilize custody seals to ship the samples via FedEx to Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

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### Data Qualifier Reference Table

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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.**

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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: June 4, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> 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 reported below the EDL for total HpCDD, 1,2,3,4,6,7,8-HpCDF, and OCDF, and a detect above the EDL but below the RL for total HpCDF. All of the method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample results. Sample results for 1,2,3,4,6,7,8-HpCDF and OCDF were qualified as

nondetected “U,” at the level of contamination. Total HpCDD and total HpCDF were qualified as estimated, “J,” as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: 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: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613 for all internal standards.
- 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 any reportable sample concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, “J.” Any detects 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.

Results reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining individual isomer results reported as EMPCs were qualified as estimated nondetects, “UJ,” at the level of the EMPC. Totals containing isomers reported as EMPCs or other EMPC peaks were qualified as estimated, “J.”

## B. EPA METHOD 8315M—Hydrazines

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Method 8315M*, and the *National Functional Guidelines for Organic Data Review (10/99)*.

- Holding Times: The hydrazine sample was derivitized within three days of collection and analyzed within three days of derivitization.
- Calibration: Calibration criteria were met. The initial calibration  $r^2$  values were  $\geq 0.995$ . The ICV, CCV and QCS recoveries were within 85-115%.
- Blanks: Hydrazine was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy and precision were evaluated based on LCS recoveries and RPDs.
- 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.
- Compound Identification: Compound identification was verified. Review of the sample, LCS, and LCSD chromatograms and retention times indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibrations and the laboratory MDLs. Any results reported between the MDL 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 reporting limit.



## C. EPA METHODS 200.7, 200.8, and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 200.7, 200.8, 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: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were  $\leq 5\%$ , and all masses of interest were calibrated to  $\leq 0.1$  amu and  $\leq 0.9$  amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  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: Total and dissolved boron was detected in the method blanks at 0.0399 0.0382 mg/L, respectively; therefore, total and dissolved boron detected in the sample were qualified as nondetected, "U." Method blanks and CCBs had no other applicable detects.
- Interference Check Samples: Recoveries were within 80-120%. There were target compounds in the ICSA solution at concentrations above the reporting limits; however, the reviewer did not find evidence indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: Recoveries 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: MS/MSD analyses were performed on the sample in the SDG for total and dissolved mercury. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: All sample internal standard intensities were within 60-125% of the internal standard intensities measured in the initial calibration.

- **Sample Result Verification:** Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - **Field Blanks and Equipment Rinsates:** This SDG had no identified field blank or equipment rinsate samples.
  - **Field Duplicates:** There were no field duplicate samples identified for this SDG.

#### **D. EPA METHODS 8015Mod—Gasoline Range Organics (GRO), and 8015B—Diesel Range Organics (DRO)**

Reviewed By: L. Calvin

Date Reviewed: June 4, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Total Fuel Hydrocarbons (DVP-8, Rev. 0)*, *EPA Method 8015B*, and the *National Functional Guidelines for Organic Data Review (10/99)*.

- **Holding Times:** Extraction and analytical holding times were met. The GRO sample was analyzed within 14 days of collection and the DRO sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- **Calibration:** The initial calibration %RSD for GRO was less than 20%, the DRO  $r^2$  was  $\geq 0.995$ , and all ICV and continuing calibration %Ds were less than 15%.
- **Blanks:** The method blanks had no GRO or DRO detects above the MDL.
- **Blank Spikes and Laboratory Control Samples:** Recoveries for all LCSs and RPDs for the DRO LCS/LCSD were within laboratory-established QC limits.
- **Surrogate Recovery:** The surrogate recoveries were within laboratory-established QC limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed for GRO on the sample of this SDG. Recoveries and RPDs were within the laboratory-established QC limits. Method accuracy and precision for DRO were evaluated based on the blank spike/blank spike duplicate results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Compound Identification: Compound identification was verified. Two hydrocarbon ranges were reported: GRO (C4-C12) and DRO (C13-C28). Review of the sample chromatograms and retention time ranges indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibrations and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

## E. EPA METHOD 625—Semivolatile Organic Compounds (SVOCs)

Reviewed By: L. Calvin

Date Reviewed: June 4, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 625*, and the *National Functional Guidelines for Organic Data Review (10/99)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.
- Calibration: The initial calibration average RRFs and the ICV and continuing calibration RRFs were  $\geq 0.05$  for all target compounds. The initial calibration %RSDs were  $\leq 35\%$ , or  $r^2$  values  $\geq 0.995$ . The ICV %Ds for benzidine, benzoic acid, hexachlorocyclopentadiene, and phenol exceeded 20%. Sample results for the %D outliers were qualified as estimated,

“UJ,” for nondetects, and “J,” for detects. The remaining ICV and CCV %Ds were  $\leq 20\%$  for all applicable target compounds.

- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: In the LCSD, benzidine was recovered below the QC limits but  $\geq 10\%$ , and 2-nitroaniline was recovered above the QC limits. In the LCS, 4-nitrophenol was recovered above the QC limits. The RPD for n-nitroso-dimethylamine exceeded the QC limit; therefore, the nondetected sample result for n-nitroso-dimethylamine was qualified as estimated, “UJ.” Remaining recoveries and RPDs for applicable target compounds were within laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy and precision was evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the continuing calibration standards:  $-50\%/+100\%$  for internal standard areas and  $\pm 30$  seconds for retention times.
- Compound Identification: Compound identification was verified. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, “J,” and coded with “DNQ” in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

## F. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

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. All remaining aliquots were preserved within the five-day holding time.
- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha 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. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.
- Blank Spikes and Laboratory Control Samples: The 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 by the laboratory 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.

## G. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks  
Date Reviewed: June 4, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Metals (DVP-20, Rev. 0)*, *EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration  $r^2$  value was  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within the method control limit of 80-120%. ICCS recovery was within the method control limit of 75-125%.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a 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. Reported nondetects are valid to the reporting limit.
- 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.

## H. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: June 4, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Methods 120.1, 180.1, Standard Methods SM 5310B and SM 5540C*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: Analytical holding times, 48 hours for turbidity and MBAS and 28 days for TOC and conductivity, were met.
- Calibration: Calibration criteria were met. Initial calibration  $r^2$  values were  $\geq 0.995$ . The turbidity ICV was recovered at 70%; therefore, turbidity detected in the sample was qualified as estimated, "J." The remaining initial and all continuing calibration recoveries were within 90-110%.
- 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: Recoveries and RPDs were within laboratory-established QC limits.
- 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 440-8277-1

## Analysis Method 120.1

**Sample Name** Outfall 002 Grab **Matrix Type:** Water **Validation Level:** IV  
**Lab Sample Name:** 440-8278-1 **Sample Date:** 4/11/2012 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	STL00244	630	1.0	1.0	umhos/c			

## Analysis Method 1613B

**Sample Name** Outfall 002 Grab **Matrix Type:** Water **Validation Level:** IV  
**Lab Sample Name:** 440-8277-1 **Sample Date:** 4/11/2012 2:50:00 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	0.000003	0.000050	0.0000011	ug/L	J	J	DNQ
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000013	ug/L	J Q B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000016	ug/L	J Q	UJ	*III
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000009	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000006	ug/L	J Q	UJ	*III
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000010	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000007	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000015	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	0.000001	0.000050	0.0000007	ug/L	J	J	DNQ
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000020	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000015	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	0.000001	0.000050	0.0000006	ug/L	J	J	DNQ
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000016	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000003	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000015	ug/L		U	
OCDD	3268-87-9	ND	0.00010	0.0000016	ug/L	J Q	UJ	*III
OCDF	39001-02-0	ND	0.00010	0.0000025	ug/L	J Q B	U	B
Total HpCDD	37871-00-4	0.000006	0.000050	0.0000011	ug/L	J Q B	J	B, DNQ, *III
Total HpCDF	38998-75-3	0.000014	0.000050	0.0000014	ug/L	J Q B	J	B, DNQ, *III
Total HxCDD	34465-46-8	ND	0.000050	0.0000009	ug/L		U	
Total HxCDF	55684-94-1	0.000009	0.000050	0.0000006	ug/L	J Q	J	DNQ, *III
Total PeCDD	36088-22-9	ND	0.000050	0.0000020	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000050	0.0000015	ug/L		U	
Total TCDD	41903-57-5	ND	0.000010	0.0000003	ug/L		U	
Total TCDF	55722-27-5	ND	0.000010	0.0000015	ug/L		U	

*Analysis Method 180.1*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Turbidity	STL00189	2.6	0.10	0.040	NTU		J	C

*Analysis Method 200.7 Rev 4.4*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Arsenic	7440-38-2	ND	10	7.0	ug/L		U	
Arsenic, Dissolved	7440-38-2	ND	10	7.0	ug/L		U	
Barium	7440-39-3	29	10	6.0	ug/L			
Barium, Dissolved	7440-39-3	30	10	6.0	ug/L			
Beryllium	7440-41-7	ND	2.0	0.90	ug/L		U	
Beryllium, Dissolved	7440-41-7	ND	2.0	0.90	ug/L		U	
Boron	7440-42-8	ND	0.096	0.020	mg/L	MB	U	B
Boron, Dissolved	7440-42-8	ND	0.092	0.020	mg/L	MB	U	B
Chromium	7440-47-3	ND	5.0	2.0	ug/L		U	
Chromium, Dissolved	7440-47-3	ND	5.0	2.0	ug/L		U	
Iron	7439-89-6	0.14	0.040	0.015	mg/L			
Iron, Dissolved	7439-89-6	0.017	0.040	0.015	mg/L	J,DX	J	DNQ
Manganese	7439-96-5	12	20	7.0	ug/L	J,DX	J	DNQ
Manganese, Dissolved	7439-96-5	8.4	20	7.0	ug/L	J,DX	J	DNQ
Nickel	7440-02-0	ND	10	2.0	ug/L		U	
Nickel, Dissolved	7440-02-0	ND	10	2.0	ug/L		U	
Silver	7440-22-4	ND	10	6.0	ug/L		U	
Silver, Dissolved	7440-22-4	ND	10	6.0	ug/L		U	
Vanadium	7440-62-2	ND	10	3.0	ug/L		U	
Vanadium, Dissolved	7440-62-2	ND	10	3.0	ug/L		U	
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	

### Analysis Method 200.8

Sample Name Outfall 002 Grab Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8277-1 Sample Date: 4/11/2012 2:50:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	0.30	2.0	0.30	ug/L	J,DX	J	DNQ
Antimony, Dissolved	7440-36-0	0.48	2.0	0.30	ug/L	J,DX	J	DNQ
Cadmium	7440-43-9	ND	1.0	0.10	ug/L		U	
Cadmium, Dissolved	7440-43-9	ND	1.0	0.10	ug/L		U	
Cobalt	7440-48-4	0.20	1.0	0.10	ug/L	J,DX	J	DNQ
Cobalt, Dissolved	7440-48-4	0.20	1.0	0.10	ug/L	J,DX	J	DNQ
Copper	7440-50-8	2.2	2.0	0.50	ug/L			
Copper, Dissolved	7440-50-8	2.4	2.0	0.50	ug/L			
Lead	7439-92-1	ND	1.0	0.20	ug/L		U	
Lead, Dissolved	7439-92-1	ND	1.0	0.20	ug/L		U	
Selenium	7782-49-2	ND	2.0	0.50	ug/L		U	
Selenium, Dissolved	7782-49-2	ND	2.0	0.50	ug/L		U	
Thallium	7440-28-0	ND	1.0	0.20	ug/L		U	
Thallium, Dissolved	7440-28-0	ND	1.0	0.20	ug/L		U	

### Analysis Method 245.1

Sample Name Outfall 002 Grab Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8277-1 Sample Date: 4/11/2012 2:50:00 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	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	

### Analysis Method 314.0

Sample Name Outfall 002 Grab Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8277-1 Sample Date: 4/11/2012 2:50:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/L		U	

## Analysis Method 625

**Sample Name** Outfall 002 Grab **Matrix Type:** Water **Validation Level:** IV

**Lab Sample Name:** 440-8277-1 **Sample Date:** 4/11/2012 2:50:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,4-Trichlorobenzene	120-82-1	ND	0.943	0.0943	ug/L		U	
1,2-Dichlorobenzene	95-50-1	ND	0.472	0.0943	ug/L		U	
1,2-Diphenylhydrazine(as Azobenzene)	122-66-7	ND	0.943	0.189	ug/L		U	
1,3-Dichlorobenzene	541-73-1	ND	0.472	0.0943	ug/L		U	
1,4-Dichlorobenzene	106-46-7	ND	0.472	0.189	ug/L		U	
2,4,6-Trichlorophenol	88-06-2	ND	0.943	0.0943	ug/L		U	
2,4-Dichlorophenol	120-83-2	ND	1.89	0.189	ug/L		U	
2,4-Dimethylphenol	105-67-9	ND	1.89	0.283	ug/L		U	
2,4-Dinitrophenol	51-28-5	ND	4.72	0.849	ug/L		U	
2,4-Dinitrotoluene	121-14-2	ND	4.72	0.189	ug/L		U	
2,6-Dinitrotoluene	606-20-2	ND	4.72	0.0943	ug/L		U	
2-Chloronaphthalene	91-58-7	ND	0.472	0.0943	ug/L		U	
2-Chlorophenol	95-57-8	ND	0.943	0.189	ug/L		U	
2-Methylnaphthalene	91-57-6	ND	0.943	0.189	ug/L		U	
2-Methylphenol	95-48-7	ND	1.89	0.0943	ug/L		U	
2-Nitroaniline	88-74-4	ND	4.72	0.0943	ug/L	LQ	U	
2-Nitrophenol	88-75-5	ND	1.89	0.0943	ug/L		U	
3,3'-Dichlorobenzidine	91-94-1	ND	4.72	0.472	ug/L		U	
3-Nitroaniline	99-09-2	ND	4.72	0.943	ug/L		U	
4,6-Dinitro-2-methylphenol	534-52-1	ND	4.72	0.283	ug/L		U	
4-Bromophenyl phenyl ether	101-55-3	ND	0.943	0.189	ug/L		U	
4-Chloro-3-methylphenol	59-50-7	ND	1.89	0.189	ug/L		U	
4-Chloroaniline	106-47-8	ND	1.89	0.283	ug/L		U	
4-Chlorophenyl phenyl ether	7005-72-3	ND	0.472	0.189	ug/L		U	
4-Methylphenol	106-44-5	ND	4.72	0.189	ug/L		U	
4-Nitroaniline	100-01-6	ND	4.72	0.472	ug/L		U	
4-Nitrophenol	100-02-7	ND	4.72	2.36	ug/L	LQ	U	
Acenaphthene	83-32-9	ND	0.472	0.189	ug/L		U	
Acenaphthylene	208-96-8	ND	0.472	0.189	ug/L		U	
Aniline	62-53-3	ND	9.43	0.283	ug/L		U	
Anthracene	120-12-7	ND	0.472	0.0943	ug/L		U	
Benzidine	92-87-5	ND	4.72	0.943	ug/L	LR	UJ	C
Benzo(a)anthracene	56-55-3	ND	4.72	0.0943	ug/L		U	
Benzo(a)pyrene	50-32-8	ND	1.89	0.0943	ug/L		U	
Benzo(b)fluoranthene	205-99-2	ND	1.89	0.0943	ug/L		U	

## Analysis Method 625

Benzo(g,h,i)perylene	191-24-2	ND	4.72	0.0943	ug/L		<b>U</b>	
Benzo(k)fluoranthene	207-08-9	ND	0.472	0.189	ug/L		<b>U</b>	
Benzoic acid	65-85-0	2.96	18.9	2.83	ug/L	J,DX	<b>J</b>	<b>C, DNQ</b>
Benzyl alcohol	100-51-6	ND	4.72	0.0943	ug/L		<b>U</b>	
bis (2-chloroisopropyl) ether	108-60-1	ND	0.472	0.0943	ug/L		<b>U</b>	
Bis(2-chloroethoxy)methane	111-91-1	ND	0.472	0.0943	ug/L		<b>U</b>	
Bis(2-chloroethyl)ether	111-44-4	ND	0.472	0.0943	ug/L		<b>U</b>	
Bis(2-ethylhexyl) phthalate	117-81-7	ND	4.72	1.60	ug/L		<b>U</b>	
Butyl benzyl phthalate	85-68-7	ND	4.72	0.660	ug/L		<b>U</b>	
Chrysene	218-01-9	ND	0.472	0.0943	ug/L		<b>U</b>	
Dibenz(a,h)anthracene	53-70-3	ND	0.472	0.0943	ug/L		<b>U</b>	
Dibenzofuran	132-64-9	ND	0.472	0.0943	ug/L		<b>U</b>	
Diethyl phthalate	84-66-2	ND	0.943	0.0943	ug/L		<b>U</b>	
Dimethyl phthalate	131-11-3	ND	0.472	0.189	ug/L		<b>U</b>	
Di-n-butyl phthalate	84-74-2	ND	1.89	0.283	ug/L		<b>U</b>	
Di-n-octyl phthalate	117-84-0	ND	4.72	0.189	ug/L		<b>U</b>	
Fluoranthene	206-44-0	ND	0.472	0.0943	ug/L		<b>U</b>	
Fluorene	86-73-7	ND	0.472	0.0943	ug/L		<b>U</b>	
Hexachlorobenzene	118-74-1	ND	0.943	0.0943	ug/L		<b>U</b>	
Hexachlorobutadiene	87-68-3	ND	1.89	0.189	ug/L		<b>U</b>	
Hexachlorocyclopentadiene	77-47-4	ND	4.72	0.0943	ug/L		<b>UJ</b>	<b>C</b>
Hexachloroethane	67-72-1	ND	2.83	0.189	ug/L		<b>U</b>	
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.89	0.0943	ug/L		<b>U</b>	
Isophorone	78-59-1	0.257	0.943	0.0943	ug/L	J,DX	<b>J</b>	<b>DNQ</b>
Naphthalene	91-20-3	ND	0.943	0.0943	ug/L		<b>U</b>	
Nitrobenzene	98-95-3	ND	0.943	0.0943	ug/L		<b>U</b>	
N-Nitrosodimethylamine	62-75-9	ND	1.89	0.0943	ug/L	BA	<b>UJ</b>	<b>L</b>
N-Nitrosodi-n-propylamine	621-64-7	ND	1.89	0.0943	ug/L		<b>U</b>	
N-Nitrosodiphenylamine	86-30-6	ND	0.943	0.0943	ug/L		<b>U</b>	
Pentachlorophenol	87-86-5	ND	1.89	0.377	ug/L		<b>U</b>	
Phenanthrene	85-01-8	ND	0.472	0.0943	ug/L		<b>U</b>	
Phenol	108-95-2	ND	0.943	0.283	ug/L		<b>UJ</b>	<b>C</b>
Pyrene	129-00-0	ND	0.472	0.0943	ug/L		<b>U</b>	

*Analysis Method 8015B*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8278-1	<b>Sample Date:</b>	4/11/2012 11:00:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
C13-C28	STL01628	0.13	0.47	0.094	mg/L	J,DX	J	DNQ
GRO (C4-C12)	STL00350	0.046	0.050	0.025	mg/L	J,DX	J	DNQ

*Analysis Method Gamma Spec K-40 CS-137*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Cesium-137	10045973	-0.824	20	3.23	pCi/L	U	U	
Potassium-40	13966002	-7.2	25	31.8	pCi/L	U	U	

*Analysis Method Gross Alpha and Beta*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Gross Alpha	12587461	0.226	3	0.872	pCi/L	U	UJ	C
Gross Beta	12587472	4.16	4	1.26	pCi/L			

*Analysis Method Radium 226*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-226	13982633	0.354	1	0.497	pCi/L	U	U	

*Analysis Method Radium 228*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-228	15262201	-0.025	1	0.381	pCi/L	U	U	

*Analysis Method SM 2340B*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Hardness, as CaCO3	STL00009	140	0.33	0.17	mg/L			
Hardness, as CaCO3, Dissolved	STL00009	130	0.33	0.17	mg/L			

*Analysis Method SM 5310B*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Total Organic Carbon	7440-44-0	18	5.0	3.8	mg/L			

*Analysis Method SM 5540C*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Methylene Blue Active Substances	STL00077	0.074	0.10	0.050	mg/L	J,DX	J	DNQ

*Analysis Method Strontium 90*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Strontium-90	10098972	0.378	2	0.901	pCi/L	U	U	

*Analysis Method Tritium*

<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Tritium	10028178	5.22	500	172	pCi/L	U	U	

*Analysis Method*    *Uranium, Combined*

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<b>Sample Name</b>	Outfall 002 Grab	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	440-8277-1	<b>Sample Date:</b>	4/11/2012 2:50:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Uranium, Total		0.147	1	0.019	pCi/L	J	J	DNQ

---



# TRUESDAIL LABORATORIES, INC.

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## REPORT

**Client:** TestAmerica Analytical - Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Laboratory No. 801025

Page 1 of 2

Printed 4/24/2012

Attention: Debby Wilson

Project Name: Boeing SSFL outfalls

Project Number: 44002624

P.O. Number: 440-8277-1

Release Number: 440-8277-1

Samples Received on 4/13/2012

Field ID	Lab ID	Collected	Matrix
Outfall 002 (440-8277) Outfall 002 (440-8277-1)	801025-001	04/11/2012 14:50	Water

### EPA 8315 M-Hydrazines (water)

Batch 709867

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801025-001 Hydrazine	ug/L	04/14/2012 19:39	1	0.439	1.00	ND
Monomethyl Hydrazine	ug/L	04/14/2012 19:39	1	1.77	5.00	ND
Unsymmetrical Dimethyl Hydrazine	ug/L	04/14/2012 19:39	1	1.13	5.00	ND

### Method Blank

Parameter	Unit	DF	Result
Hydrazine	ug/L	1	ND
Monomethyl Hydrazine	ug/L	1	ND
Unsymmetrical Dimethyl Hydr:	ug/L	1	ND

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	9.38	10.0	93.8	50 - 150
Monomethyl Hydrazine	ug/L	1	34.7	50.0	69.4	50 - 150
Unsymmetrical Dimethyl Hydr:	ug/L	1	34.2	50.0	68.4	50 - 150

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	8.65	10.0	86.5	50 - 150
Monomethyl Hydrazine	ug/L	1	39.9	50.0	79.8	50 - 150
Unsymmetrical Dimethyl Hydr:	ug/L	1	40.7	50.0	81.4	50 - 150

Level IV

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



# **APPENDIX G**

## **Section 4**

Outfall 002 – April 11, 2012

Test America Analytical Laboratory Report



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-8277-1

Client Project/Site: Boeing SSFL outfalls

Sampling Event: Annual Outfall 001

For:

MWH Americas Inc

618 Michillinda Avenue, Suite 200

Arcadia, California 91007

Attn: Bronwyn Kelly



Authorized for release by:

5/16/2012 11:56:49 AM

Debby Wilson

Project Manager I

[debby.wilson@testamericainc.com](mailto:debby.wilson@testamericainc.com)

### LINKS

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results through  
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Have a Question?



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

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

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

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



---

Debby Wilson  
Project Manager I  
5/16/2012 11:56:49 AM



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# Sample Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-8277-1	Outfall 002 Grab	Water	04/11/12 14:50	04/11/12 18:30
440-8277-2	Trip Blank	Water	04/12/12 14:13	04/11/12 18:30
440-8278-1	Outfall 002 Grab	Water	04/11/12 11:00	04/11/12 18:30
440-8278-2	Trip Blanks	Water	04/11/12 11:00	04/11/12 18:30
S204062-01	OUTFALL 018 (440-8282-1)	WATER		

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# Case Narrative

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Job ID: 440-8277-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-8277-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/11/2012 6:30 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 7.2 C and 8.1 C.

#### GC/MS VOA

Method(s) 624: The sample spiked had a pH of less than 2. 2-Chloroethylvinylether degrades under acidic conditions: 440-8283-A-1 MS and 440-8283-A-1 MSD

Method(s) 8260B SIM: Surrogate recovery for the following sample(s) was outside the upper control limit: 440-8277-1, 440-8689-1, and 440-8282-1. These sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

#### GC/MS Semi VOA

Method(s) 625: The continuing calibration verification (CCV) for 2-nitroaniline, 4-nitrophenol, hexachlorocyclopentadiene, and n-nitrosodi-n-propylamine associated with batch 21217 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 625: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 20598. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 625: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 20598 exceeded control limits for the following analytes: 2-nitroaniline and 4-nitrophenol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 625: The laboratory control sample (LCS) and / or the laboratory control sample duplicate (LCSD) for batch 20598 exceeded control limits for the following analytes: benzidine. Per the EPA method, benzidine is known to be subject to oxidative losses during solvent concentration.

Method(s) 625: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 20598 exceeded control limits for the following analytes: n-nitrosodimethylamine.

Method(s) 625: Surrogate recovery for the following sample(s) was outside the upper control limit: (MB 440-20598/1-A). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

#### HPLC

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for nitrite in batch 19241 were outside control limits due to matrix effects. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for phosphate in batch 19241 were outside control limits due to matrix effects. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

#### GC VOA

No analytical or quality issues were noted.

## Case Narrative

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

### Job ID: 440-8277-1 (Continued)

#### Laboratory: TestAmerica Irvine (Continued)

##### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19875. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: The continuing calibration verification (CCV) for 1260 associated with batch 20064 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 19875. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: The continuing calibration verification (CCV) for DDE, a-BHC, d-BHC ,DDD ,DDT, Endosulf sulfate associated with batch 20597 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8015B: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 20179. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

##### Metals

Method(s) 200.7 Rev 4.4: The method blank for preparation batch 440-20778 contained calcium above the reporting limit (RL). The associated sample(s) contained detects for this analyte at concentrations greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 200.7 Rev 4.4: The method blank for preparation batch 19452 contained Ca above the reporting limit (RL). The associated sample(s) contained detects for this analyte at concentrations greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Aluminum in batch 21053 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 21053 for Aluminum was outside control limits. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision met acceptance criteria.

No other analytical or quality issues were noted.

##### General Chemistry

Method(s) 1664A: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 21254. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

##### Biology

Method(s) SM 9221E, SM 9221F: The following sample(s) was received outside of holding time: Outfall 002 Grab (440-8278-1).

No other analytical or quality issues were noted.

##### WATER, 1613B, Dioxins/Furans with Totals

Sample: 1

Some analytes in this sample and the associated method blank (MB) 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.

Some analytes in the MB are 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

# Case Narrative

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

---

## Job ID: 440-8277-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

method required 2.5:1.

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

#### Organic Prep

No analytical or quality issues were noted.

#### VOA Prep

No analytical or quality issues were noted.

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# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

**Date Collected: 04/11/12 14:50**

**Matrix: Water**

**Date Received: 04/11/12 18:30**

**Method: 8260B SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0	1.0	ug/L			04/18/12 23:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	126	AY	80 - 120					04/18/12 23:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Acenaphthylene	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Aniline	ND		9.43	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
Anthracene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzidine	ND	LR	4.72	0.943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzo[a]anthracene	ND		4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzo[b]fluoranthene	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzo[k]fluoranthene	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
<b>Benzoic acid</b>	<b>2.96</b>	<b>J,DX</b>	18.9	2.83	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzo[a]pyrene	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Bis(2-chloroethoxy)methane	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Bis(2-chloroethyl)ether	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Bis(2-ethylhexyl) phthalate	ND		4.72	1.60	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Bromophenyl phenyl ether	ND		0.943	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Butyl benzyl phthalate	ND		4.72	0.660	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Chloro-3-methylphenol	ND		1.89	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Chloronaphthalene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Chlorophenol	ND		0.943	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Chlorophenyl phenyl ether	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Chrysene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Dibenz(a,h)anthracene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Di-n-butyl phthalate	ND		1.89	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
1,2-Dichlorobenzene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
1,3-Dichlorobenzene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
1,4-Dichlorobenzene	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
3,3'-Dichlorobenzidine	ND		4.72	0.472	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,4-Dichlorophenol	ND		1.89	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Diethyl phthalate	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,4-Dimethylphenol	ND		1.89	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
Dimethyl phthalate	ND		0.472	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
4,6-Dinitro-2-methylphenol	ND		4.72	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,4-Dinitrophenol	ND		4.72	0.849	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,4-Dinitrotoluene	ND		4.72	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,6-Dinitrotoluene	ND		4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Di-n-octyl phthalate	ND		4.72	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.943	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Fluoranthene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Fluorene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Hexachlorobenzene	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Hexachlorobutadiene	ND		1.89	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Hexachloroethane	ND		2.83	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Hexachlorocyclopentadiene	ND		4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Indeno[1,2,3-cd]pyrene	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	0.257	J,DX	0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Methylphenol	ND		4.72	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
Naphthalene	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Nitrobenzene	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Nitrophenol	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Nitrophenol	ND	LQ	4.72	2.36	ug/L		04/18/12 18:02	04/29/12 16:00	1
N-Nitrosodimethylamine	ND	BA	1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
N-Nitrosodiphenylamine	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
N-Nitrosodi-n-propylamine	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Pentachlorophenol	ND		1.89	0.377	ug/L		04/18/12 18:02	04/29/12 16:00	1
Phenanthrene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Phenol	ND		0.943	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
Pyrene	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
1,2,4-Trichlorobenzene	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
2,4,6-Trichlorophenol	ND		0.943	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Methylphenol	ND		1.89	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Chloroaniline	ND		1.89	0.283	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Methylnaphthalene	ND		0.943	0.189	ug/L		04/18/12 18:02	04/29/12 16:00	1
2-Nitroaniline	ND	LQ	4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
3-Nitroaniline	ND		4.72	0.943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Dibenzofuran	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
4-Nitroaniline	ND		4.72	0.472	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzo[g,h,i]perylene	ND		4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
Benzyl alcohol	ND		4.72	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1
bis (2-chloroisopropyl) ether	ND		0.472	0.0943	ug/L		04/18/12 18:02	04/29/12 16:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	104		50 - 120	04/18/12 18:02	04/29/12 16:00	1
2-Fluorophenol	84		30 - 120	04/18/12 18:02	04/29/12 16:00	1
2,4,6-Tribromophenol	116		40 - 120	04/18/12 18:02	04/29/12 16:00	1
Nitrobenzene-d5	106		45 - 120	04/18/12 18:02	04/29/12 16:00	1
Terphenyl-d14	122		50 - 125	04/18/12 18:02	04/29/12 16:00	1
Phenol-d6	96		35 - 120	04/18/12 18:02	04/29/12 16:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1221	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1232	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1242	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1248	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1254	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1
Aroclor 1260	ND		0.48	0.24	ug/L		04/15/12 14:34	04/16/12 22:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	93		45 - 120	04/15/12 14:34	04/16/12 22:44	1

**Method: 608 Pesticides - Organochlorine Pesticides Low level**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0048	0.0014	ug/L		04/15/12 14:34	04/18/12 21:59	1
alpha-BHC	ND		0.0048	0.0024	ug/L		04/15/12 14:34	04/18/12 21:59	1
beta-BHC	ND		0.0095	0.0038	ug/L		04/15/12 14:34	04/18/12 21:59	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.095	0.0076	ug/L		04/15/12 14:34	04/18/12 21:59	1
delta-BHC	ND		0.0048	0.0033	ug/L		04/15/12 14:34	04/18/12 21:59	1
Dieldrin	ND		0.0048	0.0019	ug/L		04/15/12 14:34	04/18/12 21:59	1
Endosulfan I	ND		0.0048	0.0029	ug/L		04/15/12 14:34	04/18/12 21:59	1
Endosulfan II	ND		0.0048	0.0019	ug/L		04/15/12 14:34	04/18/12 21:59	1
Endosulfan sulfate	ND		0.0095	0.0029	ug/L		04/15/12 14:34	04/18/12 21:59	1
Endrin	ND		0.0048	0.0019	ug/L		04/15/12 14:34	04/18/12 21:59	1
Endrin aldehyde	ND		0.0095	0.0019	ug/L		04/15/12 14:34	04/18/12 21:59	1
gamma-BHC (Lindane)	ND		0.0095	0.0029	ug/L		04/15/12 14:34	04/18/12 21:59	1
Heptachlor	ND		0.0095	0.0029	ug/L		04/15/12 14:34	04/18/12 21:59	1
Heptachlor epoxide	ND		0.0048	0.0024	ug/L		04/15/12 14:34	04/18/12 21:59	1
Toxaphene	ND		0.48	0.24	ug/L		04/15/12 14:34	04/18/12 21:59	1
4,4'-DDD	ND		0.0048	0.0038	ug/L		04/15/12 14:34	04/18/12 21:59	1
4,4'-DDE	ND		0.0048	0.0029	ug/L		04/15/12 14:34	04/18/12 21:59	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		04/15/12 14:34	04/18/12 21:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Tetrachloro-m-xylene	76		35 - 115				04/15/12 14:34	04/18/12 21:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			04/11/12 23:56	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		5.0	4.0	mg/L			04/12/12 15:03	10
Nitrate as N	0.23		0.11	0.080	mg/L			04/12/12 13:22	1
Nitrate Nitrite as N	0.23	J,DX	0.26	0.19	mg/L			04/12/12 13:22	1
Sulfate	130		5.0	4.0	mg/L			04/12/12 15:03	10
Nitrite as N	ND		0.15	0.11	mg/L			04/12/12 13:22	1

**Method: 314.0 - Perchlorate (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/19/12 15:20	1

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000036	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
Total TCDD	ND		0.000010	0.00000036	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,7,8-PeCDD	ND		0.000050	0.0000020	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
Total PeCDD	ND		0.000050	0.0000020	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000093	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000010	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000015	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
Total HxCDD	ND		0.000050	0.00000093	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,4,6,7,8-HpCDD	0.0000037	J	0.000050	0.0000011	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
Total HpCDD	0.0000066	J Q B	0.000050	0.0000011	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
OCDD	0.000014	J Q	0.00010	0.0000016	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
2,3,7,8-TCDF	ND		0.000010	0.0000015	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
Total TCDF	ND		0.000010	0.0000015	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,7,8-PeCDF	ND		0.000050	0.0000015	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
2,3,4,7,8-PeCDF	ND		0.000050	0.0000016	ug/L		04/17/12 09:00	04/21/12 23:11	0.98

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	ND		0.000050	0.0000015	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>1,2,3,4,7,8-HxCDF</b>	<b>0.0000026</b>	<b>J Q</b>	0.000050	0.00000066	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000070	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>2,3,4,6,7,8-HxCDF</b>	<b>0.0000012</b>	<b>J</b>	0.000050	0.00000065	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>1,2,3,7,8,9-HxCDF</b>	<b>0.0000016</b>	<b>J</b>	0.000050	0.00000076	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>Total HxCDF</b>	<b>0.0000095</b>	<b>J Q</b>	0.000050	0.00000068	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>1,2,3,4,6,7,8-HpCDF</b>	<b>0.0000036</b>	<b>J Q B</b>	0.000050	0.0000013	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>1,2,3,4,7,8,9-HpCDF</b>	<b>0.0000047</b>	<b>J Q</b>	0.000050	0.0000016	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>Total HpCDF</b>	<b>0.000014</b>	<b>J Q B</b>	0.000050	0.0000014	ug/L		04/17/12 09:00	04/21/12 23:11	0.98
<b>OCDF</b>	<b>0.0000074</b>	<b>J Q B</b>	0.00010	0.0000025	ug/L		04/17/12 09:00	04/21/12 23:11	0.98

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	89		35 - 197	04/17/12 09:00	04/21/12 23:11	0.98

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	48		25 - 164	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,7,8-PeCDD	48		25 - 181	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,6,7,8-HxCDD	52		28 - 130	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,4,6,7,8-HpCDD	53		23 - 140	04/17/12 09:00	04/21/12 23:11	0.98
13C-OCDD	61		17 - 157	04/17/12 09:00	04/21/12 23:11	0.98
13C-2,3,7,8-TCDF	51		24 - 169	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,7,8-PeCDF	49		24 - 185	04/17/12 09:00	04/21/12 23:11	0.98
13C-2,3,4,7,8-PeCDF	52		21 - 178	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,6,7,8-HxCDF	54		26 - 123	04/17/12 09:00	04/21/12 23:11	0.98
13C-2,3,4,6,7,8-HxCDF	54		28 - 136	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,7,8,9-HxCDF	54		29 - 147	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,4,6,7,8-HpCDF	55		28 - 143	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,4,7,8,9-HpCDF	59		26 - 138	04/17/12 09:00	04/21/12 23:11	0.98
13C-1,2,3,4,7,8-HxCDF	56		26 - 152	04/17/12 09:00	04/21/12 23:11	0.98

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	7.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
<b>Boron</b>	<b>0.096</b>	<b>MB</b>	0.050	0.020	mg/L		04/19/12 13:47	04/19/12 22:31	1
Beryllium	ND		2.0	0.90	ug/L		04/19/12 13:47	04/19/12 22:31	1
Chromium	ND		5.0	2.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
<b>Iron</b>	<b>0.14</b>		0.040	0.015	mg/L		04/19/12 13:47	04/19/12 22:31	1
Nickel	ND		10	2.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
Vanadium	ND		10	3.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
Zinc	ND		20	6.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
Silver	ND		10	6.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
<b>Barium</b>	<b>29</b>		10	6.0	ug/L		04/19/12 13:47	04/19/12 22:31	1
<b>Manganese</b>	<b>12</b>	<b>J,DX</b>	20	7.0	ug/L		04/19/12 13:47	04/19/12 22:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	7.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
<b>Boron</b>	<b>0.092</b>	<b>MB</b>	0.050	0.020	mg/L		04/20/12 09:32	04/20/12 17:34	1
Beryllium	ND		2.0	0.90	ug/L		04/20/12 09:32	04/20/12 17:34	1
Chromium	ND		5.0	2.0	ug/L		04/20/12 09:32	04/20/12 17:34	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.017	J,DX	0.040	0.015	mg/L		04/20/12 09:32	04/20/12 17:34	1
Nickel	ND		10	2.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
Vanadium	ND		10	3.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
Zinc	ND		20	6.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
Silver	ND		10	6.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
Barium	30		10	6.0	ug/L		04/20/12 09:32	04/20/12 17:34	1
Manganese	8.4	J,DX	20	7.0	ug/L		04/20/12 09:32	04/20/12 17:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/19/12 10:41	04/21/12 21:55	1
Copper	2.2		2.0	0.50	ug/L		04/19/12 10:41	04/21/12 21:55	1
Lead	ND		1.0	0.20	ug/L		04/19/12 10:41	04/23/12 16:06	1
Antimony	0.30	J,DX	2.0	0.30	ug/L		04/19/12 10:41	04/21/12 21:55	1
Selenium	ND		2.0	0.50	ug/L		04/19/12 10:41	04/21/12 21:55	1
Thallium	ND		1.0	0.20	ug/L		04/19/12 10:41	04/23/12 16:06	1
Cobalt	0.20	J,DX	1.0	0.10	ug/L		04/19/12 10:41	04/21/12 21:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/20/12 09:35	04/25/12 17:16	1
Copper	2.4		2.0	0.50	ug/L		04/20/12 09:35	04/26/12 18:54	1
Lead	ND		1.0	0.20	ug/L		04/20/12 09:35	04/25/12 17:16	1
Antimony	0.48	J,DX	2.0	0.30	ug/L		04/20/12 09:35	04/25/12 17:16	1
Selenium	ND		2.0	0.50	ug/L		04/20/12 09:35	04/26/12 18:54	1
Thallium	ND		1.0	0.20	ug/L		04/20/12 09:35	04/25/12 17:16	1
Cobalt	0.20	J,DX	1.0	0.10	ug/L		04/20/12 09:35	04/26/12 18:54	1

**Method: 245.1 - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/12/12 18:47	04/13/12 21:16	1

**Method: 245.1 - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/12/12 20:37	04/13/12 22:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	140		0.33	0.17	mg/L			04/18/12 13:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	130		0.33	0.17	mg/L			04/23/12 11:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	2.6		0.10	0.040	NTU			04/12/12 14:34	1
Total Dissolved Solids	330		10	10	mg/L			04/13/12 10:06	1
Total Suspended Solids	13		10	10	mg/L			04/17/12 22:29	1
Cyanide, Total	ND		5.0	3.0	ug/L		04/17/12 17:12	04/18/12 14:58	1
Fluoride	0.17		0.10	0.020	mg/L			04/16/12 06:30	1
Ammonia (as N)	0.280	J,DX	0.400	0.157	mg/L		04/12/12 16:52	04/12/12 21:16	1
Total Organic Carbon	18		5.0	3.8	mg/L			04/13/12 07:11	5



# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Client Sample ID: Outfall 002 Grab

Lab Sample ID: 440-8277-1

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

### General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	0.074	J,DX	0.10	0.050	mg/L			04/12/12 19:40	1
Biochemical Oxygen Demand	2.1		2.0	0.50	mg/L			04/13/12 09:06	1

### Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.824	U	20		pCi/L		04/19/12 00:00	04/19/12 00:00	1
Potassium-40	-7.2	U	25		pCi/L		04/19/12 00:00	04/19/12 00:00	1

### Method: Gross Alpha and Beta - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.226	U	3		pCi/L		04/24/12 00:00	04/25/12 08:07	1
Gross Beta	4.16		4		pCi/L		04/24/12 00:00	04/25/12 08:07	1

### Method: Radium 226 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.354	U	1		pCi/L		05/02/12 00:00	05/02/12 13:19	1

### Method: Radium 228 - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.025	U	1		pCi/L		04/25/12 00:00	04/25/12 14:21	1

### Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.378	U	2		pCi/L		04/24/12 00:00	04/24/12 08:20	1

### Method: Tritium - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	5.22	U	500		pCi/L		04/19/12 00:00	04/19/12 20:20	1

### Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.147	J	1		pCi/L		04/25/12 00:00	04/25/12 01:38	1

## Client Sample ID: Trip Blank

Lab Sample ID: 440-8277-2

Date Collected: 04/12/12 14:13

Matrix: Water

Date Received: 04/11/12 18:30

### Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.219	U	20		pCi/L		04/19/12 00:00	04/20/12 00:00	1
Potassium-40	4.5	U	25		pCi/L		04/19/12 00:00	04/20/12 00:00	1

### Method: Gross Alpha and Beta - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.051	U	3		pCi/L		04/24/12 00:00	04/25/12 08:07	1
Gross Beta	-0.209	U	4		pCi/L		04/24/12 00:00	04/25/12 08:07	1

### Method: Radium 226 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.25	U	1		pCi/L		05/02/12 00:00	05/02/12 13:19	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-8277-2**

Date Collected: 04/12/12 14:13

Matrix: Water

Date Received: 04/11/12 18:30

**Method: Radium 228 - RAD-226-228 combined**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.032	U	1		pCi/L		04/25/12 00:00	04/25/12 14:21	1

**Method: Strontium 90 - General Sub Contract Method**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.079	U	2		pCi/L		04/24/12 00:00	04/24/12 08:20	1

**Method: Uranium, Combined - General Sub Contract Method**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/25/12 00:00	04/25/12 01:42	1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8278-1**

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/18/12 03:00	1
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/12/12 17:17	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/18/12 03:00	1
Acrolein	ND		5.0	4.0	ug/L			04/12/12 17:17	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/18/12 03:00	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/12/12 17:17	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/18/12 03:00	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			04/18/12 03:00	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/18/12 03:00	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/18/12 03:00	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/18/12 03:00	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/18/12 03:00	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/18/12 03:00	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/18/12 03:00	1
Benzene	ND		0.50	0.28	ug/L			04/18/12 03:00	1
Bromoform	ND		0.50	0.40	ug/L			04/18/12 03:00	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.1	ug/L			04/18/12 03:00	1
Bromomethane	ND		0.50	0.42	ug/L			04/18/12 03:00	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/18/12 03:00	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/18/12 03:00	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/18/12 03:00	1
Chloroethane	ND		0.50	0.40	ug/L			04/18/12 03:00	1
Chloroform	ND		0.50	0.33	ug/L			04/18/12 03:00	1
Chloromethane	ND		0.50	0.40	ug/L			04/18/12 03:00	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/18/12 03:00	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/18/12 03:00	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/18/12 03:00	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/18/12 03:00	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/18/12 03:00	1
Toluene	ND		0.50	0.36	ug/L			04/18/12 03:00	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/18/12 03:00	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/18/12 03:00	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/18/12 03:00	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/18/12 03:00	1
Trichloroethene	ND		0.50	0.26	ug/L			04/18/12 03:00	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/18/12 03:00	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8278-1**

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	ND		2.0	0.40	ug/L			04/18/12 03:00	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/18/12 03:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120					04/12/12 17:17	1
Dibromofluoromethane (Surr)	102		80 - 120					04/12/12 17:17	1
4-Bromofluorobenzene (Surr)	106		80 - 120					04/18/12 03:00	1
Dibromofluoromethane (Surr)	107		80 - 120					04/18/12 03:00	1
Toluene-d8 (Surr)	106		80 - 120					04/18/12 03:00	1

**Method: 8015B - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>GRO (C4-C12)</b>	<b>0.046</b>	<b>J,DX</b>	0.050	0.025	mg/L			04/17/12 04:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		65 - 140					04/17/12 04:43	1

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>C13-C28</b>	<b>0.13</b>	<b>J,DX</b>	0.47	0.094	mg/L		04/17/12 09:41	04/18/12 07:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	75		45 - 120				04/17/12 09:41	04/18/12 07:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.9	1.4	mg/L		04/23/12 06:18	04/23/12 06:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Specific Conductance</b>	<b>630</b>		1.0	1.0	umhos/cm			04/16/12 10:04	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			04/12/12 18:14	1

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

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Coliform, Fecal</b>	<b>500</b>	<b>BU BV</b>	2.0	2.0	MPN/100mL			04/11/12 19:08	1

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

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Escherichia coli</b>	<b>500</b>	<b>BU BV</b>	2.0	2.0	MPN/100mL			04/11/12 19:08	1

**Client Sample ID: Trip Blanks**

**Lab Sample ID: 440-8278-2**

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/18/12 02:31	1
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/12/12 17:43	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/18/12 02:31	1
Acrolein	ND		5.0	4.0	ug/L			04/12/12 17:43	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/18/12 02:31	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/12/12 17:43	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/18/12 02:31	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			04/18/12 02:31	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Trip Blanks**

**Lab Sample ID: 440-8278-2**

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/18/12 02:31	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/18/12 02:31	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/18/12 02:31	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/18/12 02:31	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/18/12 02:31	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/18/12 02:31	1
Benzene	ND		0.50	0.28	ug/L			04/18/12 02:31	1
Bromoform	ND		0.50	0.40	ug/L			04/18/12 02:31	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.1	ug/L			04/18/12 02:31	1
Bromomethane	ND		0.50	0.42	ug/L			04/18/12 02:31	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/18/12 02:31	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/18/12 02:31	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/18/12 02:31	1
Chloroethane	ND		0.50	0.40	ug/L			04/18/12 02:31	1
Chloroform	ND		0.50	0.33	ug/L			04/18/12 02:31	1
Chloromethane	ND		0.50	0.40	ug/L			04/18/12 02:31	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/18/12 02:31	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/18/12 02:31	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/18/12 02:31	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/18/12 02:31	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/18/12 02:31	1
Toluene	ND		0.50	0.36	ug/L			04/18/12 02:31	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/18/12 02:31	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/18/12 02:31	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/18/12 02:31	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/18/12 02:31	1
Trichloroethene	ND		0.50	0.26	ug/L			04/18/12 02:31	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/18/12 02:31	1
Cyclohexane	ND		2.0	0.40	ug/L			04/18/12 02:31	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/18/12 02:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		04/12/12 17:43	1
Dibromofluoromethane (Surr)	103		80 - 120		04/12/12 17:43	1
4-Bromofluorobenzene (Surr)	106		80 - 120		04/18/12 02:31	1
Dibromofluoromethane (Surr)	105		80 - 120		04/18/12 02:31	1
Toluene-d8 (Surr)	106		80 - 120		04/18/12 02:31	1

**Client Sample ID: OUTFALL 018 (440-8282-1)**

**Lab Sample ID: S204062-01**

Date Collected:

Matrix: WATER

Date Received:

**Method: Gross Alpha and Beta - Gross Alpha/Beta**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.048	U	20		pCi/L		04/19/12 00:00	04/19/12 00:00	1
Gross Alpha	0.114	U	3		pCi/L		04/24/12 00:00	04/25/12 08:07	1
Gross Beta	4.32		4		pCi/L		04/24/12 00:00	04/25/12 08:07	1
Potassium-40	12.9	U	25		pCi/L		04/19/12 00:00	04/19/12 00:00	1
Radium-226	0.118	U	1		pCi/L		05/02/12 00:00	05/02/12 13:19	1
Radium-228	-0.12	U	1		pCi/L		04/25/12 00:00	04/25/12 14:21	1
Strontium-90	-0.277	U	2		pCi/L		04/24/12 00:00	04/24/12 08:20	1

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: OUTFALL 018 (440-8282-1)**

**Lab Sample ID: S204062-01**

**Date Collected:**

**Matrix: WATER**

**Date Received:**

**Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	47.2	U	500		pCi/L		04/19/12 00:00	04/19/12 20:20	1
Uranium, Total	0.047	J	1		pCi/L		04/25/12 00:00	04/25/12 03:59	1

- 1
- 2
- 3
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- 12
- 13

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

**Client Sample ID: Outfall 002 Grab**

**Lab Sample ID: 440-8277-1**

**Date Collected: 04/11/12 14:50**

**Matrix: Water**

**Date Received: 04/11/12 18:30**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	10 mL	10 mL	20473	04/18/12 23:15	GK	TAL IRV
Total/NA	Prep	625			1060 mL	2 mL	20598	04/18/12 18:02	DM	TAL IRV
Total/NA	Analysis	625		1			22607	04/29/12 16:00	AI	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	19875	04/15/12 14:34	AB	TAL IRV
Total/NA	Analysis	608 PCB LL		1			20064	04/16/12 22:44	CN	TAL IRV
Total/NA	Analysis	608 Pesticides		1			20597	04/18/12 21:59	DD	TAL IRV
Total/NA	Analysis	218.6		1	10 mL	10 mL	19011	04/11/12 23:56	SL	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	19241	04/12/12 13:22	NN	TAL IRV
Total/NA	Analysis	300.0		10	1 mL	1.0 mL	19242	04/12/12 15:03	NN	TAL IRV
Total/NA	Analysis	314.0		1	5 mL	1.0 mL	20654	04/19/12 15:20	MN	TAL IRV
Total	Prep	3542			1020.03 mL	20 uL	2108092_P	04/17/12 09:00	TL	TAL WSC
Total	Analysis	1613B		0.98			2108092	04/21/12 23:11	SO	TAL WSC
Total/NA	Prep	245.1			20 mL	20 mL	19442	04/12/12 18:47	SN	TAL IRV
Total/NA	Analysis	245.1		1			19759	04/13/12 21:16	DB	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	19467	04/12/12 20:37	SN	TAL IRV
Dissolved	Analysis	245.1		1			19759	04/13/12 22:55	DB	TAL IRV
Total/NA	Analysis	SM 2340B		1			20492	04/18/12 13:09	FR	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	20778	04/19/12 13:47	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			20942	04/19/12 22:31	VS	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	20964	04/20/12 09:32	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			21093	04/20/12 17:34	DP	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	20735	04/19/12 10:41	EN	TAL IRV
Total Recoverable	Analysis	200.8		1			21222	04/21/12 21:55	NH	TAL IRV
Dissolved	Analysis	SM 2340B		1			21322	04/23/12 11:19	FR	TAL IRV
Total Recoverable	Analysis	200.8		1			21383	04/23/12 16:06	NH	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	20965	04/20/12 09:35	EN	TAL IRV
Dissolved	Analysis	200.8		1			22049	04/25/12 17:16	RC	TAL IRV
Dissolved	Analysis	200.8		1			22325	04/26/12 18:54	RC	TAL IRV
Total/NA	Analysis	180.1		1			19369	04/12/12 14:34	RR	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	19455	04/12/12 19:40	NEA	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	19411	04/12/12 16:52	NP	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1			19480	04/12/12 21:16	NP	TAL IRV
Total/NA	Analysis	SM5210B		1			19553	04/13/12 09:06	QPD	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	19574	04/13/12 10:06	XL	TAL IRV
Total/NA	Analysis	SM 5310B		5			19604	04/13/12 07:11	FZ	TAL IRV
Total/NA	Analysis	SM 4500 F C		1			19968	04/16/12 06:30	FZ	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	20344	04/17/12 22:29	DK	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	20314	04/17/12 17:12	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			20530	04/18/12 14:58	PQI	TAL IRV
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8607	04/19/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/19/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/24/12 00:00		Eber-Rich

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Client Sample ID: Outfall 002 Grab

## Lab Sample ID: 440-8277-1

Date Collected: 04/11/12 14:50

Matrix: Water

Date Received: 04/11/12 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/25/12 08:07	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	05/02/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8607	05/02/12 13:19	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/25/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8607	04/25/12 14:21	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8607	04/24/12 08:20	SK	Eber-Rich
Total/NA	Analysis	Tritium		1			8607	04/19/12 20:20	WL	Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8607	04/25/12 01:38	LS	Eber-Rich

## Client Sample ID: Trip Blank

## Lab Sample ID: 440-8277-2

Date Collected: 04/12/12 14:13

Matrix: Water

Date Received: 04/11/12 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	General Prep		1			8607_P	04/19/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8607	04/20/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/24/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/25/12 08:07	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	05/02/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8607	05/02/12 13:19	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/25/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8607	04/25/12 14:21	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8607	04/24/12 08:20	SK	Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8607	04/25/12 01:42	LS	Eber-Rich

## Client Sample ID: Outfall 002 Grab

## Lab Sample ID: 440-8278-1

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	19207	04/12/12 17:17	AL	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20297	04/18/12 03:00	YK	TAL IRV
Total/NA	Analysis	8015B		1	10 mL	10 mL	19934	04/17/12 04:43	RG	TAL IRV
Total/NA	Prep	3510C			1060 mL	1 mL	20179	04/17/12 09:41	AV	TAL IRV
Total/NA	Analysis	8015B		1			20339	04/18/12 07:13	ES	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	19428	04/12/12 18:14	EC	TAL IRV
Total/NA	Analysis	120.1		1			19950	04/16/12 10:04	XL	TAL IRV
Total/NA	Prep	1664A			1030 mL	1000 mL	21239	04/23/12 06:18	DA	TAL IRV
Total/NA	Analysis	1664A		1			21254	04/23/12 06:54	DA	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	19325		ST	TAL IRV
							(Start)	04/11/12 19:08		
							(End)	04/14/12 15:46		

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Client Sample ID: Outfall 002 Grab

Lab Sample ID: 440-8278-1

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	19326		ST	TAL IRV
							(Start)	04/11/12 19:08		
							(End)	04/14/12 15:46		

## Client Sample ID: Trip Blanks

Lab Sample ID: 440-8278-2

Date Collected: 04/11/12 11:00

Matrix: Water

Date Received: 04/11/12 18:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	19207	04/12/12 17:43	AL	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20297	04/18/12 02:31	YK	TAL IRV

## Client Sample ID: OUTFALL 018 (440-8282-1)

Lab Sample ID: S204062-01

Date Collected:

Matrix: WATER

Date Received:

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/25/12 03:59	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/24/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/25/12 08:07	DVP	Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/19/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/19/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	05/02/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	05/02/12 13:19	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8607_P	04/25/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/25/12 14:21	ASM	Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/24/12 08:20	SK	Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8607	04/19/12 20:20	WL	Eber-Rich

**Laboratory References:**

- = Truesdail Laboratories Inc, 14201 Franklin Ave, Tustin, CA 92780
- Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804
- EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077
- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-19207/5**  
**Matrix: Water**  
**Analysis Batch: 19207**

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

Surrogate	MB MB		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	100		80 - 120

Prepared	Analyzed	Dil Fac
	04/12/12 09:29	1
	04/12/12 09:29	1

**Lab Sample ID: LCS 440-19207/6**  
**Matrix: Water**  
**Analysis Batch: 19207**

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	103		80 - 120

**Lab Sample ID: 440-7787-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 19207**

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	101		80 - 120

**Lab Sample ID: 440-7787-C-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19207**

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

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	102		80 - 120

**Lab Sample ID: MB 440-20297/4**  
**Matrix: Water**  
**Analysis Batch: 20297**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Trichlorotrifluoroethane(F-113)	ND		2.0	0.50	ug/L			04/17/12 18:28	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 18:28	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 18:28	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 18:28	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 18:28	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/17/12 18:28	1
Benzene	ND		0.50	0.28	ug/L			04/17/12 18:28	1
Bromoform	ND		0.50	0.40	ug/L			04/17/12 18:28	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	1.1	ug/L			04/17/12 18:28	1
Bromomethane	ND		0.50	0.42	ug/L			04/17/12 18:28	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/17/12 18:28	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-20297/4**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.50	0.36	ug/L			04/17/12 18:28	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Chloroethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Chloroform	ND		0.50	0.33	ug/L			04/17/12 18:28	1
Chloromethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/17/12 18:28	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 18:28	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 18:28	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 18:28	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 18:28	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 18:28	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 18:28	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Cyclohexane	ND		2.0	0.40	ug/L			04/17/12 18:28	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 18:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120		04/17/12 18:28	1
Dibromofluoromethane (Surr)	101		80 - 120		04/17/12 18:28	1
Toluene-d8 (Surr)	104		80 - 120		04/17/12 18:28	1

**Lab Sample ID: LCS 440-20297/5**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	26.7		ug/L		107	65 - 135
1,1,2,2-Tetrachloroethane	25.0	26.5		ug/L		106	55 - 130
1,1,2-Trichloroethane	25.0	24.4		ug/L		98	70 - 125
1,1-Dichloroethane	25.0	26.3		ug/L		105	70 - 125
1,1-Dichloroethene	25.0	24.1		ug/L		96	70 - 125
1,2-Dichlorobenzene	25.0	26.2		ug/L		105	75 - 120
1,2-Dichloroethane	25.0	28.3		ug/L		113	60 - 140
1,2-Dichloropropane	25.0	25.0		ug/L		100	70 - 125
1,3-Dichlorobenzene	25.0	27.9		ug/L		112	75 - 120
1,4-Dichlorobenzene	25.0	26.5		ug/L		106	75 - 120
Benzene	25.0	23.7		ug/L		95	70 - 120
Bromoform	25.0	19.7		ug/L		79	55 - 130
Bromomethane	25.0	26.6		ug/L		106	65 - 140
Carbon tetrachloride	25.0	24.8		ug/L		99	65 - 140
Chlorobenzene	25.0	27.4		ug/L		110	75 - 120
Dibromochloromethane	25.0	26.0		ug/L		104	70 - 140
Chloroethane	25.0	23.3		ug/L		93	60 - 140
Chloroform	25.0	27.2		ug/L		109	70 - 130
Chloromethane	25.0	24.8		ug/L		99	50 - 140

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCS 440-20297/5**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	25.0	25.5		ug/L		102	75 - 125
Bromodichloromethane	25.0	27.2		ug/L		109	70 - 135
Ethylbenzene	25.0	26.7		ug/L		107	75 - 125
Methylene Chloride	25.0	24.4		ug/L		98	55 - 130
Tetrachloroethene	25.0	26.3		ug/L		105	70 - 125
Toluene	25.0	25.6		ug/L		102	70 - 120
trans-1,2-Dichloroethene	25.0	24.8		ug/L		99	70 - 125
trans-1,3-Dichloropropene	25.0	26.8		ug/L		107	70 - 125
Trichlorofluoromethane	25.0	31.3		ug/L		125	65 - 145
Vinyl chloride	25.0	25.1		ug/L		100	55 - 135
Trichloroethene	25.0	26.8		ug/L		107	70 - 125
cis-1,2-Dichloroethene	25.0	25.6		ug/L		102	70 - 125
Xylenes, Total	75.0	80.7		ug/L		108	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
4-Bromofluorobenzene (Surr)	112		80 - 120
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	104		80 - 120

**Lab Sample ID: 440-8650-A-3 MS**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	25.6		ug/L		102	65 - 140
1,1,1,2-Tetrachloroethane	ND		25.0	25.3		ug/L		101	55 - 135
1,1,2-Trichloroethane	ND		25.0	23.7		ug/L		95	65 - 130
1,1-Dichloroethane	ND		25.0	25.0		ug/L		100	65 - 130
1,1-Dichloroethene	ND		25.0	22.7		ug/L		91	60 - 130
1,2-Dichlorobenzene	ND		25.0	25.4		ug/L		102	75 - 125
1,2-Dichloroethane	ND		25.0	27.5		ug/L		110	60 - 140
1,2-Dichloropropane	ND		25.0	24.1		ug/L		96	65 - 130
1,3-Dichlorobenzene	ND		25.0	26.3		ug/L		105	75 - 125
1,4-Dichlorobenzene	ND		25.0	25.3		ug/L		101	75 - 125
Benzene	ND		25.0	22.9		ug/L		92	65 - 125
Bromoform	ND		25.0	19.8		ug/L		79	55 - 135
Bromomethane	ND		25.0	25.2		ug/L		101	55 - 145
Carbon tetrachloride	ND		25.0	23.7		ug/L		95	65 - 140
Chlorobenzene	ND		25.0	26.6		ug/L		106	75 - 125
Dibromochloromethane	ND		25.0	26.3		ug/L		105	65 - 140
Chloroethane	ND		25.0	22.2		ug/L		89	55 - 140
Chloroform	ND		25.0	26.6		ug/L		106	65 - 135
Chloromethane	ND		25.0	23.3		ug/L		93	45 - 145
cis-1,3-Dichloropropene	ND		25.0	24.9		ug/L		100	70 - 130
Bromodichloromethane	ND		25.0	27.9		ug/L		112	70 - 135
Ethylbenzene	ND		25.0	25.6		ug/L		102	65 - 130
Methylene Chloride	1.9		25.0	25.2		ug/L		93	50 - 135
Tetrachloroethene	7.8		25.0	33.3		ug/L		102	65 - 130
Toluene	ND		25.0	24.3		ug/L		97	70 - 125

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: 440-8650-A-3 MS**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier	Added	Result	Qualifier					
trans-1,2-Dichloroethene	ND		25.0	23.7		ug/L		95	65 - 130	
trans-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	65 - 135	
Trichlorofluoromethane	ND		25.0	30.6		ug/L		122	60 - 145	
Vinyl chloride	ND		25.0	23.2		ug/L		93	45 - 140	
Trichloroethene	84		25.0	106		ug/L		88	65 - 125	
cis-1,2-Dichloroethene	ND		25.0	25.1		ug/L		100	65 - 130	
Xylenes, Total	ND		75.0	78.2		ug/L		104	60 - 130	
<b>MS MS</b>										
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	114		80 - 120							
Dibromofluoromethane (Surr)	105		80 - 120							
Toluene-d8 (Surr)	106		80 - 120							

**Lab Sample ID: 440-8650-A-3 MSD**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1,1-Trichloroethane	ND		25.0	25.4		ug/L		102	65 - 140	1.00	20
1,1,1,2,2-Tetrachloroethane	ND		25.0	25.0		ug/L		100	55 - 135	1.19	30
1,1,1,2-Trichloroethane	ND		25.0	23.3		ug/L		93	65 - 130	1.70	25
1,1-Dichloroethane	ND		25.0	24.8		ug/L		99	65 - 130	1.00	20
1,1-Dichloroethene	ND		25.0	23.1		ug/L		92	60 - 130	1.75	20
1,2-Dichlorobenzene	ND		25.0	25.1		ug/L		100	75 - 125	1.19	20
1,2-Dichloroethane	ND		25.0	27.1		ug/L		108	60 - 140	1.47	20
1,2-Dichloropropane	ND		25.0	23.2		ug/L		93	65 - 130	3.81	20
1,3-Dichlorobenzene	ND		25.0	26.5		ug/L		106	75 - 125	1.00	20
1,4-Dichlorobenzene	ND		25.0	25.1		ug/L		100	75 - 125	1.00	20
Benzene	ND		25.0	22.5		ug/L		90	65 - 125	1.76	20
Bromoform	ND		25.0	19.5		ug/L		78	55 - 135	1.53	25
Bromomethane	ND		25.0	25.0		ug/L		100	55 - 145	1.00	25
Carbon tetrachloride	ND		25.0	24.0		ug/L		96	65 - 140	1.26	25
Chlorobenzene	ND		25.0	25.6		ug/L		102	75 - 125	3.83	20
Dibromochloromethane	ND		25.0	25.7		ug/L		103	65 - 140	2.31	25
Chloroethane	ND		25.0	22.9		ug/L		92	55 - 140	3.10	25
Chloroform	ND		25.0	26.0		ug/L		104	65 - 135	2.28	20
Chloromethane	ND		25.0	23.5		ug/L		94	45 - 145	1.00	25
cis-1,3-Dichloropropene	ND		25.0	24.6		ug/L		98	70 - 130	1.21	20
Bromodichloromethane	ND		25.0	26.6		ug/L		106	70 - 135	4.77	20
Ethylbenzene	ND		25.0	25.1		ug/L		100	65 - 130	1.97	20
Methylene Chloride	1.9		25.0	24.7		ug/L		91	50 - 135	2.00	20
Tetrachloroethene	7.8		25.0	32.4		ug/L		99	65 - 130	2.74	20
Toluene	ND		25.0	24.4		ug/L		98	70 - 125	0.000	20
trans-1,2-Dichloroethene	ND		25.0	23.6		ug/L		94	65 - 130	0.000	20
trans-1,3-Dichloropropene	ND		25.0	25.5		ug/L		102	65 - 135	3.09	25
Trichlorofluoromethane	ND		25.0	29.5		ug/L		118	60 - 145	3.66	25
Vinyl chloride	ND		25.0	23.3		ug/L		93	45 - 140	0.000	30
Trichloroethene	84		25.0	102		ug/L		72	65 - 125	3.66	20
cis-1,2-Dichloroethene	ND		25.0	24.6		ug/L		98	65 - 130	2.01	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: 440-8650-A-3 MSD**

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total	ND		75.0	75.7		ug/L		101	60 - 130	3.25	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
4-Bromofluorobenzene (Surr)	110		80 - 120								
Dibromofluoromethane (Surr)	103		80 - 120								
Toluene-d8 (Surr)	104		80 - 120								

## Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-20473/2**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0	1.0	ug/L			04/18/12 15:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Dibromofluoromethane (Surr)	115		80 - 120					04/18/12 15:08	1

**Lab Sample ID: LCS 440-20473/3**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.22		ug/L		92	70 - 125
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
Dibromofluoromethane (Surr)	112		80 - 120				

**Lab Sample ID: 440-8769-A-2 MS**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		10.0	9.25		ug/L		93	70 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
Dibromofluoromethane (Surr)	114		80 - 120						

**Lab Sample ID: 440-8769-A-2 MSD**

**Matrix: Water**

**Analysis Batch: 20473**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		10.0	9.58		ug/L		96	70 - 130	3.51	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
Dibromofluoromethane (Surr)	117		80 - 120								

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-20598/1-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Acenaphthylene	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Aniline	ND		10.0	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
Anthracene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzidine	ND		5.00	1.00	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzo[a]anthracene	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzo[b]fluoranthene	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzo[k]fluoranthene	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzoic acid	ND		20.0	3.00	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzo[a]pyrene	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Bis(2-chloroethoxy)methane	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Bis(2-chloroethyl)ether	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Bromophenyl phenyl ether	ND		1.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Butyl benzyl phthalate	ND		5.00	0.700	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Chloronaphthalene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Chlorophenol	ND		1.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Chrysene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Dibenz(a,h)anthracene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Di-n-butyl phthalate	ND		2.00	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
1,2-Dichlorobenzene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
1,3-Dichlorobenzene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
3,3'-Dichlorobenzidine	ND		5.00	0.500	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4-Dichlorophenol	ND		2.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Diethyl phthalate	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4-Dimethylphenol	ND		2.00	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
Dimethyl phthalate	ND		0.500	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
4,6-Dinitro-2-methylphenol	ND		5.00	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4-Dinitrophenol	ND		5.00	0.900	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,6-Dinitrotoluene	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Di-n-octyl phthalate	ND		5.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Fluoranthene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Fluorene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Hexachlorobenzene	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Hexachlorobutadiene	ND		2.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Hexachloroethane	ND		3.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Hexachlorocyclopentadiene	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Indeno[1,2,3-cd]pyrene	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Isophorone	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Methylphenol	ND		5.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
Naphthalene	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Nitrobenzene	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Nitrophenol	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Nitrophenol	ND		5.00	2.50	ug/L		04/18/12 18:02	04/22/12 15:46	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-20598/1-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
N-Nitrosodimethylamine	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
N-Nitrosodiphenylamine	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
N-Nitrosodi-n-propylamine	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Pentachlorophenol	ND		2.00	0.400	ug/L		04/18/12 18:02	04/22/12 15:46	1
Phenanthrene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Phenol	ND		1.00	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
Pyrene	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
1,2,4-Trichlorobenzene	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4,6-Trichlorophenol	ND		1.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Methylphenol	ND		2.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Chloroaniline	ND		2.00	0.300	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Methylnaphthalene	ND		1.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
2-Nitroaniline	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
3-Nitroaniline	ND		5.00	1.00	ug/L		04/18/12 18:02	04/22/12 15:46	1
Dibenzofuran	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
4-Nitroaniline	ND		5.00	0.500	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzo[g,h,i]perylene	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Benzyl alcohol	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
bis (2-chloroisopropyl) ether	ND		0.500	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	117		50 - 120	04/18/12 18:02	04/22/12 15:46	1
2-Fluorophenol	88		30 - 120	04/18/12 18:02	04/22/12 15:46	1
2,4,6-Tribromophenol	127	AY	40 - 120	04/18/12 18:02	04/22/12 15:46	1
Nitrobenzene-d5	107		45 - 120	04/18/12 18:02	04/22/12 15:46	1
Terphenyl-d14	114		50 - 125	04/18/12 18:02	04/22/12 15:46	1
Phenol-d6	96		35 - 120	04/18/12 18:02	04/22/12 15:46	1

**Lab Sample ID: LCS 440-20598/2-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Acenaphthene	10.0	9.120		ug/L		91	60 - 120
Acenaphthylene	10.0	11.12		ug/L		111	60 - 120
Aniline	10.0	8.680	J,DX	ug/L		87	35 - 120
Anthracene	10.0	10.40		ug/L		104	65 - 120
Benzidine	10.0	3.140	J,DX	ug/L		31	30 - 160
Benzo[a]anthracene	10.0	10.86		ug/L		109	65 - 120
Benzo[b]fluoranthene	10.0	10.32		ug/L		103	55 - 125
Benzo[k]fluoranthene	10.0	9.260		ug/L		93	50 - 125
Benzoic acid	10.0	9.140	J,DX	ug/L		91	25 - 120
Benzo[a]pyrene	10.0	10.28		ug/L		103	55 - 130
Bis(2-chloroethoxy)methane	10.0	9.580		ug/L		96	55 - 120
Bis(2-chloroethyl)ether	10.0	8.840		ug/L		88	50 - 120
Bis(2-ethylhexyl) phthalate	10.0	11.60		ug/L		116	65 - 130
4-Bromophenyl phenyl ether	10.0	8.560		ug/L		86	60 - 120
Butyl benzyl phthalate	10.0	12.02		ug/L		120	55 - 130
4-Chloro-3-methylphenol	10.0	10.98		ug/L		110	60 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCS 440-20598/2-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	10.0	9.500		ug/L		95	60 - 120
2-Chlorophenol	10.0	8.540		ug/L		85	45 - 120
4-Chlorophenyl phenyl ether	10.0	9.020		ug/L		90	65 - 120
Chrysene	10.0	9.780		ug/L		98	65 - 120
Dibenz(a,h)anthracene	10.0	8.660		ug/L		87	50 - 135
Di-n-butyl phthalate	10.0	12.28		ug/L		123	60 - 125
1,2-Dichlorobenzene	10.0	7.320		ug/L		73	40 - 120
1,3-Dichlorobenzene	10.0	7.020		ug/L		70	35 - 120
1,4-Dichlorobenzene	10.0	7.060		ug/L		71	35 - 120
3,3'-Dichlorobenzidine	10.0	8.640		ug/L		86	45 - 135
2,4-Dichlorophenol	10.0	9.260		ug/L		93	55 - 120
Diethyl phthalate	10.0	10.22		ug/L		102	55 - 120
2,4-Dimethylphenol	10.0	8.620		ug/L		86	40 - 120
Dimethyl phthalate	10.0	9.520		ug/L		95	30 - 120
4,6-Dinitro-2-methylphenol	10.0	10.92		ug/L		109	45 - 120
2,4-Dinitrophenol	10.0	6.220		ug/L		62	40 - 120
2,4-Dinitrotoluene	10.0	9.740		ug/L		97	65 - 120
2,6-Dinitrotoluene	10.0	9.400		ug/L		94	65 - 120
Di-n-octyl phthalate	10.0	11.68		ug/L		117	65 - 135
1,2-Diphenylhydrazine(as Azobenzene)	10.0	10.46		ug/L		105	60 - 120
Fluoranthene	10.0	10.98		ug/L		110	60 - 120
Fluorene	10.0	9.460		ug/L		95	65 - 120
Hexachlorobenzene	10.0	9.040		ug/L		90	60 - 120
Hexachlorobutadiene	10.0	6.640		ug/L		66	40 - 120
Hexachloroethane	10.0	6.920		ug/L		69	35 - 120
Hexachlorocyclopentadiene	10.0	7.100		ug/L		71	25 - 120
Indeno[1,2,3-cd]pyrene	10.0	9.340		ug/L		93	45 - 135
Isophorone	10.0	10.44		ug/L		104	50 - 120
4-Methylphenol	10.0	9.720		ug/L		97	50 - 120
Naphthalene	10.0	8.280		ug/L		83	55 - 120
Nitrobenzene	10.0	9.600		ug/L		96	55 - 120
2-Nitrophenol	10.0	9.460		ug/L		95	50 - 120
4-Nitrophenol	10.0	13.44	LQ	ug/L		134	45 - 120
N-Nitrosodimethylamine	10.0	7.360		ug/L		74	45 - 120
N-Nitrosodiphenylamine	10.0	9.160		ug/L		92	60 - 120
N-Nitrosodi-n-propylamine	10.0	11.24		ug/L		112	45 - 120
Pentachlorophenol	10.0	8.920		ug/L		89	24 - 121
Phenanthrene	10.0	9.660		ug/L		97	65 - 120
Phenol	10.0	8.420		ug/L		84	40 - 120
Pyrene	10.0	10.76		ug/L		108	55 - 125
1,2,4-Trichlorobenzene	10.0	7.280		ug/L		73	45 - 120
2,4,6-Trichlorophenol	10.0	9.980		ug/L		100	55 - 120
2-Methylphenol	10.0	9.060		ug/L		91	50 - 120
4-Chloroaniline	10.0	8.800		ug/L		88	55 - 120
2-Methylnaphthalene	10.0	9.440		ug/L		94	55 - 120
2-Nitroaniline	10.0	11.54		ug/L		115	65 - 120
3-Nitroaniline	10.0	9.140		ug/L		91	60 - 120
Dibenzofuran	10.0	9.440		ug/L		94	65 - 120
4-Nitroaniline	10.0	9.380		ug/L		94	55 - 125



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCS 440-20598/2-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[g,h,i]perylene	10.0	9.240		ug/L		92	45 - 135
Benzyl alcohol	10.0	9.560		ug/L		96	50 - 120
bis (2-chloroisopropyl) ether	10.0	9.680		ug/L		97	45 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	100		50 - 120
2-Fluorophenol	74		30 - 120
2,4,6-Tribromophenol	104		40 - 120
Nitrobenzene-d5	103		45 - 120
Terphenyl-d14	108		50 - 125
Phenol-d6	84		35 - 120

**Lab Sample ID: LCSD 440-20598/3-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	10.0	9.720		ug/L		97	60 - 120	6	20
Acenaphthylene	10.0	11.84		ug/L		118	60 - 120	6	20
Aniline	10.0	10.04		ug/L		100	35 - 120	15	30
Anthracene	10.0	10.44		ug/L		104	65 - 120	0	20
Benzidine	10.0	2.520	J,DX LR	ug/L		25	30 - 160	22	35
Benzo[a]anthracene	10.0	10.68		ug/L		107	65 - 120	2	20
Benzo[b]fluoranthene	10.0	10.24		ug/L		102	55 - 125	1	25
Benzo[k]fluoranthene	10.0	10.00		ug/L		100	50 - 125	8	20
Benzoic acid	10.0	9.780	J,DX	ug/L		98	25 - 120	7	30
Benzo[a]pyrene	10.0	10.12		ug/L		101	55 - 130	2	25
Bis(2-chloroethoxy)methane	10.0	10.40		ug/L		104	55 - 120	8	20
Bis(2-chloroethyl)ether	10.0	9.620		ug/L		96	50 - 120	8	20
Bis(2-ethylhexyl) phthalate	10.0	11.38		ug/L		114	65 - 130	2	20
4-Bromophenyl phenyl ether	10.0	8.980		ug/L		90	60 - 120	5	25
Butyl benzyl phthalate	10.0	11.60		ug/L		116	55 - 130	4	20
4-Chloro-3-methylphenol	10.0	10.94		ug/L		109	60 - 120	0	25
2-Chloronaphthalene	10.0	10.08		ug/L		101	60 - 120	6	20
2-Chlorophenol	10.0	8.960		ug/L		90	45 - 120	5	25
4-Chlorophenyl phenyl ether	10.0	9.800		ug/L		98	65 - 120	8	20
Chrysene	10.0	9.300		ug/L		93	65 - 120	5	20
Dibenz(a,h)anthracene	10.0	9.160		ug/L		92	50 - 135	6	25
Di-n-butyl phthalate	10.0	11.80		ug/L		118	60 - 125	4	20
1,2-Dichlorobenzene	10.0	8.020		ug/L		80	40 - 120	9	25
1,3-Dichlorobenzene	10.0	7.820		ug/L		78	35 - 120	11	25
1,4-Dichlorobenzene	10.0	7.780		ug/L		78	35 - 120	10	25
3,3'-Dichlorobenzidine	10.0	7.960		ug/L		80	45 - 135	8	25
2,4-Dichlorophenol	10.0	9.780		ug/L		98	55 - 120	5	20
Diethyl phthalate	10.0	10.96		ug/L		110	55 - 120	7	30
2,4-Dimethylphenol	10.0	8.760		ug/L		88	40 - 120	2	25
Dimethyl phthalate	10.0	10.28		ug/L		103	30 - 120	8	30
4,6-Dinitro-2-methylphenol	10.0	10.52		ug/L		105	45 - 120	4	25
2,4-Dinitrophenol	10.0	6.600		ug/L		66	40 - 120	6	25

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCSD 440-20598/3-A**

**Matrix: Water**

**Analysis Batch: 21217**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 20598**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
2,4-Dinitrotoluene	10.0	10.38		ug/L		104	65 - 120	6	20
2,6-Dinitrotoluene	10.0	10.24		ug/L		102	65 - 120	9	20
Di-n-octyl phthalate	10.0	10.96		ug/L		110	65 - 135	6	20
1,2-Diphenylhydrazine(as Azobenzene)	10.0	11.44		ug/L		114	60 - 120	9	25
Fluoranthene	10.0	10.86		ug/L		109	60 - 120	1	20
Fluorene	10.0	10.20		ug/L		102	65 - 120	8	20
Hexachlorobenzene	10.0	9.060		ug/L		91	60 - 120	0	20
Hexachlorobutadiene	10.0	7.840		ug/L		78	40 - 120	17	25
Hexachloroethane	10.0	7.760		ug/L		78	35 - 120	11	25
Hexachlorocyclopentadiene	10.0	8.660		ug/L		87	25 - 120	20	30
Indeno[1,2,3-cd]pyrene	10.0	9.140		ug/L		91	45 - 135	2	25
Isophorone	10.0	10.36		ug/L		104	50 - 120	1	20
4-Methylphenol	10.0	10.72		ug/L		107	50 - 120	10	20
Naphthalene	10.0	9.040		ug/L		90	55 - 120	9	20
Nitrobenzene	10.0	10.34		ug/L		103	55 - 120	7	25
2-Nitrophenol	10.0	9.740		ug/L		97	50 - 120	3	25
4-Nitrophenol	10.0	13.52	LQ	ug/L		135	45 - 120	1	30
N-Nitrosodimethylamine	10.0	10.18	BA	ug/L		102	45 - 120	32	20
N-Nitrosodiphenylamine	10.0	9.500		ug/L		95	60 - 120	4	20
N-Nitrosodi-n-propylamine	10.0	11.52		ug/L		115	45 - 120	2	20
Pentachlorophenol	10.0	8.280		ug/L		83	24 - 121	7	25
Phenanthrene	10.0	9.900		ug/L		99	65 - 120	2	20
Phenol	10.0	9.920		ug/L		99	40 - 120	16	25
Pyrene	10.0	10.98		ug/L		110	55 - 125	2	25
1,2,4-Trichlorobenzene	10.0	7.880		ug/L		79	45 - 120	8	20
2,4,6-Trichlorophenol	10.0	10.54		ug/L		105	55 - 120	5	30
2-Methylphenol	10.0	9.620		ug/L		96	50 - 120	6	20
4-Chloroaniline	10.0	10.34		ug/L		103	55 - 120	16	25
2-Methylnaphthalene	10.0	9.780		ug/L		98	55 - 120	4	20
2-Nitroaniline	10.0	12.48	LQ	ug/L		125	65 - 120	8	20
3-Nitroaniline	10.0	10.04		ug/L		100	60 - 120	9	25
Dibenzofuran	10.0	10.16		ug/L		102	65 - 120	7	20
4-Nitroaniline	10.0	9.500		ug/L		95	55 - 125	1	20
Benzo[g,h,i]perylene	10.0	9.020		ug/L		90	45 - 135	2	25
Benzyl alcohol	10.0	11.42		ug/L		114	50 - 120	18	20
bis (2-chloroisopropyl) ether	10.0	10.38		ug/L		104	45 - 120	7	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	108		50 - 120
2-Fluorophenol	84		30 - 120
2,4,6-Tribromophenol	104		40 - 120
Nitrobenzene-d5	110		45 - 120
Terphenyl-d14	111		50 - 125
Phenol-d6	98		35 - 120

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 8015B - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 440-19934/36**  
**Matrix: Water**  
**Analysis Batch: 19934**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		0.050	0.025	mg/L			04/17/12 04:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		65 - 140					04/17/12 04:18	1

**Lab Sample ID: LCS 440-19934/33**  
**Matrix: Water**  
**Analysis Batch: 19934**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	0.800	0.789		mg/L		99	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	127		65 - 140				

**Lab Sample ID: 440-8278-1 MS**  
**Matrix: Water**  
**Analysis Batch: 19934**

**Client Sample ID: Outfall 002 Grab**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	0.046	J,DX	0.800	0.748		mg/L		88	65 - 140
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	129		65 - 140						

**Lab Sample ID: 440-8278-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19934**

**Client Sample ID: Outfall 002 Grab**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	0.046	J,DX	0.800	0.763		mg/L		90	65 - 140	1.93	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	132		65 - 140								

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

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1221	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1232	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1242	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1248	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1
Aroclor 1254	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1260	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 21:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	48		45 - 120	04/15/12 14:34	04/16/12 21:52	1

**Lab Sample ID: LCS 440-19875/4-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	4.00	3.75		ug/L		94	50 - 115
Aroclor 1260	4.00	3.70		ug/L		93	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	94		45 - 120

**Lab Sample ID: LCSD 440-19875/5-A**  
**Matrix: Water**  
**Analysis Batch: 20064**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	4.00	3.25		ug/L		81	50 - 115	14	30
Aroclor 1260	4.00	3.60		ug/L		90	60 - 120	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	94		45 - 120

## Method: 608 Pesticides - Organochlorine Pesticides Low level

**Lab Sample ID: MB 440-19875/1-A**  
**Matrix: Water**  
**Analysis Batch: 19946**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19875**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0050	0.0015	ug/L		04/15/12 14:34	04/16/12 12:21	1
alpha-BHC	ND		0.0050	0.0025	ug/L		04/15/12 14:34	04/16/12 12:21	1
beta-BHC	ND		0.010	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1
Chlordane (technical)	ND		0.10	0.0080	ug/L		04/15/12 14:34	04/16/12 12:21	1
delta-BHC	ND		0.0050	0.0035	ug/L		04/15/12 14:34	04/16/12 12:21	1
Dieldrin	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan I	ND		0.0050	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan II	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endrin	ND		0.0050	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		04/15/12 14:34	04/16/12 12:21	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Heptachlor	ND		0.010	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		04/15/12 14:34	04/16/12 12:21	1
Toxaphene	ND		0.50	0.25	ug/L		04/15/12 14:34	04/16/12 12:21	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-19875/1-A**

**Matrix: Water**

**Analysis Batch: 19946**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 19875**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.0050	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		04/15/12 14:34	04/16/12 12:21	1
4,4'-DDT	ND		0.010	0.0040	ug/L		04/15/12 14:34	04/16/12 12:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	82		35 - 115	04/15/12 14:34	04/16/12 12:21	1

**Lab Sample ID: LCS 440-19875/2-A**

**Matrix: Water**

**Analysis Batch: 19946**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 19875**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.467		ug/L		93	40 - 115
alpha-BHC	0.500	0.489		ug/L		98	45 - 115
beta-BHC	0.500	0.480		ug/L		96	55 - 115
delta-BHC	0.500	0.497		ug/L		99	55 - 115
Dieldrin	0.500	0.497		ug/L		99	55 - 115
Endosulfan I	0.500	0.482		ug/L		96	55 - 115
Endosulfan II	0.500	0.463		ug/L		93	55 - 120
Endosulfan sulfate	0.500	0.469		ug/L		94	60 - 120
Endrin	0.500	0.504		ug/L		101	55 - 115
Endrin aldehyde	0.500	0.514		ug/L		103	50 - 120
gamma-BHC (Lindane)	0.500	0.488		ug/L		98	45 - 115
Heptachlor	0.500	0.481		ug/L		96	45 - 115
Heptachlor epoxide	0.500	0.486		ug/L		97	55 - 115
4,4'-DDD	0.500	0.538		ug/L		108	55 - 120
4,4'-DDE	0.500	0.508		ug/L		102	50 - 120
4,4'-DDT	0.500	0.549		ug/L		110	55 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	80		35 - 115

**Lab Sample ID: LCSD 440-19875/3-A**

**Matrix: Water**

**Analysis Batch: 19946**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 19875**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.500	0.439		ug/L		88	40 - 115	6	30
alpha-BHC	0.500	0.460		ug/L		92	45 - 115	6	30
beta-BHC	0.500	0.461		ug/L		92	55 - 115	4	30
delta-BHC	0.500	0.471		ug/L		94	55 - 115	5	30
Dieldrin	0.500	0.470		ug/L		94	55 - 115	6	30
Endosulfan I	0.500	0.456		ug/L		91	55 - 115	6	30
Endosulfan II	0.500	0.438		ug/L		88	55 - 120	6	30
Endosulfan sulfate	0.500	0.449		ug/L		90	60 - 120	4	30
Endrin	0.500	0.479		ug/L		96	55 - 115	5	30
Endrin aldehyde	0.500	0.502		ug/L		100	50 - 120	2	30
gamma-BHC (Lindane)	0.500	0.461		ug/L		92	45 - 115	6	30
Heptachlor	0.500	0.454		ug/L		91	45 - 115	6	30

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID:** LCSD 440-19875/3-A  
**Matrix:** Water  
**Analysis Batch:** 19946

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 19875

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Heptachlor epoxide	0.500	0.461		ug/L		92	55 - 115	5	5	30
4,4'-DDD	0.500	0.508		ug/L		102	55 - 120	6	6	30
4,4'-DDE	0.500	0.481		ug/L		96	50 - 120	5	5	30
4,4'-DDT	0.500	0.520		ug/L		104	55 - 120	5	5	30
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Tetrachloro-m-xylene		76		35 - 115						

## Method: 8015B - Diesel Range Organics (DRO) (GC)

**Lab Sample ID:** MB 440-20179/1-A  
**Matrix:** Water  
**Analysis Batch:** 20341

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 20179

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
n-Octacosane	73		45 - 120				04/17/12 09:41	04/17/12 21:15	1

**Lab Sample ID:** LCS 440-20179/2-A  
**Matrix:** Water  
**Analysis Batch:** 20341

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 20179

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
C10-C28	1.00	0.736		mg/L		74	40 - 115			
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
n-Octacosane		74		45 - 120						

**Lab Sample ID:** LCSD 440-20179/3-A  
**Matrix:** Water  
**Analysis Batch:** 20341

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 20179

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
C10-C28	1.00	0.747		mg/L		75	40 - 115	NaN	25	
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
n-Octacosane		78		45 - 120						

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

**Lab Sample ID:** MB 440-19011/3  
**Matrix:** Water  
**Analysis Batch:** 19011

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

**Lab Sample ID: LCS 440-19011/2**

**Matrix: Water**

**Analysis Batch: 19011**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	50.0	49.8		ug/L		100	90 - 110

**Lab Sample ID: 440-8238-I-2 MS**

**Matrix: Water**

**Analysis Batch: 19011**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	2.8		50.0	54.8		ug/L		104	90 - 110

**Lab Sample ID: 440-8238-I-2 MSD**

**Matrix: Water**

**Analysis Batch: 19011**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	2.8		50.0	54.1		ug/L		103	90 - 110	1.29	10

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-19241/2**

**Matrix: Water**

**Analysis Batch: 19241**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			04/12/12 09:24	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/12/12 09:24	1
Nitrite as N	ND		0.15	0.11	mg/L			04/12/12 09:24	1

**Lab Sample ID: LCS 440-19241/3**

**Matrix: Water**

**Analysis Batch: 19241**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.14		mg/L		101	90 - 110
Nitrate Nitrite as N	2.65	2.67		mg/L		101	90 - 110
Nitrite as N	1.52	1.53		mg/L		101	90 - 110

**Lab Sample ID: 440-8283-A-1 MS**

**Matrix: Water**

**Analysis Batch: 19241**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.39		1.13	1.54		mg/L		102	80 - 120
Nitrate Nitrite as N	0.39		2.65	3.83	AY	mg/L		130	80 - 120
Nitrite as N	ND		1.52	2.29	AY	mg/L		150	80 - 120

**Lab Sample ID: 440-8283-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 19241**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.39		1.13	1.51		mg/L		99	80 - 120	2	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 440-8283-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19241**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Nitrate Nitrite as N	0.39		2.65	3.78	LM	mg/L		128	80 - 120	1	20
Nitrite as N	ND		1.52	2.27	LM	mg/L		149	80 - 120	1	20

**Lab Sample ID: MB 440-19242/2**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.40	mg/L			04/12/12 09:24	1
Sulfate	ND		0.50	0.40	mg/L			04/12/12 09:24	1

**Lab Sample ID: MB 440-19242/41**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.40	mg/L			04/12/12 22:04	1
Sulfate	ND		0.50	0.40	mg/L			04/12/12 22:04	1

**Lab Sample ID: LCS 440-19242/3**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Chloride	5.00	4.81		mg/L		96	90 - 110
Sulfate	10.0	9.43		mg/L		94	90 - 110

**Lab Sample ID: LCS 440-19242/42**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Chloride	5.00	4.94		mg/L		99	90 - 110
Sulfate	10.0	9.69		mg/L		97	90 - 110

**Lab Sample ID: 440-8414-D-21 MS**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	94		50.0	145		mg/L		103	80 - 120		

**Lab Sample ID: 440-8414-D-21 MSD**  
**Matrix: Water**  
**Analysis Batch: 19242**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	94		50.0	145		mg/L		103	80 - 120	0	20



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 314.0 - Perchlorate (IC)

**Lab Sample ID:** MB 440-20654/5  
**Matrix:** Water  
**Analysis Batch:** 20654

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/19/12 07:57	1

**Lab Sample ID:** LCS 440-20654/4  
**Matrix:** Water  
**Analysis Batch:** 20654

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	25.5		ug/L		102	85 - 115

**Lab Sample ID:** 440-8128-C-1 MS  
**Matrix:** Water  
**Analysis Batch:** 20654

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	27.1		ug/L		108	80 - 120

**Lab Sample ID:** 440-8128-C-1 MSD  
**Matrix:** Water  
**Analysis Batch:** 20654

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	26.2		ug/L		105	80 - 120	3.38	20

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

**Lab Sample ID:** G2D17000092B  
**Matrix:** Water  
**Analysis Batch:** 2108092

**Client Sample ID:** Method Blank  
**Prep Type:** Total  
**Prep Batch:** 2108092\_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000070	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total TCDD	ND		0.000010	0.0000070	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000052	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total PeCDD	ND		0.000050	0.0000052	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000060	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000055	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000051	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total HxCDD	ND		0.000050	0.0000051	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,4,6,7,8-HpCDD	ND		0.000050	0.0000021	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total HpCDD	0.0000015	J Q	0.000050	0.0000021	ug/L		04/17/12 09:00	04/19/12 14:25	1
OCDD	ND		0.00010	0.000016	ug/L		04/17/12 09:00	04/19/12 14:25	1
2,3,7,8-TCDF	ND		0.000010	0.0000028	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total TCDF	ND		0.000010	0.0000028	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,7,8-PeCDF	ND		0.000050	0.000010	ug/L		04/17/12 09:00	04/19/12 14:25	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000097	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total PeCDF	ND		0.000050	0.0000097	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.0000070	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000068	ug/L		04/17/12 09:00	04/19/12 14:25	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000069	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000096	ug/L		04/17/12 09:00	04/19/12 14:25	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: G2D17000092B**

**Matrix: Water**

**Analysis Batch: 2108092**

**Client Sample ID: Method Blank**

**Prep Type: Total**

**Prep Batch: 2108092\_P**

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDF	ND		0.000050	0.0000068	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,4,6,7,8-HpCDF	0.0000047	J Q	0.000050	0.0000049	ug/L		04/17/12 09:00	04/19/12 14:25	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000065	ug/L		04/17/12 09:00	04/19/12 14:25	1
Total HpCDF	0.0000097	J Q	0.000050	0.0000056	ug/L		04/17/12 09:00	04/19/12 14:25	1
OCDF	0.0000058	J Q	0.00010	0.0000081	ug/L		04/17/12 09:00	04/19/12 14:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	04/17/12 09:00	04/19/12 14:25	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	39		25 - 164	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,7,8-PeCDD	37		25 - 181	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,4,7,8-HxCDD	38		32 - 141	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,6,7,8-HxCDD	51		28 - 130	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	04/17/12 09:00	04/19/12 14:25	1
13C-OCDD	46		17 - 157	04/17/12 09:00	04/19/12 14:25	1
13C-2,3,7,8-TCDF	43		24 - 169	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,7,8-PeCDF	37		24 - 185	04/17/12 09:00	04/19/12 14:25	1
13C-2,3,4,7,8-PeCDF	43		21 - 178	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,6,7,8-HxCDF	58		26 - 123	04/17/12 09:00	04/19/12 14:25	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,7,8,9-HxCDF	48		29 - 147	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,4,7,8,9-HpCDF	56		26 - 138	04/17/12 09:00	04/19/12 14:25	1
13C-1,2,3,4,7,8-HxCDF	49		26 - 152	04/17/12 09:00	04/19/12 14:25	1

**Lab Sample ID: G2D17000092C**

**Matrix: Water**

**Analysis Batch: 2108092**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 2108092\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000212		ug/L		106	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00111		ug/L		111	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.00107		ug/L		107	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00106		ug/L		106	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00119		ug/L		119	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.00120		ug/L		120	70 - 140
OCDD	0.00200	0.00215		ug/L		107	78 - 144
2,3,7,8-TCDF	0.000200	0.000221		ug/L		111	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.00102		ug/L		102	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000966		ug/L		97	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000922		ug/L		92	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00100		ug/L		100	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000907		ug/L		91	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000964		ug/L		96	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.00104	B	ug/L		104	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000987		ug/L		99	78 - 138
OCDF	0.00200	0.00235	B	ug/L		117	63 - 170

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

Lab Sample ID: G2D17000092C

Matrix: Water

Analysis Batch: 2108092

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 2108092\_P

Surrogate	LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	84		31 - 191

Internal Standard	LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	40		20 - 175
13C-1,2,3,7,8-PeCDD	35		21 - 227
13C-1,2,3,4,7,8-HxCDD	39		21 - 193
13C-1,2,3,6,7,8-HxCDD	54		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	48		26 - 166
13C-OCDD	45		13 - 199
13C-2,3,7,8-TCDF	43		22 - 152
13C-1,2,3,7,8-PeCDF	38		21 - 192
13C-2,3,4,7,8-PeCDF	42		13 - 328
13C-1,2,3,6,7,8-HxCDF	61		21 - 159
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,7,8,9-HxCDF	53		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	57		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186
13C-1,2,3,4,7,8-HxCDF	53		19 - 202

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

Lab Sample ID: MB 440-20778/1-A

Matrix: Water

Analysis Batch: 20942

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 20778

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		10	7.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Boron	0.0399	J,DX	0.050	0.020	mg/L		04/19/12 13:47	04/19/12 22:06	1
Beryllium	ND		2.0	0.90	ug/L		04/19/12 13:47	04/19/12 22:06	1
Chromium	ND		5.0	2.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Iron	ND		0.040	0.015	mg/L		04/19/12 13:47	04/19/12 22:06	1
Nickel	ND		10	2.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Vanadium	ND		10	3.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Zinc	ND		20	6.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Silver	ND		10	6.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Barium	ND		10	6.0	ug/L		04/19/12 13:47	04/19/12 22:06	1
Manganese	ND		20	7.0	ug/L		04/19/12 13:47	04/19/12 22:06	1

Lab Sample ID: LCS 440-20778/2-A

Matrix: Water

Analysis Batch: 20942

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 20778

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Arsenic	500	485		ug/L		97	85 - 115
Boron	0.500	0.546		mg/L		109	85 - 115
Beryllium	500	515		ug/L		103	85 - 115
Chromium	500	521		ug/L		104	85 - 115
Iron	0.500	0.531		mg/L		106	85 - 115
Nickel	500	491		ug/L		98	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCS 440-20778/2-A**  
**Matrix: Water**  
**Analysis Batch: 20942**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20778**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	500	502		ug/L		100	85 - 115
Zinc	500	495		ug/L		99	85 - 115
Silver	250	252		ug/L		101	85 - 115
Barium	500	502		ug/L		100	85 - 115
Manganese	500	509		ug/L		102	85 - 115

**Lab Sample ID: 440-8747-H-2-B MS**  
**Matrix: Water**  
**Analysis Batch: 20942**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20778**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		500	494		ug/L		99	70 - 130
Boron	1.4	MB	0.500	1.85		mg/L		96	70 - 130
Beryllium	ND		500	508		ug/L		102	70 - 130
Chromium	ND		500	506		ug/L		101	70 - 130
Iron	0.27		0.500	0.767		mg/L		100	70 - 130
Nickel	ND		500	477		ug/L		95	70 - 130
Vanadium	ND		500	509		ug/L		102	70 - 130
Zinc	ND		500	502		ug/L		100	70 - 130
Silver	ND		250	241		ug/L		96	70 - 130
Barium	40		500	526		ug/L		97	70 - 130
Manganese	ND		500	493		ug/L		99	70 - 130

**Lab Sample ID: 440-8747-H-2-C MSD**  
**Matrix: Water**  
**Analysis Batch: 20942**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20778**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		500	512		ug/L		102	70 - 130	3.50	20
Boron	1.4	MB	0.500	1.90		mg/L		106	70 - 130	2.75	20
Beryllium	ND		500	519		ug/L		104	70 - 130	2.09	20
Chromium	ND		500	517		ug/L		103	70 - 130	2.22	20
Iron	0.27		0.500	0.766		mg/L		100	70 - 130	0.000	20
Nickel	ND		500	486		ug/L		97	70 - 130	1.82	20
Vanadium	ND		500	517		ug/L		103	70 - 130	1.42	20
Zinc	ND		500	513		ug/L		103	70 - 130	2.30	20
Silver	ND		250	248		ug/L		99	70 - 130	2.93	20
Barium	40		500	540		ug/L		100	70 - 130	2.63	20
Manganese	ND		500	503		ug/L		101	70 - 130	2.01	20

**Lab Sample ID: MB 440-19452/1-D**  
**Matrix: Water**  
**Analysis Batch: 21093**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 20964**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	7.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Boron	0.0382	J,DX	0.050	0.020	mg/L		04/20/12 09:32	04/20/12 17:21	1
Beryllium	ND		2.0	0.90	ug/L		04/20/12 09:32	04/20/12 17:21	1
Chromium	ND		5.0	2.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Iron	ND		0.040	0.015	mg/L		04/20/12 09:32	04/20/12 17:21	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: MB 440-19452/1-D**  
**Matrix: Water**  
**Analysis Batch: 21093**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 20964**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	ND		10	2.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Vanadium	ND		10	3.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Zinc	ND		20	6.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Silver	ND		10	6.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Barium	ND		10	6.0	ug/L		04/20/12 09:32	04/20/12 17:21	1
Manganese	ND		20	7.0	ug/L		04/20/12 09:32	04/20/12 17:21	1

**Lab Sample ID: LCS 440-19452/2-D**  
**Matrix: Water**  
**Analysis Batch: 21093**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 20964**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	500	486		ug/L		97	85 - 115
Boron	0.500	0.532		mg/L		106	85 - 115
Beryllium	500	479		ug/L		96	85 - 115
Chromium	500	517		ug/L		103	85 - 115
Iron	0.500	0.491		mg/L		98	85 - 115
Nickel	500	481		ug/L		96	85 - 115
Vanadium	500	502		ug/L		100	85 - 115
Zinc	500	484		ug/L		97	85 - 115
Silver	250	248		ug/L		99	85 - 115
Barium	500	492		ug/L		98	85 - 115
Manganese	500	496		ug/L		99	85 - 115

**Lab Sample ID: 440-8290-G-1-F MS**  
**Matrix: Water**  
**Analysis Batch: 21093**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 20964**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		500	496		ug/L		99	70 - 130
Boron	0.078	MB	0.500	0.592		mg/L		103	70 - 130
Beryllium	ND		500	492		ug/L		98	70 - 130
Chromium	ND		500	521		ug/L		104	70 - 130
Iron	0.040		0.500	0.508		mg/L		94	70 - 130
Nickel	2.8	J,DX	500	478		ug/L		95	70 - 130
Vanadium	ND		500	514		ug/L		103	70 - 130
Zinc	ND		500	495		ug/L		99	70 - 130
Silver	ND		250	247		ug/L		99	70 - 130
Barium	29		500	518		ug/L		98	70 - 130
Manganese	ND		500	502		ug/L		100	70 - 130

**Lab Sample ID: 440-8290-G-1-G MSD**  
**Matrix: Water**  
**Analysis Batch: 21093**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 20964**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND		500	516		ug/L		103	70 - 130	3.94	20
Boron	0.078	MB	0.500	0.602		mg/L		105	70 - 130	1.68	20
Beryllium	ND		500	502		ug/L		100	70 - 130	1.96	20
Chromium	ND		500	535		ug/L		107	70 - 130	2.66	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

Lab Sample ID: 440-8290-G-1-G MSD  
Matrix: Water  
Analysis Batch: 21093

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Dissolved  
Prep Batch: 20964

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	
Iron	0.040		0.500	0.529		mg/L		98	70 - 130	3.90	20
Nickel	2.8	J,DX	500	488		ug/L		97	70 - 130	2.18	20
Vanadium	ND		500	523		ug/L		105	70 - 130	1.68	20
Zinc	ND		500	504		ug/L		101	70 - 130	1.84	20
Silver	ND		250	250		ug/L		100	70 - 130	1.22	20
Barium	29		500	528		ug/L		100	70 - 130	1.98	20
Manganese	ND		500	512		ug/L		102	70 - 130	2.03	20

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

Lab Sample ID: MB 440-20735/1-A  
Matrix: Water  
Analysis Batch: 21222

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 20735

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.10	ug/L		04/19/12 10:41	04/21/12 20:36	1
Copper	ND		2.0	0.50	ug/L		04/19/12 10:41	04/21/12 20:36	1
Antimony	ND		2.0	0.30	ug/L		04/19/12 10:41	04/21/12 20:36	1
Selenium	ND		2.0	0.50	ug/L		04/19/12 10:41	04/21/12 20:36	1
Cobalt	ND		1.0	0.10	ug/L		04/19/12 10:41	04/21/12 20:36	1

Lab Sample ID: MB 440-20735/1-A  
Matrix: Water  
Analysis Batch: 21383

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 20735

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Lead	ND		1.0	0.20	ug/L		04/19/12 10:41	04/23/12 14:46	1
Thallium	ND		1.0	0.20	ug/L		04/19/12 10:41	04/23/12 14:46	1

Lab Sample ID: LCS 440-20735/2-A  
Matrix: Water  
Analysis Batch: 21222

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 20735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Cadmium	80.0	84.4		ug/L		105	85 - 115
Copper	80.0	85.3		ug/L		107	85 - 115
Antimony	80.0	84.6		ug/L		106	85 - 115
Selenium	80.0	80.1		ug/L		100	85 - 115
Cobalt	80.0	81.2		ug/L		102	85 - 115

Lab Sample ID: LCS 440-20735/2-A  
Matrix: Water  
Analysis Batch: 21383

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 20735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Lead	80.0	83.9		ug/L		105	85 - 115
Thallium	80.0	84.4		ug/L		105	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: 440-8282-A-1-D MS**  
**Matrix: Water**  
**Analysis Batch: 21222**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20735**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Cadmium	ND		80.0	82.6		ug/L		103		70 - 130
Copper	0.85	J,DX	80.0	80.7		ug/L		100		70 - 130
Antimony	ND		80.0	87.9		ug/L		110		70 - 130
Selenium	ND		80.0	77.9		ug/L		97		70 - 130
Cobalt	0.10	J,DX	80.0	80.2		ug/L		100		70 - 130

**Lab Sample ID: 440-8282-A-1-D MS**  
**Matrix: Water**  
**Analysis Batch: 21383**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20735**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Lead	ND		80.0	78.3		ug/L		98		70 - 130
Thallium	ND		80.0	83.2		ug/L		104		70 - 130

**Lab Sample ID: 440-8282-A-1-E MSD**  
**Matrix: Water**  
**Analysis Batch: 21222**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20735**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Cadmium	ND		80.0	83.6		ug/L		104		70 - 130	1.21	20
Copper	0.85	J,DX	80.0	80.8		ug/L		100		70 - 130	0.000	20
Antimony	ND		80.0	87.9		ug/L		110		70 - 130	0.000	20
Selenium	ND		80.0	77.4		ug/L		97		70 - 130	1.00	20
Cobalt	0.10	J,DX	80.0	80.0		ug/L		100		70 - 130	0.000	20

**Lab Sample ID: 440-8282-A-1-E MSD**  
**Matrix: Water**  
**Analysis Batch: 21383**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20735**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Lead	ND		80.0	77.1		ug/L		96		70 - 130	2	20
Thallium	ND		80.0	82.6		ug/L		103		70 - 130	1	20

**Lab Sample ID: MB 440-20965/1-A**  
**Matrix: Water**  
**Analysis Batch: 22049**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20965**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		1.0	0.10	ug/L		04/20/12 09:35	04/25/12 17:06	1
Lead	ND		1.0	0.20	ug/L		04/20/12 09:35	04/25/12 17:06	1
Antimony	ND		2.0	0.30	ug/L		04/20/12 09:35	04/25/12 17:06	1
Thallium	ND		1.0	0.20	ug/L		04/20/12 09:35	04/25/12 17:06	1

**Lab Sample ID: MB 440-20965/1-A**  
**Matrix: Water**  
**Analysis Batch: 22325**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20965**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Copper	ND		2.0	0.50	ug/L		04/20/12 09:35	04/26/12 18:44	1
Selenium	ND		2.0	0.50	ug/L		04/20/12 09:35	04/26/12 18:44	1
Cobalt	ND		1.0	0.10	ug/L		04/20/12 09:35	04/26/12 18:44	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

**Lab Sample ID: LCS 440-20965/2-A**  
**Matrix: Water**  
**Analysis Batch: 22049**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20965**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	86.7		ug/L		108	85 - 115
Lead	80.0	79.4		ug/L		99	85 - 115
Antimony	80.0	86.5		ug/L		108	85 - 115
Thallium	80.0	79.7		ug/L		100	85 - 115

**Lab Sample ID: LCS 440-20965/2-A**  
**Matrix: Water**  
**Analysis Batch: 22325**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 20965**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	80.0	91.5		ug/L		114	85 - 115
Selenium	80.0	79.9		ug/L		100	85 - 115
Cobalt	80.0	87.2		ug/L		109	85 - 115

**Lab Sample ID: 440-8282-K-1-E MS**  
**Matrix: Water**  
**Analysis Batch: 22049**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 20965**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	85.5		ug/L		107	70 - 130
Lead	ND		80.0	76.9		ug/L		96	70 - 130
Antimony	0.43	J,DX	80.0	87.3		ug/L		109	70 - 130
Thallium	0.24	J,DX	80.0	76.8		ug/L		96	70 - 130

**Lab Sample ID: 440-8282-K-1-E MS**  
**Matrix: Water**  
**Analysis Batch: 22325**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 20965**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.81	J,DX	80.0	90.7		ug/L		112	70 - 130
Selenium	ND		80.0	79.8		ug/L		100	70 - 130
Cobalt	0.16	J,DX	80.0	84.9		ug/L		106	70 - 130

**Lab Sample ID: 440-8282-K-1-F MSD**  
**Matrix: Water**  
**Analysis Batch: 22049**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 20965**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cadmium	ND		80.0	86.1		ug/L		108	70 - 130	1	20
Lead	ND		80.0	76.5		ug/L		96	70 - 130	0	20
Antimony	0.43	J,DX	80.0	87.9		ug/L		109	70 - 130	1	20
Thallium	0.24	J,DX	80.0	77.7		ug/L		97	70 - 130	1	20

**Lab Sample ID: 440-8282-K-1-F MSD**  
**Matrix: Water**  
**Analysis Batch: 22325**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 20965**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Copper	0.81	J,DX	80.0	87.9		ug/L		109	70 - 130	3	20
Selenium	ND		80.0	78.0		ug/L		97	70 - 130	2	20
Cobalt	0.16	J,DX	80.0	83.3		ug/L		104	70 - 130	2	20



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 440-19442/1-A**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19442**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/12/12 18:47	04/13/12 20:43	1

**Lab Sample ID: LCS 440-19442/2-A**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 19442**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.07		ug/L		101	85 - 115

**Lab Sample ID: 440-7955-C-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 19442**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	5.96		ug/L		74	70 - 130

**Lab Sample ID: 440-7955-C-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 19442**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	5.91		ug/L		74	70 - 130	1	20

**Lab Sample ID: MB 440-19452/1-C**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 19467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/12/12 20:37	04/13/12 22:50	1

**Lab Sample ID: LCS 440-19452/2-C**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 19467**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.18		ug/L		102	85 - 115

**Lab Sample ID: 440-8277-1 MS**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Outfall 002 Grab**  
**Prep Type: Dissolved**  
**Prep Batch: 19467**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	7.13		ug/L		89	70 - 130

**Lab Sample ID: 440-8277-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 19759**

**Client Sample ID: Outfall 002 Grab**  
**Prep Type: Dissolved**  
**Prep Batch: 19467**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.17		ug/L		90	70 - 130	1	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-19950/1  
Matrix: Water  
Analysis Batch: 19950

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			04/16/12 10:04	1

Lab Sample ID: LCS 440-19950/2  
Matrix: Water  
Analysis Batch: 19950

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	501	541		umhos/cm		108	90 - 110

Lab Sample ID: 440-8593-C-1 DU  
Matrix: Water  
Analysis Batch: 19950

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	150		149		umhos/cm		1	5

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-21239/1-A  
Matrix: Water  
Analysis Batch: 21254

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 21239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		04/23/12 06:18	04/23/12 06:54	1

Lab Sample ID: LCS 440-21239/2-A  
Matrix: Water  
Analysis Batch: 21254

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 21239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	18.0		mg/L		90	78 - 114

Lab Sample ID: LCSD 440-21239/3-A  
Matrix: Water  
Analysis Batch: 21254

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 21239

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	18.6		mg/L		93	78 - 114	3	11

## Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-19369/6  
Matrix: Water  
Analysis Batch: 19369

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			04/12/12 14:34	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: 180.1 - Turbidity, Nephelometric (Continued)

Lab Sample ID: MRL 440-19369/4 MRL  
Matrix: Water  
Analysis Batch: 19369

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	1.00	1.04		NTU		104	

Lab Sample ID: 440-8326-D-1 DU  
Matrix: Water  
Analysis Batch: 19369

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	0.040	J,DX	ND		NTU		NC	20

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

Lab Sample ID: MB 440-19574/1  
Matrix: Water  
Analysis Batch: 19574

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			04/13/12 10:06	1

Lab Sample ID: LCS 440-19574/2  
Matrix: Water  
Analysis Batch: 19574

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1000		mg/L		100	90 - 110

Lab Sample ID: 440-8336-A-1 DU  
Matrix: Water  
Analysis Batch: 19574

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	890		858		mg/L		4	10

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

Lab Sample ID: MB 440-20344/1  
Matrix: Water  
Analysis Batch: 20344

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			04/17/12 22:29	1

Lab Sample ID: LCS 440-20344/2  
Matrix: Water  
Analysis Batch: 20344

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	999		mg/L		100	85 - 115

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

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

Lab Sample ID: 440-8289-A-3 DU  
Matrix: Water  
Analysis Batch: 20344

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	27		27.0		mg/L		0.000	10

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

Lab Sample ID: MB 440-20314/1-A  
Matrix: Water  
Analysis Batch: 20530

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 20314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		04/17/12 17:12	04/18/12 14:57	1

Lab Sample ID: LCS 440-20314/2-A  
Matrix: Water  
Analysis Batch: 20530

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 20314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	98.0		ug/L		98	90 - 110

Lab Sample ID: 440-7684-V-1-A MS  
Matrix: Water  
Analysis Batch: 20530

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 20314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	99.3		ug/L		99	70 - 115

Lab Sample ID: 440-7684-V-1-B MSD  
Matrix: Water  
Analysis Batch: 20530

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 20314

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cyanide, Total	ND		100	95.3		ug/L		95	70 - 115	4	15

## Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-19968/10  
Matrix: Water  
Analysis Batch: 19968

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.020	mg/L			04/16/12 06:01	1

Lab Sample ID: LCS 440-19968/9  
Matrix: Water  
Analysis Batch: 19968

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.00		mg/L		100	90 - 110

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: SM 4500 F C - Fluoride (Continued)

**Lab Sample ID: 440-8444-A-4 MS**  
**Matrix: Water**  
**Analysis Batch: 19968**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.32		1.00	1.32		mg/L		99	80 - 120

**Lab Sample ID: 440-8444-A-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 19968**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.32		1.00	1.33		mg/L		100	80 - 120	1	20

## Method: SM 4500 NH3 C - Ammonia

**Lab Sample ID: MB 440-19411/1-A**  
**Matrix: Water**  
**Analysis Batch: 19480**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19411**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.400	0.157	mg/L		04/12/12 16:52	04/12/12 21:16	1

**Lab Sample ID: LCS 440-19411/2-A**  
**Matrix: Water**  
**Analysis Batch: 19480**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 19411**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	10.0	9.520		mg/L		95	85 - 115

**Lab Sample ID: 440-8181-D-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 19480**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 19411**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.840		10.0	10.08		mg/L		92	70 - 120

**Lab Sample ID: 440-8181-D-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 19480**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 19411**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.840		10.0	10.08		mg/L		92	70 - 120	0	15

## Method: SM 5310B - Organic Carbon, Total (TOC)

**Lab Sample ID: MB 440-19604/5**  
**Matrix: Water**  
**Analysis Batch: 19604**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.75	mg/L			04/13/12 05:23	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

**Lab Sample ID: LCS 440-19604/6**

**Matrix: Water**

**Analysis Batch: 19604**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.93		mg/L		99	90 - 110

**Lab Sample ID: 440-7927-B-2 MS**

**Matrix: Water**

**Analysis Batch: 19604**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	8.2		5.00	13.7		mg/L		110	80 - 120

**Lab Sample ID: 440-7927-B-2 MSD**

**Matrix: Water**

**Analysis Batch: 19604**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	8.2		5.00	13.7		mg/L		110	80 - 120	0	20

## Method: SM 5540C - Methylene Blue Active Substances (MBAS)

**Lab Sample ID: MB 440-19455/3**

**Matrix: Water**

**Analysis Batch: 19455**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			04/12/12 19:39	1

**Lab Sample ID: LCS 440-19455/4**

**Matrix: Water**

**Analysis Batch: 19455**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.244		mg/L		97	90 - 110

**Lab Sample ID: 440-8282-E-1 MS**

**Matrix: Water**

**Analysis Batch: 19455**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	ND		0.250	0.230		mg/L		92	50 - 125

**Lab Sample ID: 440-8282-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 19455**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	ND		0.250	0.286	RA	mg/L		115	50 - 125	22	20

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-19553/1 USB**  
**Matrix: Water**  
**Analysis Batch: 19553**

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

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			04/13/12 09:06	1

**Lab Sample ID: LCS 440-19553/4**  
**Matrix: Water**  
**Analysis Batch: 19553**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	200		mg/L		101	85 - 115

**Lab Sample ID: LCSD 440-19553/5**  
**Matrix: Water**  
**Analysis Batch: 19553**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	205		mg/L		103	85 - 115	2.48	20

## Method: Gross Alpha and Beta - Gross Alpha/Beta

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	12.2	U	500		pCi/L		04/19/12 00:00	04/19/12 20:20	1

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	1.25	U	20		pCi/L		04/19/12 00:00	04/20/12 00:00	1
Potassium-40	20.2	U	25		pCi/L		04/19/12 00:00	04/20/12 00:00	1

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.127	U	2		pCi/L		04/24/12 00:00	04/24/12 08:20	1

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/25/12 00:00	04/25/12 01:53	1

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	0.006	U	1		pCi/L		04/25/12 00:00	04/25/12 14:21	1

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.105	U	3		pCi/L		04/24/12 00:00	04/25/12 16:16	1
Gross Beta	-0.378	U	4		pCi/L		04/24/12 00:00	04/25/12 16:16	1

**Lab Sample ID: S204062-05**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	-0.07	U	1		pCi/L		05/02/12 00:00	05/02/12 13:19	1

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tritium	2440	2200		pCi/L		90	80 - 120

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cesium-137	122	120		pCi/L		98	80 - 120
Cobalt-60	108	101		pCi/L		94	80 - 120

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Strontium-90	8.49	8.52		pCi/L		100	80 - 120

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium, Total	56.5	59.4		pCi/L		105	80 - 120



# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-228	4.42	4.94		pCi/L		112	60 - 140

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Alpha	37	43.3		pCi/L		117	70 - 130
Gross Beta	34	33.6		pCi/L		99	70 - 130

**Lab Sample ID: S204062-04**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-226	50.1	55		pCi/L		110	80 - 120

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Tritium	47.2	U	10.8	U	pCi/L		0	

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Cesium-137	0.048	U	-0.679	U	pCi/L		0	
Potassium-40	12.9	U	0.265	U	pCi/L		0	

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Strontium-90	-0.277	U	0.002	U	pCi/L		0	

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Uranium, Total	0.047	J	0.052	J	pCi/L		10	

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample	Sample	Duplicate	Duplicate	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Radium-228	-0.12	U	-0.052	U	pCi/L		0	

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample	Sample	Duplicate	Duplicate	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Gross Alpha	0.114	U	0.008	U	pCi/L		0	
Gross Beta	4.32		3.59	J	pCi/L		18	

**Lab Sample ID: S204062-06**  
**Matrix: WATER**  
**Analysis Batch: 8607**

**Client Sample ID: OUTFALL 018 (440-8282-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8607\_P**

Analyte	Sample	Sample	Duplicate	Duplicate	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Radium-226	0.118	U	-0.012	U	pCi/L		0	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## GC/MS VOA

### Analysis Batch: 19207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7787-C-1 MS	Matrix Spike	Total/NA	Water	624	
440-7787-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-8278-1	Outfall 002 Grab	Total/NA	Water	624	
440-8278-2	Trip Blanks	Total/NA	Water	624	
LCS 440-19207/6	Lab Control Sample	Total/NA	Water	624	
MB 440-19207/5	Method Blank	Total/NA	Water	624	

### Analysis Batch: 20297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	624	
440-8278-2	Trip Blanks	Total/NA	Water	624	
440-8650-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-8650-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-20297/5	Lab Control Sample	Total/NA	Water	624	
MB 440-20297/4	Method Blank	Total/NA	Water	624	

### Analysis Batch: 20473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	8260B SIM	
440-8769-A-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
440-8769-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	
LCS 440-20473/3	Lab Control Sample	Total/NA	Water	8260B SIM	
MB 440-20473/2	Method Blank	Total/NA	Water	8260B SIM	

## GC/MS Semi VOA

### Prep Batch: 20598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	625	
LCS 440-20598/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-20598/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-20598/1-A	Method Blank	Total/NA	Water	625	

### Analysis Batch: 21217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-20598/2-A	Lab Control Sample	Total/NA	Water	625	20598
LCSD 440-20598/3-A	Lab Control Sample Dup	Total/NA	Water	625	20598
MB 440-20598/1-A	Method Blank	Total/NA	Water	625	20598

### Analysis Batch: 22607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	625	20598

## GC VOA

### Analysis Batch: 19934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	8015B	
440-8278-1 MS	Outfall 002 Grab	Total/NA	Water	8015B	
440-8278-1 MSD	Outfall 002 Grab	Total/NA	Water	8015B	
LCS 440-19934/33	Lab Control Sample	Total/NA	Water	8015B	
MB 440-19934/36	Method Blank	Total/NA	Water	8015B	



# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## GC Semi VOA

### Prep Batch: 19875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	608	
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-19875/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 440-19875/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-19875/1-A	Method Blank	Total/NA	Water	608	

### Analysis Batch: 19946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	19875
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 Pesticides	19875

### Analysis Batch: 20064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	608 PCB LL	19875
LCS 440-19875/4-A	Lab Control Sample	Total/NA	Water	608 PCB LL	19875
LCSD 440-19875/5-A	Lab Control Sample Dup	Total/NA	Water	608 PCB LL	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 PCB LL	19875

### Prep Batch: 20179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	3510C	
LCS 440-20179/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-20179/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 440-20179/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 20339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	8015B	20179

### Analysis Batch: 20341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-20179/2-A	Lab Control Sample	Total/NA	Water	8015B	20179
LCSD 440-20179/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	20179
MB 440-20179/1-A	Method Blank	Total/NA	Water	8015B	20179

### Analysis Batch: 20597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	608 Pesticides	19875

## HPLC/IC

### Analysis Batch: 19011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8238-I-2 MS	Matrix Spike	Total/NA	Water	218.6	
440-8238-I-2 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	
440-8277-1	Outfall 002 Grab	Total/NA	Water	218.6	
LCS 440-19011/2	Lab Control Sample	Total/NA	Water	218.6	
MB 440-19011/3	Method Blank	Total/NA	Water	218.6	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## HPLC/IC (Continued)

### Analysis Batch: 19241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	300.0	
440-8283-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8283-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 440-19241/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19241/2	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 19242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	300.0	
440-8414-D-21 MS	Matrix Spike	Total/NA	Water	300.0	
440-8414-D-21 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 440-19242/3	Lab Control Sample	Total/NA	Water	300.0	
LCS 440-19242/42	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19242/2	Method Blank	Total/NA	Water	300.0	
MB 440-19242/41	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 20654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8128-C-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-8128-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
440-8277-1	Outfall 002 Grab	Total/NA	Water	314.0	
LCS 440-20654/4	Lab Control Sample	Total/NA	Water	314.0	
MB 440-20654/5	Method Blank	Total/NA	Water	314.0	

## Specialty Organics

### Analysis Batch: 2108092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total	Water	1613B	
G2D170000092B	Method Blank	Total	Water	1613B	
G2D170000092C	Lab Control Sample	Total	Water	1613B	

### Prep Batch: 2108092\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total	Water	3542	
G2D170000092B	Method Blank	Total	Water	3542	
G2D170000092C	Lab Control Sample	Total	Water	3542	

## Metals

### Prep Batch: 19442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7955-C-1-B MS	Matrix Spike	Total/NA	Water	245.1	
440-7955-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-8277-1	Outfall 002 Grab	Total/NA	Water	245.1	
LCS 440-19442/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-19442/1-A	Method Blank	Total/NA	Water	245.1	

### Prep Batch: 19467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	245.1	
440-8277-1 MS	Outfall 002 Grab	Dissolved	Water	245.1	

# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Metals (Continued)

### Prep Batch: 19467 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1 MSD	Outfall 002 Grab	Dissolved	Water	245.1	
LCS 440-19452/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19452/1-C	Method Blank	Dissolved	Water	245.1	

### Analysis Batch: 19759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7955-C-1-B MS	Matrix Spike	Total/NA	Water	245.1	19442
440-7955-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	19442
440-8277-1	Outfall 002 Grab	Total/NA	Water	245.1	19442
440-8277-1	Outfall 002 Grab	Dissolved	Water	245.1	19467
440-8277-1 MS	Outfall 002 Grab	Dissolved	Water	245.1	19467
440-8277-1 MSD	Outfall 002 Grab	Dissolved	Water	245.1	19467
LCS 440-19442/2-A	Lab Control Sample	Total/NA	Water	245.1	19442
LCS 440-19452/2-C	Lab Control Sample	Dissolved	Water	245.1	19467
MB 440-19442/1-A	Method Blank	Total/NA	Water	245.1	19442
MB 440-19452/1-C	Method Blank	Dissolved	Water	245.1	19467

### Analysis Batch: 20492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 2340B	

### Prep Batch: 20735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total Recoverable	Water	200.2	
440-8282-A-1-D MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8282-A-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-20735/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-20735/1-A	Method Blank	Total Recoverable	Water	200.2	

### Prep Batch: 20778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total Recoverable	Water	200.2	
440-8747-H-2-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8747-H-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-20778/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-20778/1-A	Method Blank	Total Recoverable	Water	200.2	

### Analysis Batch: 20942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total Recoverable	Water	200.7 Rev 4.4	20778
440-8747-H-2-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	20778
440-8747-H-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	20778
LCS 440-20778/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	20778
MB 440-20778/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	20778

### Prep Batch: 20964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	200.2	
440-8290-G-1-F MS	Matrix Spike	Dissolved	Water	200.2	
440-8290-G-1-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
LCS 440-19452/2-D	Lab Control Sample	Dissolved	Water	200.2	
MB 440-19452/1-D	Method Blank	Dissolved	Water	200.2	

# QC Association Summary

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Metals (Continued)

### Prep Batch: 20965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	200.2	
440-8282-K-1-E MS	Matrix Spike	Dissolved	Water	200.2	
440-8282-K-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
LCS 440-20965/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-20965/1-A	Method Blank	Total Recoverable	Water	200.2	

### Analysis Batch: 21093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	200.7 Rev 4.4	20964
440-8290-G-1-F MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	20964
440-8290-G-1-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	20964
LCS 440-19452/2-D	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	20964
MB 440-19452/1-D	Method Blank	Dissolved	Water	200.7 Rev 4.4	20964

### Analysis Batch: 21222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total Recoverable	Water	200.8	20735
440-8282-A-1-D MS	Matrix Spike	Total Recoverable	Water	200.8	20735
440-8282-A-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	20735
LCS 440-20735/2-A	Lab Control Sample	Total Recoverable	Water	200.8	20735
MB 440-20735/1-A	Method Blank	Total Recoverable	Water	200.8	20735

### Analysis Batch: 21322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	SM 2340B	

### Analysis Batch: 21383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total Recoverable	Water	200.8	20735
440-8282-A-1-D MS	Matrix Spike	Total Recoverable	Water	200.8	20735
440-8282-A-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	20735
LCS 440-20735/2-A	Lab Control Sample	Total Recoverable	Water	200.8	20735
MB 440-20735/1-A	Method Blank	Total Recoverable	Water	200.8	20735

### Analysis Batch: 22049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	200.8	20965
440-8282-K-1-E MS	Matrix Spike	Dissolved	Water	200.8	20965
440-8282-K-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	20965
LCS 440-20965/2-A	Lab Control Sample	Total Recoverable	Water	200.8	20965
MB 440-20965/1-A	Method Blank	Total Recoverable	Water	200.8	20965

### Analysis Batch: 22325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Dissolved	Water	200.8	20965
440-8282-K-1-E MS	Matrix Spike	Dissolved	Water	200.8	20965
440-8282-K-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	20965
LCS 440-20965/2-A	Lab Control Sample	Total Recoverable	Water	200.8	20965
MB 440-20965/1-A	Method Blank	Total Recoverable	Water	200.8	20965

# QC Association Summary

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## General Chemistry

### Analysis Batch: 19369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	180.1	
440-8326-D-1 DU	Duplicate	Total/NA	Water	180.1	
MB 440-19369/6	Method Blank	Total/NA	Water	180.1	
MRL 440-19369/4 MRL	Lab Control Sample	Total/NA	Water	180.1	

### Prep Batch: 19411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8181-D-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-8181-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 4500 NH3 B	
LCS 440-19411/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-19411/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 19428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	SM 2540F	

### Analysis Batch: 19455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 5540C	
440-8282-E-1 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-8282-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
LCS 440-19455/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-19455/3	Method Blank	Total/NA	Water	SM 5540C	

### Analysis Batch: 19480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8181-D-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 C	19411
440-8181-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 C	19411
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 4500 NH3 C	19411
LCS 440-19411/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	19411
MB 440-19411/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	19411

### Analysis Batch: 19553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM5210B	
LCS 440-19553/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-19553/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-19553/1 USB	Method Blank	Total/NA	Water	SM5210B	

### Analysis Batch: 19574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 2540C	
440-8336-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 440-19574/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-19574/1	Method Blank	Total/NA	Water	SM 2540C	

### Analysis Batch: 19604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7927-B-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-7927-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 5310B	



# QC Association Summary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## General Chemistry (Continued)

### Analysis Batch: 19604 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-19604/6	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-19604/5	Method Blank	Total/NA	Water	SM 5310B	

### Analysis Batch: 19950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	120.1	
440-8593-C-1 DU	Duplicate	Total/NA	Water	120.1	
LCS 440-19950/2	Lab Control Sample	Total/NA	Water	120.1	
MB 440-19950/1	Method Blank	Total/NA	Water	120.1	

### Analysis Batch: 19968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 4500 F C	
440-8444-A-4 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
440-8444-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
LCS 440-19968/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-19968/10	Method Blank	Total/NA	Water	SM 4500 F C	

### Prep Batch: 20314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-V-1-A MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-7684-V-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
440-8277-1	Outfall 002 Grab	Total/NA	Water	Distill/CN	
LCS 440-20314/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-20314/1-A	Method Blank	Total/NA	Water	Distill/CN	

### Analysis Batch: 20344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 2540D	
440-8289-A-3 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-20344/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-20344/1	Method Blank	Total/NA	Water	SM 2540D	

### Analysis Batch: 20530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-V-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	20314
440-7684-V-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	20314
440-8277-1	Outfall 002 Grab	Total/NA	Water	SM 4500 CN E	20314
LCS 440-20314/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	20314
MB 440-20314/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	20314

### Prep Batch: 21239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	1664A	
LCS 440-21239/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-21239/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-21239/1-A	Method Blank	Total/NA	Water	1664A	

### Analysis Batch: 21254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	1664A	21239
LCS 440-21239/2-A	Lab Control Sample	Total/NA	Water	1664A	21239

# QC Association Summary

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## General Chemistry (Continued)

### Analysis Batch: 21254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 440-21239/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	21239
MB 440-21239/1-A	Method Blank	Total/NA	Water	1664A	21239

## Biology

### Analysis Batch: 19325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	SM 9221E	

### Analysis Batch: 19326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8278-1	Outfall 002 Grab	Total/NA	Water	SM 9221F	

## Subcontract

### Analysis Batch: 8607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	Gamma Spec	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	K-40 CS-137	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Gross Alpha and Beta	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Radium 226	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Radium 228	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Strontium 90	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Tritium	8607_P
440-8277-1	Outfall 002 Grab	Total/NA	Water	Uranium, Combined	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Gamma Spec	8607_P
440-8277-2	Trip Blank	Total/NA	Water	K-40 CS-137	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Gross Alpha and Beta	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Radium 226	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Radium 228	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Strontium 90	8607_P
440-8277-2	Trip Blank	Total/NA	Water	Uranium, Combined	8607_P
S204062-01	OUTFALL 018 (440-8282-1)	Total/NA	WATER	Gross Alpha and Beta	8607_P
S204062-04	Lab Control Sample	Total/NA	WATER	Gross Alpha and Beta	8607_P
S204062-05	Method Blank	Total/NA	WATER	Gross Alpha and Beta	8607_P
S204062-06	OUTFALL 018 (440-8282-1) DU	Total/NA	WATER	Gross Alpha and Beta	8607_P

### Prep Batch: 8607\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-1	Outfall 002 Grab	Total/NA	Water	General Prep	
440-8277-2	Trip Blank	Total/NA	Water	General Prep	
S204062-01	OUTFALL 018 (440-8282-1)	Total/NA	WATER	General Prep	
S204062-04	Lab Control Sample	Total/NA	WATER	General Prep	
S204062-05	Method Blank	Total/NA	WATER	General Prep	
S204062-06	OUTFALL 018 (440-8282-1) DU	Total/NA	WATER	General Prep	

# Definitions/Glossary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
AY	Matrix Interference suspected

### GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
BA	Relative percent difference out of control
AY	Matrix Interference suspected

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

### DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

### Metals

Qualifier	Qualifier Description
MB	Analyte present in the method blank
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

### General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
RA	RPD exceeds limits due to matrix interference. % recoveries were within limits

### Biology

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BV	Sample received after holding time expired

### Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid

## Definitions/Glossary

Client: MWH Americas Inc  
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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# Certification Summary

Client: MWH Americas Inc  
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-8277-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 12.002r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080
TestAmerica West Sacramento	A2LA	DoD ELAP		2928-01
TestAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
TestAmerica West Sacramento	Arizona	State Program	9	AZ0708
TestAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica West Sacramento	California	NELAC	9	1119CA
TestAmerica West Sacramento	Colorado	State Program	8	N/A
TestAmerica West Sacramento	Connecticut	State Program	1	PH-0691
TestAmerica West Sacramento	Florida	NELAC	4	E87570
TestAmerica West Sacramento	Georgia	State Program	4	960
TestAmerica West Sacramento	Guam	State Program	9	N/A
TestAmerica West Sacramento	Hawaii	State Program	9	N/A
TestAmerica West Sacramento	Illinois	NELAC	5	200060
TestAmerica West Sacramento	Kansas	NELAC	7	E-10375
TestAmerica West Sacramento	Louisiana	NELAC	6	30612
TestAmerica West Sacramento	Michigan	State Program	5	9947
TestAmerica West Sacramento	Nevada	State Program	9	CA44
TestAmerica West Sacramento	New Jersey	NELAC	2	CA005
TestAmerica West Sacramento	New Mexico	State Program	6	N/A
TestAmerica West Sacramento	New York	NELAC	2	11666
TestAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
TestAmerica West Sacramento	Oregon	NELAC	10	CA200005
TestAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
TestAmerica West Sacramento	South Carolina	State Program	4	87014
TestAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
TestAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
TestAmerica West Sacramento	USDA	Federal		P330-09-00055
TestAmerica West Sacramento	Utah	NELAC	8	QUAN1
TestAmerica West Sacramento	Virginia	State Program	3	178
TestAmerica West Sacramento	Washington	State Program	10	C581
TestAmerica West Sacramento	West Virginia	State Program	3	9930C
TestAmerica West Sacramento	West Virginia DEP	State Program	3	334
TestAmerica West Sacramento	Wisconsin	State Program	5	998204680
TestAmerica West Sacramento	Wyoming	State Program	8	8TMS-Q

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



# EBERLINE SERVICES

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May 8, 2012

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

**Reference: Test America-Irvine 44002624  
Eberline Analytical Report S204062-8607  
Sample Delivery Group 8607**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for three water samples received under Test America Project No. 44002624. The samples were received on April 13, 2012.

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

Sincerely,

Joseph Verville  
Client Services Manager

*NJV/mw*

Enclosure: Level IV CLP-like Data Package CD

### 1.0 General Comments

Sample delivery group 8607 consists of the analytical results and supporting documentation for three water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The samples were 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 samples as received i.e. the samples were 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

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate 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  $2\sigma$  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."**

  
\_\_\_\_\_  
**Joseph Verville**  
**Client Services Manager**

5/8/12  
\_\_\_\_\_  
**Date**




EBERLINE ANALYTICAL  
SDG 8607

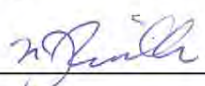
SDG 8607  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

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Prepared by

  
Reviewed by

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

SDG 8607

Client Test America, Inc.

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Contact Joseph Verville

REPORT GUIDE

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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GUIDE, cont.

Contract 44002624

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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LAB SAMPLE SUMMARY

Client Test America, Inc.  
 Contract 44002624

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S204062-01	OUTFALL 018 (440-8282-1)	Boeing-SSFL	WATER			440-3828.1	04/11/12 13:45
S204062-02	OUTFALL 002 (440-8277-1)	Boeing-SSFL	WATER			440-3828.1	04/11/12 14:50
S204062-03	TRIP BLANK (440-8277-2)	Boeing-SSFL	WATER			440-3828.1	04/12/12 14:13
S204062-04	Lab Control Sample		WATER				
S204062-05	Method Blank		WATER				
S204062-06	Duplicate (S204062-01)	Boeing-SSFL	WATER				04/11/12 13:45

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QC SUMMARY

SDG 8607  
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Client Test America, Inc.  
 Contract 44002624

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
8607	440-3828.1	OUTFALL 002 (440-8277-1)	WATER		10.0 L		04/13/12 2	S204062-02	8607-002
		OUTFALL 018 (440-8282-1)	WATER		10.0 L		04/13/12 2	S204062-01	8607-001
		TRIP BLANK (440-8277-2)	WATER		10.0 L		04/13/12 1	S204062-03	8607-003
		Method Blank	WATER					S204062-05	8607-005
		Lab Control Sample	WATER					S204062-04	8607-004
		Duplicate (S204062-01)	WATER		10.0 L		04/13/12 2	S204062-06	8607-006

QC SUMMARY  
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EBERLINE ANALYTICAL

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SDG 8607  
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PREP BATCH SUMMARY

Client Test America, Inc.  
Contract 44002624

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS	
Beta Counting									
AC	WATER	Radium-228 in Water	7726-059	10.4	3		1	1	1/1
SR	WATER	Strontium-90 in Water	7726-059	10.4	3		1	1	1/1
Gas Proportional Counting									
80A	WATER	Gross Alpha in Water	7726-059	20.6	3		1	1	1/1
80B	WATER	Gross Beta in Water	7726-059	11.0	3		1	1	1/1
Gamma Spectroscopy									
GAM	WATER	Gamma Emitters in Water	7726-059	7.0	3		1	1	1/1
Kinetic Phosphorimetry									
U_T	WATER	Uranium, Total	7726-059		3		1	1	1/1
Liquid Scintillation Counting									
H	WATER	Tritium in Water	7726-059	10.0	2		1	1	1/1
Radon Counting									
RA	WATER	Radium-226 in Water	7726-059	16.4	3		1	1	1/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

PREP BATCH SUMMARY

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**EBERLINE ANALYTICAL**

SDG 8607

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Client Test America, Inc.  
Contract 44002624

**LAB WORK SUMMARY**

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST						
S204062-01	OUTFALL 018 (440-8282-1)		8607-001	80A/80		04/25/12	04/27/12	MWT	Gross Alpha in Water	
04/11/12	Boeing-SSFL	WATER	8607-001	80B/80		04/25/12	04/27/12	MWT	Gross Beta in Water	
04/13/12	440-3828.1		8607-001	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-001	GAM		04/19/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-001	H		04/19/12	05/04/12	MWT	Tritium in Water	
			8607-001	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-001	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-001	U_T		04/25/12	04/26/12	CSS	Uranium, Total	
S204062-02	OUTFALL 002 (440-8277-1)		8607-002	80A/80		04/25/12	04/27/12	MWT	Gross Alpha in Water	
04/11/12	Boeing-SSFL	WATER	8607-002	80B/80		04/25/12	04/27/12	MWT	Gross Beta in Water	
04/13/12	440-3828.1		8607-002	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-002	GAM		04/19/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-002	H		04/19/12	05/04/12	MWT	Tritium in Water	
			8607-002	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-002	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-002	U_T		04/25/12	04/26/12	CSS	Uranium, Total	
S204062-03	TRIP BLANK (440-8277-2)		8607-003	80A/80		04/25/12	04/27/12	MWT	Gross Alpha in Water	
04/12/12	Boeing-SSFL	WATER	8607-003	80B/80		04/25/12	04/27/12	MWT	Gross Beta in Water	
04/13/12	440-3828.1		8607-003	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-003	GAM		04/20/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-003	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-003	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-003	U_T		04/25/12	04/26/12	CSS	Uranium, Total	
S204062-04	Lab Control Sample		8607-004	80A/80		04/25/12	04/27/12	MWT	Gross Alpha in Water	
		WATER	8607-004	80B/80		04/25/12	04/27/12	MWT	Gross Beta in Water	
			8607-004	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-004	GAM		04/20/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-004	H		04/19/12	05/04/12	MWT	Tritium in Water	
			8607-004	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-004	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-004	U_T		04/25/12	04/26/12	CSS	Uranium, Total	

WORK SUMMARY

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Lab id EAS  
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Form DVD-LWS  
Version 3.06  
Report date 05/08/12

**EBERLINE ANALYTICAL**

SDG 8607

SDG 8607  
Contact Joseph Verville

**WORK SUMMARY, cont.**

Client Test America, Inc.  
Contract 44002624

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST						
S204062-05	Method Blank		8607-005	80A/80		04/25/12	04/27/12	MWT	Gross Alpha in Water	
		WATER	8607-005	80B/80		04/25/12	04/27/12	MWT	Gross Beta in Water	
			8607-005	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-005	GAM		04/20/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-005	H		04/19/12	05/04/12	MWT	Tritium in Water	
			8607-005	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-005	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-005	U_T		04/25/12	04/26/12	CSS	Uranium, Total	
S204062-06	Duplicate (S204062-01)		8607-006	80A/80		04/26/12	04/27/12	MWT	Gross Alpha in Water	
04/11/12	Boeing-SSFL	WATER	8607-006	80B/80		04/26/12	04/27/12	MWT	Gross Beta in Water	
04/13/12			8607-006	AC		04/25/12	05/04/12	MWT	Radium-228 in Water	
			8607-006	GAM		04/20/12	04/23/12	MWT	Gamma Emitters in Water	
			8607-006	H		04/19/12	05/04/12	MWT	Tritium in Water	
			8607-006	RA		05/02/12	05/02/12	BW	Radium-226 in Water	
			8607-006	SR		04/24/12	04/30/12	BW	Strontium-90 in Water	
			8607-006	U_T		04/25/12	04/26/12	CSS	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	3			1	1	1	6
80B/80		Gross Beta in Water	900.0	3			1	1	1	6
AC		Radium-228 in Water	904.0	3			1	1	1	6
GAM		Gamma Emitters in Water	901.1	3			1	1	1	6
H		Tritium in Water	906.0	2			1	1	1	5
RA		Radium-226 in Water	903.1	3			1	1	1	6
SR		Strontium-90 in Water	905.0	3			1	1	1	6
U_T		Uranium, Total	D5174	3			1	1	1	6
TOTALS				23			8	8	8	47

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LWS  
Version 3.06  
Report date 05/08/12



EBERLINE ANALYTICAL

SDG 8607

8607-005

Method Blank

METHOD BLANK

SDG <u>8607</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204062-05</u>	Client sample id <u>Method Blank</u>
Dept sample id <u>8607-005</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	-0.105	0.29	0.571	3.00	U	80A
Gross Beta	12587472	-0.378	0.68	1.12	4.00	U	80B
Tritium	10028178	12.2	100	171	500	U	H
Radium-226	13982633	-0.070	0.27	0.518	1.00	U	RA
Radium-228	15262201	0.006	0.16	0.417	1.00	U	AC
Strontium-90	10098972	0.127	0.25	0.518	2.00	U	SR
Uranium, Total		0	0.008	0.019	1.00	U	U_T
Potassium-40	13966002	20.2	38	<u>65.0</u>	25.0	U	GAM
Cesium-137	10045973	1.25	3.0	5.18	20.0	U	GAM

QC-BLANK #81577

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>05/08/12</u>

METHOD BLANKS

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8607

8607-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8607</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>8204062-04</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>8607-004</u>	Material/Matrix <u>WATER</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMES (TOTAL)	PROTOCOL LIMITS
Gross Alpha	43.3	2.3	0.592	3.00	80A	37.0	1.5	117	75-125	70-130
Gross Beta	33.6	1.3	0.925	4.00	80B	34.0	1.4	99	88-112	70-130
Tritium	2200	160	172	500	H	2440	98	90	88-112	80-120
Radium-226	55.0	2.1	0.621	1.00	RA	50.1	2.0	110	81-119	80-120
Radium-228	4.94	0.50	0.415	1.00	AC	4.42	0.18	112	83-117	60-140
Strontium-90	8.52	0.59	0.309	2.00	SR	8.49	0.34	100	87-113	80-120
Uranium, Total	59.4	6.9	0.193	1.00	U_T	56.5	2.3	105	87-113	80-120
Cobalt-60	101	5.6	4.64	10.0	GAM	108	4.3	94	91-109	80-120
Cesium-137	120	0.48	2.82	20.0	GAM	122	4.9	98	92-108	80-120

QC-LCS #81576

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>05/08/12</u>

EBERLINE ANALYTICAL

SDG 8607

8607-006

OUTFALL 018 (440-8282-1)

DUPLICATE

SDG <u>8607</u>		Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>		Contract <u>44002624</u>
DUPLICATE		ORIGINAL
Lab sample id <u>S204062-06</u>	Lab sample id <u>S204062-01</u>	Client sample id <u>OUTFALL 018 (440-8282-1)</u>
Dept sample id <u>8607-006</u>	Dept sample id <u>8607-001</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
	Received <u>04/13/12</u>	Collected/Volume <u>04/11/12 13:45</u> <u>10.0 L</u>
		Chain of custody id <u>440-3828.1</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	0.008	0.51	0.908	3.00	U	80A	0.114	0.49	0.835	U	-	0.3	
Gross Beta	3.59	0.68	0.957	4.00	J	80B	4.32	0.65	0.853		18	43	1.3
Tritium	10.8	110	178	500	U	H	47.2	100	172	U	-		0.5
Radium-226	-0.012	0.29	0.543	1.00	U	RA	0.118	0.27	0.477	U	-		0.7
Radium-228	-0.052	0.15	0.412	1.00	U	AC	-0.120	0.14	0.396	U	-		0.7
Strontium-90	0.002	0.28	0.579	2.00	U	SR	-0.277	0.36	0.981	U	-		1.2
Uranium, Total	0.052	0.010	0.019	1.00	J	U_T	0.047	0.010	0.019	J	10	43	0.7
Potassium-40	0.265	14	<u>25.2</u>	25.0	U	GAM	12.9	14	23.3	U	-		1.3
Cesium-137	-0.679	1.7	2.97	20.0	U	GAM	0.048	0.89	1.76	U	-		0.8

QC-DUP#1 81578

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-DUP  
Version 3.06  
Report date 05/08/12

EBERLINE ANALYTICAL

SDG 8607

8607-001

OUTFALL 018 (440-8282-1)

DATA SHEET

SDG <u>8607</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204062-01</u>	Client sample id <u>OUTFALL 018 (440-8282-1)</u>
Dept sample id <u>8607-001</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
Received <u>04/13/12</u>	Collected/Volume <u>04/11/12 13:45</u> <u>10.0 L</u>
	Chain of custody id <u>440-3828.1</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.114	0.49	0.835	3.00	U	80A
Gross Beta	12587472	4.32	0.65	0.853	4.00		80B
Tritium	10028178	47.2	100	172	500	U	H
Radium-226	13982633	0.118	0.27	0.477	1.00	U	RA
Radium-228	15262201	-0.120	0.14	0.396	1.00	U	AC
Strontium-90	10098972	-0.277	0.36	0.981	2.00	U	SR
Uranium, Total		0.047	0.010	0.019	1.00	J	U T
Potassium-40	13966002	12.9	14	23.3	25.0	U	GAM
Cesium-137	10045973	0.048	0.89	1.76	20.0	U	GAM

DATA SHEETS

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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-DS</u>
Version <u>3.06</u>
Report date <u>05/08/12</u>

EBERLINE ANALYTICAL

SDG 8607

8607-002

OUTFALL 002 (440-8277-1)

DATA SHEET

SDG <u>8607</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204062-02</u>	Client sample id <u>OUTFALL 002 (440-8277-1)</u>
Dept sample id <u>8607-002</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
Received <u>04/13/12</u>	Collected/Volume <u>04/11/12 14:50</u> <u>10.0 L</u>
	Chain of custody id <u>440-3828.1</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.226	0.51	0.872	3.00	U	80A
Gross Beta	12587472	4.16	0.89	1.26	4.00		80B
Tritium	10028178	5.22	100	172	500	U	H
Radium-226	13982633	0.354	0.31	0.497	1.00	U	RA
Radium-228	15262201	-0.025	0.13	0.381	1.00	U	AC
Strontium-90	10098972	0.378	0.45	0.901	2.00	U	SR
Uranium, Total		0.147	0.018	0.019	1.00	J	U_T
Potassium-40	13966002	-7.20	18	<u>31.8</u>	25.0	U	GAM
Cesium-137	10045973	-0.824	1.8	3.23	20.0	U	GAM

DATA SHEETS

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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-DS</u>
Version <u>3.06</u>
Report date <u>05/08/12</u>

EBERLINE ANALYTICAL  
SDG 8607

8607-003

TRIP BLANK (440-8277-2)

DATA SHEET

SDG <u>8607</u>	Client <u>Test America, Inc.</u>
Contact <u>Joseph Verville</u>	Contract <u>44002624</u>
Lab sample id <u>S204062-03</u>	Client sample id <u>TRIP BLANK (440-8277-2)</u>
Dept sample id <u>8607-003</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
Received <u>04/13/12</u>	Collected/Volume <u>04/12/12 14:13</u> <u>10.0 L</u>
	Chain of custody id <u>440-3828.1</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.051	0.17	0.332	3.00	U	80A
Gross Beta	12587472	-0.209	0.48	0.821	4.00	U	80B
Radium-226	13982633	0.250	0.32	0.526	1.00	U	RA
Radium-228	15262201	-0.032	0.13	0.371	1.00	U	AC
Strontium-90	10098972	0.079	0.44	0.988	2.00	U	SR
Uranium, Total		0	0.008	0.019	1.00	U	U_T
Potassium-40	13966002	4.50	17	<u>30.0</u>	25.0	U	GAM
Cesium-137	10045973	0.219	0.61	1.86	20.0	U	GAM

DATA SHEETS  
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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-DS</u>
Version <u>3.06</u>
Report date <u>05/08/12</u>

**EBERLINE ANALYTICAL**

SDG 8607

**LAB METHOD SUMMARY**

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER  
 SDG 8607  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

**RESULTS**

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

Preparation batch 7726-059

S204062-01	8607-001	OUTFALL 018 (440-8282-1)	U
S204062-02	8607-002	OUTFALL 002 (440-8277-1)	U
S204062-03	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	8607-004	Lab Control Sample	ok
S204062-05	8607-005	Method Blank	U
S204062-06	8607-006	Duplicate (S204062-01)	- 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 7726-059 2σ prep error 10.4 % Reference Lab Notebook 7724 pg. 119

S204062-01	OUTFALL 018 (440-8282-1)	0.396	1.80	85	150	14	04/25/12	04/25	GRB-221
S204062-02	OUTFALL 002 (440-8277-1)	0.381	1.80	85	150	14	04/25/12	04/25	GRB-222
S204062-03	TRIP BLANK (440-8277-2)	0.371	1.80	91	150	13	04/25/12	04/25	GRB-223
S204062-04	Lab Control Sample	0.415	1.80	87	150		04/25/12	04/25	GRB-224
S204062-05	Method Blank	0.417	1.80	84	150		04/25/12	04/25	GRB-225
S204062-06	Duplicate (S204062-01)	0.412	1.80	83	150	14	04/25/12	04/25	GRB-227

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 0.399 ± 0.039  
 FOR 6 SAMPLES YIELD 86 ± 6

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 05/08/12

**EBERLINE ANALYTICAL**

SDG 8607

Test SR Matrix WATER  
 SDG 8607  
 Contact Joseph Verville

**LAB METHOD SUMMARY**

STRONTIUM-90 IN WATER  
 BETA COUNTING

Client Test America, Inc.  
 Contract 44002624

**RESULTS**

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

Preparation batch 7726-059

S204062-01	8607-001	OUTFALL 018 (440-8282-1)	U
S204062-02	8607-002	OUTFALL 002 (440-8277-1)	U
S204062-03	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	8607-004	Lab Control Sample	ok
S204062-05	8607-005	Method Blank	U
S204062-06	8607-006	Duplicate (S204062-01)	- 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 7726-059            2σ prep error 10.4 %    Reference Lab Notebook 7724 pg. 119

S204062-01	OUTFALL 018 (440-8282-1)	0.981	<u>0.500</u>	80	50	13	04/24/12	04/24	GRB-221
S204062-02	OUTFALL 002 (440-8277-1)	0.901	<u>0.500</u>	84	50	13	04/24/12	04/24	GRB-222
S204062-03	TRIP BLANK (440-8277-2)	0.988	<u>0.500</u>	77	50	12	04/24/12	04/24	GRB-223
S204062-04	Lab Control Sample	0.309	1.00	75	100		04/24/12	04/24	GRB-229
S204062-05	Method Blank	0.518	1.00	79	50		04/24/12	04/24	GRB-225
S204062-06	Duplicate (S204062-01)	0.579	<u>0.500</u>	76	100	13	04/24/12	04/24	GRB-230

Nominal values and limits from method            2.00    1.00            30-105            50            180

PROCEDURES    REFERENCE    905.0  
 CP-380            Strontium in Water Samples, rev 5

AVERAGES ± 2 SD            MDA 0.713 ± 0.567  
 FOR 6 SAMPLES            YIELD 78 ± 7

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 05/08/12



**EBERLINE ANALYTICAL**

SDG 8607

Test ROA Matrix WATER  
 SDG 8607  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

**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 7726-059				
S204062-01	80	8607-001	OUTFALL 018 (440-8282-1)	U
S204062-02	80	8607-002	OUTFALL 002 (440-8277-1)	U
S204062-03	80	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	80	8607-004	Lab Control Sample	ok
S204062-05	80	8607-005	Method Blank	U
S204062-06	80	8607-006	Duplicate (S204062-01)	- 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 7726-059      2σ prep error 20.6 %      Reference Lab Notebook 7724 pg. 119															
S204062-01	80	OUTFALL 018 (440-8282-1)	0.835	0.300			104	400	14	04/24/12	04/25	GRB-109			
S204062-02	80	OUTFALL 002 (440-8277-1)	0.872	<u>0.200</u>			67	400	14	04/24/12	04/25	GRB-111			
S204062-03	80	TRIP BLANK (440-8277-2)	0.332	0.300			0	400	13	04/24/12	04/25	GRB-112			
S204062-04	80	Lab Control Sample	0.592	0.300			60	400		04/24/12	04/25	GRB-105			
S204062-05	80	Method Blank	0.571	0.300			62	400		04/24/12	04/25	GRB-107			
S204062-06	80	Duplicate (S204062-01)	0.908	0.300			105	400	15	04/24/12	04/26	GRB-105			

Nominal values and limits from method      3.00      0.300      0-250      100      180

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

AVERAGES ± 2 SD      MDA 0.685 ± 0.450  
 FOR 6 SAMPLES      RESIDUE 66 ± 77

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 05/08/12

**EBERLINE ANALYTICAL**

SDG 8607

Test 80B Matrix WATER  
 SDG 8607  
 Contact Joseph Verville

**LAB METHOD SUMMARY**

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client Test America, Inc.  
 Contract 44002624

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>PLANCHET</b>	<b>CLIENT SAMPLE ID</b>	<b>Gross Beta</b>

Preparation batch 7726-059

S204062-01	80	8607-001	OUTFALL 018 (440-8282-1)	4.32
S204062-02	80	8607-002	OUTFALL 002 (440-8277-1)	4.16
S204062-03	80	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	80	8607-004	Lab Control Sample	ok
S204062-05	80	8607-005	Method Blank	U
S204062-06	80	8607-006	Duplicate (S204062-01)	ok J

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

**METHOD PERFORMANCE**

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

Preparation batch 7726-059      2σ prep error 11.0 %      Reference Lab Notebook 7724 pg. 119

S204062-01	80	OUTFALL 018 (440-8282-1)	0.853	0.300				104		400			14	04/24/12	04/25	GRB-109
S204062-02	80	OUTFALL 002 (440-8277-1)	1.26	<u>0.200</u>				67		400			14	04/24/12	04/25	GRB-111
S204062-03	80	TRIP BLANK (440-8277-2)	0.821	0.300				0		400			13	04/24/12	04/25	GRB-112
S204062-04	80	Lab Control Sample	0.925	0.300				60		400				04/24/12	04/25	GRB-105
S204062-05	80	Method Blank	1.12	0.300				62		400				04/24/12	04/25	GRB-107
S204062-06	80	Duplicate (S204062-01)	0.957	0.300				105		400			15	04/24/12	04/26	GRB-105

Nominal values and limits from method      4.00      0.300      0-250      100      180

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

AVERAGES ± 2 SD      MDA 0.989 ± 0.338  
 FOR 6 SAMPLES      RESIDUE 66 ± 77

METHOD SUMMARIES

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**EBERLINE ANALYTICAL**

SDG 8607

**LAB METHOD SUMMARY**

URANIUM, TOTAL  
KINETIC PHOSPHORIMETRY

Test U T Matrix WATER  
SDG 8607  
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Contract 44002624

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		<b>Uranium,</b>
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>PLANCHET</b>	<b>CLIENT SAMPLE ID</b>	<b>Total</b>

Preparation batch 7726-059

S204062-01	8607-001	OUTFALL 018 (440-8282-1)	0.047 J
S204062-02	8607-002	OUTFALL 002 (440-8277-1)	0.147 J
S204062-03	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	8607-004	Lab Control Sample	ok
S204062-05	8607-005	Method Blank	U
S204062-06	8607-006	Duplicate (S204062-01)	ok J

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

**METHOD PERFORMANCE**

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

Preparation batch 7726-059      2σ prep error      Reference Lab Notebook 7724 pg. 119

S204062-01	OUTFALL 018 (440-8282-1)	0.019	0.0200	14	04/25/12	04/25	KPA-001
S204062-02	OUTFALL 002 (440-8277-1)	0.019	0.0200	14	04/25/12	04/25	KPA-001
S204062-03	TRIP BLANK (440-8277-2)	0.019	0.0200	13	04/25/12	04/25	KPA-001
S204062-04	Lab Control Sample	0.193	0.0200		04/25/12	04/25	KPA-001
S204062-05	Method Blank	0.019	0.0200		04/25/12	04/25	KPA-001
S204062-06	Duplicate (S204062-01)	0.019	0.0200	14	04/25/12	04/25	KPA-001

Nominal values and limits from method      1.00      0.0200      180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD      MDA 0.048 ± 0.142  
FOR 6 SAMPLES      YIELD \_\_\_\_\_ ± \_\_\_\_\_

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

SDG 8607

**LAB METHOD SUMMARY**

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER  
 SDG 8607  
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 Contract 44002624

**RESULTS**

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7726-059				
S204062-01		8607-001	OUTFALL 018 (440-8282-1)	U
S204062-02		8607-002	OUTFALL 002 (440-8277-1)	U
S204062-04		8607-004	Lab Control Sample	ok
S204062-05		8607-005	Method Blank	U
S204062-06		8607-006	Duplicate (S204062-01)	- 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 7726-059			2σ prep error 10.0 %		Reference Lab Notebook 7724 pg. 119										
S204062-01		OUTFALL 018 (440-8282-1)	172	0.0100			100		150			8	04/19/12	04/19	LSC-006
S204062-02		OUTFALL 002 (440-8277-1)	172	0.0100			100		150			8	04/19/12	04/19	LSC-006
S204062-04		Lab Control Sample	172	0.100			10		150				04/19/12	04/19	LSC-006
S204062-05		Method Blank	171	0.100			10		150				04/19/12	04/19	LSC-006
S204062-06		Duplicate (S204062-01)	178	0.0100			100		150			8	04/19/12	04/19	LSC-006

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 173 ± 5.66  
 FOR 5 SAMPLES YIELD 64 ± 99

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SDG 8607

Test RA Matrix WATER  
 SDG 8607  
 Contact Joseph Verville

LAB METHOD SUMMARY

RADIUM-226 IN WATER  
 RADON COUNTING

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RESULTS

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

Preparation batch 7726-059

S204062-01	8607-001	OUTFALL 018 (440-8282-1)	U
S204062-02	8607-002	OUTFALL 002 (440-8277-1)	U
S204062-03	8607-003	TRIP BLANK (440-8277-2)	U
S204062-04	8607-004	Lab Control Sample	ok
S204062-05	8607-005	Method Blank	U
S204062-06	8607-006	Duplicate (S204062-01)	- 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 7726-059 2σ prep error 16.4 % Reference Lab Notebook 7724 pg. 119

S204062-01	OUTFALL 018 (440-8282-1)	0.477	0.100	100	120	21	05/02/12	05/02	RN-012
S204062-02	OUTFALL 002 (440-8277-1)	0.497	0.100	100	120	21	05/02/12	05/02	RN-010
S204062-03	TRIP BLANK (440-8277-2)	0.526	0.100	100	120	20	05/02/12	05/02	RN-011
S204062-04	Lab Control Sample	0.621	0.100	100	120		05/02/12	05/02	RN-009
S204062-05	Method Blank	0.518	0.100	100	120		05/02/12	05/02	RN-013
S204062-06	Duplicate (S204062-01)	0.543	0.100	100	120	21	05/02/12	05/02	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 0.530 ± 0.100  
 FOR 6 SAMPLES YIELD 100 ± 0

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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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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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REPORT GUIDE

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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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'

REPORT GUIDES

Page 12

SUMMARY DATA SECTION

Page 33

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 05/08/12

EBERLINE ANALYTICAL

SDG 8607

SDG 8607  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

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

REPORT GUIDES

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SUMMARY DATA SECTION

Page 34

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 05/08/12

EBERLINE ANALYTICAL

SDG 8607

SDG 8607  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

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.

REPORT GUIDES

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SUMMARY DATA SECTION

Page 35

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 05/08/12

EBERLINE ANALYTICAL

SDG 8607

SDG 8607  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

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

Page 15

SUMMARY DATA SECTION

Page 36

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 05/08/12



520010600 - 8607

### Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b> Client Contact: Wilson, Debby Shipping/Receiving: debby.wilson@testamericainc.com Company: Eberline Services		Lab P/N: Wilson, Debby E-Mail: debby.wilson@testamericainc.com		Carrier Tracking No(s): COC No: 440-9282-1 Page: Page 1 of 1 Job #: 440-9282-1	
Due Date Requested: 4/25/2012 TAT Requested (days): Address: 2030 Wright Avenue, City: Richmond State, Zip: CA, 94804 Phone: Email: Project #: 44002624 Site: Boeing SSFL		<b>Analysis Requested</b> SUBCONTRACT/ Gross Alpha SUBCONTRACT/ Gross Beta SUBCONTRACT/ Radium Combined SUBCONTRACT/ Strontium 90 SUBCONTRACT/ Tritium SUBCONTRACT/ Uranium, Combined SUBCONTRACT/ Gamma Spec K-40 CS-137		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SSO3 S - H2SO4 T - TSP Dodacahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (Specify)	
<b>Sample Identification - Client ID (Lab ID)</b> Outfall 018 (440-9282-1)		<b>Sample Date</b> 4/11/12		<b>Sample Time</b> 13:45 Pacific	
<b>Sample Type (C=Comp, G=grab)</b> G-grab		<b>Matrix</b> (W=water, S=solid, O=wastefl, BT=Tissue, AA=)		Water	
<b>Field Filtered Sample (Yes or No)</b> No		<b>Field Filtered Sample (Type or No)</b> No		<b>Total Number of Containers</b> 2	
<b>Special Instructions/Note:</b> None		<b>Special Instructions/Note:</b> None		<b>Special Instructions/Note:</b> None	
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)					
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
<b>Special Instructions/QC Requirements:</b>					
<b>Empty Kit Relinquished by:</b> SubBauer		<b>Date:</b> 4/12/12 17:00		<b>Method of Shipment:</b>	
<b>Relinquished by:</b> FED EX		<b>Date/Time:</b> 4/12/12 17:00		<b>Company:</b> TAI	
<b>Relinquished by:</b> FED EX		<b>Date/Time:</b> 4/13/12 10:00		<b>Company:</b> CBERG	
<b>Relinquished by:</b> FED EX		<b>Date/Time:</b> 4/13/12 10:00		<b>Company:</b> CBERG	
<b>Custody Seals Intact:</b> Δ Yes Δ No		<b>Custody Seal No.:</b>		<b>Cooler Temperature(s) °C and Other Remarks:</b>	

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

Chain of Custody Record

TestAmerica  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b> Company: Eberline Services Address: 2030 Wright Avenue, City: Richmond State/Zip: CA, 94804 Phone: Email: Project Name: Boeing SSFL outfalls Site: Boeing SSFL		Lab PM: Wilson, Debby E-Mail: debby.wilson@testamericainc.com		Carrier Tracking No(s): COC No: 440-3828-1 Page: Page 1 of 1 Job #: 440-8277-1	
Due Date Requested: 4/25/2012 TAT Requested (days): PO #: WO #: Project #: 44002624 SSOW#:		<b>Analysis Requested</b> SUBCONTRACT/ Gross Alpha SUBCONTRACT/ Gross Beta SUBCONTRACT/ Radium Combined SUBCONTRACT/ Strontium 90 SUBCONTRACT/ Tritium SUBCONTRACT/ Uranium, Combined SUBCONTRACT/ Gamma Spec K-40 CS-137 Total Number of containers: 2			
Sample Date Sample Time Sample Type (C=Comp, G=Grab) Matrix (W=water, S=solid, O=wastebell, BT=tissue, PA=plasma) Preservation Code		Filtered Sample (Yes or No) Special Instructions/Note: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 H - Ascorbic Acid U - Acetone V - MCAA W - ph 4-5 L - EDA Other:			
<b>Sample Identification - Client ID (Lab ID)</b> Outfall 002 (440-8277-1) Trip Blank (440-8277-2)		Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Empty Kit Relinquished by: Relinquished by: <i>W. B. B...</i> Relinquished by: <i>FEDEX</i> Relinquished by: Custody Seals Intact: Δ Yes Δ No			
Date/Time: 4/12/12 17:00 Date/Time: 4/13/12 10:00 Date/Time:		Received by: <i>FEDEX</i> Received by: <i>FEDEX</i> Received by: Date/Time: 4/12/12 17:00 Date/Time: 4/13/12 10:00 Date/Time:			
Date:		Method of Shipment: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:			
Cooler Temperature(s) °C and Other Remarks:		Company: <i>FEDEX</i> Company: <i>FEDEX</i> Company:			







# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

## REPORT

**Client:** TestAmerica Analytical - Irvine

17461 Derian Avenue, Suite 100

Irvine, CA 92614

**Attention:** Debby Wilson

**Project Name:** Boeing SSFL outfalls

**Project Number:** 44002624

**P.O. Number:** 440-8277-1

**Release Number:** 440-8277-1

Laboratory No. 801025

Page 1 of 2

Printed 4/24/2012

Samples Received on 4/13/2012

Field ID	Lab ID	Collected	Matrix
Outfall 002 (440-8277) Outfall 002 (440-8277-1)	801025-001	04/11/2012 14:50	Water

### EPA 8315 M-Hydrazines (water)

Batch 709867

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801025-001 Hydrazine	ug/L	04/14/2012 19:39	1	0.439	1.00	ND
Monomethyl Hydrazine	ug/L	04/14/2012 19:39	1	1.77	5.00	ND
Unsymmetrical Dimethyl Hydrazine	ug/L	04/14/2012 19:39	1	1.13	5.00	ND

#### Method Blank

Parameter	Unit	DF	Result
Hydrazine	ug/L	1	ND
Monomethyl Hydrazine	ug/L	1	ND
Unsymmetrical Dimethyl Hydrazine	ug/L	1	ND

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	9.38	10.0	93.8	50 - 150
Monomethyl Hydrazine	ug/L	1	34.7	50.0	69.4	50 - 150
Unsymmetrical Dimethyl Hydrazine	ug/L	1	34.2	50.0	68.4	50 - 150

#### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	8.65	10.0	86.5	50 - 150
Monomethyl Hydrazine	ug/L	1	39.9	50.0	79.8	50 - 150
Unsymmetrical Dimethyl Hydrazine	ug/L	1	40.7	50.0	81.4	50 - 150

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: TestAmerica Analytical - Irvine

Project Name: Boeing SSFL outfalls

Page 2 of 2

Project Number: 44002624

Printed 4/24/2012

Matrix Spike

Lab ID = 801024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Hydrazine	ug/L	1	6.43	10.0(10.0)	64.3	45 - 146
Monomethyl Hydrazine	ug/L	1	35.2	50.0(50.0)	70.4	7 - 149
Unsymmetrical Dimethyl Hydr:	ug/L	1	33.8	50.0(50.0)	67.6	45 - 137

Matrix Spike Duplicate

Lab ID = 801024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Hydrazine	ug/L	1	6.39	10.0(10.0)	63.9	45 - 146
Monomethyl Hydrazine	ug/L	1	38.5	50.0(50.0)	77.0	7 - 149
Unsymmetrical Dimethyl Hydr:	ug/L	1	36.1	50.0(50.0)	72.2	45 - 137

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	10.4	10.0	104	85 - 115
Monomethyl Hydrazine	ug/L	1	48.8	50.0	97.6	85 - 115
Unsymmetrical Dimethyl Hydr:	ug/L	1	52.3	50.0	105.	85 - 115

MRCVS - Primary

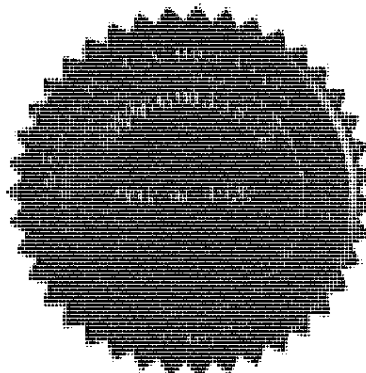
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Hydrazine	ug/L	1	5.44	5.00	109.	85 - 115
Monomethyl Hydrazine	ug/L	1	24.6	25.0	98.4	85 - 115
Unsymmetrical Dimethyl Hydr:	ug/L	1	25.7	25.0	103.	85 - 115

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

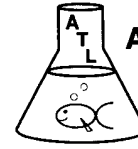
Jeff Lee

Assistant Project Manager



This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

4350 Transport Street, Unit 107  
Ventura, CA 93003  
(805) 650-0546 FAX (805) 650-0756  
CA DOHS ELAP Cert. No.: 1775

**Date:** April 18, 2012  
**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**Laboratory No.:** A-12041205-001  
**Job No.:** 440-8277-1  
**Sample I.D.:** Outfall 002 (440-8277-1)

**Sample Control:** The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample).

Date Sampled: 04/11/12  
Date Received: 04/12/12  
Temp. Received: 5.3°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 04/12/12 to 04/18/12

**Sample Analysis:** The following analyses were performed on your sample:

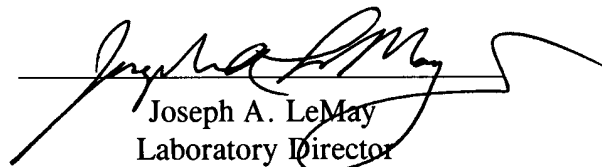
*Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

Chronic:	NOEC	TUc
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-12041205-001  
Client/ID: TestAmerica - Outfall 002 (440-8277-1)

Date Tested: 04/12/12 to 04/18/12

**TEST SUMMARY**

Test type: Daily static-renewal.	Endpoints: Survival and Reproduction.
Species: <i>Ceriodaphnia dubia</i> .	Source: In-laboratory culture.
Age: < 24 hrs; all released within 8 hrs.	Food: .1 ml YTC, algae per day.
Test vessel size: 30 ml.	Test solution volume: 15 ml.
Number of test organisms per vessel: 1.	Number of replicates: 10.
Temperature: 25 +/- 1°C.	Photoperiod: 16/8 hrs. light/dark cycle.
Dilution water: Mod. hard reconstituted (MHRW).	Test duration: 6 days.
QA/QC Batch No.: RT-120403.	Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	20.8
100% Sample	100%	26.3
Sample not statistically significantly less than Control for either endpoint.		

**CHRONIC TOXICITY**

Survival NOEC	100%
Survival T <sub>Uc</sub>	1.0
Reproduction NOEC	100%
Reproduction T <sub>Uc</sub>	1.0

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥ 80%	Pass (100% survival)
≥ 15 young per surviving control female	Pass (20.8 young)
≥ 60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD < 47% for reproduction; if > 47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 17.8%)
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-Survival Day 6**

Start Date: 4/12/2012 14:30 Test ID: 12041205c Sample ID: Outfall 002  
 End Date: 4/18/2012 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/11/2012 14:50 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

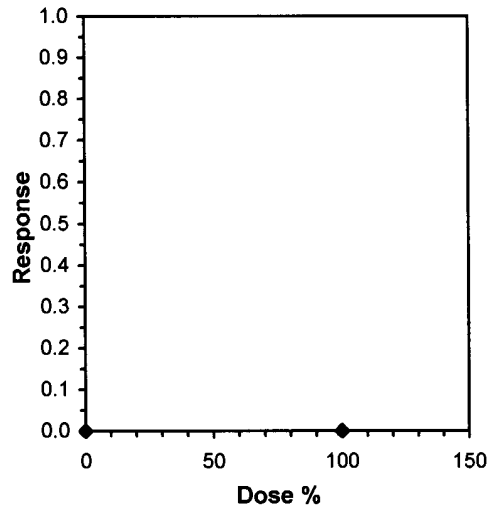
Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	1.0472	0	10	10			1.0000	1.0000
100	1.0000	1.0000	1.0472	0	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: 4/12/2012 14:30 Test ID: 12041205c Sample ID: Outfall 002  
 End Date: 4/18/2012 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/11/2012 14:50 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	13.000	23.000	24.000	21.000	25.000	22.000	24.000	22.000	13.000	21.000
100	14.000	24.000	29.000	29.000	32.000	31.000	29.000	26.000	23.000	26.000

Conc-%	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	20.800	1.0000	20.800	13.000	25.000	20.747	10			23.550	1.0000
100	26.300	1.2644	26.300	14.000	32.000	19.802	10	141.50	82.00	23.550	1.0000

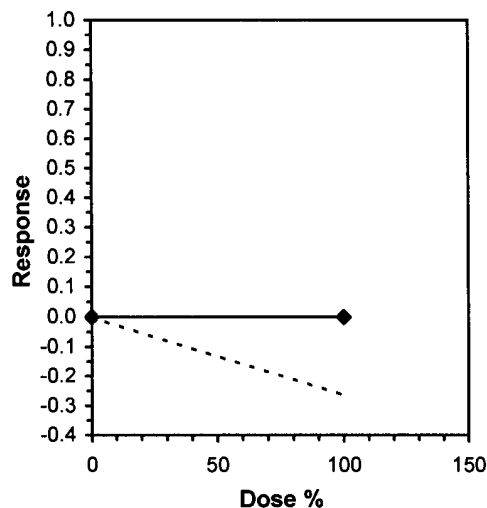
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.86414	0.905	-1.3661	1.49036
F-Test indicates equal variances (p = 0.58)	1.45644	6.54109		

**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates no significant differences

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: 4/12/2012 14:30 Test ID: 12041205c Sample ID: Outfall 002  
 End Date: 4/18/2012 15:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/11/2012 14:50 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	13.000	23.000	24.000	21.000	25.000	22.000	24.000	22.000	13.000	21.000
100	14.000	24.000	29.000	29.000	32.000	31.000	29.000	26.000	23.000	26.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed	
			Mean	Min	Max	CV%	Critical			MSD	
D-Control	20.800	1.0000	20.800	13.000	25.000	20.747	10				
100	26.300	1.2644	26.300	14.000	32.000	19.802	10	-2.572	1.730	3.700	

Auxiliary Tests			Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)			0.86414	0.905	-1.3661	1.49036						
F-Test indicates equal variances (p = 0.58)			1.45644	6.54109								
Hypothesis Test (1-tail, 0.05)			NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test			100	>100		1	3.70012	0.17789	151.25	22.8722	0.01921	1, 18
Treatments vs D-Control												

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0 Raw Data Sheet**



Lab No.: A-12041205-001

Client ID: TestAmerica - Outfall 002 (440-8277-1)

Start Date: 04/12/2012

		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:		JK	Z	Z	Z	Z	Z	Z	JK	JK	Z	Z	Z	-	-
Time of Readings:		1430	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1500	-	-
Control	DO	8.0	8.0	8.2	8.3	8.7	8.4	9.1	7.9	8.2	8.1	8.2	7.9	-	-
	pH	8.2	8.1	7.9	8.1	8.2	8.1	8.2	8.1	8.2	8.1	8.1	8.1	-	-
	Temp	24.4	24.2	24.2	24.3	24.4	24.4	24.3	24.2	24.2	24.3	24.3	24.3	-	-
100%	DO	7.7	8.1	9.2	8.4	9.1	8.3	9.4	7.9	9.7	7.7	9.8	7.6	-	-
	pH	7.6	8.0	7.5	8.0	7.7	8.0	7.7	8.0	7.6	8.1	7.6	8.1	-	-
	Temp	24.6	24.2	24.3	24.4	24.2	24.7	24.3	24.2	24.2	24.3	24.6	24.6	-	-

Additional Parameters	Control	100% Sample
Conductivity (umohms)	320	469
Alkalinity (mg/l CaCO <sub>3</sub> )	69	70
Hardness (mg/l CaCO <sub>3</sub> )	94	140
Ammonia (mg/l NH <sub>3</sub> -N)	0	0.2

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	1A	1B	1C	2D	2E	1G	2H	1I	2I	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	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	4	0	0	4	0	0	8	10	
	4	4	3	3	4	0	2	3	0	4	4	27	10	
	5	0	8	8	7	9	6	9	8	0	7	62	10	
	6	9	12	13	10	12	14	12	10	9	10	111	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	13	23	24	21	25	22	24	22	13	21	208	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	JK
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	4	0	0	0	4	8	10	
	4	4	5	5	4	5	0	5	4	3	0	35	10	
	5	10	7	8	10	11	8	9	10	8	8	89	10	
	6	0	12	16	15	16	19	15	12	12	14	131	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	14	24	29	29	32	31	29	26	23	26	263	10	

Circled fourth brood not used in statistical analysis.

7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.



# ***CHAIN OF CUSTODY***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13





***Ceriodaphnia dubia  
Chronic Toxicity Test  
Reference  
Toxicant  
Data***

**CERIODAPHNIA CHRONIC BIOASSAY**  
**EPA METHOD 1002.0**  
**REFERENCE TOXICANT - NaCl**



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

**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%		23.5	
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
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	2.1 g/l
Reproduction IC25	0.82 mg/l

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference= 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia

Comments:

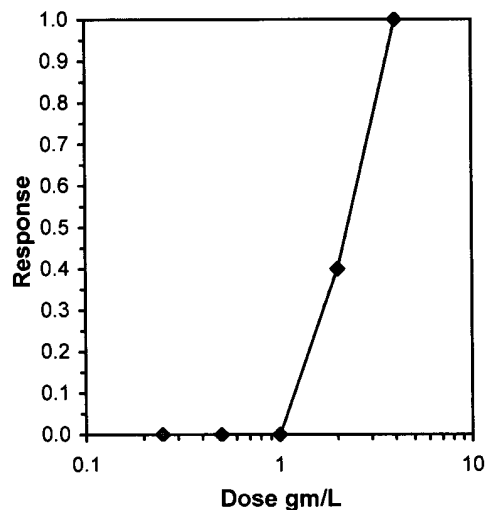
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000	0.6000	4	6	10	10	0.0433	0.0500	4	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	1	2	1.41421	
Treatments vs D-Control				

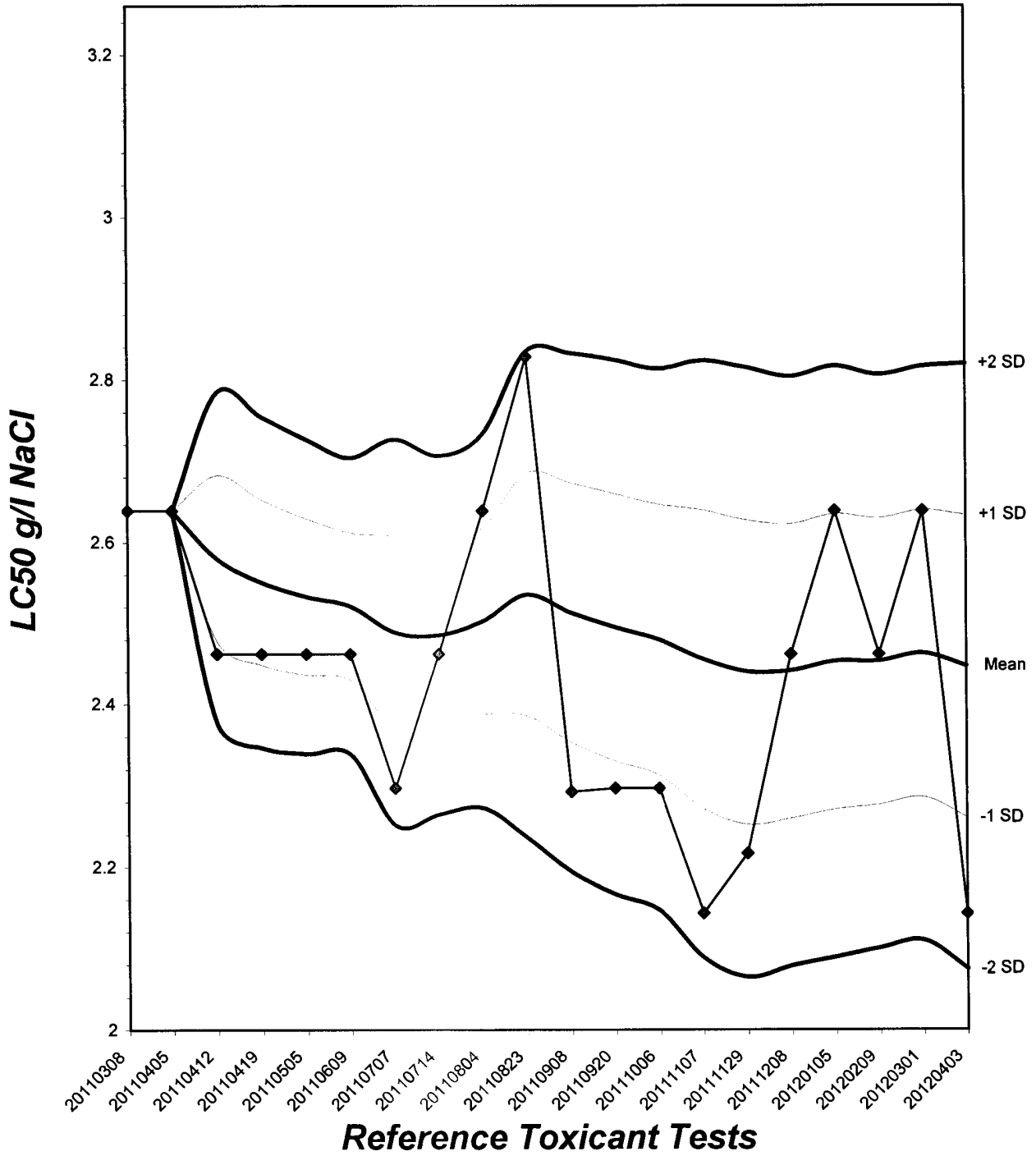
**Trimmed Spearman-Kärber**

Trim Level	EC50	95% CL	
0.0%	2.1435	1.7293	2.6571
5.0%	2.1584	1.6984	2.7429
10.0%	2.1732	1.6538	2.8556
20.0%	2.2021	1.5017	3.2291
Auto-0.0%	2.1435	1.7293	2.6571



# Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 7.61



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

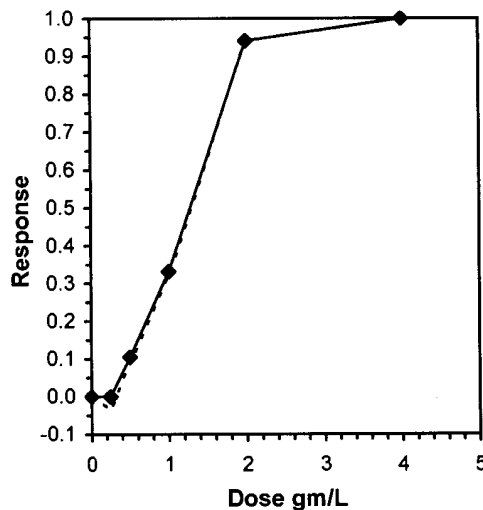
Conc-gm/L	Mean	N-Mean	Transform: Untransformed					N	Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	Mean				N-Mean	
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			23.900	1.0000	
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	111.50	77.00	23.900	1.0000	
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	87.00	77.00	21.400	0.8954	
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	66.00	77.00	16.000	0.6695	
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			1.400	0.0586	
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)	0.93053	0.94	-0.5964	-0.342
Bartlett's Test indicates equal variances (p = 0.53)	2.22089	11.3449		

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				

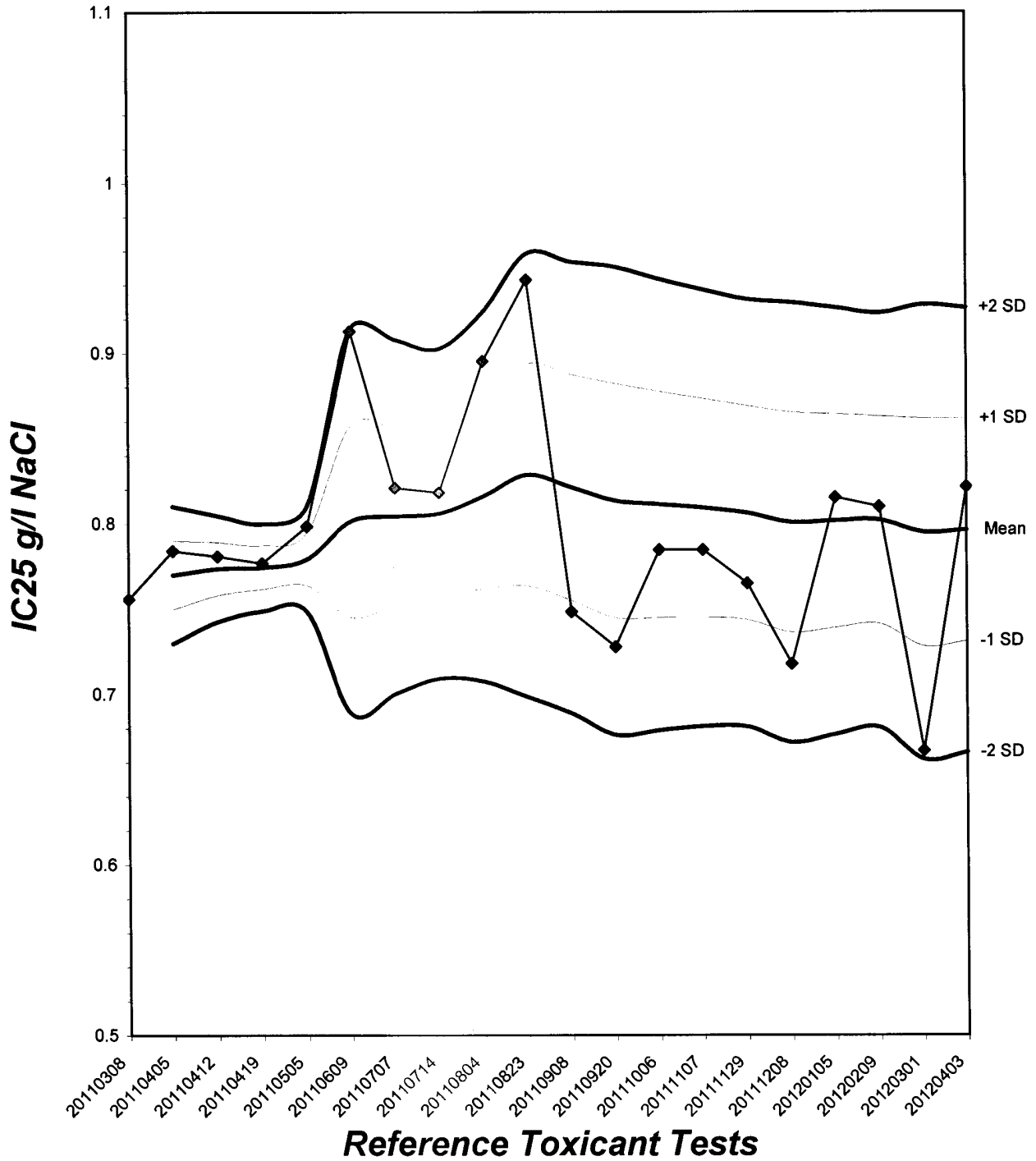
**Linear Interpolation (200 Resamples)**

Point	gm/L	SD	95% CL		Skew
IC05	0.3695	0.0911	0.1696	0.5686	0.2464
IC10	0.4890	0.0910	0.3077	0.6622	0.1815
IC15	0.6005	0.1009	0.4034	0.7714	0.1407
IC20	0.7111	0.1157	0.4592	0.9579	0.1807
IC25	0.8218	0.1195	0.5745	1.0536	0.0455
IC40	1.1137	0.1010	0.8928	1.2609	-0.5191
IC50	1.2774	0.0905	1.0680	1.4019	-0.8577



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.18





**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed	
			Mean	Min	Max	CV%	Critical			MSD	
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10				
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819	
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819	
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819	
2	1.400	0.0596	1.400	0.000	5.000	139.646	10				
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests		Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)		0.93053	0.94	-0.5964	-0.342						
Bartlett's Test indicates equal variances (p = 0.53)		2.22089	11.3449								
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control											

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Reproduction and Survival Raw Data Sheet**



QA/QC No.: RT-120403

Start Date: 04/03/2012

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	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	4	3	0	0	10	10	
	4	3	5	4	4	0	4	0	0	3	4	27	10	
	5	0	0	10	8	8	9	9	10	7	8	69	10	
	6	17	12	11	13	13	14	15	14	10	10	129	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	20	17	25	25	24	27	28	27	20	22	235	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	0	0	0	0	4	0	4	0	0	0	8		10
	4	5	4	5	5	0	4	0	5	4	4	36		10
	5	0	0	10	9	10	9	7	9	9	8	71		10
	6	16	13	14	12	13	12	14	13	10	11	128		10
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	21	17	29	26	27	25	25	27	23	23	243		10
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	0	0	0	0	0	0	0	0	0	0	10		
	3	0	0	0	0	0	0	4	0	0	0	4		10
	4	4	4	3	3	5	4	0	3	4	4	34		10
	5	0	0	7	9	8	7	9	7	7	8	62		10
	6	12	10	13	10	11	12	10	13	12	11	114		10
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	16	14	23	22	24	23	23	23	23	23	214		10

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> 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-120403

Start Date:04/03/2012

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	0	0	0	0	0	3	10	
	4	3	4	2	3	0	3	4	4	2	3	28	10	
	5	0	0	0	7	7	0	8	7	7	6	47	10	
	6	12	13	6	10	13	12	0	11	0	10	87	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	15	17	8	20	23	15	12	22	9	19	160	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	X	X	0	0	0	0	X	X	0	0	0		6
	3	-	-	0	0	0	0	-	-	0	0	0		6
	4	-	-	0	0	0	0	-	-	0	0	0		6
	5	-	-	0	2	2	3	-	-	0	2	9		6
	6	-	-	0	0	2	0	-	-	0	3	5		6
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	0	0	0	2	4	3	0	0	0	5	14		6
4.0 g/l	1	X	X	X	X	X	X	X	X	X	0	0	[Signature]	
	2	-	-	-	-	-	-	-	-	-	-	-		
	3	-	-	-	-	-	-	-	-	-	-	-		
	4	-	-	-	-	-	-	-	-	-	-	-		
	5	-	-	-	-	-	-	-	-	-	-	-		
	6	-	-	-	-	-	-	-	-	-	-	-		
	7	-	-	-	-	-	-	-	-	-	-	-		
	Total	0	0	0	0	0	0	0	0	0	0	0		0

Circled fourth brood not used in statistical analysis.  
 7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY**  
**Reference Toxicant - NaCl**  
**Water Chemistries Raw Data Sheet**



QA/QC No.: RT-120403

Start Date: 04/03/2012

		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:		J	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	-	-
Control	DO	8.3	8.2	7.9	8.6	7.8	8.5	7.9	8.4	8.5	8.7	8.3	8.6	-	-
	pH	8.0	8.2	8.1	8.1	8.2	8.2	8.1	8.2	8.1	8.0	8.1	8.0	-	-
	Temp	24.7	24.7	24.3	24.3	24.6	24.7	24.8	24.7	24.8	24.4	24.3	24.5	-	-
0.25 g/l	DO	8.4	8.4	8.2	8.6	8.4	8.3	8.3	8.3	7.9	8.6	8.3	8.7	-	-
	pH	8.0	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.1	8.0	8.1	8.0	-	-
	Temp	24.5	24.7	24.5	24.5	24.7	24.8	24.6	24.7	24.8	24.4	24.5	24.6	-	-
0.5 g/l	DO	8.2	8.3	8.1	8.6	8.2	8.6	8.0	8.4	8.1	8.6	8.4	8.0	-	-
	pH	8.0	8.1	8.2	8.1	8.2	8.2	8.1	8.1	8.1	8.0	8.1	8.0	-	-
	Temp	24.6	24.9	24.5	24.2	24.3	24.8	24.3	24.8	24.8	24.3	24.7	25.2	-	-
1.0 g/l	DO	8.2	8.3	8.1	8.4	8.3	8.5	7.9	8.1	8.0	8.4	8.3	8.1	-	-
	pH	8.0	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.0	-	-
	Temp	24.7	24.7	24.5	24.5	24.5	24.7	24.7	24.6	24.8	24.7	24.5	24.5	-	-
2.0 g/l	DO	8.4	8.2	7.9	8.2	8.1	8.3	7.9	8.2	8.1	8.3	8.1	8.2	-	-
	pH	8.0	8.1	8.2	8.1	8.2	8.1	8.0	8.1	8.1	8.0	8.0	8.0	-	-
	Temp	24.7	25.2	24.5	24.5	24.3	24.5	24.7	24.8	24.8	24.3	24.6	24.6	-	-
4.0 g/l	DO	8.5	8.1	-	-	-	-	-	-	-	-	-	-	-	-
	pH	8.0	8.1	-	-	-	-	-	-	-	-	-	-	-	-
	Temp	24.7	24.5	-	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; 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)	309	319	316	6960	2520	3310
Alkalinity (mg/l CaCO <sub>3</sub> )	69	67	67	68	68	68
Hardness (mg/l CaCO <sub>3</sub> )	90	87	88	90	89	88

**Source of Neonates**

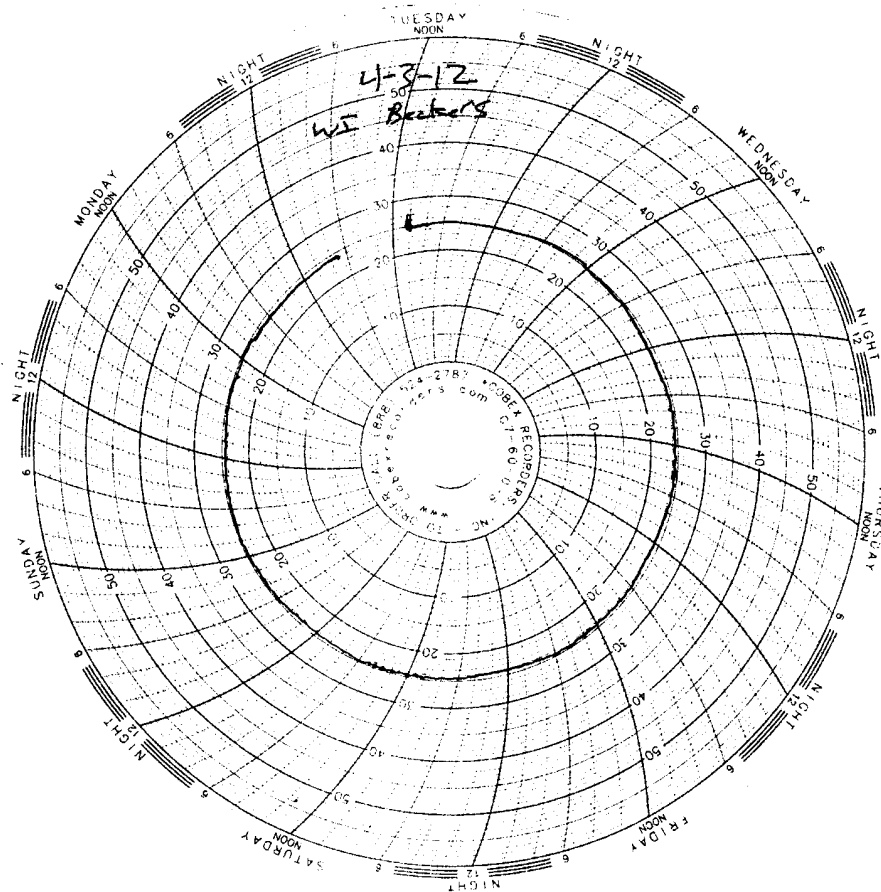
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1B	2C	3C	2D	1E	3E	1F	1G	3H	2I

# Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/09/06

Acceptable Range: 25 $\pm$  1°C



# EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675/ 786-0262

<http://www.emsl.com> E-mail: [MicrobiologyLab@emsl.com](mailto:MicrobiologyLab@emsl.com)



<b>Client:</b> TestAmerica Irvine 17461 Derian Avenue Suite 100 Irvine, CA 92614 <b>Attn:</b> Debby Wilson <b>Project:</b> Boeing SSFL Outfalls: 440-8278-1	<b>EMSL Order ID:</b> 371205757 <b>Date Received:</b> 4/13/2012 <b>Date Analyzed:</b> 4/13/2012 <b>Date Reported:</b> 4/18/2012 <b>Date Amended:</b>
---	--

## Real-Time PCR Analysis for Human *Bacteroides*


(Based on a published method SAM: 348 - 357, 2010), EMSL Test Code: M199, Revision No. 3, 04/18/2011)

Lab Sample Number	Client Sample ID	Location	Amount Received	Amount Sampled	CEs /100 mL
5757-1	Outfall 002(440-8278-1)		Water 250 ml	Water 250 ml	None Detected

EMSL maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method limitations.

Note: The PCR primer is HF183 and the qPCR probe and primer was evaluated in 2010 by EPA scientists. The real-time PCR based on HF183 detects human specific total bacteroides predominantly with minor cross-detections on chicken and dog fecal materials. CEs: Cell Equivalents, measured by PCR using genomic DNA standards.

USEPA License No: 0240-02

  
 Quanyi "Charlie" Li, Ph.D.  
 Director, PCR and DNA Analysis Lab



# LABORATORY REPORT



*"dedicated to providing quality aquatic toxicity testing"*

**Date:** April 16, 2012  
**Client:** Test America – Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

4350 Transport Street, Unit 107  
Ventura, CA 93003  
(805) 650-0546 FAX (805) 650-0756  
CA DOHS ELAP Cert. No.: 1775

**Laboratory No.:** A-12041206-001  
**Job No.:** 440-8278-1  
**Sample ID.:** Outfall 002 (440-8278-1)

**Sample Control:** The sample was received by ATL in a chilled state, within the recommended hold time and with the chain of custody record attached.

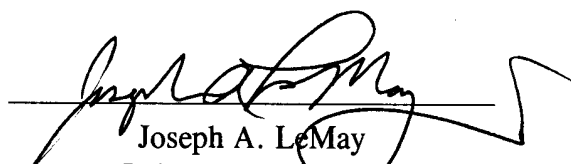
Date Sampled: 04/11/12  
Date Received: 04/12/12  
Temp. Received: 5.7°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 04/12/12 to 04/16/12

**Sample Analysis:** The following analyses were performed on your sample:  
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).  
Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

## Result Summary:

<u>Sample ID.</u>	<u>Results</u>
Outfall 002 (404-8278-1)	100% Survival (TUa = 0.0)

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**FATHEAD MINNOW PERCENT SURVIVAL TEST**  
**EPA Method 2000.0**



Lab No.: A-12041206-001

Client/ID: TestAmerica Outfall 002 (440-8278-1)

Start Date: 04/12/2012

**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-120403.

**TEST DATA**

		°C	DO	pH	# Dead		Analyst & Time of Readings
					A	B	
INITIAL	Control	19.8	8.3	8.2	0	0	J 1400
	100%	20.2	8.4	7.5	0	0	
24 Hr	Control	19.8	8.6	8.0	0	0	J 1330
	100%	19.9	8.1	7.9	0	0	
48 Hr	Control	19.7	9.0	7.9	0	0	J 1300
	100%	19.7	8.6	7.8	0	0	
Renewal	Control	19.4	8.2	8.2	0	0	J 1300
	100%	19.8	9.2	7.7	0	0	
72 Hr	Control	19.7	8.6	7.9	0	0	J 1330
	100%	19.8	8.5	7.7	0	0	
96 Hr	Control	19.8	7.5	7.9	0	0	J 1400
	100%	19.7	8.0	7.9	0	0	

Comments:

Sample as received: Chlorine: 0.0 mg/l; pH: 7.5; Conductivity: 483 umho; Temp: 5.7°C;

DO: 8.4 mg/l; Alkalinity: 68 mg/l; Hardness: 132 mg/l; NH<sub>3</sub>-N: 0.2 mg/l.

Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No

Control: Alkalinity: 65 mg/l; Hardness: 96 mg/l; Conductivity: 339 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 O<sub>2</sub>.

**RESULTS**

Percent Survival In: Control: 100 %      100% Sample: 100 %







# ***REFERENCE TOXICANT DATA***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

# FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-120403

## TEST SUMMARY

Species: *Pimephales promelas*.  
 Age: 14 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: Analyst:	INITIAL			24 Hr						48 Hr					
	<u>4-3-12 1130</u>			<u>4-4-12 1130</u>						<u>4-5-12 1130</u>					
	<u>Z</u>			<u>Z</u>						<u>Z</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead			
A							B	A				B			
Control	20.1	8.4	8.0	19.8	8.2	7.9	0	0	19.7	8.2	7.9	0	0		
1.0 mg/l	19.9	8.5	7.9	19.8	8.2	7.9	0	0	19.6	8.1	7.9	0	0		
2.0 mg/l	19.8	8.6	8.0	19.8	8.1	7.9	0	0	19.7	7.9	7.9	0	0		
4.0 mg/l	19.7	8.8	8.0	19.8	8.2	7.9	0	0	19.7	7.8	7.9	1	0		
8.0 mg/l	19.7	8.7	8.0	19.8	8.1	7.8	10	10	-	-	-	-	-		
16.0 mg/l	19.8	8.8	8.1	19.8	7.2	7.6	10	10	-	-	-	-	-		

Date/Time: Analyst:	RENEWAL			72 Hr						96 Hr					
	<u>4-5-12 1130</u>			<u>4-6-12 1130</u>						<u>4-7-12 1130</u>					
	<u>Z</u>			<u>Z</u>						<u>Z</u>					
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead			
A							B	A				B			
Control	19.2	6.5	8.2	19.6	7.5	8.0	0	0	19.5	7.6	7.8	0	0		
1.0 mg/l	19.6	6.8	8.1	19.6	7.8	7.9	0	0	19.4	7.8	7.8	0	0		
2.0 mg/l	19.7	6.9	8.0	19.5	8.0	8.0	0	0	19.4	7.9	7.8	0	0		
4.0 mg/l	19.7	6.9	8.0	19.6	8.1	7.9	0	0	19.4	8.0	7.8	0	1		
8.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-		
16.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-		

Comments: Control: Alkalinity: 68 mg/l; Hardness: 97 mg/l; Conductivity: 327 umho.  
 SDS: Alkalinity: 69 mg/l; Hardness: 93 mg/l; Conductivity: 331 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**

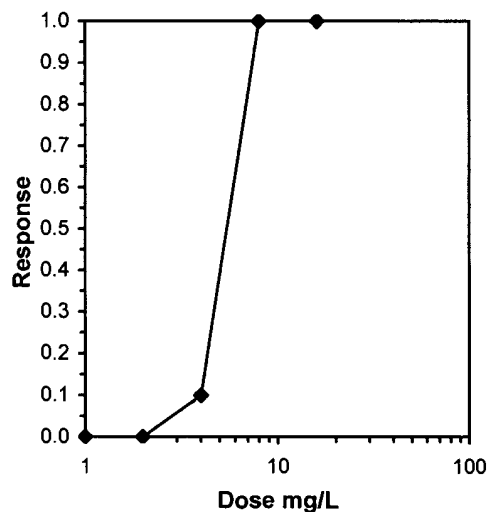
Start Date: 4/3/2012 11:30    Test ID: RT120403    Sample ID: REF-Ref Toxicant  
 End Date: 4/7/2012 11:30    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: SDS-Sodium dodecyl sulfate  
 Sample Date: 4/3/2012    Protocol: ACUTE-EPA-821-R-02-012    Test Species: PP-Pimephales promelas  
 Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1	1.0000	1.0000
2	1.0000	1.0000
4	0.9000	0.9000
8	0.0000	0.0000
16	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							Number Resp	Total Number
	Mean	N-Mean	Mean	Min	Max	CV%	N		
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
4	0.9000	0.9000	1.2490	1.2490	1.2490	0.000	2	2	20
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

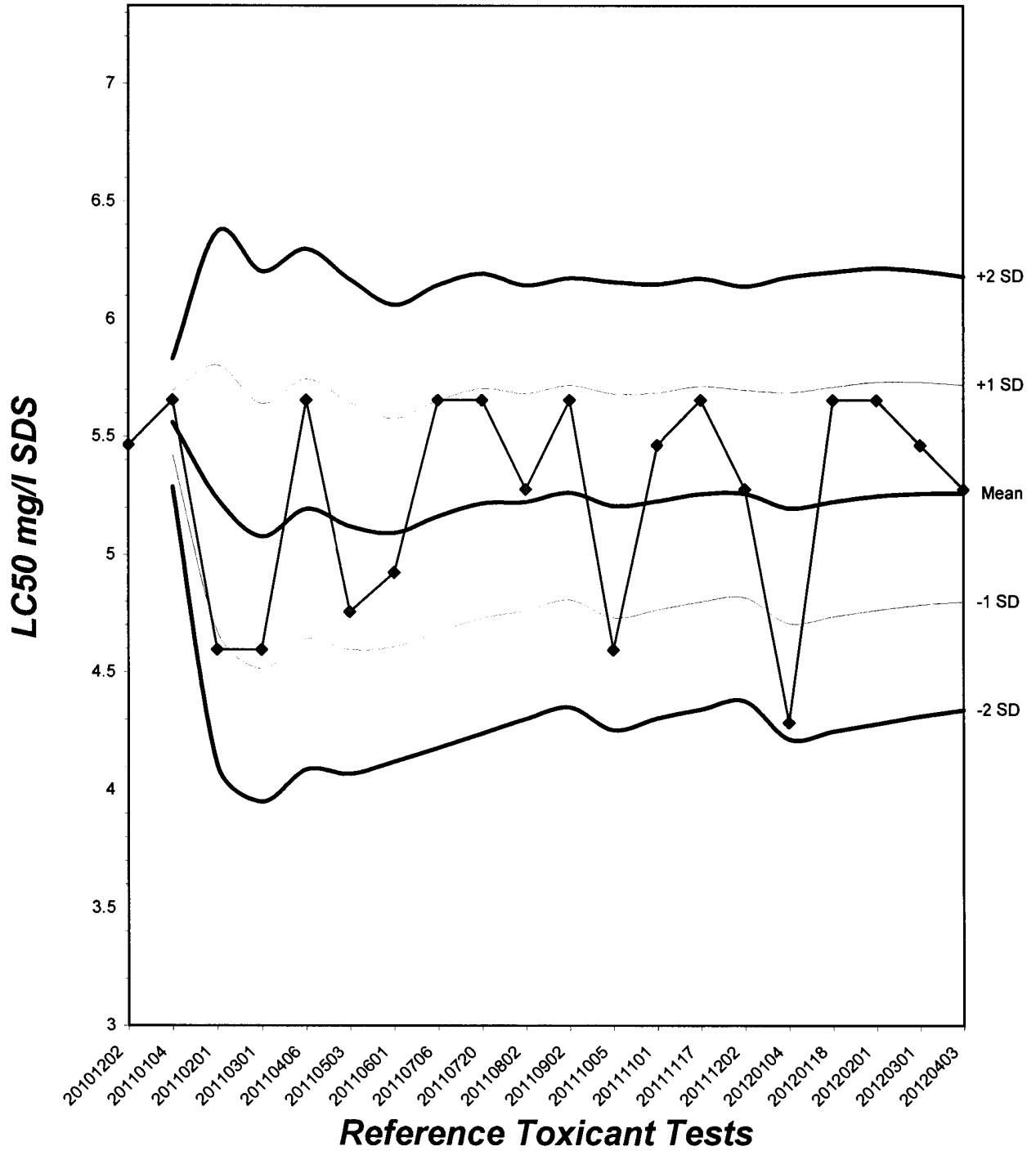
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Trim Level	Trimmed Spearman-Kärber		
	EC50	95% CL	
0.0%	5.2780	4.8093	5.7924
5.0%	5.3968	4.8053	6.0611
10.0%	5.4432	5.1395	5.7648
20.0%	5.4432	5.1395	5.7648
Auto-0.0%	5.2780	4.8093	5.7924



# Fathead Minnow Acute Laboratory Control Chart

CV% = 8.75



# TEST ORGANISM LOG

FATHEAD MINNOW - LARVAL  
(*Pimephales promelas*)



QA/QC BATCH NO.: RT120403

SOURCE: In-Lab Culture

DATE HATCHED: 3-20-12

APPROXIMATE QUANTITY: 40

GENERAL APPEARANCE: good

# MORTALITIES 48 HOURS PRIOR TO  
TO USE IN TESTING: 0

DATE USED IN LAB: 4/3/12

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.: 20.1 °C

pH: 8.0

Ammonia: 20.1 mg/l NH<sub>3</sub>-N

DO: 8.4 mg/l

Alkalinity: 68 mg/l

Hardness: 93 mg/l

READINGS RECORDED BY: [Signature]

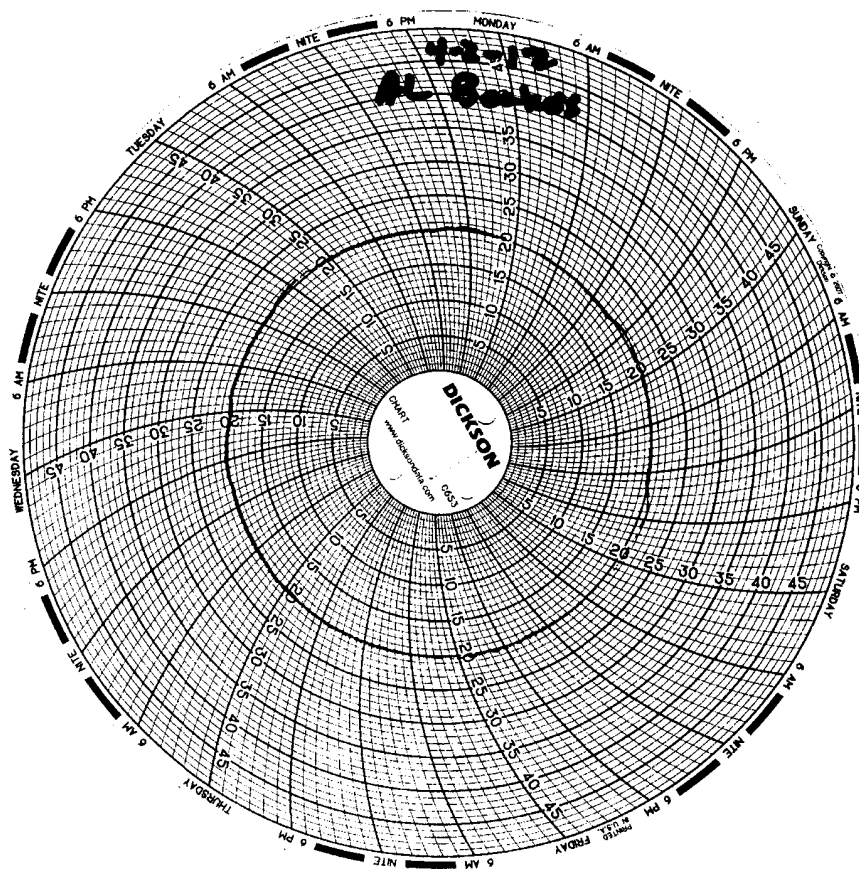
DATE: 4-4-12

# Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/07/06

Acceptable Range: 20 $\pm$ 1 $^{\circ}$ C



CHAIN OF CUSTODY FORM

440-8277

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007			Project: Boeing-SSFL NPDES Annual Outfall 002 COMPOSITE GRAB			ANALYSIS REQUIRED										Comments										
Test America Contact: Debby Wilson			Project Manager: Bronwyn Kelly			Sample Description			Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	1,4-Dioxane		Total Organic Carbon	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	PCBs	Monomethyl Hydrazine	Chronic Toxicity	Total Dissolved Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub>	Cr (VI) (218.6)	Cyanide		
Outfall 002	W	VOAS	3	4-11-2012 14:50	HCl	24A, 24B, 24C	X																			
Outfall 002	W	250 mL Glass	1		HCl	25																				
Outfall 002	W	2.5 Gal Cube	1		None	26A																				
Outfall 002	W	500 mL Amber	1		None	26B																				
Outfall 002	W	1L Amber	2		None	27A, 27B																				
Outfall 002	W	1L Amber	2		None	28A, 28B																				
Outfall 002	W	1 Gal Cube	1		None	29																				
Outfall 002	W	1L Poly	1		None	30																				
Outfall 002	W	500 mL Poly	1		None	31																				
Outfall 002	W	500 mL Poly	1	4-11-2012 14:50	NaOH	32																				

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

Relinquished By: <i>Debby Wilson</i>	Date/Time: 4-11-2012	Received By: <i>W. W. Haddad</i>	Date/Time: 4/11/12
Relinquished By: <i>W. W. Haddad</i>	Date/Time: 4/11/12	Received By: <i>W. W. Haddad</i>	Date/Time: 4/11/12
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turn-around time: (Check)  
 24 Hour: \_\_\_\_\_ 72 Hour: \_\_\_\_\_ 10 Day: \_\_\_\_\_  
 48 Hour: \_\_\_\_\_ 5 Day: \_\_\_\_\_ Normal:   
 Sample Integrity: (Check)  
 Intact: \_\_\_\_\_ On Ice: \_\_\_\_\_  
 Data Requirements: (Check)  
 No. Level IV: \_\_\_\_\_ All Level IV: \_\_\_\_\_ NPDES Level IV:   
 7.20°C



Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project: Boeing-SSFL NPDES Annual Outfall 002 COMPOSITE <b>GRAB</b>			
Test America Contact: Debby Wilson		Project Manager: Bronwyn Kelly Phone Number: (626) 568-6691 Sampler: <i>Rick Banaon</i> Fax Number: (626) 568-6515			
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #
Outfall 002	W	1L Poly	1	HNO <sub>3</sub>	14A
Outfall 002 Dup	W	1L Poly	1	HNO <sub>3</sub>	14B
Outfall 002	W	1L Amber	2	None	15A, 15B
Outfall 002	W	1L Poly	1	None	16
Outfall 002	W	500 mL Poly	2	None	17A, 17B
Outfall 002	W	500 mL Poly	2	None	18A, 18B
Outfall 002	W	500 mL Poly	1	None	19
Outfall 002	W	500 mL Poly	2	None	20A, 20B
Outfall 002	W	500 mL Poly	1	H <sub>2</sub> SO <sub>4</sub>	21
Outfall 002	W	1L Amber	2	None	22A, 22B
Outfall 002	W	1L Amber	2	None	23A, 23B

ANALYSIS REQUIRED Total Recoverable Metals: Cu, Pb, Hg, B, Ba, Fe, Mn, Sb, As, Be, Cd, Cr, Ni, Se, Ag, Tl, Zn, Co, V, Hardness as CaCO <sub>3</sub> TCDD (and all congeners) BOD <sub>5</sub> (20 degrees C) Surfactants (MBAS) Cl <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , F <sup>-</sup> , Perchlorate Nitrate-N, Nitrite-N Turbidity, TDS, TSS Ammonia-N (350.2) Alpha BHC (609) + Pesticides + PP 2,4,6-TCP, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625) + PP										
X	X	X	X	X	X	X	X	X	X	X

Relinquished By	Date/Time	Received By	Date/Time
<i>Rick Banaon</i>	4-11-2012	<i>W. Haedl</i>	4/11/12 15:20
Relinquished By	Date/Time	Received By	Date/Time
<i>W. Haedl</i>	4/11/12 18:30	<i>W. Haedl</i>	4/11/12 18:30
Relinquished By	Date/Time	Received By	Date/Time

**COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.**

**These must be added to the same work order for COC Page 1 for 3 for Outfall 002 for the same event.**

Turn-around time: (Check)	10 Day: _____	72 Hour: _____	5 Day: _____
	24 Hour: _____	48 Hour: _____	Normal: <input checked="" type="checkbox"/>
Sample Integrity: (Check)	Intact: _____	On Ice: _____	
Data Requirements: (Check)	No Level IV: _____	All Level IV: _____	NPDES Level IV: <input checked="" type="checkbox"/>



CHAIN OF CUSTODY FORM

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:																								
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Boeing-SSEL NPDES Annual Outfall 002 GRAB		Phone Number: (626) 568-6691		Fax Number: (626) 568-6515		VOCs 624 + xylenes + Freon 113, Freon 123A, Cyclohexane + PP		VOCs 624 + A+A+2CVE		Settleable Solids		Conductivity		Oil & Grease (1664-HEM)		8015 - gas		8015 - diesel/fuel		Fecal coliform (SM9221)		E. coli (SM9221)		Acute Toxicity		MST-Bacteroides, Human										
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #											Temp °F = 57																					
Outfall 002	W	VOAs	5	4-11-2012	HCl	1A, 1B, 1C, 1D, 1E											pH = 7.0																					
Outfall 002	W	VOAs	3	11:00	None	2A, 2B, 2C											DO = 11.4 mg/L																					
Outfall 002	W	1L Poly	1		None	3											Chlorine = 0																					
Outfall 002	W	500 ml Poly	2		None	4A, 4B											Time of readings = 11:08																					
Outfall 002	W	1L Amber	2		HCl	5A, 5B											Comments																					
Trip Blanks	W	VOAs	3		HCl	6A, 6B, 6C																																
Trip Blanks	W	VOAs	3		None	7A, 7B, 7C																																
Outfall 002	W	VOAs	1		HCl	8A																																
Outfall 002 Dup	W	VOAs	2		HCl	8B, 8C																																
Outfall 002	W	1L Amber	1		None	9A																																
Outfall 002 Dup	W	1L Amber	1		None	9B																																
Outfall 002	W	125mL Poly	1		Na2S2O3	10																																
Outfall 002	W	125mL Poly	1		Na2S2O3	11																																
Outfall 002	W	1 Gal Cube	1		None	12																																
Outfall 002	W	125mL Poly	1	4-11-2012	None	13																																
Relinquished By: <i>Pin Bas</i>													Date/Time: 4-11-2012													Turn-around time: (Check) 10 Day: <input checked="" type="checkbox"/> 24 Hour: <input type="checkbox"/> 48 Hour: <input type="checkbox"/> 5 Day: <input type="checkbox"/> Normal: <input checked="" type="checkbox"/>												
Relinquished By: <i>WVH</i>													Date/Time: 4/11/12													Sample Integrity: (Check) <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/> 8.1 °C												
Relinquished By: <i>WVH</i>													Date/Time: 4/11/12													Data Requirements: (Check) No Level IV: <input type="checkbox"/> All Level IV: <input checked="" type="checkbox"/> NPDES Level IV: <input checked="" type="checkbox"/>												

These Samples are the Grab Portion of Outfall 002 for this storm event. Composite samples will follow and are to be added to this work order.



## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8277-1

**Login Number: 8277**

**List Number: 1**

**Creator: Perez, Angel**

**List Source: TestAmerica Irvine**

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



## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8277-1

**Login Number: 8278**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Perez, Angel**

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

