APPENDIX E

First Quarter 2015 Analytical Laboratory Report, Chain of Custody, and Validation Report

APPENDIX E

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DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUPS: 440-103199-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-103199-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
Outfall009_20150303 _Comp	440-103199-2	N/A	Water	3/3/2015 2:43:00 PM	E1613B, E200.8, E900, E901.1, E903.0, E904.0, E905.0, E906.0, HASL-300 U MOD, RADUIM, SM2540D

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice and within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the sample containers were received intact and properly preserved, as applicable. The COCs were appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the sample was delivered to TestAmerica-Irvine by courier. Custody seals were present and intact upon receipt at TestAmerica-Sacramento and TA-St. Louis.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	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
С	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.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
Т	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

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Р	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.
* , *	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not b used because another more technically sound analysis is available.
Р	Instrument performance for pesticides wa 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 reportin limit.	The reported result is above the metho detection limit but is less than the reporting limit.
* , *	Unusual problems found with the data the have been described in Section II, "Samp Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can b found.	Unusual problems found with the data that have been described in Section II "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613B—Dioxin/Furans

Reviewed By: L. Calvin Date Reviewed: March 23, 2015

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

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance preceding the sample analysis was acceptable with the static resolving power greater than 10,000. The case narrative noted the closing resolution check "crashed," and was not completed. The resolution check was performed manually 17 hours from the beginning of the analytical run, with acceptable results, indicating instrument performance was not compromised and had been maintained in the interim. No qualifications were assigned.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.

- Blanks: The method blank had detects below the reporting limit for 1,2,3,4,6,7,8-HpCDD (0.00000327 µg/L), 1,2,3,4,6,7,8-HpCDF (0.00000206 µg/L) OCDD (0.0000104 µg/L), OCDF (0.00000288 µg/L, and totals HpCDD, HpCDF, and PeCDD. The result for OCDF was qualified as nondetected (U) at the level of contamination. The remaining isomer method blank concentrations were not sufficient to qualify the sample concentrations. Total PeCDD was not detected in the sample. Totals HpCDD and HpCDF were qualified as estimated (J), as only a portion of the totals was determined to be method blank contamination. The method blank had no other detects above the estimated detection limit (EDL).
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. As 2,3,7,8-TCDF was not detected in the sample, confirmation analysis was not required.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. The laboratory coded total HpCDD "DNQ;" however, as the result was above the reporting limit, the code was removed. Nondetects are valid to the EDL.

Isomers 1,2,3,6,7,8-HxCDD and 1,2,3,4,7,8-HxCDF were reported as EMPCs in the sample. The results were qualified as estimated nondetects (UJ) at the level of the EMPC. The peaks comprising total HxCDF were both EMPCs; therefore the result was also qualified as an estimated nondetect (UJ). The results for total HxCDD was qualified as estimated, "J."

B. EPA METHOD 200.8—Metals

Reviewed By: P. Meeks Date Reviewed: March 20, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 200.8, Standard Methods for the Examination of Water and Wastewater Method (2012) 2340B, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The analytical holding time, six months, was met.
- Calibration: The initial and continuing calibration recoveries were within 90-110% and the CRI recoveries were within the control limits of 70-130%.
- Blanks: Total copper was detected in the method blank at 1.43 µg/L and total antimony was detected in a bracketing CCB at 0.505 µg/L; therefore, total copper and total antimony detected in the sample were qualified as nondetected, "U," at the levels of contamination. Method blanks and CCBs had no other detects.
- Interference Check Samples: Recoveries were within 80-120%. There were no detects in the ICSA at concentrations above the certified trace impurity concentrations reported by the manufacturer.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the method control limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on a sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the total analytes. The recoveries were within method control limits of 70-130% and the RPDs were within the laboratory control limit of ≤20%.
- Serial Dilution: No serial dilution analyses were performed on a sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: April 6, 2015

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the EPA Methods 900.0, 901.1, 903.0, 904.0, 905.0, and 906.0, and A-01-R U, and the National Functional Guidelines for Inorganic Data Review (2014).

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

The gross alpha and radium-226 detector efficiencies were less than 20%; therefore, the nondetected results for these analytes were qualified as estimated, "UJ," in the sample. The remaining detector efficiencies were greater than 20%. Carrier/tracer recoveries were within the laboratory control limits of 40-110%. All calibration checks were acceptable.

- Blanks: There were no analytes detected in the method blanks.
- Laboratory Control Samples: The recoveries were within laboratory-established control limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for cesium-137 and potassium-40. The relative error ratio was within the laboratory control limit of ≤1.
- 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 MDCs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Reported nondetects are valid to the MDC.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. STANDARD METHOD 2540D—Total Suspended Solids (TSS)

Reviewed By: P. Meeks Date Reviewed: March 20, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Method 2540D, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The TSS sample was analyzed within seven days of collection.
- Calibration: The balance calibration check logs were acceptable for the data of analysis.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The TSS recovery was within the laboratory control limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD samples are not applicable to this method.
- 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: 4401031991

Sample Name Outf	fall009_2	0150303_C	omp Mat	rix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/3/2015 2:43:00	0 PM	Valid	ation Level: 8						
Lab Sample Name: 440-1	03199-2								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9- Octachlorodibenzofuran (OCDF)	Ν	39001-02-0	0.000024	0.000099	0.0000010	ug/L	J,DXqMB	U	В
1,2,3,4,6,7,8,9-Octachlorodibenzo- dioxin (OCDD)	p- N	3268-87-9	0.00055	0.000099	0.0000041	ug/L	MB		
1,2,3,4,6,7,8- Heptachlorodibenzofuran (HpCDF	N)	67562-39-4	0.000013	0.000049	0.00000056	ug/L	J,DXMB	1	DNQ
1,2,3,4,6,7,8-Heptachlorodibenzo-p dioxin (HpCDD)	D- N	35822-46-9	0.000046	0.000049	0.0000026	ug/L	J,DXMB	1	DNQ
1,2,3,4,7,8,9- Heptachlorodibenzofuran (HpCDF	N)	55673-89-7		0.000049	0.00000093	ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofura (HxCDF)	n N	70648-26-9	0.0000024	0.000049	0.00000062	ug/L	J,DXq	UJ	*Ⅲ
1,2,3,4,7,8-Hexachlorodibenzo-p- dioxin (HxCDD)	Ν	39227-28-6	0.0000018	0.000049	0.00000056	ug/L	J,DX	J	DNQ
1,2,3,6,7,8-Hexachlorodibenzofura (HxCDF)	n N	57117-44-9		0.000049	0.00000052	ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzo-p- lioxin (HxCDD)	Ν	57653-85-7	0.0000016	0.000049	0.00000049	ug/L	J,DXq	UJ	*Ⅲ
1,2,3,7,8,9-Hexachlorodibenzofura HxCDF)	n N	72918-21-9		0.000049	0.00000056	ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p- lioxin (HxCDD)	Ν	19408-74-3	0.0000019	0.000049	0.00000045	ug/L	J,DX	1	DNQ
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	Ν	57117-41-6		0.000049	0.00000039	ug/L	U	U	

2,3,7,8-Tetrachlorodibenzofuran 51207-31-9 0.0000099 0.00000042 ug/L U U Ν (TCDF) 2,3,7,8-Tetrachlorodibenzo-p-dioxin N 1746-01-6 0.00000018 ug/L U U 0.0000099 (TCDD) Total Heptachlorodibenzofuran Ν 38998-75-3 0.000032 0.000049 0.00000074 ug/L J,DXMB J B, DNQ (HpCDF) Total Heptachlorodibenzo-p-dioxin N 37871-00-4 0.00011 0.000049 0.0000026 J,DXMB B ug/L J (HpCDD)

0.000049

0.000049

0.000049

0.00000061 ug/L

0.00000048 ug/L

0.00000047 ug/L

U

U

U

U

U

U

1,2,3,7,8-Pentachlorodibenzo-p-

2,3,4,6,7,8-Hexachlorodibenzofuran N

2,3,4,7,8-Pentachlorodibenzofuran

dioxin (PeCDD)

(HxCDF)

(PeCDF)

Ν

Ν

40321-76-4

60851-34-5

57117-31-4

Total Hexachlorodibenzofuran	N	55684-94-1	0.0000068	0.000049	0.00000054	11σ/I	J,DXq	UJ	*Ш
(HxCDF)	IN	55084-94-1	0.000008	0.000049	0.00000034	ug/L	J,DAQ	0J	т ш
Total Hexachlorodibenzo-p-dioxir (HxCDD)	n N	34465-46-8	0.000014	0.000049	0.00000050	ug/L	J,DXq	1	DNQ, *III
Fotal Pentachlorodibenzofuran PeCDF)	Ν	30402-15-4	0.0000010	0.000049	0.00000043	ug/L	J,DX	1	DNQ
Fotal Pentachlorodibenzo-p-dioxir PeCDD)	n N	36088-22-9		0.000049	0.00000061	ug/L	U	U	
Fotal Tetrachlorodibenzofuran TCDF)	Ν	55722-27-5		0.0000099	0.00000042	ug/L	U	U	
Total Tetrachlorodibenzo-p-dioxir TCDD)	n N	41903-57-5		0.0000099	0.00000018	ug/L	U	U	
Analysis Method	E200.	.8							
Sample Name Out	fall009_20	0150303_Co	omp Mat	trix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/3/2015 2:43:0	00 PM	Valid	ation Level: 8						
Lab Sample Name: 440-1	103199-2								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	Т	7440-36-0	0.71	2.0	0.50	ug/L	J,DX	U	В
Antimony	D	7440-36-0	0.63	2.0	0.50	ug/L	J,DXQP	J	DNQ
Cadmium	D	7440-43-9		1.0	0.25	ug/L	UQP	U	
Cadmium	Т	7440-43-9		1.0	0.25	ug/L	U	U	
Copper	D	7440-50-8	3.1	2.0	0.50	ug/L	QP		
Copper	Т	7440-50-8	5.3	2.0	0.50	ug/L	MB	U	В
Lead	Т	7439-92-1	5.8	1.0	0.50	ug/L			
Lead	D	7439-92-1		1.0	0.50	ug/L	UQP	U	
Thallium	D	7440-28-0		1.0	0.50	ug/L	UQP	U	
Thallium	Т	7440-28-0		1.0	0.50	ug/L	U	U	
Analysis Method	SM25	40D							
Sample Name Out	tfal1009_20	0150303_Co	omp Mat	trix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/3/2015 2:43:0	00 PM	Valid	ation Level: 8						
Lab Sample Name: 440-1	103199-2								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

Validated Sample Result Forms: 4401031991

	-								
Analysis Method	E900								
Sample Name	Outfall009_201503	303_Com	ip Mat	rix Type:	WM	Res	sult Type: T	RG	
Sample Date: 3/3/2015 2	:43:00 PM	Validati	on Level: 8						
Lab Sample Name:	40-103199-2								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validatior Notes
Gross Alpha Analytes	GROSSALPHA	1.29	1.34	2.15	2.15	pCi/L	U	UJ	С
Gross Beta Analytes	GROSSBETA	3.19	0.902	1.08	1.08	pCi/L			
Analysis Method	E901.1								
Sample Name	Outfall009_201503	303_Com	p Mat	rix Type:	WM	Res	sult Type: T	RG	
Sample Date: 3/3/2015 2	43:00 PM	Validati	on Level: 8						
Lab Sample Name:	40-103199-2								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045-97-3	1.38	4.56	8.35	8.35	pCi/L	U	U	
Potassium-40	13966-00-2	-29.5	123	200	200	pCi/L	U	U	
Analysis Method	E903.0								
Sample Name	Outfall009_20150.	303_Com	ip Mat	rix Type:	WM	Res	sult Type: T	RG	
Sample Date: 3/3/2015 2	:43:00 PM	Validati	on Level: 8						
Lab Sample Name: ⁴	40-103199-2								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982-63-3	0.0579	0.204	0.373	0.373	pCi/L	U	UJ	С
Analysis Method	E904.0								
Sample Name	Outfall009_201503	303_Com	ip Mat	rix Type:	WM	Res	sult Type: T	RG	
Sample Date: 3/3/2015 2	43:00 PM	Validati	on Level: 8						
Lab Sample Name: ²	40-103199-2								
			T ()	БТ	MDC	D14	Lab	T 7 10 1 / 0	X 7 - 1 ² 1 - 4 ²
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Qualifier	Validation Qualifier	Validatior Notes

Analysis Method	E905.0								
Sample Name O	utfall009_20150	0303_Com	p Matri	x Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/3/2015 2:43	3:00 PM	Validati	on Level: ⁸						
Lab Sample Name: 440	0-103199-2								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098-97-2	0.0911	0.380	0.664	0.664	pCi/L	U	U	
Analysis Method	E906.0								
Sample Name O	utfall009_20150	0303_Com	p Matri	x Type:	WM	Res	ult Type: TI	RG	
Sample Date: 3/3/2015 2:43	3:00 PM	Validati	on Level: 8						
Lab Sample Name: 440	0-103199-2								
	0-103199-2 CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Analyte				RL 328	MDC 328				
Analyte	CAS No	Value 74.8	Uncert. 189			Units	Qualifier	Qualifier	
Analyte Tritium Analysis Method	CAS No 10028-17-8	Value 74.8 00 U M	Uncert. 189 od			Units pCi/L	Qualifier	Qualifier U	
Analyte Tritium Analysis Method Sample Name O	CAS No 10028-17-8 HASL-30 putfall009_20150	Value 74.8 00 U M 0303_Com	Uncert. 189 od	328	328	Units pCi/L	Qualifier U	Qualifier U	
Analyte Tritium Analysis Method Sample Name O Sample Date: 3/3/2015 2:43	CAS No 10028-17-8 HASL-30 putfall009_20150	Value 74.8 00 U M 0303_Com	Uncert. 189 od p Matri	328	328	Units pCi/L	Qualifier U	Qualifier U	
Analyte Tritium Analysis Method Sample Name O Sample Date: 3/3/2015 2:43	CAS No 10028-17-8 <i>HASL-3(</i> putfall009_20150 3:00 PM	Value 74.8 00 U M 0303_Com	Uncert. 189 <i>od</i> p Matri on Level: ⁸ Total	328	328	Units pCi/L	Qualifier U	Qualifier U	



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: 440-103199-1

Client Project/Site: Boeing SSFL outfalls

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by: 3/17/2015 5:29:07 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.



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.

abby Wilson

Debby Wilson Manager of Project Management 3/17/2015 5:29:07 PM

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Matrix

Water

Water

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Client Sample ID

Outfall009_20150303_Grab

Outfall009_20150303_Comp

Lab Sample ID

440-103199-1

440-103199-2

03/03/15 07:30 03/03/15 12:16

Received

03/03/15 12:16

Collected

03/03/15 02:43

1
3
5
8
9
13

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-103199-1

Comments

Radiological results reported under separate cover: 440-103199-2.

Receipt

The samples were received on 3/3/2015 12:16 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1° C, 1.8° C and 1.9° C.

HPLC/IC

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

Dioxin

Method(s) 1613B: The automatic MS resolution checks at the end of the analytical run (batch 67541) crashed while it was being acquired at 04:52 on 3/7/15, within 12 hours of the run start. Only Function 1 was acquired.

Manual MS resolution checks were performed, without changing any instrument parameters, the following morning when the problem was discovered. Function 1 through Function 5 ending resolution checks were acquired at 10:26 on 3/7/15, approximately 17 hours after the analytical run start. The resolution checks were all acceptable indicating that the instrument's static mass resolving power had maintained acceptable criteria since the analytical run start on 3/6/15 at 17:13: (LCS 320-67314/2-A), (MB 320-67314/1-A), Outfall009_20150303_Comp (440-103199-2)

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

Metals

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

General Chemistry

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

Subcontract non-Sister

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

Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 242901. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

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

Dioxin Prep

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

Result Qualifier

Result Qualifier

Result Qualifier

Result Qualifier

3.0

3.3

0.64

ND

ND

ND

ND

0.0000018 J,DX

0.0000016 J,DX q

0.0000019 J,DX

0.0000024 J,DX q

ND

ND

Date Collected: 03/03/15 07:30 Date Received: 03/03/15 12:16

Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16

General Chemistry

Analyte

Analyte

Chloride

Sulfate

Analyte

Analyte

2,3,7,8-TCDD

2,3,7,8-TCDF

1,2,3,7,8-PeCDD

1,2,3,7,8-PeCDF

2,3,4,7,8-PeCDF

1,2,3,4,7,8-HxCDD

1,2,3,6,7,8-HxCDD

1,2,3,7,8,9-HxCDD

1,2,3,4,7,8-HxCDF

1,2,3,6,7,8-HxCDF

1,2,3,7,8,9-HxCDF

Nitrate Nitrite as N

HEM

Client Sample ID: Outfall009_20150303_Grab

Client Sample ID: Outfall009_20150303_Comp

Method: 300.0 - Anions, Ion Chromatography

Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

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

03199-1	a Job ID: 440-10	TestAmerica			i courto	Campie	
	le ID: 440-103	Lab Samp					
: Water	Matrix						
Dil Fac	Analyzed	Prepared	D	Unit	MDL	RL	
1	03/16/15 14:26	03/16/15 11:15		mg/L		4.7	_
3199-2	le ID: 440-103	Lab Samp					
: Water							
Dil Fac	Analyzed	Prepared	D	Unit	MDL	RL	
1	03/03/15 22:35			mg/L		0.50	
1	03/03/15 22:35			mg/L	0.25	0.50	
Dil Fac	Analyzed	Prepared	D	Unit	MDL	RL	
1	03/13/15 10:25				0.070	0.15	
Dil Fac	Analyzed	Prepared	D	Unit	EDL	RL	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000001	0.0000099	
1	03/07/15 03:17	03/05/15 08:23		ug/L	o 0.0000004 2	0.0000099	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000006 1	0.000049	
1	03/07/15 03:17	03/05/15 08:23			0.0000003 9	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000004 7	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000005 6	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000004 9	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	5	0.000049	
1	03/07/15 03:17	03/05/15 08:23			0.0000006 2	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000005 2	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000005 6	0.000049	
1	03/07/15 03:17	03/05/15 08:23		ug/L	0.0000004 8	0.000049	
1	03/07/15 03:17	03/05/15 08:23		-	0.0000026	0.000049	
1	03/07/15 03:17	03/05/15 08:23			0.0000005	0.000049	
1	03/07/15 03:17 03/07/15 03:17	03/05/15 08:23 03/05/15 08:23		ug/L	0.0000009 3 0.0000041	0.000049	
		03/05/15 08:23		-	0.0000041	0.000099	

ND 2,3,4,6,7,8-HxCDF 0.000046 J,DX MB 1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF 0.000013 J,DX MB ND 1,2,3,4,7,8,9-HpCDF OCDD 0.00055 MB OCDF 0.000024 J,DX q MB 0.000099 0.0000010 ug/L 03/05/15 08:23 03/07/15 03:17 Total TCDD 0.0000099 03/05/15 08:23 03/07/15 03:17 ND 0.0000001 ug/L 8 Total TCDF ND 0.0000099 03/05/15 08:23 03/07/15 03:17 0.0000004 ug/L 2 Total PeCDD 03/05/15 08:23 ND 0.000049 0.0000006 ug/L 03/07/15 03:17 1

TestAmerica Irvine

1

1

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Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16

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

Lab Sample ID: 440-103199-2 Matrix: Water

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	0.0000010	J,DX	0.000049	0.0000004 3	ug/L		03/05/15 08:23	03/07/15 03:17	1
Total HxCDD	0.000014	J,DX q	0.000049	0.0000005	ug/L		03/05/15 08:23	03/07/15 03:17	1
				0			00/05/15 55 55	00/07/17 55 5	
Total HxCDF	0.0000068	J,DX q	0.000049	0.0000005 4	ug/L		03/05/15 08:23	03/07/15 03:17	1
Total HpCDD	0.00011	J,DX MB	0.000049	4 0.0000026	ug/L		03/05/15 08:23	03/07/15 03:17	1
Total HpCDF	0.000032	J,DX MB	0.000049	0.0000007	ug/L		03/05/15 08:23	03/07/15 03:17	1
Isotope Dilution	%Recovery	Qualifier	Limits	4			Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	75		25 - 164				03/05/15 08:23	03/07/15 03:17	1
13C-2,3,7,8-TCDF	77		24 - 169				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,7,8-PeCDD	76		25 - 181				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,7,8-PeCDF	72		24 - 185				03/05/15 08:23	03/07/15 03:17	
13C-2,3,4,7,8-PeCDF	71		21 - 178				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,6,7,8-HxCDD	80		28 - 130				03/05/15 08:23	03/07/15 03:17	
13C-1,2,3,4,7,8-HxCDF	66		26 - 152				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,6,7,8-HxCDF	74		26 - 123				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147				03/05/15 08:23	03/07/15 03:17	1
13C-2,3,4,6,7,8-HxCDF	75		28 - 136				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,4,6,7,8-HpCDF	70		28 - 143				03/05/15 08:23	03/07/15 03:17	1
13C-1,2,3,4,7,8,9-HpCDF	59		26 - 138				03/05/15 08:23	03/07/15 03:17	1
13C-OCDD	58		17 - 157				03/05/15 08:23	03/07/15 03:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197				03/05/15 08:23	03/07/15 03:17	1
Method: 200.8 - Metals (ICP/MS) - ⁻	Total Recove	rable							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/10/15 14:05	03/11/15 13:13	1
Copper	5.3	MB	2.0	0.50	ug/L		03/10/15 14:05	03/11/15 13:13	1
Lead	5.8		1.0	0.50	ug/L		03/10/15 14:05	03/11/15 13:13	1
Antimony	0.71	J,DX	2.0	0.50	ug/L		03/10/15 14:05	03/11/15 13:13	1
Thallium	ND		1.0	0.50	ug/L		03/10/15 14:05	03/11/15 13:13	1
Method: 200.8 - Metals (ICP/MS) - I	Dissolved								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		03/10/15 10:43	03/11/15 06:33	1
Copper	3.1	QP	2.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:33	1
Lead	ND	QP	1.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:33	1
Antimony	0.63	J,DX QP	2.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:33	1
Thallium		QP	1.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:33	1
Method: 245.1 - Mercury (CVAA) Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

TestAmerica Job ID: 440-103199-1

Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16

Lab Sample ID: 440-103199-2 Matrix: Water

Matrix:	Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	QP	0.20	0.10	ug/L		03/06/15 12:31	03/06/15 17:26	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	68		10	5.0	mg/L			03/10/15 08:44	1
	33		3.3	1.7	mg/L			03/10/15 15:53	1
Total Suspended Solids			0.0						-

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

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8
8 9 10
9

12 13 14

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
1613B	Dioxins and Furans (HRGC/HRMS)	40CFR136A	TAL SAC
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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

2 3 4 5 6 7 8 9 10 11

Lab Sample ID: 440-103199-1

Lab Sample ID: 440-103199-2

Matrix: Water

Matrix: Water

Date Collected: 03/03/15 07:30 Date Received: 03/03/15 12:16

Client Sample ID: Outfall009_20150303_Grab

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1060 mL	1000 mL	242901	03/16/15 11:15	AMR	TAL IRV
Total/NA	Analysis	1664A		1	1060 mL	1000 mL	242967	03/16/15 14:26	AMR	TAL IRV

Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	5 mL		240094	03/03/15 22:35	NN	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			242536	03/13/15 10:25	TN	TAL IRV
Total/NA	Prep	1613B			1012.5 mL	20 uL	67314	03/05/15 08:23	DXD	TAL SAC
Total/NA	Analysis	1613B		1	1012.5 mL	20 uL	67541	03/07/15 03:17	JRB	TAL SAC
Dissolved	Filtration	FILTRATION			250 mL	250 mL	240732	03/05/15 13:37	APS	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	241619	03/10/15 10:43	ND	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	241860	03/11/15 06:33	RC	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	241698	03/10/15 14:05	ND	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	242042	03/11/15 13:13	NH	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	240732	03/05/15 13:37	APS	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	240990	03/06/15 12:31	DB	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	241411	03/06/15 17:26	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	240260	03/03/15 20:04	DB	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	240351	03/04/15 03:02	EN	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	241585	03/10/15 08:44	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	241739	03/10/15 15:53	NTN	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	240985	03/06/15 12:23	EN	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	241042	03/06/15 15:56	EN	TAL IRV

Laboratory References:

SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-240094/4											Client S	ample ID:		
Matrix: Water												Prep T	ype: To	tal/N/
Analysis Batch: 240094			_											
	_	MB M	-						_	_	<u>.</u>			
Analyte	R	esult Q	ualifier		RL		Unit			PI	repared	Analyz		Dil Fa
Chloride		ND			0.50	0.25	0					03/03/15		
Sulfate		ND			0.50	0.25	mg/L					03/03/15	12:23	
Lab Sample ID: LCS 440-240094/2	2								Clie	ent	Sample	ID: Lab Co	ontrol S	ampl
Matrix: Water												Prep T	ype: To	tal/N/
Analysis Batch: 240094														
			5	Spike	LC	S LCS	3					%Rec.		
Analyte			A	dded	Resu	lt Qua	alifier	Unit	I	D	%Rec	Limits		
Chloride				5.00	4.7	5		mg/L			95	90 _ 110		
Sulfate				5.00	4.8	4		mg/L			97	90 - 110		
	_													
Lab Sample ID: 440-103137-B-4 M	S										Client	Sample ID		-
Matrix: Water												Prep T	ype: To	tal/N/
Analysis Batch: 240094														
	Sample	•		Spike		S MS						%Rec.		
Analyte		Qualifie	er A	dded		It Qua	alifier	Unit		D	%Rec	Limits		
Chloride	96			50.0	13			mg/L			71	80 - 120		
Sulfate	130			50.0	16	4 LN		mg/L			69	80 - 120		
Lab Sample ID: 440-103137-B-4 M	SD								Client	Sa	mple ID	: Matrix Sp	oike Dup	olicat
Matrix: Water													ype: To	
Analysis Batch: 240094														
-	Sample	Sample	. 5	Spike	MS	D MSC	D					%Rec.		RP
Analyte	Result	Qualifie	er A	dded	Resu	lt Qua	alifier	Unit	I	D	%Rec	Limits	RPD	Lim
Chloride	96			50.0	13	5 LN		mg/L		_	78	80 - 120	2	2
Sulfate	130			50.0	16	6 LN		mg/L			75	80 - 120	2	2

Lab Sample ID: MB 320-67314/1-A Matrix: Water Analysis Batch: 67541							Client Sa	mple ID: Metho Prep Type: T Prep Batch	otal/NA
	MB	MB							
Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000002	ug/L		03/05/15 08:23	03/06/15 18:39	1
				4					
2,3,7,8-TCDF	ND		0.000010	0.0000002	ug/L		03/05/15 08:23	03/06/15 18:39	1
				0					
1,2,3,7,8-PeCDD	ND		0.000050	0.0000012	ug/L		03/05/15 08:23	03/06/15 18:39	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000005	ug/L		03/05/15 08:23	03/06/15 18:39	1
				8					
2,3,4,7,8-PeCDF	ND		0.000050	0.0000007	ug/L		03/05/15 08:23	03/06/15 18:39	1
				2					
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000005	ug/L		03/05/15 08:23	03/06/15 18:39	1
				2					
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000004	ug/L		03/05/15 08:23	03/06/15 18:39	1
				6					
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000004	ug/L		03/05/15 08:23	03/06/15 18:39	1
				1					
1,2,3,4,7,8-HxCDF	ND		0.000050	0.0000004	ug/L		03/05/15 08:23	03/06/15 18:39	1
				7					

Lab Sample ID: MB 320-67314/1-A

Matrix: Water

Analysis Batch: 67541

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	6	8

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)
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Analysis Batch: 67541	MB	МВ					Prep Batch: 6731		
Analyte	Result	Qualifier	RL	EDL	Unit	D Prepared	Analyzed	Dil Fa	
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000004	ug/L	03/05/15 08:23	03/06/15 18:39		
1,2,3,7,8,9-HxCDF	ND		0.000050	0 0.0000004	ug/L	03/05/15 08:23	03/06/15 18:39		
2,3,4,6,7,8-HxCDF	ND		0.000050	0	ug/l	03/05/15 08:23	03/06/15 18:39		
2,3,4,0,7,0-NXCDF	ND		0.000050	0.0000003	ug/L	03/03/15 08.23	03/00/13 18.39		
1,2,3,4,6,7,8-HpCDD	0.00000327	J,DX	0.000050	0.0000006	ug/L	03/05/15 08:23	03/06/15 18:39		
1,2,3,4,6,7,8-HpCDF	0.00000206	J,DX	0.000050	2 0.0000005	ug/L	03/05/15 08:23	03/06/15 18:39		
1,2,3,4,7,8,9-HpCDF	ND		0.000050	7 0.0000009	ug/L	03/05/15 08:23	03/06/15 18:39		
OCDD	0.0000104	LDX a	0.00010	2 0.0000013	ua/l	03/05/15 08:23	03/06/15 18:39		
OCDF	0.00000288		0.00010		-	03/05/15 08:23	03/06/15 18:39		
OCDF	0.00000288	J,DX Y	0.00010	0.0000004 7	ug/L	03/03/15 08.23	03/00/13 18.39		
Total TCDD	ND		0.000010	0.0000002 4	ug/L	03/05/15 08:23	03/06/15 18:39		
Total TCDF	ND		0.000010	0.0000002	ug/L	03/05/15 08:23	03/06/15 18:39		
Total PeCDD	0.00000367	J,DX q	0.000050	0 0.0000012	ug/L	03/05/15 08:23	03/06/15 18:39		
Total PeCDF	ND	-, 1	0.000050	0.0000005	•	03/05/15 08:23	03/06/15 18:39		
				8					
Total HxCDD	ND		0.000050	0.0000004	ug/L	03/05/15 08:23	03/06/15 18:39		
Total HxCDF	ND		0.000050	0.0000003	ug/L	03/05/15 08:23	03/06/15 18:39		
Total HpCDD	0.00000619	J,DX	0.000050	6 0.0000006	ug/L	03/05/15 08:23	03/06/15 18:39		
Total HpCDF	0.00000206	J,DX	0.000050	2 0.0000007	ug/L	03/05/15 08:23	03/06/15 18:39		
	МВ	МВ		4					
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa	
13C-2,3,7,8-TCDD	77		25 - 164			03/05/15 08:23	03/06/15 18:39		
13C-2,3,7,8-TCDF	87		24 - 169			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,7,8-PeCDD	70		25 - 181			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,7,8-PeCDF	72		24 _ 185			03/05/15 08:23	03/06/15 18:39		
13C-2,3,4,7,8-PeCDF	71		21 - 178			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,4,7,8-HxCDD	67		32 _ 141			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,6,7,8-HxCDD	66		28 - 130			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,4,7,8-HxCDF	60		26 - 152			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,6,7,8-HxCDF	66		26 - 123			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,7,8,9-HxCDF	65		29 - 147			03/05/15 08:23	03/06/15 18:39		
13C-2,3,4,6,7,8-HxCDF	70		28 - 136			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,4,6,7,8-HpCDD	56		23 - 140			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,4,6,7,8-HpCDF	63		28 - 143			03/05/15 08:23	03/06/15 18:39		
13C-1,2,3,4,7,8,9-HpCDF	54		26 - 138			03/05/15 08:23	03/06/15 18:39		
13C-OCDD	31		17 - 157			03/05/15 08:23	03/06/15 18:39		
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa	
37Cl4-2,3,7,8-TCDD	97		35 - 197			03/05/15 08:23	03/06/15 18:39	-	

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

Lab Sample ID: LCS 320-67314/2-	A
Matrix: Water	

Lab Sample ID: LCS 320-67	7314/2-A						Client	Sample	D: Lab Control Sample
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 67541			Casilya	1.00	LCS				Prep Batch: 67314
Analyte			Spike Added		Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD			0.000200	0.000197	Quaimer	ug/L		98	67 - 158
2,3,7,8-TCDF			0.000200	0.000137		ug/L		87	75 - 158
1,2,3,7,8-PeCDD			0.00100	0.000978		ug/L		98	70 ₋ 142
1,2,3,7,8-PeCDF			0.00100	0.000973		ug/L		97	80 - 134
2,3,4,7,8-PeCDF			0.00100	0.00103		ug/L		103	68 - 160
1,2,3,4,7,8-HxCDD			0.00100	0.00102		ug/L		103	70 ₋ 164
1,2,3,6,7,8-HxCDD			0.00100	0.000933		ug/L		93	76 - 134
1,2,3,7,8,9-HxCDD			0.00100	0.000961		ug/L		96	64 - 162
1,2,3,4,7,8-HxCDF			0.00100	0.00109		ug/L		109	72 - 134
1,2,3,6,7,8-HxCDF			0.00100	0.000942		ug/L		94	84 - 130
1,2,3,7,8,9-HxCDF			0.00100	0.000954		ug/L		9 4 95	78 - 130
2,3,4,6,7,8-HxCDF			0.00100	0.000970		ug/L		97	70 - 156
1,2,3,4,6,7,8-HpCDD			0.00100	0.000925	MP	ug/L		92	70 - 130 70 - 140
1,2,3,4,6,7,8-HpCDF			0.00100	0.000925		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF			0.00100	0.000920	IVID	ug/L		93 98	78 - 138
OCDD			0.00200	0.000979	MD	ug/L		90 87	78 - 138
OCDF			0.00200	0.00174		ug/L		86	63 - 170
	105	LCS	0.00200	0.00175	IVID	ug/L		00	05 - 170
Isotope Dilution	%Recovery		Limits						
13C-2,3,7,8-TCDD			20 - 175						
13C-2,3,7,8-TCDF	86		22 - 152						
13C-1,2,3,7,8-PeCDD	68		21 - 227						
13C-1,2,3,7,8-PeCDF	72		21 - 192						
13C-2,3,4,7,8-PeCDF	68		13 - 328						
13C-1,2,3,4,7,8-HxCDD	68		21 - 193						
13C-1,2,3,6,7,8-HxCDD	67		25 - 163						
13C-1,2,3,4,7,8-HxCDF	60		19 - 202						
13C-1,2,3,6,7,8-HxCDF	68		21 - 159						
13C-1,2,3,7,8,9-HxCDF	66		17 _ 205						
13C-2,3,4,6,7,8-HxCDF	70		22 - 176						
13C-1,2,3,4,6,7,8-HpCDD	61		26 - 166						
13C-1,2,3,4,6,7,8-HpCDF	67		21 - 158						
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186						
13C-OCDD	57		13 - 199						
	1.00	LCS							
Surrogate			Limits						
Surrogate 37Cl4-2,3,7,8-TCDD	%Recovery 	Quaiiiitti	35 - 197						
51014-2,3,1,0-10DD	95		30 - 19/						

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-241698/1- Matrix: Water Analysis Batch: 242042		мв						mple ID: Metho ype: Total Reco Prep Batch:	overable
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/10/15 14:05	03/11/15 13:08	1
Copper	1.43	J,DX	2.0	0.50	ug/L		03/10/15 14:05	03/11/15 13:08	1

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

Dil Fac

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Client Sample ID: Outfall009_20150303_Comp	
Prep Type: Total Recoverable	

Client Sample ID: Outfall009_20150303_Comp

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Pron Bate

Prep Type: Total Recoverable

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 241619

h: <mark>241</mark>	698	

Lab Sample ID: MB 440-241698/1-A **Client Sample ID: Method Blank** Matrix: Water Prep Type: Total Recoverable Analysis Batch: 242042 Prep Batch: 241698 MB MB Analyte **Result Qualifier** RL MDL Unit Prepared D Analyzed ND Lead 1.0 0.50 ug/L 03/10/15 14:05 03/11/15 13:08 Antimony ND 2.0 0.50 ug/L 03/10/15 14:05 03/11/15 13:08 Thallium ND 1.0 0.50 ug/L 03/10/15 14:05 03/11/15 13:08

Lab Sample ID: LCS 440-241698/2-A

Matrix: Water Analysis Batch: 242042

Analysis Batch: 242042							Prep Batch: 24169		
	Spike	LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Cadmium	80.0	79.5		ug/L		99	85 _ 115		
Copper	80.0	80.4		ug/L		101	85 _ 115		
Lead	80.0	79.9		ug/L		100	85 - 115		
Antimony	80.0	84.3		ug/L		105	85 - 115		
Thallium	80.0	80.4		ug/L		100	85 ₋ 115		

Lab Sample ID: 440-103199-2 MS Matrix: Water Analysis Batch: 242042

Analysis Datch. 242042									гіері	Datch. 241030
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	ND		80.0	79.6		ug/L		99	70 - 130	
Copper	5.3	MB	80.0	80.6		ug/L		94	70 - 130	
Lead	5.8		80.0	84.1		ug/L		98	70 - 130	
Antimony	0.71	J,DX	80.0	82.5		ug/L		102	70 - 130	
Thallium	ND		80.0	78.9		ug/L		99	70 - 130	

Lab Sample ID: 440-103199-2 MSD Matrix: Water nalveje Batch: 242042

Analysis Batch: 242042									Prep I	Batch: 2	41698
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	78.5		ug/L		98	70 - 130	1	20
Copper	5.3	MB	80.0	82.8		ug/L		97	70 - 130	3	20
Lead	5.8		80.0	83.1		ug/L		97	70 - 130	1	20
Antimony	0.71	J,DX	80.0	81.1		ug/L		100	70 - 130	2	20
Thallium	ND		80.0	78.8		ug/L		98	70 - 130	0	20

Lab Sample ID: MB 440-240732/1-E Matrix: Water Analysis Batch: 241860

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/10/15 10:43	03/11/15 06:19	1
Copper	ND		2.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:19	1
Lead	ND		1.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:19	1
Antimony	ND		2.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:19	1
Thallium	ND		1.0	0.50	ug/L		03/10/15 10:43	03/11/15 06:19	1

LCS LCS

79.0

78.9

78.9

85.0

78.2

Result Qualifier

Unit

ug/L

ug/L

ug/L

ug/L

ug/L

Spike

Added

80.0

80.0

80.0

80.0

80.0

Matrix: Water

Analyte

Copper

Lead

Cadmium

Antimony

Thallium

Analysis Batch: 241860

Lab Sample ID: LCS 440-240732/2-E

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

Client Sample ID: Lab Control Sample

%Rec.

Limits

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

%Rec

99

99

99

106

98

D

Prep Type: Dissolved

Prep Batch: 241619

2 3 4 5 6

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Client Sample ID: Matrix Spike Prep Type: Dissolved Prep Batch: 241619

Matrix: Water Analysis Batch: 241860

Lab Sample ID: 440-103439-N-1-D MS

Analysis Datch. 241000									Frep	Datch: 241019
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	ND		80.0	74.7		ug/L		93	70 - 130	
Copper	0.94	J,DX	80.0	68.8		ug/L		85	70 - 130	
Lead	ND		80.0	74.4		ug/L		93	70 - 130	
Antimony	ND		80.0	86.0		ug/L		107	70 - 130	
Thallium	ND		80.0	73.8		ug/L		92	70 - 130	

Lab Sample ID: 440-103439-N Matrix: Water Analysis Batch: 241860	-1-E MSD						Client Sa	ample ID): Matrix Sp Prep Ty Prep B		olved
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	74.9		ug/L		94	70 - 130	0	20
Copper	0.94	J,DX	80.0	68.5		ug/L		84	70 - 130	0	20
Lead	ND		80.0	73.2		ug/L		91	70 - 130	2	20
Antimony	ND		80.0	86.6		ug/L		108	70 - 130	1	20
Thallium	ND		80.0	73.6		ug/L		92	70 - 130	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-240260/1-A Matrix: Water Analysis Batch: 240351	мв	МВ							Client Sa	Imple ID: Metho Prep Type: 1 Prep Batch	otal/NA
Analyte	Result ND	Qualifier		RL 0.20	 MDL Ur	-	_ <u>D</u>		repared 3/15 20:04	Analyzed 03/04/15 02:02	Dil Fac
Lab Sample ID: LCS 440-240260/2-A Matrix: Water Analysis Batch: 240351							C	lient	Sample	ID: Lab Control Prep Type: ∃ Prep Batch	otal/NA
Analyte Mercury			Spike Added 8.00		LCS Qualifie	r Unit ug/L		_ <u>D</u>	%Rec	%Rec. Limits 85 - 115	

Matrix: Water

Method: 245.1 - Mercury (CVAA) (Continued)

Analysis Batch: 240351												⁻ ype: To Batch: 2	
	Sample	Sample	Spike		MS	MS					%Rec.		
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits		
Mercury	ND		8.00		8.14		ug/L		_	102	70 - 130		
- Lab Sample ID: 440-103118-D-1-D M	NSD							Clier	it Sa	ample ID:	: Matrix S	pike Dup	licate
Matrix: Water											Prep 1	ype: To	tal/NA
Analysis Batch: 240351											Prep	Batch: 2	40260
	Sample	Sample	Spike		MSD	MSD					%Rec.		RPD
Analyte		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Mercury	ND		8.00		8.11		ug/L			101	70 - 130	0	20
Lab Sample ID: MB 440-240732/1-B	i -									Client Sa	ample ID:	Method	Blank
Matrix: Water											Prep Ty	vpe: Diss	olved
Analysis Batch: 241411											Prep	Batch: 2	40990
	_	MB MB						_	_				
Analyte	R	esult Qualifier		RL		MDL Unit		D		repared	Analy		Dil Fac
Mercury		ND		0.20		0.10 ug/L			03/0	6/15 12:31	03/06/15	17:21	1
Lab Sample ID: LCS 440-240732/2-I	в							CI	ient	Sample	ID: Lab C	ontrol S	ample
Matrix: Water											Prep Ty	vpe: Diss	olved
Analysis Batch: 241411											Prep	Batch: 2	40990
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		
Mercury			8.00		7.92		ug/L			99	85 - 115		
Lab Sample ID: 440-103199-2 MS							Clien	t San	nple	ID: Outf	all009_20	150303_	Comp
Matrix: Water											Prep Ty	vpe: Diss	olved
Analysis Batch: 241411												Batch: 2	40990
· · · · · · · · · · · · · · · · · · ·	Sample	Sample	Spike		MS	MS					%Rec.		
	Result	Qualifier	Added			Qualifier	Unit		<u>D</u>	%Rec	Limits		
Analyte			8.00		8.06		ug/L			101	70 - 130		
Analyte	ND	QP							nple		all009_20		
Analyte		QP					Clien	t San		D. Out			olved
Analyte Mercury Lab Sample ID: 440-103199-2 MSD		QP					Clien	t San		ib. outi	Prep Ty	-	
Analyte Mercury Lab Sample ID: 440-103199-2 MSD Matrix: Water		QP					Clien	t San		ib. out	Prep Ty	vpe: Diss Batch: 2	
Analyte Mercury Lab Sample ID: 440-103199-2 MSD Matrix: Water Analysis Batch: 241411	ND Sample	Sample	Spike			MSD		t San			Prep Ty Prep %Rec.	Batch: 2	40990 RPD
Analyte Mercury Lab Sample ID: 440-103199-2 MSD Matrix: Water Analysis Batch: 241411 Analyte	ND Sample Result	Sample Qualifier	Added		Result	MSD Qualifier	Unit	t San	D	%Rec	Prep Ty Prep %Rec. Limits	Batch: 2	40990 RPD Limit
Analyte Mercury Lab Sample ID: 440-103199-2 MSD Matrix: Water Analysis Batch: 241411	ND Sample Result	Sample	-					t San			Prep Ty Prep %Rec.	Batch: 2	40990 RPD

Prep Type: Total/NA Prep Batch: 242901

Analysis Batch: 242967								Prep Batch	242901
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		03/16/15 11:15	03/16/15 14:26	1

8 9

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 440-242901/2-A Matrix: Water Analysis Batch: 242967					Client	Sample		ontrol Sa ype: Tot Batch: 2	al/NA
Analysis Datch. 242307	Spike	LCS	LCS				%Rec.	Daten. 2	42301
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
HEM	20.0	19.3		mg/L		96	78 - 114		
Lab Sample ID: LCSD 440-242901/3-A				Clie	ent Sam	ple ID: I	_ab Contro	ol Sample	e Dup
Matrix: Water							Prep T	ype: Tot	al/NA
Analysis Batch: 242967							Prep I	Batch: 2	42901
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
НЕМ	20.0	19.5		mg/L		97	78 - 114	1	11

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

Lab Sample ID: MB 440-241585/1 Matrix: Water												Client S	Sample ID: Met Prep Type		
Analysis Batch: 241585															
		MB	MB												
Analyte	Re	esult	Qualifier		RL		MDL	Unit		D	Pr	repared	Analyzed		Dil Fac
Total Dissolved Solids		ND			10		5.0	mg/L					03/10/15 08:4	4	1
Lab Sample ID: LCS 440-241585/2										Clie	ənt	Sample	BID: Lab Conti	ol S	ample
Matrix: Water													Prep Type		
Analysis Batch: 241585															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Total Dissolved Solids				1000		1020			mg/L			102	90 - 110		
Lab Sample ID: 440-103343-AB-4 DI	J											Cli	ent Sample ID:	Dup	olicate
Matrix: Water													Prep Type	: To	tal/NA
Analysis Batch: 241585															
-	Sample	Samp	le			DU	DU								RPD
Analyte	Result	Quali	fier			Result	Qua	lifier	Unit		D		F	RPD	Limit
Total Dissolved Solids	330					334			mg/L					1	5

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

Lab Sample ID: MB 440-241739/1 Matrix: Water Analysis Batch: 241739										Client	Sample ID: Met Prep Type	hod Blank : Total/NA
	МВ	МВ										
Analyte	Result	Qualifier		RL		MDL (Unit		D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND			1.0		0.50	mg/L				03/10/15 15:5	3 1
Lab Sample ID: LCS 440-241739/2 Matrix: Water									Clie	nt Samp	le ID: Lab Contr Prep Type	
Analysis Batch: 241739			Spike		LCS	1.00					%Rec.	
Analyte Total Suspended Solids			Added 1000		Result 1010		fier	Unit mg/L	[0 %Rec 101		

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

Lab Sample ID: 440-103433-A- Matrix: Water Analysis Batch: 241739	1 DU						mple ID: Duj rep Type: To	
· · · · · · · · · · · · · · · · · · ·	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	22		 21.3		mg/L		 3	10

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

_ Lab Sample ID: MB 440-240985/1-A											Client Sa	ample ID: I	Nethod	d Blank
Matrix: Water												Prep Ty	pe: To	otal/NA
Analysis Batch: 241042														240985
		MB MB												
Analyte	R	esult Qualifier		RL		MDL	Unit		D	Р	repared	Analyze	əd	Dil Fac
Cyanide, Total		ND		5.0		2.5	ug/L			03/0	6/15 12:23	03/06/15 1	5:55	1
- Lab Sample ID: LCS 440-240985/2-A	4								С	lient	Sample	ID: Lab Co	ontrol	Sample
Matrix: Water												Prep Ty	ype: To	otal/NA
Analysis Batch: 241042												Prep E	Batch:	240985
-			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Qual	lifier	Unit		D	%Rec	Limits		
Cyanide, Total			100		97.7			ug/L			98	90 - 110		
- Lab Sample ID: 440-103023-A-1-B N	IS										Client S	Sample ID:	Matrix	x Spike
Matrix: Water												Prep Ty	ype: To	otal/NA
Analysis Batch: 241042												Prep E	Batch:	240985
-	Sample	Sample	Spike		MS	MS						%Rec.		
Analyte	Result	Qualifier	Added		Result	Qual	lifier	Unit		D	%Rec	Limits		
Cyanide, Total	ND		100		90.3			ug/L			90	70 _ 115		
- Lab Sample ID: 440-103023-A-1-C N	ISD								Clie	nt Sa	ample ID:	Matrix Sp	ike Du	plicate
Matrix: Water												Prep Ty	pe: To	otal/NA
Analysis Batch: 241042												Prep E	Batch:	240985
-	Sample	Sample	Spike		MSD	MSD)					%Rec.		RPD
Analyte	Result	Qualifier	Added		Result	Qual	lifier	Unit		D	%Rec	Limits	RPD	Limi
Cyanide, Total	ND		100		85.0			ug/L			85	70 - 115	6	15
- Lab Sample ID: MB 440-242103/1-A											Client Sa	ample ID: I	Nethod	d Blank
Matrix: Water												Prep Ty	ype: To	otal/NA
Analysis Batch: 242149												Prep E	Batch:	242103
-		MB MB												
Analyte	R	esult Qualifier		RL		MDL	Unit		D	Р	repared	Analyz	ed	Dil Fac
Cyanide, Total		ND		5.0		2.5	ug/L			03/1	1/15 18:15	03/11/15 2	22:37	1
_ Lab Sample ID: LCS 440-242103/2-A	x								С	lient	Sample	ID: Lab Co	ontrol	Sample
Matrix: Water											- The second sec	Prep Ty	pe: To	otal/NA
Analysis Batch: 242149														242103
-			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Qual	lifier	Unit		D	%Rec	Limits		

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

Lab Sample ID: 440-103023-A- Matrix: Water Analysis Batch: 242149		Sample	Spike	MS	MS			Client): Matrix Гуре: To Batch: 2	tal/NA
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Cyanide, Total	ND		100	104		ug/L		104	70 - 115		
Lab Sample ID: 440-103023-A-	1-F MSD						Client Sa	ample IC): Matrix S	pike Du	olicate
Matrix: Water									Prep 1	Гуре: То	tal/NA
Analysis Batch: 242149									Prep	Batch: 2	42103
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Total	ND		100	104		ug/L		104	70 - 115	1	15

HPLC/IC

Analysis Batch: 240094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103137-B-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-103137-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	300.0	
LCS 440-240094/2	Lab Control Sample	Total/NA	Water	300.0	
MB 440-240094/4	Method Blank	Total/NA	Water	300.0	
nalysis Batch: 242530	6				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-103199-2	Outfall009 20150303 Comp	Total/NA	Water	NO3NO2 Calc	

Specialty Organics

Prep Batch: 67314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	1613B	
LCS 320-67314/2-A	Lab Control Sample	Total/NA	Water	1613B	
MB 320-67314/1-A	Method Blank	Total/NA	Water	1613B	
nalysis Batch: 67541					
nalysis Batch: 67541 Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
		Prep Type Total/NA	Matrix Water	Method	Prep Batch
Lab Sample ID	Client Sample ID				

Metals

Prep Batch: 240260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103118-D-1-C MS	Matrix Spike	Total/NA	Water	245.1	
440-103118-D-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	245.1	
LCS 440-240260/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-240260/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 240351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103118-D-1-C MS	Matrix Spike	Total/NA	Water	245.1	240260
440-103118-D-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	240260
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	245.1	240260
LCS 440-240260/2-A	Lab Control Sample	Total/NA	Water	245.1	240260
MB 440-240260/1-A	Method Blank	Total/NA	Water	245.1	240260

Filtration Batch: 240732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Dissolved	Water	FILTRATION	
440-103199-2 MS	Outfall009_20150303_Comp	Dissolved	Water	FILTRATION	
440-103199-2 MSD	Outfall009_20150303_Comp	Dissolved	Water	FILTRATION	
440-103439-N-1-D MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-103439-N-1-E MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
LCS 440-240732/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	

TestAmerica Irvine

Prep Type

Dissolved

Dissolved

Dissolved

Prep Type

Dissolved

Dissolved

Dissolved

Dissolved

Dissolved

Prep Type

Dissolved

Matrix

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Filtration Batch: 240732 (Continued)

Client Sample ID

Method Blank

Method Blank

Client Sample ID

Lab Control Sample

Client Sample ID

Method Blank

Method Blank

Outfall009 20150303 Comp

Outfall009_20150303_Comp

Outfall009_20150303_Comp

Outfall009_20150303_Comp

Lab Control Sample

Metals (Continued)

Lab Sample ID

LCS 440-240732/2-E

MB 440-240732/1-B

MB 440-240732/1-E

Prep Batch: 240990

440-103199-2

440-103199-2 MS

440-103199-2 MSD

LCS 440-240732/2-B

MB 440-240732/1-B

Lab Sample ID

440-103199-2

Analysis Batch: 241411

Method

Method

245.1

245.1

245.1

245.1

245 1

Method

245.1

200.8

FILTRATION

FILTRATION

FILTRATION

Prep Batch

Prep Batch

240732

240732

240732

240732

240732

Prep Batch

240990

9 10 11

12 13 14

440-103199-2 MS Outfall009_20150303_Comp Dissolved Water 245.1 240990 440-103199-2 MSD Outfall009 20150303 Comp Dissolved Water 245.1 240990 LCS 440-240732/2-B Lab Control Sample Dissolved Water 245.1 240990 MB 440-240732/1-B Method Blank Dissolved Water 245.1 240990 Prep Batch: 241619 Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch Water 200.2 440-103199-2 Outfall009_20150303_Comp Dissolved 240732 440-103439-N-1-D MS Matrix Spike Dissolved Water 200.2 240732 440-103439-N-1-E MSD Dissolved Water 200.2 240732 Matrix Spike Duplicate LCS 440-240732/2-E Lab Control Sample Dissolved Water 200.2 240732 MB 440-240732/1-E Method Blank Dissolved 200.2 240732 Water Prep Batch: 241698 Lab Sample ID **Client Sample ID** Prep Type Matrix Method Prep Batch 440-103199-2 Outfall009 20150303 Comp Total Recoverable Water 200.2 Outfall009_20150303_Comp 440-103199-2 MS Total Recoverable Water 200.2 440-103199-2 MSD Outfall009 20150303 Comp **Total Recoverable** Water 200.2 LCS 440-241698/2-A Lab Control Sample **Total Recoverable** 200.2 Water MB 440-241698/1-A Method Blank **Total Recoverable** Water 200.2 Analysis Batch: 241860 Lab Sample ID **Client Sample ID** Prep Type Matrix Method Prep Batch 440-103199-2 Outfall009_20150303_Comp Dissolved Water 200.8 241619 440-103439-N-1-D MS Matrix Spike Dissolved Water 200.8 241619 440-103439-N-1-E MSD Matrix Spike Duplicate Dissolved Water 200.8 241619 Lab Control Sample LCS 440-240732/2-E Dissolved Water 200.8 241619

Analysis Batch: 242042

MB 440-240732/1-E

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Total Recoverable	Water	200.8	241698
440-103199-2 MS	Outfall009_20150303_Comp	Total Recoverable	Water	200.8	241698
440-103199-2 MSD	Outfall009_20150303_Comp	Total Recoverable	Water	200.8	241698
LCS 440-241698/2-A	Lab Control Sample	Total Recoverable	Water	200.8	241698
MB 440-241698/1-A	Method Blank	Total Recoverable	Water	200.8	241698

Dissolved

TestAmerica Irvine

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Client Sample ID

Matrix Spike Duplicate

Lab Control Sample

Outfall009_20150303_Comp

Matrix Spike

Method Blank

Client Sample ID

Matrix Spike Duplicate

Lab Control Sample

Outfall009_20150303_Comp

Outfall009_20150303_Comp

Matrix Spike

Method Blank

Client Sample ID

Lab Control Sample

Duplicate

Method Blank

General Chemistry

Prep Batch: 240985

440-103023-A-1-B MS

LCS 440-240985/2-A

MB 440-240985/1-A

Analysis Batch: 241042

440-103023-A-1-B MS

LCS 440-240985/2-A

MB 440-240985/1-A

440-103343-AB-4 DU

LCS 440-241585/2

MB 440-241585/1

Analysis Batch: 241585

440-103023-A-1-C MSD

440-103199-2

Lab Sample ID

440-103199-2

Lab Sample ID

440-103199-2

440-103023-A-1-C MSD

Method

Distill/CN

Distill/CN

Distill/CN Distill/CN

Distill/CN

Method

SM 4500 CN E

Method

SM 2540C

SM 2540C

SM 2540C

SM 2540C

Prep Batch

Prep Batch

240985

240985

240985

240985

240985

Prep Batch

9 10 11 12 13

Analysis Batch: 241739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	SM 2540D	
440-103433-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-241739/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-241739/1	Method Blank	Total/NA	Water	SM 2540D	

Prep Batch: 242103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103023-A-1-E MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-103023-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-242103/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-242103/1-A	Method Blank	Total/NA	Water	Distill/CN	

Analysis Batch: 242149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103023-A-1-E MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	242103
440-103023-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	242103
LCS 440-242103/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	242103
MB 440-242103/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	242103

Prep Batch: 242901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-1	Outfall009_20150303_Grab	Total/NA	Water	1664A	
LCS 440-242901/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-242901/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-242901/1-A	Method Blank	Total/NA	Water	1664A	

9

General Chemistry (Continued)

Analysis Batch: 242967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-1	Outfall009_20150303_Grab	Total/NA	Water	1664A	242901
LCS 440-242901/2-A	Lab Control Sample	Total/NA	Water	1664A	242901
LCSD 440-242901/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	242901
MB 440-242901/1-A	Method Blank	Total/NA	Water	1664A	242901

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9	uu		U U

UD	I C/	IC
пг	LU/	

HPLC/IC		
Qualifier	Qualifier Description	
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)	5
Dioxin		
Qualifier	Qualifier Description	
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	-
MB	Analyte present in the method blank	
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The	
	measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.	8
Metals		
Qualifier	Qualifier Description	9
QP	Holding time Immediate. Analyzed as close to receipt as possible	
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	10
MB	Analyte present in the method blank	
Glossary		

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Laboratory: TestAmerica Irvine All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-15
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15
Florida	NELAP	4	E87570	06-30-15
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-15
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	06-30-15
New York	NELAP	2	11666	04-01-15
Oregon	NELAP	10	CA200005	01-29-16
Oregon	NELAP Secondary AB	10	E87570	06-30-15
Pennsylvania	NELAP	3	9947	03-31-15
Texas	NELAP	6	T104704399-08-TX	05-31-15
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Washington	State Program	10	C581	05-05-15
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

* Certification renewal pending - certification considered valid.

LABORATORY REPORT



Date:	Marc	h 12, 2015		
	1.1010			"dedicated to providing quality aquatic toxicity testing
Client:	1746 Irvin	America, Irvine 1 Derian Ave., Suite 1 e, CA 92614 Debby Wilson	00	 4350 Transport Street, Unit 107 Ventura, CA 93003 (805) 650-0546 FAX (805) 650-0756 CA ELAP Cert. No.: 1775
Laboratory Job No.: Sample I.D.:		A-15030403-001 440-103199-1 Outfall009_2015_0	303_Comp (440-103199-2)	
Sample Con	trol:	-	-	recommended hold time and with ted on only one sample per client
		Date Sampled: Date Received: Temp. Received: Chlorine (TRC): Date Tested:	03/03/15 03/04/15 0.4°C 0.0 mg/l 03/04/15 to 03/11/15	
Sample Ana	lysis:	The following analy	ses were performed on your san	nple:
		Ceriodaphnia dubia	Survival and Reproduction Tes	t (EPA Method 1002).
		conducted under the		s of your sample. All testing was LeMay. Daily test readings were bb LeMay (initialed: J).

Result Summary:

Chronic:	<u>NOEC</u>	<u>TUc</u>
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia 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-15030403-001 Client/ID: TestAmerica – Outfall 009 Date Tested: 03/04/15 to 03/11/15

TEST SUMMARY

Test type: Daily static-renewal.
Species: Ceriodaphnia dubia.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-150303.

Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 15 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 7 days. Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	26.9
100% Sample	100%	26.6
Sample not statistically	significantly less than Co	ontrol for either endpoint.

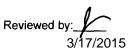
CHRONIC TOXICITY

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 (26.9 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 5.3%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Start Date:	3/4/2015	14.30		15030403			Sample II	st-7 Day S	Outfall 009	<u></u>		
End Date:	3/11/2015			CAATL-Ad					SRW2-Ind		rmwator	
Sample Date:				EPAFW02			Test Spec		CD-Cerioo			
Comments:	0/0/2010	02.40	1 1010001.		. 02 1 1 02			5100.			1010	
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		
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
				_	Not			Fisher's			Isoto	
Conc-%	Mean	N-Mean	·	Resp	Resp	Total	<u>N</u>	Exact P	Critical			N-Mean
D-Control				0 0	10 10	10 10	10 10	1.0000	0.0500		1.0000	1.0000
100								1.0000	0.0000		1.0000	1.0000
	1.0000	1.0000		U								
Fisher's Exact	est (1-tail	, 0.05)	NOEC 100	LOEC >100	ChV_	<u>TU</u>						
Fisher's Exact	est (1-tail	, 0.05)	NOEC	LOEC >100	ChV	<u>TU</u> 1		ples)				
Fisher's Exact Treatments vs	est (1-tail Test D-Contro	, 0.05)	NOEC 100	LOEC >100		<u>TU</u> 1		ples)				
Fisher's Exact Freatments vs Point	est (1-tail	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1		ples)				
Fisher's Exact Freatments vs Point C05	Test (1-tail t Test s D-Contro %	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1		ples)				
Fisher's Exact Treatments vs Point C05 IC10 IC15	<mark>est (1-tail</mark> t Test s D-Contro % >100 >100 >100 >100	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1		ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC20 IC25 IC40	est (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	est (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	est (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Hypothesis T Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40 IC50	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	pies)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				
Fisher's Exact Treatments vs Point IC05 IC10 IC15 IC20 IC25 IC40	Test (1-tail t Test s D-Contro >100 >100 >100 >100 >100 >100 >100 >10	, 0.05) I SD	NOEC 100	LOEC >100 Linea	ChV ar Interpo	<u>TU</u> 1	0 Resam	ples)				



150

100

0

50

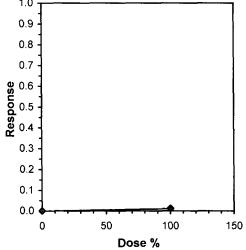
Dose %

			Cerioda	iphnia Su	rvival and	Reprodu	ction Tes	t-Reproc	duction	
Start Date:	3/4/2015 1	4:30	Test ID:	15030403	с		Sample ID	:	Outfall 009	9
End Date:	3/11/2015	14:00	Lab ID: 0	CAATL-Ac	uatic Tesi	ting Labs	Sample Ty	/pe:	SRW2-Ind	Justrial stormwater
Sample Date:	3/3/2015 0	12.43	Protocol· I	FPAF\W02	-821-R-02	2-013	Test Spec	ies:	CD-Cerio	daphnia dubia
oumpic Dute.	0.0.2010.0	2.40	1010001. 1							
Comments:	0/0/2010 0	.40								
•	1	2	3	4	5	6	7	8	9	10
Comments:	1	2 25.000	<u>3</u> 30.000	<u>4</u> 27.000	<u>5</u> 27.000		7 28.000	8 27.000		
Comments: Conc-%	1 26.000	2	3	4	5	6	7	8	9	10

			Transform: Untransformed 1-Tailed Isoto				onic					
Conc-%	Mean	N-Mean	Mean	Min	Мах	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	26.900	1.0000	26.900	25.000	30.000	5.665	10				26.900	1.0000
100	26.600	0.9888	26.600	23.000	30.000	7.965	10	0.364	1.734	1.431	26.600	0.9888

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.96719		0.905		0.14531	-0.201
F-Test indicates equal variances (p = 0.34)	1.93301		6.54109			
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	1.43111	0.0532	0.45	3.40556	0.72046	1, 18
Treatments vs D-Control						
Linear Internola	tion (200 Resam	ales)			······································	

			L.I.	lear interpolation	(Loo Nesamples)	
Point	%	SD	95% CL	Skew		
IC05	>100					
IC10	>100					
IC15	>100				1.0	
IC20	>100				0.9	
IC25	>100				0.9	
IC40	>100				0.8 -	
IC50	>100				0.7 -	
					a ne j	



Reviewed by:_ 3/17/2015

CERIODAPHNIA DUBIA CHRONIC BIOASSAY EPA METHOD 1002.0 Raw Data Sheet



ab No.: A-	15030403	3-001													
lient ID: T	estAmeri			7		<u>-</u>		<u></u>		ار			Date: 0		
		DA			AY 2		DAY 3	-	Y 4		Y 5	 	AY 6		AY 7
	<u></u>	0 hr	24hr	_0 hr	24hr	0 hr	r 24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst In		MBU	1400	Ma	1400	44	u 1400		1400		NW	(4a)	1400	14 w	144
Time of Re				815	Î.	1		(40		1400	T T	ir in the second se	1400		
	DO	88	83		8.4	8.9	8.6	8.8	8.2	88	8.3	8.7	<u> </u>	8,7	8.1
Control	pH	1-1	80	21	8.1	810		8.0	8.0	80	7-9	80	6.1	8:0	81
	Temp	1256	221	521	2521	25,	0 24.4	25.1	25:0	25.0	251		28.0		24.9
	DO	91	\$ 7	8.4	8.3	<u>8v7</u>			83	<u>67</u>	8.2	8.4	8.4	8.8	8.5
100%	pH	8.0	8-1	7.8	5.1	8.0		4:2	80	8-0	80	8.1	81	0.0	8.0
	Temp	R\$~1	1251	25,0	25.0	521	25.0	25.1	2520	25.2	250	1251	25~	249	24.8
	A	lditional l	Paramet	ers					ntrol				100% Sai	mple	
		nductivity			<u> </u>			2	<u>78</u>				799		
		kalinity (n ardness (m	-	-			 		9				30		
			al us												
Ammonia (mg/1 NH ₃ -N) <u>LO·1</u> O·3															
		<u> </u>		1			Source of N						<u></u>		
	licate:		A A	B	2		_D	E 3F	F 3(<u> </u>	G T	н , т			
Broo	od ID:			ZA	- 3/							15	4/3		A
Sample	2	Day	-	A B	С	Numl D	E I	g Produceo	H	1		otal Live Young	No. Li [.] Adult		Analyst Initials
	<u></u>	1		00		0	00	20	$\overline{\mathcal{O}}$	0		\mathcal{C}	10		2
		2		00	0	C	00		C	0		\mathcal{C}	10		2
		3		43	5	0	0	00	\mathcal{O}	5	3	20	10		2
Control		4		78	7	ч	SL	1 4	3	0	ッ	42	10		6
Control		5		<u>0</u> C	$\sqrt{2}$	8	87	7 8	7	8	6	52	-10		K
		6		5/14	118	0	00	$\frac{2}{2}$	\cup	$ \mathcal{O} $,4	-iO		5
	Ļ	7		<u> 20</u>		2	14/1	116	12			91			K
		Total	<u>_ 2</u>	2625	30	2	272	5 28	27	28 2	YLi	269	<i>_(</i>)		$\overline{\lambda}$
		!			$\frac{1}{2}$	\mathcal{O}			0	c		C	10		· ~
	┣	2		$\frac{2}{2}$								$\overline{\mathcal{C}}$	10		\sim
		3		43		0	0		<u>u</u>			23	<u> </u>		5-
100%	┣	4		88	7	5	2	2 4	19		<u></u>	49	16		5
		5		$\alpha \mu \alpha$	$^{\prime} Q$			シーン	6			42	10	←╟	<u>г</u> .
	<u> </u>	6	lł	11.10		2 .					/ / II	16			
		6		16 12		<i>U</i> 15	01	b 0 > 14	0	13	$\frac{12}{2}$	<u>43</u> 58	10	, 	6 F

Circled fourth brood not used in statistical analysis.

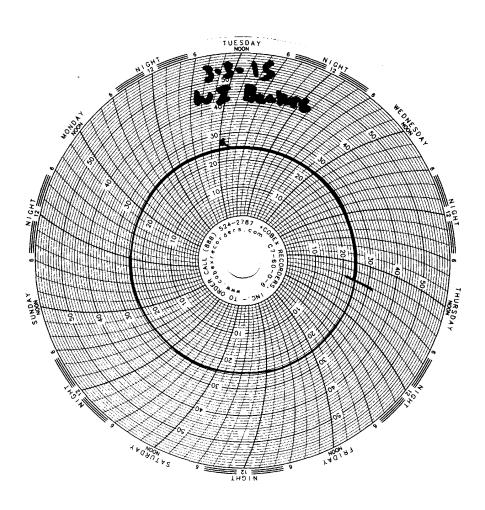
 7^{th} day only used if <60% of the surviving control females have produced their third brood. Page 30 of 49



12 13 14

Test Temperature Chart

Test No: A-15030403 Date Tested: 03/04/15 to 03/11/15 Acceptable Range: 25 +/- 1°C





CHAIN OF CUSTODY

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Phone (949) 261-1022 Fax (949) 260-3297	Chain of	of Custody Record	ecord		
(Sub Contract Lab)	Sampler:	Lab P Wils	M: on, Debby S	Carrier Tracking No(s):	COC No: 440-79645.1
	Phone:	E-Mai debt	E-Mail: debby.wilson@testamericainc.com	E	Page: Page 1 of 1
Company. Aquatic Testing Laboratories			Апа	Analysis Requested	Job #: 440-103199-1
	Due Date Requested: 3/13/2015				10
	TAT Requested (days):		Cerio,		
State, Zip. CA, 93003) oinori		D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone:	PO#			•••	
Email:	#OM			· · · · · · · · · · · · · · · · · · ·	I - Ice J - Di Water
	Project #: 44009879				K - EDTA L - EDA
Site:	SSOW#		erio, El	•	of con
		Sample Matrix Type (w ^{matst} ,	Filtered 5 Chronic Ce 521-R02-01		i Jedmuń i
-D Sample Identification - Client ID (Lab ID)	Sample Date Time G	(G=comp, o-wastadoll, G=grab) BT-Tissue, A-Air)	ans		Special Instructions/Note:
	X	Preservation Code:			X
က Outfail009_20150303_Comp (440-103199-2)	3/3/15 02:43 Pacific	Water	×		
3 of					
49					
			•		
			`		
Possible Hazard Identification			Sample Disposal (A fee	may be assessed if samples	ger than 1 m
Deliverable Requested: I, II, IN, Other (specify)			Special Instructions/QC Requirements:	Uispusai by Lab Requirements:	ACHIVE FOI
Empty Kit Relinquis/fed by:	Date: /		Time:	Method of Shipment	at:
Keiinquished by 3/-	Daterrine: COMMAN	Company	Received by:	NART Dateding	" + + / /5 / DAY New Company (
Relinquistrected 1 1	Alle / 1 / 13/0	Company	Rečeitadov	Date	13
Relinquished by:		Company	Receiver by:		
Custody Seals Intact: Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:	and Other Remarks: \mathcal{O}	0 h.
			12 13 14 15	8 9 10 11	2 3 4 5 6 7



REFERENCE TOXICANT DATA

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-150303

Date Tested: 03/03/15 to 03/10/15

TEST SUMMARY

Test type: Daily static-renewal. Species: Ceriodaphnia dubia. Age: <24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: 25 +/- 1°C. Dilution water: Mod. hard reconstituted (MHRW). Reference Toxicant: Sodium chloride (NaCl). Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 20 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 7 days. Statistics: ToxCalc computer program.

Sample Concentration	Percent Sur	vival	Mean Number of Young Per Female						
Control	100%		26.2						
0.25 g/L	100%		27.8						
0.5 g/L	100%		26.3						
1.0 g/L	100%		17.0						
2.0 g/L	90%		2.8	*					
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.									

RESULTS SUMMARY

CHRONIC TOXICITY

Survival LC50	2.6 g/l
Reproduction IC25	0.83 g/l

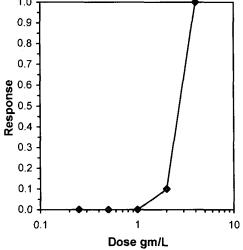
QA/QC TEST ACCEPTABILITY

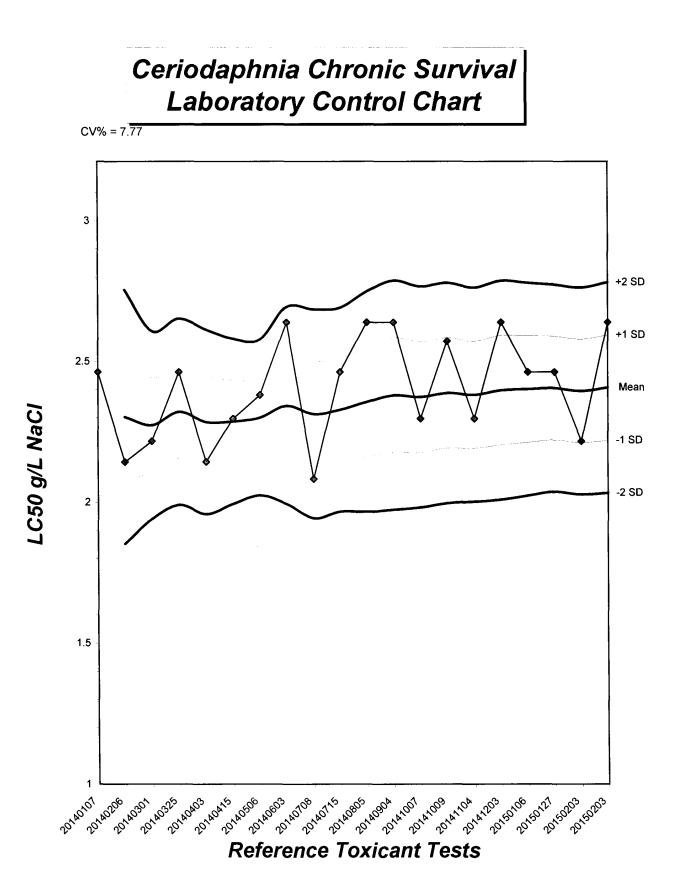
Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (26.2 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 9.4%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 35.1%)
Concentration response relationship acceptable	Pass (Response curve normal)

			Cerioda	aphnia Su	rvival and	Reprod	uction Tes	t-7 Day	Survival		
Start Date:	3/3/2015 1	4:00	Test ID:	RT150303	BC .		Sample ID):	REF-Ref 1	oxicant	
End Date:	3/10/2015	14:00	Lab ID:	CAATL-Ad	uatic Test	ting Labs	Sample Ty	/pe:	NACL-Sodium chloride		
Sample Date:	3/3/2015		Protocol:	EPAFW02	2-821-R-02	2-013	Test Spec	ies:	CD-Cerioo	laphnia dubia	
Comments:					.						
Conc-gm/L	1	2	3	4	5	6	7	8	9	10	
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

				Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	N	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Te	st (1-tail,	0.05)	NOEC	LOEC	ChV	TU	<i></i>				
Fisher's Exact	Test		2	4	2.82843		······································				
Treatments vs	D-Control										
					Trimmed	Spearman-l	Karber				
Trim Level	EC50	95%	CL								
0.0%	2.6390	2.3138	3.0099								
5.0%	2.6984	2.2899	3.1798								
10.0%	2.7216	2.5094	2.9517				1.0	<u></u>		\$	1
20.0%	2.7216	2.5094	2.9517				1				
Auto-0.0%	2.6390	2.3138	3.0099				0.9				





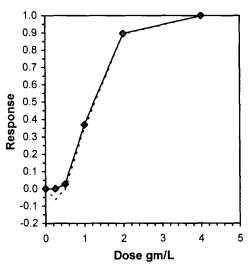
			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	t-Repro	duction	
Start Date:	3/3/2015 1	4:00	Test ID:	RT150303	c		Sample ID):	REF-Ref 1	oxicant
End Date:	3/10/2015	14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride
Sample Date:	3/3/2015		Protocol:	EPAFW02	-821-R-02	2-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	21.000	27.000	26.000	25.000	25.000	23.000	28.000	30.000	31.000	26.000
0.25	21.000	30.000	32.000	30.000	26.000	27.000	26.000	29.000	28.000	29.000
0.5	25.000	28.000	29.000	22.000	22.000	29.000	29.000	25.000	26.000	28.000
1	17.000	14.000	20.000	17.000	15.000	18.000	16.000	18.000	17.000	18.000
2	3.000	3.000	3.000	2.000	2.000	2.000	5.000	4.000	4.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

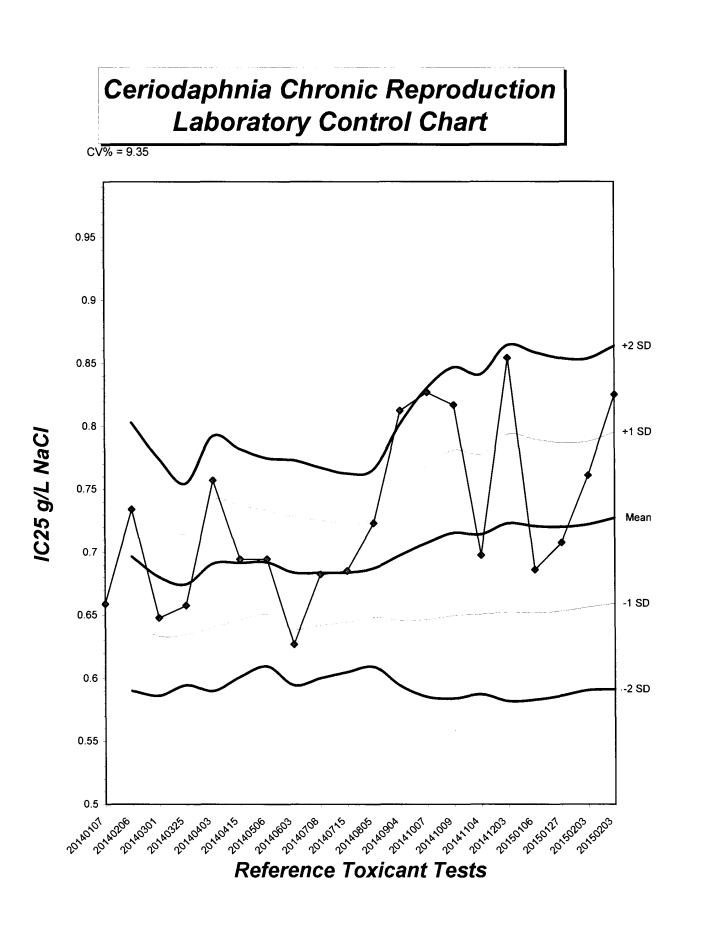
.

				Transform	n: Untran	sformed			1-Tailed		Isot	onic
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	26.200	1.0000	26.200	21.000	31.000	11.493	10				27.000	1.0000
0.25	27.800	1.0611	27.800	21.000	32.000	10.963	10	-1.442	2.223	2.466	27.000	1.0000
0.5	26.300	1.0038	26.300	22.000	29.000	10.459	10	-0.090	2.223	2.466	26.300	0.9741
*1	17.000	0.6489	17.000	14.000	20.000	9.998	10	8.293	2.223	2.466	17.000	0.6296
*2	2.800	0.1069	2.800	0.000	5.000	49.943	10	21.093	2.223	2.466	2.800	0.1037
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 nor	mal distribu	ition (p >	0.05)		0.97514		0.947		-0.5424	0.59957
Bartlett's Test indicates equal var	iances (p =	: 0.10)	-		7.72298		13.2767			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		2.46646	0.09414	1109.52	6.15333	4.4E-27	4, 45
Treatments vs D-Control										

				Linea	ar Interpolation	n (200 Resamples)	
Point	gm/L	SD	95%	CL	Skew		
IC05	0.5349	0.0645	0.3428	0.5748	-1.7201		
IC10	0.6075	0.0449	0.4726	0.6497	-1.4818		
IC15	0.6801	0.0398	0.5695	0.7245	-1.3027	1.0	
IC20	0.7527	0.0352	0.6630	0.7993	-0.8980	0.9	
IC25	0.8253	0.0321	0.7492	0.8742	-0.4011	0.8	7
IC40	1.0563	0.0384	0.9851	1.1324	-0.0036		
IC50	1.2465	0.0335	1.1845	1.3086	-0.2075	0.7	
						0.6 -	
						<u>% 05</u> 1	1





CERIODAPHNIA DUBIA CHRONIC BIOASSAY Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-150303

Start Date:03/03/2015

a .				Nu	mber	• of Y	oung	Produ	ıced			Total	No.	Analyst
Sample	Day	A	В	С	D	E	F	G	Н	Ι	J	Live Young	Live Adults	Initials
	1	U	υ	0	0	J	0	C	C	J	C	Ċ	10	\sim
	2	\mathcal{O}	0	0	0	0	\mathcal{O}	\mathcal{O}	\mathcal{O}	\mathcal{O}	0	\mathcal{O}	U,	ん
	3	5	ч	\mathcal{O}	0	4	3	Ũ	0	5	Ч	25	N	A
Control	4	2	\mathcal{O}	5	5	\mathcal{O}	0	4	5	C	\mathcal{C}	26	10	h
Control	5	0	7	2	Б	7	6	9	8	9	2	68	10	R
	6	9	0	ાપ	\mathcal{O}	0	14	15	\mathcal{O}	Û	21	67	10	Z
	7	(6	46	Ì	12	14	0	()	17	17	ß	76	10	h
	Total	21	27	26	25	25	23	28	30	31	26	262	10	R
	1	C	0	\circ	\mathcal{O}	0	0	\mathcal{O}	\mathcal{O}	\mathcal{O}	C	U	N	M
	2	\mathcal{O}	0	0	\mathcal{C}	\mathcal{O}	\mathcal{C}	\mathcal{O}	0	c	0	\mathcal{O}	10	1
	3	\mathcal{O}	ч	5	\mathcal{O}	4	4	U	0	5	5	27	10	2
0.25 /1	4	4	\mathcal{O}	0	5	0	8	4	2	C	0	26	iv	R
0.25 g/l	5	2	9	9	8	7	ט	7	9	2	S	87	K	4
	6	0		0	0	15	\mathcal{O}	15	0	16	0	63	10	B
	7	10	∂	18	17	0	10	D	15	\hat{O}	15	75	10	h
	Total	21	30	32	30	26	27	26	29	28	29	278	IU	h
	1	0	0	0	\circ	\mathcal{O}	0	c	\mathcal{O}	C	0	C	10	n
	2	\cup	\bigcirc	\mathcal{O}	C	0	C	0	$ _{\mathcal{C}}$	0	0	C	10	h
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	h brood not us used if <60%						les ha	ive pro	oduce	d their	third	brood.		

CERIODAPHNIA DUBIA CHRONIC BIOASSAY Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-150303

Start Date:03/03/2015

				Nu	mbe	r of Y	oung	Produ	ced			Total	No.	Analyst
Sample	Day	Α	В	С	D	E	F	G	Н	Ι	J	Live Young	Live Adults	Initials
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10 /1	4	7	ч	0	2	0	υ	ч	3	S	0	20	10	n
1.0 g/l	5	U	O	7	6	6	7	3	6	6	7	53	10	h
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4.0 g/l	5	-	-	-	-	-	-	~	-	-	-	-	-	-
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	7	-	-	-	-	-	-	-	-	-	-		~	-
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	Total th brood not us used if <60%	ed in :	statist	ical a	nalysi	s.		<u></u>				rood.	C	LB

CERIODAPHNIA DUBIA CHRONIC BIOASSAY Reference Toxicant - NaCl Water Chemistries Raw Data Sheet

QA/QC No.: RT-150303

Start Date:03/03/2015

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Aquatic Testing Laboratories

	[DA	Y 1	DA	Y 2	DA	Y 3	DA	Y 4	DA	Y 5	DA	Y 6	DA	Y 7
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst I	nitials:	1	\mathcal{F}	7-	2	1	2	1	7	2	V	Z		7	¥
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	DO	8: 1	8.6	8.3	8.1	813	8.8	9.0	8.7	x . 9	8.5	911	8.2	8:7	8.5
Control	pН	27	80	8.2	8.2	SNI	5.0	あい	8.1	7.9	8.1	8.0	29	80	8.3
	Temp	14.8	247	25.1	2520	2510	25.0	52.1	25.0	23.1	२५५	249	24.8	25.3	2500
	DO	8.8	7.9	8.2	ฒ	5.6	8.7	9.0	815	8.9	8.6	817	\$3	86	K .Y
0.25 g/l	рН	28	5.1	8,1	8-1	29	5.0	29	23	7. 9	6.0	80	29	80	80
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0.5 g/l	рН	29	81	8.(8.1	7.9	あい	7.9	8.0	8.0	9-3	29	7.9	81	8.0
	Temp	24 \$	24.7	25.2	25.0	25.0	25.1	25.1	25.0	25.0	249	24.9	249	25.1	25.1
	DO	8.8	80	8:2	8.2	8.4	8.3	8.7	8.6	8.9	ar	8.8	8-1	8.4	8.1
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	DO	8.8	8.0	-	-	-	-		<u> </u>		<u>†</u>	-		-	L
4.0 g/l	pН	7.9	80	<u> </u>	-		-	-	-	-	-	-	-	-	~
 	Temp	24.8	24.5			-	-	-	-	-	-				
	Di	ssolved	l Oxyge	n (DO)	reading	gs are ir	n mg/l	O ₂ ; Tem	perature	e (Temp) readin	gs are i	n ⁰C.	· ····	
	Additional	Parame	ters				Cont	rol				High Co	oncentra	tion	
ļ					Day	1	Day	3	Day 5		Day 1	<u> </u>	Day 3		Day 5
	Conduct	ivity (µ§	5)		278	ŝ	27	9	280	6	541		471	<u> </u>	278
	Alkalinity		<u> </u>		56		5	~~~ <u>_</u>	<u>57</u> 91		57		7	5	
	Hardness (mg/1 CaC	CO ₃)		11		<u>¶</u> /		<u> </u>	I	92		9/	92	<u>}</u>
	1					<u> </u>		Neonates			0 1		<u> </u>		<u></u>
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L Bro	od ID:			~~	<u> </u>						<u> </u>	17	17		<u>•</u>

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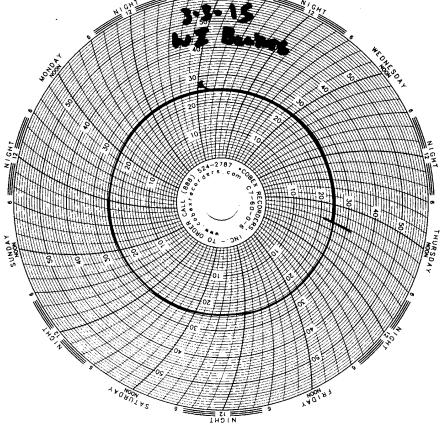


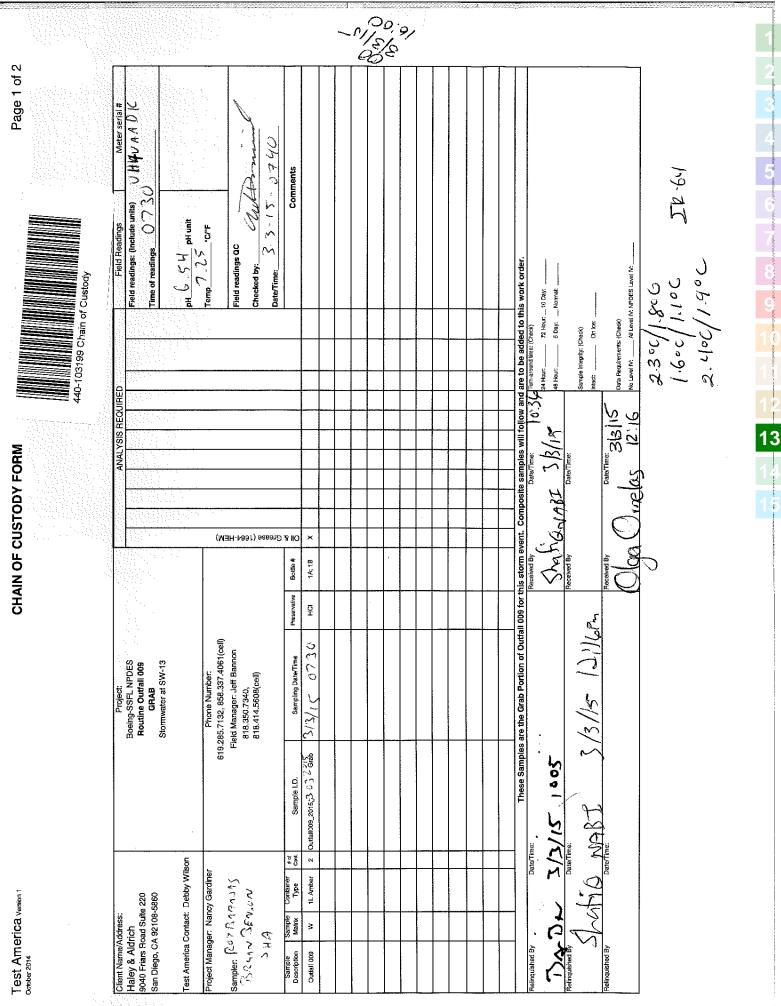
12 13

Test Temperature Chart

Test No: RT-150303 Date Tested: 03/03/15 to 03/10/15 Acceptable Range: 25 +/- 1°C







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3/17/2015

Test America version 1 October 2014

roumwater at SW-15 Stormwater at SW-15 Stormwater at SW-15 Field Mara2ge: Jeff Ben Field Mara2ge: Jeff Ben Field Mara2ge: Jeff Ben Field Mara2ge: Jeff Ben Field Mara2ge: Jeff Ben Bit J60: 5 Sample LD. Sampley Datar Sample LD. Sampley Datar Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sample LD. Sampley Datar Sampley Datar Sample LD. Sampley Datar Sampley Datar Sampl	Полнание Солонование Солонование Conservation Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:13 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 Surrows at SV:14 SURV J:11/L SURV J:11/L <	Полнов Малинис Полнов Manune По	Валонаятис Валонаятис Валонаятис Валонаятис Валонаятис Соотоводать и с	Полновите совесние совесние совесние совесние совесние совесние совесние за средство и полновите совесни совесние совесние совесние совесние совесние совесние совесние		-	Project: Boeing-SSFL NPDES			1.0)E		AN	ANALYSIS REQUIRED	(ED		
Bits Bits <th< th=""><th>Pitter Murther Elid Relation of the field of the field</th><th>Поли Миллен: Поли Миллен: 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.2.2.1.1.1 151 2.2.2.4.0.1.0; 151 2.2.2.2.1.1.1.1 151 2.2.2.4.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.</th><th>Валира и при и при</th><th>Service (1) Service (1)</th><th></th><th>-</th><th>Routine Outfall 009 COMPOSITE Stormwater at SW-13</th><th></th><th></th><th>ם, כמ, כע, P</th><th></th><th></th><th>,(0,008)ete8 stoT ,(0,209</th><th>ч (о.808) м</th><th></th><th></th><th></th><th></th><th></th></th<>	Pitter Murther Elid Relation of the field	Поли Миллен: Поли Миллен: 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.1/2010; 151 2.2.2.4.0.1.0; 151 2.2.2.2.2.1.1.1 151 2.2.2.4.0.1.0; 151 2.2.2.2.1.1.1.1 151 2.2.2.4.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Валира и при	Service (1)		-	Routine Outfall 009 COMPOSITE Stormwater at SW-13			ם, כמ, כע, P			,(0,008)ete8 stoT ,(0,209	ч (о.808) м					
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Nons 5 - X X Nons 5 - X Nons 100 for this storm event. COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event. These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for this storm event. If S for the same work order for COC Page 1 of 2 for Outfall 009 for the same event. Pole/Time: 2 for the same event.	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\frac{1}{15} \sqrt{\frac{1}{5}} $	$\frac{1}{ S } = \frac{1}{ S } = 1$	$\frac{1}{15} \frac{1}{15} \frac$				HOBN							×				
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$\frac{1}{15} \frac{1}{15} \frac$	$\frac{1}{155} \frac{10}{5} $	$\frac{1}{155} \frac{1}{105} \frac{1}$	$\frac{1}{15} \frac{10:05}{7/5} \frac{10:05}{12/5} \frac{10:05}{12/5} \frac{10:01}{12/5} \frac{10:01}{12} \frac{10:01}{12/5} \frac{10:01}{12/5$	115 10:05 ALAMANET 3/3/15/16/2010 Barrier Barrier And ANET 3/2 / 10:05 2100. 2			COC Page 2 c	of 2 list the	Composit	e Sampli	es for Ou	tfall 009	for this stor	n event.					
115 10:05 Stall ANDET 3/3/17/16 ANDET 3/3/17/16 ANDET 5000 - 72 Hour - 72 Ho	115 10:05 Jahrab I allor 13/12/15/16 200 - 2100 - 2	115 10:05 Jahran 213/17/16 16:05 Start 3/2 212/17/16 2000 Start 20	15 10:05 Chick Mart 3/17 10:05 Takin - 72 hour	115 10:05 Child Mart 3/17 10:05 Town - Zhow	E			o the same	teceived By		c rage :	Date/Time				Futn-around lime: (Chr	ok)		
T / 2 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1	$3/5/k$ / 2: $//p_{n_1}$ Received By Date/Time: Date/Time: Marging (Date/Time: Date/Time: Date/Tim	$\frac{7/5}{5}$ Brink market By Date/The Brink Mark Mark Mark Mark Mark Mark Mark Mar	7/5/2/21/22 / 21/22 Bached By Dale/Three Bangle Integrity (Check) Received By Bachimer Bangle Integrity (Check) Received By Bachimer Bangle Inter On the Dale American Bangle Bachimer (Check) All Low IV.	$3/5/k$ / 2! // p_{n_1} Received By Delo/Three Brench integrity (Check) Brench integrity (Che		رح ا	Š		L'	h'er	Kab I	1	3/8/1	A	16:34	24 Hours	72 Hour, 5 Day:	10 Day:	
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De Directiones De Directo 3/3/15 D'16 Roumins (Check) 2.3 °C/1.8 °C 1.6 °C/1.1 °C TP 64	1.8°C	1.100												જ	ulo Cy	7.6-11			

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NEW CONTRACTOR

(C.N.M.

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 103199 List Number: 1

Creator: Soderblom, Tim

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

List Source: TestAmerica Irvine

Client: Haley & Aldrich, Inc.

Login Number: 103199 List Number: 2

Creator: Nelson, Kym D

List Source: TestAmerica Sacramento List Creation: 03/04/15 12:45 PM

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-103199-1

Matrix: Water

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

Prep Type: Total/NA 3 its) 4 HxCDD2 HxCDF1 (28-130) (26-152)

13

15

			Р	ercent Isotop	e Dilution Re	ecovery (Acc	eptance Limi	ts)	
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF [,]
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152
440-103199-2	Outfall009_20150303_Comp	75	77	76	72	71	70	80	66
MB 320-67314/1-A	Method Blank	77	87	70	72	71	67	66	60
			Р	ercent Isotop	e Dilution Re	ecovery (Acc	eptance Limi	ts)	
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD	
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	
440-103199-2	Outfall009_20150303_Comp	74	71	75	65	70	59	58	
MB 320-67314/1-A	Method Blank	66	65	70	56	63	54	31	
Surrogate Legend									
TCDD = 13C-2,3,7,8-T	CDD								
TCDF = 13C-2,3,7,8-T	CDF								
PeCDD = 13C-1,2,3,7,	8-PeCDD								
PeCDF1 = 13C-1,2,3,7	7,8-PeCDF								
PeCDF2 = 13C-2,3,4,7	7,8-PeCDF								
HxCDD1 = 13C-1,2,3,4	1,7,8-HxCDD								
HxCDD2 = 13C-1,2,3,6	S,7,8-HxCDD								
HxCDF1 = 13C-1,2,3,4	,7,8-HxCDF								
HxCDF2 = 13C-1,2,3,6	6,7,8-HxCDF								
HxCDF4 = 13C-1,2,3,7	7,8,9-HxCDF								
HxCDF3 = 13C-2,3,4,6	6,7,8-HxCDF								
HpCDD = 13C-1,2,3,4,	6,7,8-HpCDD								
HpCDF1 = 13C-1,2,3,4	I,6,7,8-HpCDF								
HpCDF2 = 13C-1,2,3,4	I,7,8,9-HpCDF								
OCDD = 13C-OCDD									

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

Prep Type: Total/NA

			P	ercent Isotop	e Dilution Re	covery (Acc	eptance Limi	ts)	
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF1
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-67314/2-A	Lab Control Sample	77	86	68	72	68	68	67	60
			P	ercent Isotop	e Dilution Re	covery (Acc	eptance Limi	ts)	
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD	
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	
LCS 320-67314/2-A	Lab Control Sample	68	66	70	61	67	58	57	-

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD TCDF = 13C-2,3,7,8-TCDF PeCDD = 13C-1,2,3,7,8-PeCDD PeCDF1 = 13C-1,2,3,7,8-PeCDF PeCDF2 = 13C-2,3,4,7,8-PeCDF HxCDD1 = 13C-1,2,3,4,7,8-HxCDD HxCDF1 = 13C-1,2,3,6,7,8-HxCDF HxCDF2 = 13C-1,2,3,6,7,8-HxCDF HxCDF4 = 13C-1,2,3,7,8,9-HxCDF HxCDF3 = 13C-2,3,4,6,7,8-HxCDF Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

> HpCDD = 13C-1,2,3,4,6,7,8-HpCDD HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF OCDD = 13C-OCDD

TestAmerica Irvine



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: 440-103199-2

Client Project/Site: Boeing SSFL outfalls

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

Authorized for release by: 4/5/2015 4:12:20 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.



Visit us at: www.testamericainc.com 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.

abby Wilson

Debby Wilson Manager of Project Management 4/5/2015 4:12:20 PM

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Matrix

Water

Water

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Client Sample ID

Outfall009_20150303_Comp

Outfall009_20150303_TB

Lab Sample ID

440-103199-2

440-103199-3

03/03/15 02:43 03/03/15 12:16

Received

03/03/15 12:16

Collected

03/03/15 12:16

3
5
8
9
13

TestAmerica Irvine

Job ID: 440-103199-2

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-103199-2

Comments

This report includes radiological tests only. Other analyses previously reported under separate cover.

Receipt

The samples were received on 3/3/2015 12:16 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1° C, 1.8° C and 1.9° C.

RAD

Method(s) ExtChrom: 178927: The sample is orange in color and contains sediment. A reduced aliquot was used to prevent matrix interference: Outfall009_20150303_Comp (440-103199-2)

Method(s) PrecSep-21, PrecSep_0: radium-228 batch #178156 and radium-226 batch #178164: Sample Outfall009_20150303_Comp (440-103199-2) was reduced to 500 mL because it was yellow.

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

ent: Haley & Aldrich bject/Site: Boeing SS						TestAmeric	a Job ID: 440-10	03199-2		
		<u>-0202 Co</u>					Lab Samn		2400.2	
Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16							Lab Sample ID: 440-103199-2 Matrix: Water			
Method: 900.0 - Gros	ss Alpha and Gros	s Beta Radi	ioactivity Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	MDC		Prepared	Analyzed	Dil Fac	
Gross Alpha	1.29	U	1.33	1.34			03/12/15 11:18	03/15/15 21:10	1	
Gross Beta	3.19		0.844	0.902	1.08	pCi/L	03/12/15 11:18	03/15/15 21:10	1	
Method: 901.1 - Cesi	ium 137 & Other G	amma Emit	tore (GS)							
	uni for a other e.	anna Enna	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac	
Cesium-137	1.38	U	4.55	4.56			03/09/15 14:59	03/10/15 13:31	1	
Potassium-40	-29.5	U	123	123	200	pCi/L	03/09/15 14:59	03/10/15 13:31	1	
Mathed: 002.0 - Pad										
Method: 903.0 - Rad	10m-220 (GFFC)		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-226	0.0579	U	0.204	0.204	0.373	pCi/L	03/10/15 14:54	04/01/15 06:54	1	
							- ,	.		
Carrier	%Yield Qualifi		nits				Prepared	Analyzed	Dil Fac	
Ba Carrier	93.5	40.	- 110				03/10/15 14:54	04/01/15 06:54	1	
Method: 904.0 - Rad	ium-228 (GFPC)									
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	MDC		Prepared	Analyzed	Dil Fac	
Radium-228	0.406	U	0.442	0.444	0.724	pCi/L	03/10/15 14:13	03/31/15 10:53	1	
Carrier	%Yield Qualifier Limits		nits				Prepared	Analyzed	Dil Fac	
Ba Carrier	93.5		- 110				03/10/15 14:13	03/31/15 10:53	1	
Y Carrier	86.4	40	- 110				03/10/15 14:13	03/31/15 10:53	1	
Method: 905 - Stront	tium-90 (GFPC)		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac	
Strontium-90	0.0911		0.380	0.380	0.664		03/10/15 13:35	03/19/15 18:38	1	
						r				
Carrier	%Yield Qualifi		nits				Prepared	Analyzed	Dil Fac	
Sr Carrier	84.9		- 110				03/10/15 13:35	03/19/15 18:38	1	
Y Carrier	91.6	40 -	- 110				03/10/15 13:35	03/19/15 18:38	1	
Method: 906.0 - Triti	um Total (LSC)									
Methou. 300.0 - 111.			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac	
Tritium	74.8	11	189	189	328	pCi/L	03/17/15 07:22	03/18/15 02:46	1	

Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43 Date Received: 03/03/15 12:16

Method: A-01-R - Isotop	oic Uranium (Al	pha Spectro	ometry)						
-			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.324	U	0.436	0.437	0.562	pCi/L	03/12/15 12:53	03/18/15 10:41	1

Client Sample ID: Outfall009_20150303_TB Date Collected: 03/03/15 12:16 Date Received: 03/03/15 12:16

Method: 900.0 - Gross Alp	ha and Gros	s Beta Radio	oactivity						
			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.194	U	0.610	0.611	1.13	pCi/L	03/12/15 11:18	03/15/15 21:25	1
Gross Beta	0.296	U	0.552	0.553	0.934	pCi/L	03/12/15 11:18	03/15/15 21:25	1

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

			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.49	U	6.25	6.25	11.3	pCi/L	03/09/15 14:59	03/10/15 17:10	1
Potassium-40	-53.3	U	189	189	212	pCi/L	03/09/15 14:59	03/10/15 17:10	1

Method: 903.0 - Radium-226 (GFPC)

					Count	Total					
					Uncert.	Uncert.					
Analyte	F	Result	Qualifier		(2 σ +/-)	(2 σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	C	0.0560	U		0.0937	0.0939	0.162	pCi/L	03/10/15 14:54	04/01/15 06:54	1
Carrier	%Yield	Qualifie	er	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106			40 - 110	-				03/10/15 14:54	04/01/15 06:54	1

Method: 904.0 - Radium-228 (GFPC)

			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.115	U	0.161	0.161	0.311	pCi/L	03/10/15 14:13	03/31/15 10:53	1
Carrier	%Yield Qualif	ier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110				03/10/15 14:13	03/31/15 10:53	1
Y Carrier	90.8		40 _ 110				03/10/15 14:13	03/31/15 10:53	1

Method: 905 - Strontium-90 (GFPC)

			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.134	U	0.171	0.172	0.285	pCi/L	03/10/15 13:35	03/19/15 18:38	1
Carrier	%Yield Qualif	ïer	Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	87.1		40 - 110				03/10/15 13:35	03/19/15 18:38	1
Y Carrier	89.3		40 - 110				03/10/15 13:35	03/19/15 18:38	1

Lab Sample ID: 440-103199-2

Lab Sample ID: 440-103199-3

Matrix: Water

Matrix: Water

Lab Sample ID: 440-103199-3

Matrix: Water

5

Client Sample ID: Outfall009_20150303_TB Date Collected: 03/03/15 12:16 Date Received: 03/03/15 12:16

 Method: A-01-R - Isotopic	Uranium (Al	pha Spectr	ometry)						
			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.0269	U	0.07777	0.07796	0.170	pCi/L	03/12/15 12:53	03/23/15 20:22	1

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Client Sample ID: Outfall009_20150303_Comp Date Collected: 03/03/15 02:43

Date Received: 03/03/15 12:16

Lab Sample ID: 440-103199-2

Lab Sample ID: 440-103199-3

Matrix: Water

Matrix: Water

5

7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200 mL	1.0 g	178910	03/12/15 11:18	MJS	TAL SL
Total/NA	Analysis	900.0		1	200 mL		179041	03/15/15 21:10	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 mL	177802	03/09/15 14:59	R1S	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		178132	03/10/15 13:31	SMP	TAL SL
Total/NA	Prep	PrecSep-21			502.96 mL	1.0 g	178164	03/10/15 14:54	MSS	TAL SL
Total/NA	Analysis	903.0		1	502.96 mL		182699	04/01/15 06:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			502.96 mL	1.0 g	178156	03/10/15 14:13	MSS	TAL SL
Total/NA	Analysis	904.0		1	502.96 mL		182503	03/31/15 10:53	RTM	TAL SL
Total/NA	Prep	PrecSep-7			500.52 mL	1.0 g	178146	03/10/15 13:35	CMC	TAL SL
Total/NA	Analysis	905		1	500.52 mL		180114	03/19/15 18:38	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.01 mL	1.0 g	179548	03/17/15 07:22	JDL	TAL SL
Total/NA	Analysis	906.0		1	100.01 mL		179999	03/18/15 02:46	RTM	TAL SL
Total/NA	Prep	ExtChrom			100.21 mL	1.0 mL	178927	03/12/15 12:53	SCB	TAL SL
Total/NA	Analysis	A-01-R		1	100.21 mL		179923	03/18/15 10:41	MLK	TAL SL

Client Sample ID: Outfall009_20150303_TB Date Collected: 03/03/15 12:16 Date Received: 03/03/15 12:16

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep Evaporation 200 mL 1.0 g 178910 03/12/15 11:18 MJS TAL SL Total/NA Analysis 900.0 1 200 mL 179394 03/15/15 21:25 RTM TAL SL Total/NA Prep Fill_Geo-0 1000 mL 1.0 mL 177802 03/09/15 14:59 R1S TAL SL Total/NA Analysis 901.1 1000 mL 178132 03/10/15 17:10 SMP TAL SL 1 Total/NA 989.68 mL 1.0 g 178164 03/10/15 14:54 MSS TAL SL Prep PrecSep-21 Total/NA Analysis 903.0 1 989.68 mL 182699 04/01/15 06:54 RTM TAL SL 989.68 mL 178156 MSS TAL SL Total/NA PrecSep_0 03/10/15 14:13 Prep 1.0 g Total/NA Analysis 904.0 1 989.68 mL 182503 03/31/15 10:53 RTM TAL SL CMC Total/NA 975.53 mL 178146 03/10/15 13:35 TAL SL Prep PrecSep-7 1.0 g Total/NA Analysis 905 975.53 mL 180114 03/19/15 18:38 RTM TAL SL 1 499.50 mL 178927 SCB TAL SL Total/NA ExtChrom 1.0 mL 03/12/15 12:53 Prep Total/NA Analysis A-01-R 499.50 mL 180833 03/23/15 20:22 MLK TAL SL 1

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Gross Beta

13.3

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Matrix: Water Analysis Batch: 179393 Prep Type Prep Batc Prep Batc Analyte Result Qualifiler (2σ+/-) MDC Unit Prepared O3/12/15 11:18 O3/15 02.51	bil Fa Dil Fa ol Sampl
Count Analyte MB (Cass Alpha MB (Cass Alpha MB (Cass Alpha Uncert. (Cass Alpha MDC (Cass A	Dil Fa
MB MB Uncert. Uncert. MDc Unit Prepared Analyzed Gross Alpha -0.3896 U 0.588 0.590 1.31 pCi/L 03/12/15 11:18 03/15/15 20:51 Gross Beta -0.1130 U 0.428 0.429 0.811 pCi/L 03/12/15 11:18 03/15/15 20:51 Lab Sample ID: LCS 160-178910/2-A Matrix: Water Prep Type Prep Type Prep Bate Analyze Added Result Qual (20+/-) MDC Unit %Rec. Prep Bate Analyze Added Result Qual (20+/-) MDC Unit %Rec. Limits Gross Alpha 50.1 64.52 9.23 2.03 pCi/L 129 73 - 133 Lab Sample ID: LCSB 160-178910/3-A Kadeed Result Qual (20+/-) MDC Unit %Rec. Prep Type Analysis Batch: 179393 Spike LCSB LCSB Uncert. %Rec. Limits SpCi/L 101	ol Sampl
Analyte Result Qualifier (2σ+/-) (2σ+/-) MDC Unit Prepared Analyzed Gross Alpha -0.3896 U 0.588 0.590 1.31 pCi/L 03/12/15 11:18 03/15/15 20:50 Gross Beta -0.1130 U 0.428 0.429 0.811 pCi/L 03/12/15 11:18 03/15/15 20:50 Lab Sample ID: LCS 160-178910/2-A Matrix: Water Client Sample ID: Lab Contr Prep Type Analyte Spike LCS LCS Uncert. Prep Bate Analyte Added Result Qual (2σ+/-) MDC Unit %Rec. Limits Gross Alpha 50.1 64.52 9.23 2.03 pCi/L 129 73 - 133 Prep Type Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Added Result Qual (2σ+/-) MDC Unit %Rec. Imits Gross Alpha 59.5 96.14 Uncert. MDC Unit %Rec. Imits 75 - 125	ol Sampl
Gross Alpha -0.3896 U 0.598 0.590 1.31 PC//L 03/12/15 11:18 03/15/15 20:50 Gross Alpha -0.1130 U 0.428 0.429 0.811 pC//L 03/12/15 11:18 03/15/15 20:50 Lab Sample ID: LCS 160-178910/2-A Matrix: Water Client Sample ID: Lab Contr Prep Type Prep Type Prep Bate Analyte Added Result Qual (20+/-) MDC Unit %Rec. Limits Gross Alpha 50.1 64.52 9.23 2.03 pC//L 129 73 - 133 - Lab Sample ID: LCSB 160-178910/3-A Client Sample ID: Lab Contr Prep Type Prep Bate Prep Type Prep Bate Analyte Added Result Qual (20+/-) MDC Unit %Rec. Limits Gross Alpha 95.5 96.14 10.1 1.03 pC//L 101 75 - 125 Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Added Result Qual (20+/-) MDC Unit %Re	ol Sampl
Gross Beta-0.1130U0.4280.4290.811pC//L03/12/1511:1803/15/1520:54Lab Sample ID: LCS 160-178910/2-A Matrix: Water Analysis Batch: 179487SpikeLCSLCSUncert.Prep Type Prep BateAnalyteAdded AddedResultQual(20+/-)MDCUnit%Rec.LimitsGross Alpha50.164.529.232.03pCi/L12973 - 13373 - 133Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analysis Batch: 179393Spike AddedLCSB ResultLCSB QualUncert.MDC Prep Type Prep BateWINT%Rec.Limits Prep Type Prep BateAnalyteAdded P5.596.14Qual(20+/-)MDC UnitUnit PC/L%Rec.Limits Prep Type Prep BateLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Spike Prep Type Prep BateClient Sample ID: Matrix Prep Type Prep BateClient Sample ID: MatrixMatrix: Water Analysis Batch: 17939395.596.1410.11.03PC/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix Prep BateClient Sample ID: Matrix Prep BateMatrix: Water Analysis Batch: 17939395.596.1410.11.03PC/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix Prep Type Prep BatePrep Type Prep Bate <th>े <mark>ol Sampl</mark></th>	े <mark>ol Sampl</mark>
Lab Sample ID: LCS 160-178910/2-A Matrix: Water Client Sample ID: Lab Contr Prep Type Analysis Batch: 179487 Total Spike LCS LCS Uncert. Analyte Added Gross Alpha 50.1 64.52 9.23 2.03 pCi/L 9.23 2.03 Client Sample ID: LCSB 160-178910/3-A Matrix: Water Prep Batc Analyte Added Result Qual Yere Yere Type Analyte Added Result Qual (20+/-) MDC Unit %Rec. Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Frep Type Analyte Spike LCSB LCSB Gross Bata 95.5 96.14 10.1 1.03 pCi/L 101 75 - 125 Lab Sample ID: 160-10783-A-1-B MS Client Sample ID: Matrix: Water Analysis Batch: 179393 Frep Type Total Prep Type Total Prep Batc <	ol Sampl
Matrix: Water Analysis Batch: 179487Prep Type Prep BatchAnalyte Gross AlphaSpike Added 50.1LCS 64.52LCS 9.23Uncert. 9.23MDC 2.03Unit PC/L%Rec. Limits 73 - 133Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analysis Batch: 179393Spike Added Added Spike Analysis Batch: 179393LCSB For LCSB Prep BatchClient Sample ID: Lab Contr Prep Type Prep BatchAnalyte Gross RetaSpike Added 95.5LCSB 96.14LCSB Qual Qual Qual Qual Qual (20+/-)MDC 9.23Unit MDC Unit Prep Type MCC%Rec. Limits Lab Contr Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: 160-10783-A-1-B MS Prep Type Prep BatchClient Sample ID: Matrix: Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep Type Prep BatchLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client	
Analysis Batch: 179487 Total Analysis Batch: 179487 Total Analysis Batch: 179487 Spike Analyte Added Analyte Added Gross Alpha 50.1 50.1 64.52 9.23 2.03 PC/L 129 73 - 133 Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analyte Analyte Analyte Analyte Client Sample ID: LCSB 160-178910/3-A Matrix: Water Analyte Client Sample ID: LCSB 160-178910/3-A Matrix: Water Analyte Gross Beta 95.5 96.14 95.5 96.14 10.1 10.3 pC/L 101 75 - 125 Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393	: Total/N
AnalyteSpikeLCSLCSUncert.%Rec.AnalyteAddedResultQual(20+/-)MDCUnit%Rec.LimitsGross Alpha50.164.529.232.03pCi/L12973 - 133Lab Sample ID: LCSB 160-178910/3-AKatrix: WaterPrep TypeAnalysis Batch: 179393SpikeLCSBLCSBUncert.Prep TypeAnalyteAddedResultQual(20+/-)MDCUnit%Rec.Gross Beta95.596.1410.110.3pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix: Prep Type Prep BatcClient Sample ID: Matrix: Prep Type Prep BatcPrep Type Prep BatcAnalysis Batch: 179393TotalTotalPrep Type Prep BatcPrep Type Prep Batc	
AnalyteAddedResultQual(2\sigma+l-)MDCUnit%Rec.Gross Alpha50.164.529.232.03pCi/L12973 - 13373 - 133Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analysis Batch: 179393Client Sample ID: Lab Contr Prep Type Prep BatchAnalyteSpikeLCSBLCSBUncert.%Rec.AnalyteAddedResultQual(2\sigma+l-)MDCUnit%Rec.Gross Beta95.596.1410.11.03pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Scient Sample ID: Matrix: Prep Type Prep BatchClient Sample ID: Matrix: Prep Type Prep BatchAnalyte Matrix: Water Analysis Batch: 17939395.596.1410.11.03pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393TotalTotalPrep Type Prep BatchPrep Type Prep BatchTotalTotalTotalTotalTotalPrep Type Prep BatchPrep Type Prep BatchMatrix: Water Analysis Batch: 1793931793931701175 - 125MatrixMatrix: Water Analysis Batch: 17939317011701175 - 125Matrix: Water Analysis Batch: 17939317011701175 - 125Matrix: Water Matrix: Water	h: 17891;
AnalyteAddedResultQual(2σ+/-)MDCUnit%RecLimitsGross Alpha50.164.529.239.232.03pCi/L12912973 - 1331Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analysis Batch: 179393Client Sample ID: Lab Contr Prep Type Prep BatchPrep Type Prep BatchAnalyteSpikeLCSBLCSBUncert. Qual%Rec. (2σ+/-)MDCUnit%Rec. WRec. LimitsAnalyteAddedResultQual(2σ+/-)MDCUnit%Rec. UnitLimits Prep Type TotalAnalyteAddedResultQual(2σ+/-)MDCUnit%Rec. Prep Type TotalLimits Prep Type Prep BatchAnalyteAddedResultQual(2σ+/-)MDCUnit%Rec. Prep Type TotalLimits Prep Type Prep BatchAnalysis Batch: 17939395.596.1410.11.03pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393TotalTotalPrep Type Prep BatchPrep Type Prep Batch	
Gross Alpha50.164.529.232.03pCi/L12973 - 133Lab Sample ID: LCSB 160-178910/3-A Matrix: Water Analysis Batch: 179393Client Sample ID: Lab Contr Prep Type Prep BatchAnalyteSpikeLCSBLCSBUncert. (20+/-)MDCUnit PCi/L%Rec. LimitsAnalyteAddedResultQual(20+/-)MDCUnit PCi/L%Rec. LimitsLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 17939396.1410.11.03pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393TotalTotalPrep Batch	
Lab Sample ID: LCSB 160-178910/3-A Matrix: WaterClient Sample ID: Lab Contr Prep TypeAnalysis Batch: 179393TotalAnalyteAddedResult QualQual (2\sigma+)MDC 10.1Unit pCi/L%Rec. 101AnalyteAddedResult QualQual (2\sigma+)MDC 10.1Unit pCi/L%Rec. 101Lab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Sigma Prep Type Prep Type Prep TypePrep Type Prep TypeTotalTotalTotalTotalPrep Type Prep Type	
Matrix: Water Analysis Batch: 179393Prep Type Prep BateAnalysis Batch: 179393Spike AddedLCSB Result QualUncert. (2σ+/-)MDC 10.1Unit PCi/L%Rec. Limits TotalAnalyte Gross Beta95.596.14Qual 96.14(2σ+/-) 10.1MDC 10.3Unit pCi/L%Rec. Limits TotalLab Sample ID: 160-10783-A-1-B MS Matrix: Water Analysis Batch: 179393Client Sample ID: Matrix Prep Type Prep Bate	
Analysis Batch: 179393 Prep Batch Analysis Batch: 179393 Total Analyte Spike LCSB LCSB Uncert. Analyte Added Result Qual (2σ+/-) MDC Unit %Rec. Gross Beta 95.5 96.14 10.1 10.3 pCi/L 101 75 - 125 Lab Sample ID: 160-10783-A-1-B MS Client Sample ID: Matrix: Water Prep Type Analysis Batch: 179393 Total Total	ol Sampl
TotalAnalyteSpikeLCSBLCSBUncert.%Rec.AnalyteAddedResultQual(2σ+/-)MDCUnit%RecLimitsGross Beta95.596.1410.110.11.03pCi/L10175 - 125Lab Sample ID: 160-10783-A-1-B MSKatrix: WaterClient Sample ID: Matrix: WaterPrep TypeAnalysis Batch: 179393TotalTotalPrep Batch	
AnalyteSpikeLCSBLCSBUncert.AddedAddedResultQual(2σ+/-)MDCUnit%Rec.Gross Beta95.596.1410.110.11.03pCi/L101T5 - 125Lab Sample ID: 160-10783-A-1-B MSMatrix: WaterClient Sample ID: 160-10783-A-1-B MSClient Sample ID: Matrix: WaterAnalysis Batch: 179393TotalTotalPrep Type	h: 17891:
AnalyteAddedResultQual(2σ+/-)MDCUnit%RecLimitsGross Beta95.596.1410.110.110.3pCi/L10175 - 125101Lab Sample ID: 160-10783-A-1-B MSClient Sample ID: 160-10783-A-1-B MSClient Sample ID: Matrix: WaterPrep TypeAnalysis Batch: 179393TotalTotalPrep Batch	
Gross Beta 95.5 96.14 10.1 1.03 pCi/L 101 75 - 125 Lab Sample ID: 160-10783-A-1-B MS Client Sample ID: Ma Client Sample ID: Ma Matrix: Water Prep Type Analysis Batch: 179393 Prep Batch	
Lab Sample ID: 160-10783-A-1-B MS Client Sample ID: Ma Matrix: Water Prep Type Analysis Batch: 179393 Prep Batc	
Matrix: Water Prep Type Analysis Batch: 179393 Prep Batc Total	
Analysis Batch: 179393 Prep Batch Total	
Total	
	h: 17891
Sample Sample Spike MS MS Uncert. %Rec.	
Analyte Result Qual Added Result Qual (2σ+/-) MDC Unit %Rec Limits Gross Alpha 7.82 50.1 61.83 10.5 50.2 pCi/L 108 35 - 150	
Lab Sample ID: 160-10783-A-1-C MSBT Client Sample ID: Ma	itrix Spik
Matrix: Water Prep Type	: Total/N
Analysis Batch: 179393 Prep Batc	h: 17891
Total	
Sample Sample Spike MSBT Uncert. %Rec.	
Analyte Result Qual Qual (2σ+/-) MDC Unit %Rec Limits	
Gross Beta 13.3 95.4 103.3 10.9 0.756 pCi/L 94 89 - 143	
Lab Sample ID: 160-10783-A-1-D DU Client Sample ID:	
Matrix: Water Prep Type	
Analysis Batch: 179487 Prep Batc	h: 17891
Total	
Sample DU DU Uncert.	RE
	RER Lim 0.48
Gross Alpha 7.82 6.091 1.63 1.70 pCi/L 0	0.48

TestAmerica Irvine

0.46

1

1.73

0.762 pCi/L

14.87

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

Lab Sample ID Matrix: Water	: MB 160-1	77802/1-A								Client Sa	mple ID: Metho Prep Type: 1	
Analysis Batch	h: 178132										Prep Batch:	
					Count	Total						
		MB	MB	ι	Jncert.	Uncert.						
Analyte		Result	Qualifier		(2σ+/-)	(2σ+/-)	MDC	Unit	P	repared	Analyzed	Dil Fac
Cesium-137		-3.707	U		7.48	7.49	12.8	pCi/L	03/0	9/15 14:59	03/10/15 10:02	1
Potassium-40		-20.99	U		105	105	195	pCi/L	03/0	9/15 14:59	03/10/15 10:02	1
Lab Sample ID	: LCS 160-	177802/2-A							Client	t Sample I	D: Lab Control	Sample
Matrix: Water											Prep Type: 1	otal/NA
Analysis Batcl	h: 178132										Prep Batch:	177802
-						Total						
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits	
Americium-241			137000	138700		16000		461	pCi/L	101	90 - 111	
Cesium-137			49200	49270		4910		184	pCi/L	100	90 _ 111	
Cobalt-60			51300	50150		4950		116	pCi/L	98	89 - 110	
Lab Sample ID	: 440-10319	99-2 DU						Client	Sample) ID: Outfa	1009_2015030	3 Comp
Matrix: Water											Prep Type: 1	
Analysis Batcl	h: 178131										Prep Batch:	
-						Total						
	Sample	Sample		DU	DU	Uncert.						RER
Analyte	Result	Qual		Result	Qual	(2σ+/-)		MDC	Unit		REF	R Limit
Cesium-137	1.38	U		-0.9674	U	6.29		11.4	pCi/L		0.22	2 1
Potassium-40	-29.5	U.		-71.02	ш	29600		180	pCi/L		() 1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 16	0-178164/1- <mark>A</mark>	ι							Client Sa	mple ID: Metho	d Blank
Matrix: Water										Prep Type: T	otal/NA
Analysis Batch: 18269	9									Prep Batch:	178164
				Count	Total						
		MB MB	ι	Jncert.	Uncert.						
Analyte	Re	sult Qualifier		(2σ+/-)	(2σ+/-)	MDC	Unit	P	repared	Analyzed	Dil Fa
Radium-226	0.02	2491 U		0.0882	0.0882	0.162	pCi/L	03/1	10/15 14:54	04/01/15 06:54	
	MB N	1B									
Carrier	%Yield G	ualifier	Limits					F	Prepared	Analyzed	Dil Fa
Ba Carrier	104		40 - 110					03/1	10/15 14:54	04/01/15 06:54	
Lab Sample ID: LCS 1	60-178164/2-	Α						Client	t Sample I	D: Lab Control	Sample
Matrix: Water										Prep Type: T	
Analysis Batch: 18269	9									Prep Batch:	
					Total						
		Spike	LCS	LCS	Uncert.					%Rec.	
Analyte		Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits	
· ····· , ···		11.2	10.17		1.09		0.189	- 0://	91	68 - 137	

Carrier%YieldQualifierLimitsBa Carrier10440 - 110

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

Lab Sample ID: 1	60-1077	′8-I-3-E MS								Client S	ample ID: M		-
Matrix: Water											Prep Typ	e: To	tal/N/
Analysis Batch: '	182699										Prep Bat	tch: 1	781 <mark>6</mark>
						Total							
	Sample	Sample	Spike	MS	MS	Uncert.					%Rec.		
Analyte	Result	Qual	Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits		
Radium-226	0.350		11.3	12.11		1.28		0.223	pCi/L	104	75 ₋ 138		
	MS	MS											
Carrier	%Yield	Qualifier	Limits										
Ba Carrier	100		40 - 110	-									
Lab Sample ID: 1	160-1077								Client San	nnio ID:	Matrix Spik		olicat
Matrix: Water	100-1077	0-1-0-1 1000								inpie ib.	Prep Typ		
Analysis Batch: '	182699										Prep Bat		
Analysis Datoll.	.02000					Total							
	Sample	Sample	Spike	MSD	MSD	Uncert.					%Rec.		RE
Analyte		Qual	Added	Result		(2σ+/-)		MDC	Unit	%Rec		RER	Lim
Radium-226	0.350	·	11.3	11.38		1.21		0.202	pCi/L	97	75 - 138	0.29	
	MSD	MSD											
Carrier	%Yield	Qualifier	Limits										
Ba Carrier	104		40 - 110										
Ba Carrier lethod: 904.0 - Lab Sample ID: N	¹⁰⁴ - Radiu	m-228 (GFF	40 - 110						c	lient Sa	mple ID: Me Prep Typ		
Carrier Ba Carrier Iethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: *	¹⁰⁴ - Radiu MB 160-1	m-228 (GFF	40 - 110						C	lient Sa	mple ID: Me Prep Typ Prep Bat	e: To	tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: N Matrix: Water	¹⁰⁴ - Radiu MB 160-1	m-228 (GFF	40 - 110		Count	Total			c	lient Sa	Prep Typ	e: To	tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: N Matrix: Water	¹⁰⁴ - Radiu MB 160-1	m-228 (GFF	40 - 110		Count Jncert.	Total Uncert.			C	lient Sa	Prep Typ	e: To	tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: *	¹⁰⁴ - Radiu MB 160-1	I m-228 (GFF 178156/1-A MB Result	40 _ 110 C) MB Qualifier				MDC	Unit		lient Sa	Prep Typ	e: To	tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: *	¹⁰⁴ - Radiu MB 160-1	I m-228 (GFF 178156/1-A MB Result	40 - 110 РС)		Jncert.	Uncert.	MDC 0.348		Pre		Prep Typ Prep Bat	e: Toi tch: 1	tal/N/ 7815 Dil Fa
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: ·	¹⁰⁴ - Radiu MB 160-1	I m-228 (GFF 178156/1-A MB Result	40 _ 110 C) MB Qualifier		Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre	pared	Prep Typ Prep Bat	e: Toi tch: 1	tal/N/ 7815 Dil Fa
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: * Analyte Radium-228	¹⁰⁴ - Radiu MB 160-1	IT8156/1-A IT8156/1-A MB Result -0.08654	40 _ 110 C) MB Qualifier U		Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/	pared	Prep Typ Prep Bat	e: Toi tch: 1	tal/N/ 7815
Ba Carrier lethod: 904.0 - Lab Sample ID: N Matrix: Water Analysis Batch: * Analyte Radium-228 Carrier	¹⁰⁴ - Radiu MB 160-1	IT8156/1-A MB Result -0.08654 MB MB	40 _ 110 C) MB Qualifier U		Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre	pared 15 14:13	Prep Typ Prep Bat Analyzed	e: Tot tch: 1	tal/N/ 7815 Dil Fa
Ba Carrier ethod: 904.0 - Lab Sample ID: N Matrix: Water Analysis Batch: * Analyte Radium-228 Carrier Ba Carrier	¹⁰⁴ - Radiu MB 160-1	IT8156/1-A IT8156/1-A MB Result -0.08654 MB MB %Yield Qualifi	40 _ 110 C) MB Qualifier U	Limits	Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre 03/10/	pared 15 14:13 pared	Prep Typ Prep Bat Analyzed 03/31/15 10:5 Analyzed	e: Tot tch: 1	tal/N 7815 Dil Fa
Ba Carrier lethod: 904.0 - Lab Sample ID: N Matrix: Water Analysis Batch: * Analyte Radium-228 Carrier Ba Carrier Y Carrier	104 - Radiu MB 160-1 182503	IT8156/1-A MB Result -0.08654 MB MB %Yield Qualif 104 90.1	40 _ 110 C) MB Qualifier U	Limits 40 - 110	Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre 03/10/ 03/10/	pared 15 14:13 pared 15 14:13 15 14:13	Analyzed 03/31/15 03/31/15 03/31/15 03/31/15 103/31/15	e: Tot tch: 1	tal/N 7815 Dil Fa
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: · Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample ID: L	104 - Radiu MB 160-1 182503	IT8156/1-A MB Result -0.08654 MB MB %Yield Qualif 104 90.1	40 _ 110 C) MB Qualifier U	Limits 40 - 110	Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre 03/10/ 03/10/	pared 15 14:13 pared 15 14:13 15 14:13	Prep Typ Prep Bat 03/31/15 10:3 03/31/15 10:3 03/31/15 10:3 03/31/15 10:3	e: Tot tch: 1 52	tal/N 7815 Dil Fa Dil Fa
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample ID: L Matrix: Water	104 - Radiu MB 160-1 182503	IT8156/1-A MB Result -0.08654 MB MB %Yield Qualif 104 90.1	40 _ 110 C) MB Qualifier U	Limits 40 - 110	Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre 03/10/ 03/10/	pared 15 14:13 pared 15 14:13 15 14:13	Prep Typ Prep Bat 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4	e: Tot tch: 1 52	tal/N 7815 Dil Fa Dil Fa ampl tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: · Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample ID: L	104 - Radiu MB 160-1 182503	IT8156/1-A MB Result -0.08654 MB MB %Yield Qualif 104 90.1	40 _ 110 C) MB Qualifier U	Limits 40 - 110	Jncert. (2σ+/-)	Uncert. (2σ+/-)			Pre 03/10/ Pre 03/10/ 03/10/	pared 15 14:13 pared 15 14:13 15 14:13	Prep Typ Prep Bat 03/31/15 10:3 03/31/15 10:3 03/31/15 10:3 03/31/15 10:3	e: Tot tch: 1 52	tal/N 7815 Dil Fa Dil Fa ampl tal/N
Ba Carrier lethod: 904.0 - Lab Sample ID: M Matrix: Water Analysis Batch: Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample ID: L Matrix: Water	104 - Radiu MB 160-1 182503	IT8156/1-A MB Result -0.08654 MB MB %Yield Qualif 104 90.1	40 _ 110 C) MB Qualifier U	Limits 40 - 110	Jncert. (2σ+/-) 0.187	Uncert. (2σ+/-) 0.187			Pre 03/10/ Pre 03/10/ 03/10/	pared 15 14:13 pared 15 14:13 15 14:13	Prep Typ Prep Bat 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4 03/31/15 10:4	e: Tot tch: 1 52	tal/N 7815 Dil Fa Dil Fa

Analyte			Added	Result	Qual	(2σ+/-)	MDC	Unit	%Rec	Limits
Radium-228			3.47	3.132		0.484	0.342	pCi/L	90	56 - 140
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	104		40 _ 110							
Y Carrier	88.2		40 _ 110							

Method: 904.0 - Radium-228 (GFPC) (Continued)

	D: 160-10778-I-3-B M	S						Client S	ample ID:		
Matrix: Water	r								Prep Ty	/pe: Tot	tal/N/
Analysis Bate	ch: 182501								Prep B	atch: 1	7815
					Total						
	Sample Sample	Spike	MS	MS	Uncert.				%Rec.		
Analyte	Result Qual	Added	Result	Qual	(2σ+/-)	MDC	Unit	%Rec	Limits		
Radium-228	0.163 U	3.53	3.343		0.508	0.341	pCi/L	95	45 _ 150		
	MS MS										
Carrier	%Yield Qualifier	Limits									
Ba Carrier	100	40 - 110									
	88.6 D: 160-10778-I-3-C M	40 - 110 SD				(Client S	ample ID:	Matrix Sp	ike Dup	olicat
Lab Sample I Matrix: Water	D: 160-10778-I-3-C M					(Client S	ample ID:	Prep Ty	/pe: To	tal/N/
Lab Sample I Matrix: Water	D: 160-10778-I-3-C M				Total	(Client S	ample ID:	Prep Ty		tal/NA
Lab Sample I Matrix: Water	D: 160-10778-I-3-C M		MSD	MSD	Total Uncert.	(Client S	ample ID:	Prep Ty	/pe: To	tal/NA 78150
Lab Sample I Matrix: Water Analysis Bato	D: 160-10778-I-3-C M r ch: 182501	SD	MSD Result			МДС	Client S Unit	ample ID: %Rec	Prep Ty Prep B	/pe: To	tal/NA 78150 REF
Lab Sample I Matrix: Water Analysis Bato Analyte	D: 160-10778-I-3-C M r ch: 182501 Sample Sample	SD Spike			Uncert.			-	Prep Ty Prep B %Rec.	/pe: Tot Batch: 1	tal/NA
Lab Sample I Matrix: Water Analysis Bato Analyte	D: 160-10778-I-3-C M r ch: 182501 Sample Sample Result Qual	SD Spike Added	Result		Uncert. (2σ+/-)	MDC	Unit	%Rec	Prep Ty Prep B %Rec. Limits	pe: Tot atch: 1	tal/N/ 78150 REF Limi
Lab Sample I Matrix: Water Analysis Bato Analyte Radium-228	D: 160-10778-I-3-C M r ch: 182501 Sample Sample <u>Result</u> Qual U	SD Spike Added	Result		Uncert. (2σ+/-)	MDC	Unit	%Rec	Prep Ty Prep B %Rec. Limits	pe: Tot atch: 1	tal/N/ 78150 REF Limi
Y Carrier Lab Sample I Matrix: Water Analysis Bate Analyte Radium-228 Carrier Ba Carrier	D: 160-10778-I-3-C M r ch: 182501 <u>Sample Sample</u> <u>Result Qual</u> 0.163 U <i>WSD MSD</i>	SD Spike Added 3.53	Result		Uncert. (2σ+/-)	MDC	Unit	%Rec	Prep Ty Prep B %Rec. Limits	pe: Tot atch: 1	tal/NA 78156 REF Limi

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: I Matrix: Water	MB 160-	178146/1	- A								Client Sa	mple ID: Metho Prep Type: 1	
Analysis Batch:	180061											Prep Batch:	
						Count	Total						
			MB	MB	ι	Jncert.	Uncert.						
Analyte		I	Result	Qualifier		(2σ+/-)	(2σ+/-)	MDC	Unit	Р	repared	Analyzed	Dil Fa
Strontium-90		-0.	05817	U		0.177	0.177	0.332	pCi/L	03/1	0/15 13:35	03/19/15 18:32	
		МВ	ΜВ										
Carrier		%Yield	Qualif	ïer	Limits					P	Prepared	Analyzed	Dil Fa
Sr Carrier		74.5			40 - 110					03/1	0/15 13:35	03/19/15 18:32	
Y Carrier		91.2			40 - 110					03/1	10/15 13:35	03/19/15 18:32	
Lab Sample ID: I	LCS 160	-178146/	2-A							Client	t Sample I	D: Lab Control	Sample
Matrix: Water												Prep Type: 1	
Analysis Batch:	180061											Prep Batch:	
							Total						
				Spike	LCS	LCS	Uncert.					%Rec.	
Analyte				Spike Added	LCS Result		Uncert. (2σ+/-)		MDC	Unit	%Rec	%Rec. Limits	
				•					MDC 0.336		%Rec 98		
	LCS			Added	Result		(2σ+/-)					Limits	
Strontium-90		LCS Qualifier		Added	Result		(2σ+/-)					Limits	
Analyte Strontium-90 Carrier Sr Carrier				Added 8.91	Result		(2σ+/-)					Limits	

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample II Matrix: Water Analysis Bate		99-3 DU					Cli	ent Sample	D: Outfall009_2015030 Prep Type: Tot Prep Batch: 17	al/NA
						Total			-	
	Sample	Sample		DU	DU	Uncert.				RER
Analyte	Result	Qual		Result	Qual	(2σ+/-)	MDC	Unit	RER	Limit
Strontium-90	0.134	U		0.1848	U	0.181	0.292	pCi/L	0.14	1
	DU	DU								
Carrier	%Yield	Qualifier	Limits							
Sr Carrier	87.2		40 - 110							
Y Carrier	94.6		40 - 110							

Method: 906.0 - Tritium, Total (LSC)

Lab Sample I Matrix: Water		79548/1-A								Client Sa	mple ID: Metho Prep Type: 1	
Analysis Bat											Prep Batch:	
Analysis Dat	CII. 179999				Count	Total					Fiep Batch.	179540
		МВ	мв	ι	Jncert.	Uncert.						
Analyte		Result	Qualifier		(2 σ +/-)	(2σ+/-)	MDC	Unit	F	repared	Analyzed	Dil Fa
Tritium		-70.27	U		175	176	335	pCi/L	03/1	17/15 07:22	03/17/15 22:33	·
- Lab Sample I	ID: LCS 160-	179548/2-A							Clien	t Sample I	D: Lab Control	Sample
Matrix: Water											Prep Type: 1	
Analysis Bat	ch: 179999										Prep Batch:	179548
-						Total					-	
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits	
Tritium			3410	3656		546		338	pCi/L	107	74 - 114	
Lab Sample I	ID: 160-1078	5-B-1-B MS								Client S	ample ID: Matr	ix Spike
Matrix: Water	r										Prep Type: 1	otal/NA
Analysis Bat	ch: 179999										Prep Batch:	179548
						Total						
	Sample	Sample	Spike	MS	MS	Uncert.					%Rec.	
Analyte	Result	Qual	Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits	
Tritium	2910		4540	7449		884		332	pCi/L	100	67 - 130	
Lab Sample I	ID: 160-10784	4-B-1-B DU								Clier	nt Sample ID: D	uplicate
Matrix: Water	r										Prep Type: 1	otal/NA
Analysis Bat	ch: 179999										Prep Batch:	179548
-						Total					-	
	Sample	Sample		DU	DU	Uncert.						REF
Analyte	Result	Qual		Result	Qual	(2σ+/-)		MDC	Unit		REF	R Limit
Tritium	2960			2985		481		332	pCi/L		0.02	2 1

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

Lab Sample I Matrix: Water		178927/1-A								Client Sa	mple ID: Metho Prep Type: 1	
Analysis Bate	-										Prep Batch	
Analysis Dat					Count	Total					Thep Bateri	
		МВ	мв	ι	Jncert.	Uncert.						
Analyte		Result	Qualifier		(2σ+/-)	(2σ+/-)	MDC	Unit	P	repared	Analyzed	Dil Fac
Total Uranium		0.03945	U	0	.07756	0.07762	0.123	pCi/L	03/1	12/15 12:53	03/18/15 10:41	1
- Lab Sample I	ID: LCS 160	-178927/2-A							Client	t Sample I	D: Lab Control	Sample
Matrix: Water	r										Prep Type: 1	Total/NA
Analysis Bate	ch: 179920										Prep Batch	: 178 <mark>92</mark> 7
						Total						
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)		MDC	Unit	%Rec	Limits	_
Uranium-234			12.7	13.48		1.59		0.121	pCi/L	106	84 - 120	
Uranium-238			13.0	12.99		1.55		0.121	pCi/L	100	83 - 121	
	LCS	LCS										
Tracer	%Yield	Qualifier	Limits									
Uranium-232	82.2		30 - 110									
- Lab Sample I	ID: 440-103 [.]	199-3 DU						Cli	ent San	nple ID: O	utfall009_2015()303_ТВ
Matrix: Water	r										Prep Type: 1	Fotal/NA
Analysis Bate	ch: 180834										Prep Batch	: 178 <mark>92</mark> 7
						Total						
	Sample	e Sample		DU	DU	Uncert.						RER
Analyte	Resul	t Qual		Result	Qual	(2σ+/-)		MDC	Unit		REI	R Limit
Total Uranium	0.0269	9 U —		0.05255	U	0.07673		0.123	pCi/L		0.1	7 1

Rad

Prep Batch: 177802

440-103199-3 DU

LCS 160-178927/2-A

MB 160-178927/1-A

Outfall009_20150303_TB

Lab Control Sample

Method Blank

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	Fill_Geo-0	
440-103199-2 DU	Outfall009_20150303_Comp	Total/NA	Water	Fill_Geo-0	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	Fill_Geo-0	
LCS 160-177802/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-177802/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
rep Batch: 178146					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	PrecSep-7	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	PrecSep-7	
440-103199-3 DU	Outfall009_20150303_TB	Total/NA	Water	PrecSep-7	
LCS 160-178146/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-178146/1-A	Method Blank	Total/NA	Water	PrecSep-7	
rep Batch: 178156					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10778-I-3-B MS	Matrix Spike	Total/NA	Water	PrecSep_0	
160-10778-I-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	PrecSep_0	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	PrecSep_0	
LCS 160-178156/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-178156/1-A	Method Blank	Total/NA	Water	PrecSep_0	
rep Batch: 178164					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
160-10778-I-3-E MS	Matrix Spike	Total/NA	Water	PrecSep-21	
160-10778-I-3-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	PrecSep-21	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	PrecSep-21	
LCS 160-178164/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-178164/1-A	Method Blank	Total/NA	Water	PrecSep-21	
rep Batch: 178910					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
160-10783-A-1-B MS	Matrix Spike	Total/NA	Water	Evaporation	
160-10783-A-1-C MSBT	Matrix Spike	Total/NA	Water	Evaporation	
160-10783-A-1-D DU	Duplicate	Total/NA	Water	Evaporation	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	Evaporation	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	Evaporation	
LCS 160-178910/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-178910/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-178910/1-A	Method Blank	Total/NA	Water	Evaporation	
rep Batch: 178927					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	ExtChrom	
440-103199-3	Outfall009_20150303_TB	Total/NA	Water	ExtChrom	

ExtChrom

ExtChrom

ExtChrom

Total/NA

Total/NA

Total/NA

Water

Water

Water

Rad (Continued)

Prep Batch: 179548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10784-B-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	
160-10785-B-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
440-103199-2	Outfall009_20150303_Comp	Total/NA	Water	LSC_Dist_Susp	
LCS 160-179548/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
MB 160-179548/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Qualifiers

Rad

TEF

TEQ

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

nuu	
Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Quaimer		
U	Result is less than the sample detection limit.	5
Glossary		6
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	8
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	9
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	10
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	13
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	

EPA Region

10

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9

9

9

9

9

6

9

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Certification ID

Cert. No. 12.002r

CA015312007A

P330-09-00080

CA01531

AZ0671

10256

2706

N/A

N/A

4005

MP0002

Authority

Alaska

Arizona

California

California

Guam

Hawaii

Nevada

Oregon

USDA

New Mexico

Northern Mariana Islands

Laboratory: TestAmerica Irvine

Expiration Date

06-30-15

10-13-15

01-31-16 *

06-30-16

01-23-16

01-29-16

07-31-15

01-29-15 *

01-29-15 *

01-29-16

06-06-15

1 2 3 4 5 6 7 8 9 10

11 12 13

______ Laboratory: TestAmerica St. Louis

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

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

Program

State Program

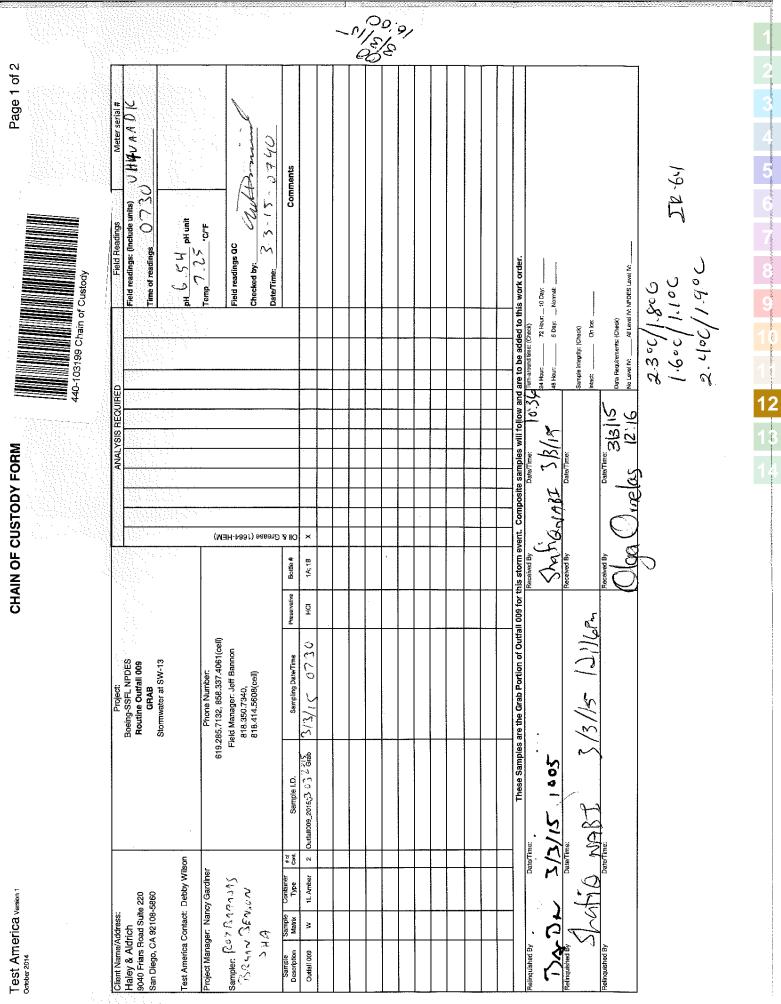
NELAP

Federal

LA Cty Sanitation Districts

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-15
Connecticut	State Program	1	PH-0241	03-31-15 *
Florida	NELAP	4	E87689	06-30-15
Illinois	NELAP	5	200023	11-30-15
lowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	03-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-15
Missouri	State Program	7	780	06-30-15
Nevada	State Program	9	MO000542013-1	07-31-15
New Jersey	NELAP	2	MO002	06-30-15
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15 *
North Dakota	State Program	8	R207	06-30-15
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15
Texas	NELAP	6	T104704193-13-6	07-31-15
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-15
Virginia	NELAP	3	460230	06-14-15
Washington	State Program	10	C592	08-30-15
West Virginia DEP	State Program	3	381	08-31-15

* Certification renewal pending - certification considered valid.



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4/5/2015

Test America version 1 October 2014

lient Name/Address.	dress.					Project:			 _					A	ANALYSIS REQUIRED	NIRED			
taley & Aldrich 040 Friars Road Suite 220 ian Diego, CA 92108-5860	ich ad Sult 92108	te 220 -5860			. 0	Boeing-SSFL NPDES Routine Outfall 009 COMPOSITE Stormwater at SW-13		, Cqi Cni Bb.	, Cd, Cu, Pb,			,(0,009),515 (0,009),515	& (1.506 ho (
est America Contact: Debby Wilson	Contact	t Debby	Wilson					AR Islai				a8 senĐ), 206 (903.0 1, UmenU ,						Comments
iroject Manager: Nancy Gardiner らんちゃっ んぞく ampler: アット ののの	er: Nai	Bardiner Bathar Bersen	iner Z S S S	2	619.28 Field	Phone Number: 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon		M sideration	and all conge	+-20N+20N *		steM bevlossi ,(0.009)andA (0.609) (€-H)	2 mujbsA ber (0.408) 822 r o 0.108) 751-	s Toxicity 🔨					
Semple Sample Container Description Marity Tune	Sample	Contained		fait Samole (D		818.300.7340, 818.414.5508(cell)	Preservative	Cotal R Botte #		os i.c	ss. sa.	l seone	ndmoC nuibs?	ohrond: 				•	
Outfall 009	3	1L Poly					² NO ³	2A •	_	>	1	<u>'</u>		+					
Outfall 009	ß	1L Amber	+	2		2.1715.2	None	3A, 3B	×	-									
Outfall 009	M	500 mL Poly		6			None	41,48	-	×									
Outfall 009	N	500 mL Poly	- VIO				None	• 2			×								
Outfall 009	M	1L Poly	×	-		07H70	None	• 9				×						Filler	Filler w/m 24hrs of receipl al lab
		2.5 Gaf Cube	the f	Toutaliaa9_2015 @ \$03 Comp	30 3 Сотр		None	7A •					>					5	Unfillered and unpreserved
Outfall 009	3	500 mL Amber	nber 1				None	78 ▲					×						analysis
Outfail 009	M	1 Gai Poly	↓ Ac				None	¢						×				Only	Only test if first or second rain events of the year
Oulfall 008	3	S00 mL Poly	Noc	<u> </u>			HOBN	•			╞			×					
Outfall 009	M	1L Polv	1		_		None	. 5			×								
			+-							+	-				-				
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						COC Page	COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event	Composite	Sample	s for Ou	utfall 00	9 for this sto	rm event.						
alimnishad Bv			Date	Date/Time'		These must be added to the same work orger for UCU Fage 1 of 2 for Uutrali UVS for the same event. Received By	o to the same	VOTK OTOPI Received Bv	TOL COL	r rage i	Date/Tim	r Uttrail UV9 te:	IOL UHE SA	lie even	Turn-around time: (Check)	: (Check)			
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telinquish By			Date	Date/Time;				Received By		- net	Date/Time		1	5	2		÷		
9	4	S	10	<u>۸</u>	13/1	it/	1600						-		Sample Integrity: (Check) Intect: On Is	(Check) On Ice:			
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12

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 103199 List Number: 1

Creator: Soderblom, Tim

Answer	Comment
True	
N/A	
True	
True	
True	
True	
N/A	
	True True True True True True True True

Job Number: 440-103199-2

List Source: TestAmerica Irvine

Client: Haley & Aldrich, Inc.

Login Number: 103199 List Number: 3

Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-103199-2

List Source: TestAmerica St. Louis

List Creation: 03/09/15 12:10 PM

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)
		Ва	
Lab Sample ID	Client Sample ID	(40-110)	
160-10778-I-3-E MS	Matrix Spike	100	
160-10778-I-3-F MSD	Matrix Spike Duplicate	104	
440-103199-2	Outfall009_20150303_Comp	93.5	
440-103199-3	Outfall009_20150303_TB	106	
LCS 160-178164/2-A	Lab Control Sample	104	
MB 160-178164/1-A	Method Blank	104	
Tracer/Carrier Legend			

Method: 904.0 - Radium-228 (GFPC) Madulas MI

				Percent Yield (Acceptance Limits)
		Ва	Y	
Lab Sample ID	Client Sample ID	(40-110)	(40-110)	
160-10778-I-3-B MS	Matrix Spike	100	88.6	
160-10778-I-3-C MSD	Matrix Spike Duplicate	104	87.5	
440-103199-2	Outfall009_20150303_Comp	93.5	86.4	
440-103199-3	Outfall009_20150303_TB	106	90.8	
LCS 160-178156/2-A	Lab Control Sample	104	88.2	
MB 160-178156/1-A	Method Blank	104	90.1	

Tracer/Carrier Legend Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC) Matrix: Wator

Matrix: Water				Prep Type: Total/NA
_				Percent Yield (Acceptance Limits)
		Sr (C)	Y	
Lab Sample ID	Client Sample ID	(40-110)	(40-110)	
440-103199-2	Outfall009_20150303_Comp	84.9	91.6	
440-103199-3	Outfall009_20150303_TB	87.1	89.3	
440-103199-3 DU	Outfall009_20150303_TB	87.2	94.6	
LCS 160-178146/2-A	Lab Control Sample	86.8	88.2	
MB 160-178146/1-A	Method Blank	74.5	91.2	
Tracer/Carrier Legend				
Sr (C) = Sr Carrier				
Y = Y Carrier				

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

Matrix: Water				Prep Type: Total/NA
Γ			Percent Yield (Acceptance Limits)	
		U-232		
Lab Sample ID	Client Sample ID	(30-110)		
440-103199-3 DU	Outfall009_20150303_TB	87.9		

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

Matrix: Water			Prep Type: Total/N	Α
			Percent Yield (Acceptance Limits)	
		U-232		
Lab Sample ID	Client Sample ID	(30-110)		
LCS 160-178927/2-A	Lab Control Sample	82.2		_
MB 160-178927/1-A	Method Blank	91.5		
Tracer/Carrier Legend				
U-232 = Uranium-232				

14



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-98715-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-98715-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_201 50111	440-98715-1	N/A	Water	1/11/2015 11:00:00 AM	1613B, SM2340, SM2540D, SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratories on ice. The sample was transported directly from the field via courier and was received at TestAmerica-Irvine below the temperature limits of $4^{\circ}C \pm 2^{\circ}C$; however, as the sample was not noted to be frozen or damaged, no qualifications were required. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved, if applicable. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were present and intact upon receipt at the subcontract laboratories.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

Qualification Code Reference Table Cont.

- D The analysis with this flag should not be used because another more technically sound analysis is available.
- P Instrument performance for pesticides was poor.
- DNQ 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.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

The reported result is above the method detection limit but is less than the reporting limit.

Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613B—Dioxin/Furans

Reviewed By: L. Calvin Date Reviewed: February 26, 2015

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

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had detects below the reporting limit for 1,2,3,4,6,7,8-HpCDD at 0.00000226 µg/L, OCDD at 0.00000902 µg/L, OCDF at 0.00000425 µg/L, and total HpCDD at 0.00000361 µg/L. The sample concentrations of 1,2,3,4,6,7,8-HpCDD and OCDD exceeded five times and ten times the method blank concentrations, respectively, and required no qualification. The result for OCDF was qualified as nondetected, "U," at

the level of contamination, and the result for total HpCDD was qualified as estimated, "J," as only a portion of the total was found to be method blank contamination. The method blank had no other detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B. As 2,3,7,8-TCDF was not detected in the sample, confirmation analysis was not necessary.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits, EDLs. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

Isomers 1,2,3,6,7,8-HxCDD and 1,2,3,4,6,7,8-HpCDF were each reported as an estimated maximum possible concentration (EMPC) in the sample. The results were qualified as estimated nondetects, "UJ," at the level of the EMPC. Totals HpCDF, HxCDD, and HxCDF also contained one or more EMPC peaks. The results for the totals were qualified as estimated, "J."

B. EPA METHOD 200.7 and SM2340B—Hardness

Reviewed By: P. Meeks Date Reviewed: February 12, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC[×]* Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 200.7, Standard Methods for the Examination of Water and Wastewater Method (2012) 2340B, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The analytical holding time, six months, was met.
- Calibration: Calibration criteria were met. Initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. The CRDL recoveries were within the control limits of 70-130%.
- Blanks: The method blank and CCBs had no detects.
- Interference Check Samples: Recoveries were within 80-120%.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the control limits of 85-115%.
- 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 the LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary form were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: February 12, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC[×]* Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Methods 2540D, 9221E, and 9221F, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared the day it was collected, no qualifications were required. TSS was analyzed within seven days of collection.
- Calibration: The balance calibration logs and biological controls were acceptable.
- Blanks: TSS was not detected in the method blank. The method blank is not applicable to the biological methods.
- Blank Spikes and Laboratory Control Samples: The TSS recovery was within laboratoryestablished QC limits. The presumptive test was analyzed for the biological methods with the positive detects for the target bacteria.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD samples are not applicable to these methods.
- 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: 440987151

Analysis Method E1613B WM Result Type: TRG Sample Name ArroyoSimi_20150111 Matrix Type: Sample Date: 1/11/2015 11:00:00 AM Validation Level: 8 440-98715-1 Lab Sample Name: RL **MDL** Analyte Fraction CAS No Result Result Lab Validation Validation Value Units Qualifier Qualifier Notes 1,2,3,4,6,7,8,9-Ν 39001-02-0 0.000027 0.000095 0.0000014 J,DXMB U В ug/L Octachlorodibenzofuran (OCDF) 1,2,3,4,6,7,8,9-Octachlorodibenzo-p- N 3268-87-9 0.00022 0.000095 0.0000050 MB ug/L dioxin (OCDD) 0.0000013 1,2,3,4,6,7,8-UJ *Ш Ν 67562-39-4 0.000011 0.000048 ug/L J,DXq Heptachlorodibenzofuran (HpCDF) 35822-46-9 0.000048 1,2,3,4,6,7,8-Heptachlorodibenzo-p- N 0.000025 0.0000031 J,DXMB J DNQ ug/L dioxin (HpCDD) 1,2,3,4,7,8,9-Ν 55673-89-7 0.000048 0.0000019 ug/L U U Heptachlorodibenzofuran (HpCDF) 1,2,3,4,7,8-Hexachlorodibenzofuran N 70648-26-9 0.000048 0.0000067 ug/L U U (HxCDF) 1,2,3,4,7,8-Hexachlorodibenzo-p-0.00000060 ug/L U U Ν 39227-28-6 0.000048 dioxin (HxCDD) 1,2,3,6,7,8-Hexachlorodibenzofuran N 57117-44-9 0.000048 0.00000056 ug/L U U (HxCDF) 1,2,3,6,7,8-Hexachlorodibenzo-p-Ν 57653-85-7 0.0000014 0.000048 0.00000052 J,DXq UJ *Ш ug/L dioxin (HxCDD) 1,2,3,7,8,9-Hexachlorodibenzofuran N U 72918-21-9 0.000048 0.0000084 ug/L U (HxCDF) 1,2,3,7,8,9-Hexachlorodibenzo-p-Ν 19408-74-3 0.0000018 0.000048 0.00000047 ug/L J,DX J DNQ dioxin (HxCDD) 1,2,3,7,8-Pentachlorodibenzofuran U U Ν 57117-41-6 0.000048 0.00000061 ug/L (PeCDF) 1,2,3,7,8-Pentachlorodibenzo-p-Ν 40321-76-4 0.000048 0.0000086 ug/L U U dioxin (PeCDD) 2,3,4,6,7,8-Hexachlorodibenzofuran N U U 60851-34-5 0.000048 0.00000064 ug/L (HxCDF) U 2,3,4,7,8-Pentachlorodibenzofuran Ν 57117-31-4 0.000048 0.00000065 ug/L U (PeCDF) 2,3,7,8-Tetrachlorodibenzofuran 51207-31-9 0.0000095 0.00000045 U U Ν ug/L (TCDF) 2,3,7,8-Tetrachlorodibenzo-p-dioxin N 1746-01-6 0.0000095 0.00000057 U U ug/L (TCDD) Total Heptachlorodibenzofuran Ν 38998-75-3 0.000025 0.000048 0.0000016 J,DXq J DNQ, *III ug/L (HpCDF) Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.000055 0.000048 0.0000031 MB J B Ν ug/L (HpCDD)

Analysis Method	E161.	3B							
Total Hexachlorodibenzofuran (HxCDF)	Ν	55684-94-1	0.0000066	0.000048	0.00000068	ug/L	J,DXq	J	DNQ, *III
Fotal Hexachlorodibenzo-p-dioxin HxCDD)	N	34465-46-8	0.0000091	0.000048	0.00000053	ug/L	J,DXq	1	DNQ, *III
Total Pentachlorodibenzofuran (PeCDF)	Ν	30402-15-4	0.0000017	0.000048	0.00000063	ug/L	J,DX	1	DNQ
Fotal Pentachlorodibenzo-p-dioxir PeCDD)	n N	36088-22-9		0.000048	0.00000086	ug/L	U	U	
Fotal Tetrachlorodibenzofuran TCDF)	Ν	55722-27-5		0.0000095	0.00000045	ug/L	U	U	
Fotal Tetrachlorodibenzo-p-dioxin TCDD)	Ν	41903-57-5		0.0000095	0.00000057	ug/L	U	U	
Analysis Method	SM23	240							
Sample Name Arro	oyoSimi_2	20150111	Ma	atrix Type:	WM	Res	ult Type: The second seco	RG	
Sample Date: 1/11/2015 11:00 Lab Sample Name: 440-9):00 AM 8715-1	Valid	ation Level:	8					
-		CAGN	D L	DI	MDI	D 1/	T 1		
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	Ν	HARDNESS CO3	CA 170	0.33	0.17	mg/L			
Analysis Method	SM25	40D							
Sample Name Arro	oyoSimi_2	20150111	Ma	atrix Type:	WM	Res	ult Type: The second se	RG	
Sample Date: 1/11/2015 11:00):00 AM	Valid	ation Level:	8					
Lab Sample Name: 440-9	8715-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	Ν	TSS	250	14	7.1	mg/L			
Analysis Method	SM92	21E							
Sample Name Arro	oyoSimi_2	20150111	Ma	atrix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 1/11/2015 11:00):00 AM	Valid	ation Level:	8					
Lab Sample Name: 440-9	8715-1								
Analyte	Fraction	CAS No	Result	RL	MDL	Result	Lab	Validation	Validation
			Value			Units	Qualifier	Qualifier	Notes

Analysis Metho	od SM92	21F							
Sample Name	ArroyoSimi_2	20150111	Ma	atrix Type:	WM	Res	ult Type: TI	RG	
Sample Date: 1/11/201	5 11:00:00 AM	Valid	ation Level:	8					
Lab Sample Name:	440-98715-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	>1600	1.8	1.8	mpn/100			



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: 440-98715-1

Client Project/Site: Annual Arroyo Simi-Frontier Park

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

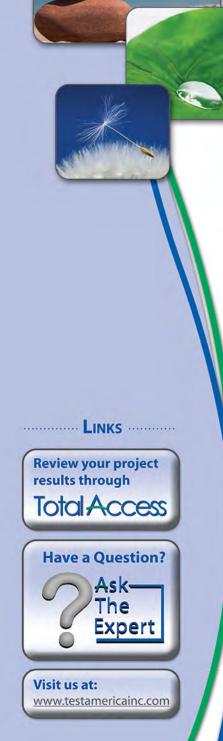
Authorized for release by: 2/4/2015 6:38:30 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.



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.

bby Wilson

Debby Wilson Manager of Project Management 2/4/2015 6:38:30 PM

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Sample Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park TestAmerica Job ID: 440-98715-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-98715-1	ArroyoSimi_20150111	Water	01/11/15 11:00	01/11/15 13:46

Job ID: 440-98715-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-98715-1

Comments

No additional comments.

Receipt

The samples were received on 1/11/2015 1:46 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.6° C and 1.2° C.

GC/MS Semi VOA

Method(s) 525.2: Surrogate recovery (Triphenylphosphate) for the following sample(s) was outside the upper control limit: ArroyoSimi_20150111 (440-98715-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 525.2: The internal standard recovery (Chrysene-d12) for the following sample was outside of acceptance: ArroyoSimi_20150111 (440-98715-1). A high bias is implied. The sample was reported based on ND results for all target analytes. No bias detected.

Method(s) 525.2: The laboratory control sample duplicate (LCSD) associated with batch 230069 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed due to a 24 hour holding time; therefore, the data has been reported based on the batch laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) being within acceptance limits and may be used to evaluate matrix performance. Recovery for Diazinon may be biased low.

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

GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 229709. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch. (LCS 440-229709/4-A)

Method(s) 608: Surrogate recovery for the following sample(s) was outside the upper control limit: (MB 440-229709/1-A). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

Dioxin

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

Metals

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

General Chemistry

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

Biology

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

Organic Prep

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

Dioxin Prep

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

Date Collected: 01/11/15 11:00

Date Received: 01/11/15 13:46

1,2,3,7,8-PeCDF

2,3,4,7,8-PeCDF

1,2,3,4,7,8-HxCDD

1,2,3,6,7,8-HxCDD

1,2,3,7,8,9-HxCDD

1,2,3,4,7,8-HxCDF

Client Sample ID: ArroyoSimi_20150111

Lab Sample ID: 440-98715-1 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		0.95	0.48	ug/L		01/12/15 09:14	01/16/15 07:00	1
Diazinon	ND	LR BA	0.24	0.11	ug/L		01/12/15 09:14	01/16/15 07:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene			70 _ 130				01/12/15 09:14	01/16/15 07:00	1
Perylene-d12	92		70 - 130				01/12/15 09:14	01/16/15 07:00	1
Triphenylphosphate	360	LH	70 - 130				01/12/15 09:14	01/16/15 07:00	1
Method: 608 - Organochlorine P	esticides in Wa	iter							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.095	0.076	ug/L		01/14/15 09:59	01/15/15 18:20	1
Dieldrin	ND		0.0048	0.0019	ug/L		01/14/15 09:59	01/15/15 18:20	1
Toxaphene	ND		0.48	0.24	ug/L		01/14/15 09:59	01/15/15 18:20	1
4,4'-DDD	ND		0.0048	0.0038	ug/L		01/14/15 09:59	01/15/15 18:20	1
4,4'-DDE	ND		0.0048	0.0029	ug/L		01/14/15 09:59	01/15/15 18:20	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		01/14/15 09:59	01/15/15 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	46		10 - 139				01/14/15 09:59	01/15/15 18:20	1
Method: 608 - Polychlorinated B	iphenyls (PCB	s) (GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.48	0.24	ug/L		01/14/15 14:34	01/14/15 22:25	1
Aroclor 1221	ND		0.48	0.24	ug/L		01/14/15 14:34	01/14/15 22:25	1
Aroclor 1232	ND		0.48	0.24	ug/L		01/14/15 14:34	01/14/15 22:25	1
Aroclor 1242	ND		0.48	0.24	ug/L		01/14/15 14:34	01/14/15 22:25	1
	ND ND		0.48 0.48	0.24 0.24	ug/L ug/L		01/14/15 14:34 01/14/15 14:34	01/14/15 22:25 01/14/15 22:25	1
Aroclor 1248					•				-
Aroclor 1248 Aroclor 1254	ND		0.48	0.24 0.24	ug/L		01/14/15 14:34	01/14/15 22:25	
Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate	ND ND	Qualifier	0.48 0.48	0.24 0.24	ug/L ug/L		01/14/15 14:34 01/14/15 14:34	01/14/15 22:25 01/14/15 22:25	1
Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate	ND ND ND	Qualifier	0.48 0.48 0.48	0.24 0.24	ug/L ug/L		01/14/15 14:34 01/14/15 14:34 01/14/15 14:34	01/14/15 22:25 01/14/15 22:25 01/14/15 22:25	1 1 1
Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr)	ND ND 		0.48 0.48 0.48 <i>Limits</i>	0.24 0.24	ug/L ug/L		01/14/15 14:34 01/14/15 14:34 01/14/15 14:34 <i>Prepared</i>	01/14/15 22:25 01/14/15 22:25 01/14/15 22:25 Analyzed	1 1 1 Dil Fac
Aroclor 1248 Aroclor 1254 Aroclor 1260 <i>Surrogate</i> <i>DCB Decachlorobiphenyl (Surr)</i> Method: 1613B - Dioxins and Fu	ND ND 		0.48 0.48 0.48 <i>Limits</i>	0.24 0.24 0.24	ug/L ug/L	D	01/14/15 14:34 01/14/15 14:34 01/14/15 14:34 <i>Prepared</i>	01/14/15 22:25 01/14/15 22:25 01/14/15 22:25 Analyzed	1 1 Dil Fac
Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Method: 1613B - Dioxins and Fu Analyte	ND ND 	RMS)	0.48 0.48 0.48 <u>Limits</u> 29 - 115	0.24 0.24 0.24 EDL 0.0000005	ug/L ug/L ug/L	D	01/14/15 14:34 01/14/15 14:34 01/14/15 14:34 Prepared 01/14/15 14:34	01/14/15 22:25 01/14/15 22:25 01/14/15 22:25 Analyzed 01/14/15 22:25	Dil Fac
Aroclor 1248 Aroclor 1254 Aroclor 1260	ND ND %Recovery 69 rans (HRGC/HF Result	RMS)	0.48 0.48 0.48 <u>Limits</u> 29 - 115 RL	0.24 0.24 0.24 EDL	ug/L ug/L ug/L	<u>D</u>	01/14/15 14:34 01/14/15 14:34 01/14/15 14:34 Prepared 01/14/15 14:34 Prepared	01/14/15 22:25 01/14/15 22:25 01/14/15 22:25 Analyzed 01/14/15 22:25 Analyzed	1 1 1 Dil Fac

01/30/15 03:43

01/30/15 03:43

01/30/15 03:43

01/30/15 03:43

01/30/15 03:43

01/30/15 03:43

1

1

1

1

1

0.000048

0.000048

0.000048

0.000048

0.000048

0.000048

ND

ND

ND

0.0000014 J,DX q

0.0000018 J,DX

ND

6

1

5

0

2

7

7

01/13/15 12:55

01/13/15 12:55

01/13/15 12:55

01/13/15 12:55

01/13/15 12:55

01/13/15 12:55

0.0000006 ug/L

0.0000006 ug/L

0.0000006 ug/L

0.0000005 ug/L

0.0000004 ug/L

0.0000006 ug/L

Client Sample ID: ArroyoSimi_20150111 Date Collected: 01/11/15 11:00 Date Received: 01/11/15 13:46

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

Lab Sample ID: 440-98715-1 Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,6,7,8-HxCDF	ND		0.000048	0.0000005	ug/L		01/13/15 12:55	01/30/15 03:43	1
			0.000040	6			04/40/45 40.55	04/00/45 00:40	
1,2,3,7,8,9-HxCDF	ND		0.000048	0.000008	ug/L		01/13/15 12:55	01/30/15 03:43	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.0000006	ug/L		01/13/15 12:55	01/30/15 03:43	1
				4					
1,2,3,4,6,7,8-HpCDD		J,DX MB	0.000048	0.0000031	-		01/13/15 12:55	01/30/15 03:43	1
1,2,3,4,6,7,8-HpCDF	0.000011	J,DX q	0.000048	0.0000013	-		01/13/15 12:55	01/30/15 03:43	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.0000019			01/13/15 12:55	01/30/15 03:43	1
OCDD	0.00022		0.000095	0.0000050	U		01/13/15 12:55	01/30/15 03:43	1
OCDF		J,DX MB	0.000095	0.0000014	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total TCDD	ND		0.0000095	0.0000005	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total TCDF	ND		0.0000095	0.0000004	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total PeCDD	ND		0.000048	5 0.0000008	ug/L		01/13/15 12:55	01/30/15 03:43	1
				6					
Total PeCDF	0.0000017	J,DX	0.000048	0.0000006	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total HxCDD	0.0000091		0.000048	3 0.0000005	ua/I		01/13/15 12:55	01/30/15 03:43	1
Total Tixebb	0.0000031	3,0 х q	0.000040	0.0000003	ug/L		01/10/10 12:00	01/00/10 00.40	
Total HxCDF	0.0000066	J,DX q	0.000048	0.0000006 8	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total HpCDD	0.000055	MB	0.000048	0.0000031	ug/L		01/13/15 12:55	01/30/15 03:43	1
Total HpCDF	0.000025	J,DX q	0.000048	0.0000016	ug/L		01/13/15 12:55	01/30/15 03:43	1
Isotope Dilution	%Recovery		Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	50		25 - 164				01/13/15 12:55	01/30/15 03:43	1
13C-2,3,7,8-TCDF	50		24 - 169				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,7,8-PeCDD	48		25 - 181				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,7,8-PeCDF	50		24 - 185				01/13/15 12:55	01/30/15 03:43	
13C-2,3,4,7,8-PeCDF	48		21 - 178				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,4,7,8-HxCDD	53		32 - 141				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,6,7,8-HxCDD	53		28 - 130				01/13/15 12:55	01/30/15 03:43	
13C-1,2,3,4,7,8-HxCDF	56		26 - 152				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,6,7,8-HxCDF	58		26 - 123				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,7,8,9-HxCDF	56		29 - 147				01/13/15 12:55	01/30/15 03:43	
13C-2,3,4,6,7,8-HxCDF	56		28 - 136				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,4,6,7,8-HpCDD	53		23 - 140				01/13/15 12:55	01/30/15 03:43	1
13C-1,2,3,4,6,7,8-HpCDF	56		28 - 143				01/13/15 12:55	01/30/15 03:43	
13C-1,2,3,4,7,8,9-HpCDF	53		26 - 138				01/13/15 12:55	01/30/15 03:43	1
13C-OCDD	48		17 - 157				01/13/15 12:55	01/30/15 03:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	86		35 - 197				01/13/15 12:55	01/30/15 03:43	1
Method: SM 2340B - Total Ha	ardness (as CaCO3	8) by calcul	ation - Total F	Recoverabl	•				
Analyte	•	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	170		0.33	0.17	mg/L			01/22/15 08:04	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	250		14	7 1	mg/L			01/13/15 13:24	1

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1

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Client Sample ID: ArroyoSimi_20150111 Lab Sample ID: 440-98715-1 Date Collected: 01/11/15 11:00 Matrix: Water Date Received: 01/11/15 13:46 Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation) Analyte Result Qualifier RL RL Unit D Prepared Analyzed Dil Fac 01/11/15 14:21 Coliform, Fecal >1600 1.8 1.8 MPN/100mL Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG) Analyte Result Qualifier RL RL Unit D Prepared Analyzed Dil Fac 1.8 MPN/100mL 01/11/15 14:21 >1600 1.8 Escherichia coli

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Method Description

Semivolatile Organic Compounds (GC/MS)

Total Hardness (as CaCO3) by calculation

Coliforms, Fecal (Multiple-Tube Fermentation)

E.Coli (Multiple-Tube Fermentation; EC-MUG)

SM = "Standard Methods For The Examination Of Water And Wastewater",

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022 TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Polychlorinated Biphenyls (PCBs) (GC)

Organochlorine Pesticides in Water

Dioxins and Furans (HRGC/HRMS)

Solids, Total Suspended (TSS)

Method

525.2

608

608

1613B

SM 2340B

SM 2540D

SM 9221E

SM 9221F

Protocol References:

subsequent revisions.

Laboratory References:

EPA = US Environmental Protection Agency

Laboratory

TAL IRV

TAL IRV

TAL IRV

TAL SAC

TAL IRV

TAL IRV

TAL IRV

TAL IRV

Protocol

40CFR136A

40CFR136A

40CFR136A

EPA

SM

SM

SM

SM

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6
6 7
6
6 7
6 7 8

Client Sample ID: ArroyoSimi_20150111 Date Collected: 01/11/15 11:00 Date Received: 01/11/15 13:46

Lab Sample ID: 440-98715-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1050 mL	1 mL	229243	01/12/15 09:14	CN	TAL IRV
Total/NA	Analysis	525.2		1	1050 mL	1 mL	230069	01/16/15 07:00	CN	TAL IRV
Total/NA	Prep	608			1045 mL	2 mL	229709	01/14/15 14:34	AP	TAL IRV
Total/NA	Analysis	608		1	1045 mL	2 mL	229866	01/14/15 22:25	CN	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	229709	01/14/15 09:59	AP	TAL IRV
Total/NA	Analysis	608		1	1050 mL	2 mL	230026	01/15/15 18:20	KS	TAL IRV
Total/NA	Prep	1613B			1052.2 mL	20 uL	62851	01/13/15 12:55	DXD	TAL SAC
Total/NA	Analysis	1613B		1	1052.2 mL	20 uL	64096	01/30/15 03:43	KSS	TAL SAC
Total Recoverable	Analysis	SM 2340B		1			227842	01/22/15 08:04	DT	TAL IRV
Total/NA	Analysis	SM 2540D		1	70 mL	1000 mL	229531	01/13/15 13:24	NTN	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	229773		ST	TAL IRV
							(Start)	01/11/15 14:21		
							(End)	01/13/15 12:04		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	229774		ST	TAL IRV
							(Start)	01/11/15 14:21		
							(End)	01/13/15 12:04		

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

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

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

Client Sample ID: Method Blank 5

Lab Sample ID: MB 440-2292 Matrix: Water	243/1-A									Cheffit Se	ample ID: M Prep Ty		
Analysis Batch: 230069											Prep B		
· ····· , · · · · · · · · · · · · · · · · · · ·	МВ	МВ											
Analyte	Result	Qualifier	RL		MDL	Unit		D	Р	repared	Analyze	ed	Dil Fac
Chlorpyrifos	ND		1.0		0.50	ug/L		_	01/1	2/15 09:14	01/16/15 0	1:57	1
Diazinon	ND		0.25		0.12	ug/L			01/1	2/15 09:14	01/16/15 0	1:57	
	MB	МВ											
Surrogate	%Recovery	Qualifier	Limits						P	repared	Analyze	ed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	104		70 - 130						01/1	2/15 09:14	01/16/15 0	01:57	:
Perylene-d12	97		70 - 130						01/1	2/15 09:14	01/16/15 0	01:57	1
Triphenylphosphate	105		70 - 130						01/1	2/15 09:14	01/16/15 0)1:57	1
Lab Sample ID: LCS 440-229	243/2-A							c	lient	Sample	ID: Lab Co	ntrol S	Sample
Matrix: Water											Prep Ty		
Analysis Batch: 230069											Prep B	-	
			Spike	LCS	LCS						%Rec.	atom	
Analyte			Added	Result	Qual	ifier	Unit		D	%Rec	Limits		
Chlorpyrifos			5.00	5.42			ug/L			108	70 - 130		
Diazinon			5.00	4.47			ug/L			89	70 - 130		
							•						
	LCS LCS												
Surrogate		lifier	Limits										
1,3-Dimethyl-2-nitrobenzene	92		70 - 130										
Perylene-d12	103		70 - 130										
Triphenylphosphate 	106		70 - 130										
Lab Sample ID: LCSD 440-22	29243/3-A						CI	ient	Sam	ple ID: L	ab Control	Samp	le Dup
Matrix: Water											Prep Ty	/pe: To	otal/NA
Analysis Batch: 230069											Prep B	atch:	229243
			Spike	LCSD	LCS	D					%Rec.		RPD
Analyte			Added	Result	Qual	ifier	Unit		D	%Rec	Limits	RPD	Limit
Chlorpyrifos			5.00	5.46			ug/L			109	70 - 130	1	30
Diazinon			5.00	3.28	LR B	A	ug/L			66	70 - 130	31	30
	LCSD LCS	50											
Surrogate		lifier	Limits										
1,3-Dimethyl-2-nitrobenzene	95		70 - 130										
Pervlene-d12	101		70 - 130										
Triphenylphosphate	110		70 - 130										
Lab Sample ID: 550-37860-A	-1-A MS									Client S	Sample ID:	Matrix	c Spike
Matrix: Water											Prep Ty	pe: To	otal/NA
Analysis Batch: 230069											Prep B	atch:	229243
-	Sample San	nple	Spike	MS	MS						%Rec.		
Analyte	Result Qua	lifier	Added	Result	Qual	ifier	Unit		D	%Rec	Limits		
Chlorpyrifos	ND		4.90	5.46			ug/L			111	70 - 130		
Diazinon	ND LRI	ВА	4.90	4.65			ug/L			95	70 - 130		
	MS MS												
Surrogate	%Recovery Qua	lifier	Limits										

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	101		70 - 130
Perylene-d12	102		70 - 130
Triphenylphosphate	104		70 - 130

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

Lab Sample ID: 550-37860-A Matrix: Water	A-1-B MSD					(Client Sa	ample IC		ype: To	tal/NA
Analysis Batch: 230069	Sample	Sample	Spike	MSD	MSD				Prep E %Rec.	Batch: 2	29243 RPD
Analyte	•	Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chlorpyrifos	ND		4.81	5.37		ug/L		112	70 - 130	2	30
Diazinon	ND	LR BA	4.81	3.65		ug/L		76	70 - 130	24	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,3-Dimethyl-2-nitrobenzene	96		70 - 130								
Perylene-d12	104		70 - 130								
Triphenylphosphate	105		70 - 130								

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-229709/1-	Α						Client Sa	mple ID: Metho	d Blank
Matrix: Water								Prep Type: T	otal/NA
Analysis Batch: 230026								Prep Batch:	229709
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.080	ug/L		01/14/15 09:59	01/15/15 16:09	1
Dieldrin	ND		0.0050	0.0020	ug/L		01/14/15 09:59	01/15/15 16:09	1
Toxaphene	ND		0.50	0.25	ug/L		01/14/15 09:59	01/15/15 16:09	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		01/14/15 09:59	01/15/15 16:09	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		01/14/15 09:59	01/15/15 16:09	1
4,4'-DDT	ND		0.010	0.0040	ug/L		01/14/15 09:59	01/15/15 16:09	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	20		10 - 139				01/14/15 09:59	01/15/15 16:09	1

Lab Sample ID: LCS 440-229709/2-A Matrix: Water

Analysis Batch: 230026

Analysis Batch: 230026						Prep	Batch: 229709
	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	
Dieldrin	0.250	0.190	ug/L		76	32 _ 139	
4,4'-DDD	0.250	0.194	ug/L		78	37 - 142	
4,4'-DDE	0.250	0.187	ug/L		75	33 - 139	
4,4'-DDT	0.250	0.207	ug/L		83	36 - 145	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Tetrachloro-m-xylene	26		10 - 139

Lab Sample ID: LCSD 440-229709/3-A Matrix: Water

Analysis Batch: 230026 Prep Batch: 229709 LCSD LCSD Spike RPD %Rec. Analyte Added Result Qualifier Unit %Rec Limits RPD Limit D Dieldrin 0.250 0.166 66 32 - 139 35 ug/L 13 37 - 142 4,4'-DDD 0.250 0.190 ug/L 76 2 35 4,4'-DDE 0.250 0.158 ug/L 63 33 - 139 17 35 4,4'-DDT 0.250 0.186 ug/L 74 36 - 145 10 35

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Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Lab Sample ID: LCSD 440-229709/3-A

Method: 608 - Organochlorine Pesticides in Water (Continued)

Client Sample ID: Lab Control Sample Dup

Matrix: Water													Prep T		
Analysis Batch: 230026															229709
Analysis Datch. 200020													Tiepi	Jaten.	22370.
	LCSD														
Surrogate	%Recovery	Qual	ifier	Limits											
Tetrachloro-m-xylene	29			10 - 139											
lethod: 608 - Polychlori	nated Bipher	nyls	(PCBs) (GC)											
Lab Sample ID: MB 440-2297	709/1-A										Clie	nt Sa	ample ID: I	Methor	l Blank
Matrix: Water													Prep T		
Analysis Batch: 229866															229709
		МВ	МВ												
Analyte	Re	esult	Qualifier		RL	I	MDL	Unit		D	Prepare	ed	Analyz	ed	Dil Fac
Aroclor 1016		ND		(0.50		0.25	ug/L		01	/14/15 0	9:59	01/15/15	15:24	1
Aroclor 1221		ND		(0.50		0.25			01	/14/15 0	9:59	01/15/15	15:24	1
Aroclor 1232		ND		(0.50		0.25	ug/L		01	/14/15 0	9:59	01/15/15	15:24	1
Aroclor 1242		ND		(0.50		0.25	ug/L		01	/14/15 0	9:59	01/15/15	15:24	1
Aroclor 1248		ND		(0.50		0.25	-		01	/14/15 0)9:59	01/15/15	15:24	1
Aroclor 1254		ND		(0.50		0.25	•			/14/15 0		01/15/15	15:24	1
Aroclor 1260		ND			0.50		0.25				/14/15 0		01/15/15		••••••
		MB	МВ												
Surrogate	%Reco	overy	Qualifier	Limits	5						Prepare	ed	Analyz	ed	Dil Fac
DCB Decachlorobiphenyl (Surr)		120		29 - 11	15					01	/14/15 (09:59	01/15/15	15:24	1
-															
Lab Sample ID: LCS 440-229	709/4-A									Clie	nt Sam	nple	ID: Lab Co	ontrol S	Sample
Matrix: Water													Prep T	ype: To	otal/NA
Analysis Batch: 229866														Batch:	229709
				Spike		LCS							%Rec.		
Analyte				Added		Result	Qual	ifier	Unit	D			Limits		
Aroclor 1016				4.00		1.57			ug/L			39	39 - 145		
Aroclor 1260				4.00		2.89			ug/L		7	72	37 - 137		
	LCS	LCS													
Surrogate	%Recovery		ifier	Limits											
DCB Decachlorobiphenyl (Surr)	81			29 - 115											
Lab Sample ID: LCSD 440-22	29709/5-4								Cli	ent Sa	mnle I		ab Contro	I Samr	ole Dur
Matrix: Water													Prep T		
Analysis Batch: 229866															229709
				Spike		LCSD	LCSI	C					%Rec.		RPD
Analyte				Added		Result			Unit	D	%Re	ec	Limits	RPD	Limit
Aroclor 1016				4.00		1.58			ug/L			39	39 - 145	1	30
				4.00		3.14			ug/L			78	37 _ 137	6	
Aroclor 1260															
Aroclor 1260	LCSD	LCSI	D												
Aroclor 1260 Surrogate	LCSD %Recovery			Limits											

Lab Sample ID: MB 320-62851/1-A

Matrix: Water

Analysis Batch: 64096

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 62851							
repared	Analyzed	Dil Fac					
13/15 12:55	01/30/15 02:10	1					

Analyzed	Dil Fac
01/30/15 02:10	1
01/30/15 02:10	1
	-

		1	
		1	
		1	
		1	
		1	
		4	

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

	MB	MB							
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000004	ug/L		01/13/15 12:55	01/30/15 02:10	1
2,3,7,8-TCDF	ND		0.000010	7 0.0000003 4	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000006	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000004 8	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000004	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,6,7,8-HxCDD	ND		0.000050	3 0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,7,8,9-HxCDD	ND		0.000050	9 0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,4,7,8-HxCDF	ND		0.000050	5 0.0000003 2	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000002	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,7,8,9-HxCDF	ND		0.000050	7 0.0000004	ug/L		01/13/15 12:55	01/30/15 02:10	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,4,6,7,8-HpCDD	0.00000226	J,DX	0.000050	0.0000008 9	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.0000006	ug/L		01/13/15 12:55	01/30/15 02:10	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	5 0.0000009	ug/L		01/13/15 12:55	01/30/15 02:10	1
OCDD	0.00000902	J,DX q	0.00010	0.0000012	ug/L		01/13/15 12:55	01/30/15 02:10	1
OCDF	0.00000425	J,DX	0.00010	0.0000011	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total TCDD	ND		0.000010	0.0000004	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total TCDF	ND		0.000010	7 0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total PeCDD	ND		0.000050	4 0.0000006	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total PeCDF	ND		0.000050	4 0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total HxCDD	ND		0.000050	8 0.0000003	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total HxCDF	ND		0.000050	5 0.0000002	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total HpCDD	0.00000361	J,DX	0.000050	7 0.0000008	ug/L		01/13/15 12:55	01/30/15 02:10	1
Total HpCDF	ND		0.000050	9 0.0000006	ug/L		01/13/15 12:55	01/30/15 02:10	1
	МВ	МВ		5					
Isotope Dilution	%Recovery		Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	<u></u>		25 - 164				01/13/15 12:55	01/30/15 02:10	1
13C-2,3,7,8-TCDF	58		24 - 169				01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,7,8-PeCDD	60		25 - 181				01/13/15 12:55	01/30/15 02:10	1
100 1,2,0,1,01 00000	00		20-101				51/10/10 12:00	51,50,15 02.10	1

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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 62851

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 62851

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Lab Sample ID: MB 320-62851/1-A Matrix: Water

Analysis Batch: 64096

-	MB	МВ				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	56		21 - 178	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,4,7,8-HxCDD	58		32 - 141	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,4,7,8-HxCDF	68		26 - 152	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,7,8,9-HxCDF	70		29 - 147	01/13/15 12:55	01/30/15 02:10	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,4,6,7,8-HpCDF	70		28 - 143	01/13/15 12:55	01/30/15 02:10	1
13C-1,2,3,4,7,8,9-HpCDF	67		26 - 138	01/13/15 12:55	01/30/15 02:10	1
13C-OCDD	56		17 - 157	01/13/15 12:55	01/30/15 02:10	1
	МВ	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	79		35 - 197	01/13/15 12:55	01/30/15 02:10	1

Lab Sample ID: LCS 320-62851/2-A Matrix: Water Analysis Batch: 64096

13C-1,2,3,6,7,8-HxCDD

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

Spike LCS LCS %Rec. Analyte Added **Result Qualifier** Unit D %Rec Limits 2,3,7,8-TCDD 0.000200 0.000216 108 67 - 158 ug/L 0.000200 2,3,7,8-TCDF 0.000222 75 - 158 ug/L 111 1,2,3,7,8-PeCDD 0.00100 0.00110 110 70 - 142 ug/L 0.00100 0.00110 110 80 - 134 1,2,3,7,8-PeCDF ug/L 2,3,4,7,8-PeCDF 0.00100 0.00110 ug/L 110 68 - 160 1,2,3,4,7,8-HxCDD 0.00100 0.00110 ug/L 110 70 - 1641,2,3,6,7,8-HxCDD 0.00100 0.00110 ug/L 110 76 - 134 0.00100 0.00110 ug/L 110 64 - 162 1,2,3,7,8,9-HxCDD 1,2,3,4,7,8-HxCDF 0.00100 0.00108 ug/L 108 72 - 134 1,2,3,6,7,8-HxCDF 0.00100 0.00111 ug/L 111 84 - 130 1,2,3,7,8,9-HxCDF 0.00100 0.00109 ug/L 109 78 - 130 0.00100 0.00109 2,3,4,6,7,8-HxCDF ug/L 109 70 - 156 1,2,3,4,6,7,8-HpCDD 0.00100 0.00102 MB ug/L 102 70 - 140 1,2,3,4,6,7,8-HpCDF 0.00100 0.00104 ug/L 104 82 - 122 1,2,3,4,7,8,9-HpCDF 0.00100 0.00104 104 78 - 138 ug/L OCDD 0.00200 0.00191 MB ug/L 95 78 - 144 OCDF 0.00200 0.00206 MB 103 63 - 170 ug/L LCS LCS %Recovery Qualifier Isotope Dilution Limits 13C-2,3,7,8-TCDD 69 20 - 175 13C-2,3,7,8-TCDF 71 22 - 152 21 - 227 13C-1,2,3,7,8-PeCDD 65 13C-1,2,3,7,8-PeCDF 65 21 - 192 13 - 328 13C-2,3,4,7,8-PeCDF 66 13C-1,2,3,4,7,8-HxCDD 63 21 - 193

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25 - 163

19 - 202

21 - 159

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

Inalysis Batch: 64096 LCS LCS otope Dilution ½Recovery Qualifier Limits 3C-1,2,3,7,8,9-HxCDF 69 17 - 205 3C-2,3,4,6,7,8-HxCDF 72 22 - 176 3C-1,2,3,4,6,7,8-HxCDF 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,6,7,8-HpCDF 64 20 - 186 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-0CDD 56 13 - 199 LCS LCS urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 35 - 197 92 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water nalysis Batch: 229531 229531 229531 235 - 197	Prep Type: Total/N/ Prep Batch: 6285
LCS LCS otope Dilution %Recovery Qualifier Limits 3C-1,2,3,7,8,9-HxCDF 69 17 - 205 3C-2,3,4,6,7,8-HxCDF 72 22 - 176 3C-1,2,3,4,6,7,8-HpCDD 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-0CDD 56 13 - 199 LCS LCS LCS urrogate %Recovery Qualifier 7Cl4-2,3,7,8-TCDD 92 35 - 197	Prep Batch: 6285
otope Dilution %Recovery Qualifier Limits 3C-1,2,3,7,8,9-HxCDF 69 17 - 205 3C-2,3,4,6,7,8-HxCDF 72 22 - 176 3C-1,2,3,4,6,7,8-HxCDF 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,6,7,8-HpCDF 64 20 - 186 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-OCDD 56 13 - 199 LCS LCS LCS urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 35 - 197 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 Jatrix: Water	
3C-1,2,3,7,8,9-HxCDF 69 17 - 205 3C-2,3,4,6,7,8-HxCDF 72 22 - 176 3C-1,2,3,4,6,7,8-HpCDD 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-0CDD 56 13 - 199 LCS LCS LCS urrogate %Recovery Qualifier 7Cl4-2,3,7,8-TCDD 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 Jatrix: Water	
3C-2,3,4,6,7,8-HxCDF 72 22 - 176 3C-1,2,3,4,6,7,8-HpCDD 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-OCDD 56 13 - 199 LCS LCS urrogate %Recovery Qualifier 7Cl4-2,3,7,8-TCDD 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water Water	
3C-1,2,3,4,6,7,8-HpCDD 62 26 - 166 3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-OCDD 56 13 - 199 LCS LCS urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
3C-1,2,3,4,6,7,8-HpCDF 65 21 - 158 3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-OCDD 56 13 - 199 LCS LCS LCS urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
3C-1,2,3,4,7,8,9-HpCDF 64 20 - 186 3C-OCDD 56 13 - 199 LCS LCS urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
3C-OCDD 56 13 - 199 LCS LCS urrogate 7C/4-2,3,7,8-TCDD 92 Qualifier Limits 92 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
LCS LCS urrogate <u>%Recovery</u> <u>Qualifier</u> <u>Limits</u> 7Cl4-2,3,7,8-TCDD <u>92</u> <u>35 - 197</u> ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
urrogate %Recovery Qualifier Limits 7C/4-2,3,7,8-TCDD 92 92 35 - 197 ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 Idatrix: Water	
7Cl4-2,3,7,8-TCDD 92 35 - 197 9thod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
ethod: SM 2540D - Solids, Total Suspended (TSS) ab Sample ID: MB 440-229531/2 latrix: Water	
ab Sample ID: MB 440-229531/2 latrix: Water	
	Client Sample ID: Method Blan Prep Type: Total/N/
MB MB	
nalyte Result Qualifier RL MDL Un	D Prepared Analyzed Dil Fa
otal Suspended Solids ND 1.0 0.50 mg	01/13/15 13:24
ab Sample ID: LCS 440-229531/1	
latrix: Water	Client Sample ID: Lab Control Sample

Analysis Batch: 229531										
			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Suspended Solids			1000	987		mg/L		99	85 - 115	
Lab Sample ID: 440-98671-A	-2 DU							Clie	ent Sample ID: Du	plicate
Matrix: Water									Prep Type: To	otal/NA
Analysis Batch: 229531										
	Sample	Sample		DU	DU					RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D		RPD	Limit
Total Suspended Solids	290			280		mg/L			2	10

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Water

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Client Sample ID

Matrix Spike

Method Blank

Client Sample ID

Matrix Spike

Method Blank

ArroyoSimi_20150111

Matrix Spike Duplicate

Lab Control Sample Dup

Lab Control Sample

ArroyoSimi_20150111

Matrix Spike Duplicate

Lab Control Sample Dup

Lab Control Sample

GC/MS Semi VOA Prep Batch: 229243

440-98715-1

550-37860-A-1-A MS

550-37860-A-1-B MSD

LCS 440-229243/2-A

MB 440-229243/1-A

Lab Sample ID

550-37860-A-1-A MS

550-37860-A-1-B MSD

LCS 440-229243/2-A

MB 440-229243/1-A

LCSD 440-229243/3-A

440-98715-1

LCSD 440-229243/3-A

Analysis Batch: 230069

Method

525.2

525.2

525.2

525.2

525.2

525.2

Method

525.2

525.2

525.2

525.2

525.2

525.2

Prep Batch

Prep Batch

229243

229243

229243

229243

229243

229243

9 10 11

GC Semi VOA

Prep Batch: 229709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	608	
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	608	
LCS 440-229709/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-229709/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-229709/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 440-229709/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-229709/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 229866

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	608	229709
LCS 440-229709/4-A	Lab Control Sample	Total/NA	Water	608	229709
LCSD 440-229709/5-A	Lab Control Sample Dup	Total/NA	Water	608	229709
MB 440-229709/1-A	Method Blank	Total/NA	Water	608	229709

Analysis Batch: 230026

L	ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
4	40-98715-1	ArroyoSimi_20150111	Total/NA	Water	608	229709
L	CS 440-229709/2-A	Lab Control Sample	Total/NA	Water	608	229709
L	CSD 440-229709/3-A	Lab Control Sample Dup	Total/NA	Water	608	229709
Ν	/IB 440-229709/1-A	Method Blank	Total/NA	Water	608	229709

Specialty Organics

Prep Batch: 62851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	1613B	
LCS 320-62851/2-A	Lab Control Sample	Total/NA	Water	1613B	
MB 320-62851/1-A	Method Blank	Total/NA	Water	1613B	

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Specialty Organics (Continued)

Analysis Batch: 64096

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	1613B	62851
LCS 320-62851/2-A	Lab Control Sample	Total/NA	Water	1613B	62851
MB 320-62851/1-A	Method Blank	Total/NA	Water	1613B	62851

Metals

Analysis Batch: 227842

Γ	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	440-98715-1	ArroyoSimi_20150111	Total Recoverable	Water	SM 2340B	

General Chemistry

Analysis Batch: 229531

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-98671-A-2 DU	Duplicate	Total/NA	Water	SM 2540D	
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	SM 2540D	
LCS 440-229531/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-229531/2	Method Blank	Total/NA	Water	SM 2540D	

Biology

Analysis Batch: 229773

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	SM 9221E	
Analysis Batch: 229	774				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-98715-1	ArroyoSimi_20150111	Total/NA	Water	SM 9221F	

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Qualifiers

GC/MS Semi VOA

		<u> </u>
Qualifier	Qualifier Description	
BA	Relative percent difference out of control	5
LR	LCS/LCSD recovery below method control limits	J
LH	Surrogate Recoveries were higher than QC limits	6
GC Semi VC	AC	0
Qualifier	Qualifier Description	7
LH	Surrogate Recoveries were higher than QC limits	
Dioxin		8
Qualifier	Qualifier Description	
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	9
MB	Analyte present in the method blank	_
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.	10

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	13
CFL	Contains Free Liquid	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

EPA Region

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Certification ID

Cert. No. 12.002r

CA015312007A

P330-09-00080

CA01531

AZ0671

10256

2706

N/A

N/A

4005

MP0002

CA01531

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Laboratory: TestAmerica Irvine

Authority

Alaska

Arizona

California

California

Guam

Hawaii

Nevada

Oregon

USDA

New Mexico

USEPA UCMR

Northern Mariana Islands

Expiration Date

06-30-15

10-13-15

01-31-16 *

06-30-16

01-23-15 *

01-29-16

07-31-15

01-29-15 *

01-29-15 *

01-29-16

06-06-15

01-31-15

1 2 3 4 5 6 7 8 9

11

Laboratory: TestAmerica Sacramento

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

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

Program

State Program

NELAP

Federal

Federal

LA Cty Sanitation Districts

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-15
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15
Florida	NELAP	4	E87570	06-30-15
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-15
Michigan	State Program	5	9947	01-31-15 *
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	06-30-15
New York	NELAP	2	11666	04-01-15
Oregon	NELAP	10	CA200005	01-29-16
Oregon	NELAP Secondary AB	10	E87570	06-30-15
Pennsylvania	NELAP	3	9947	03-31-15
Texas	NELAP	6	T104704399-08-TX	05-31-15
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-15
Washington	State Program	10	C581	05-05-15
West Virginia (DW)	State Program	3	9930C	12-31-14 *
Wyoming	State Program	8	8TMS-Q	01-29-15 *

* Certification renewal pending - certification considered valid.

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Page 1 of 1		Field readings: Time of readings 1100 Meter Serial # <u>VLJOU</u> VK T	pH <u>ć 6.7</u> pH unit	np 15,14-		Field readings QC Checked by: <u>לי לא</u> אואיז. Date/Time: ו-וו-וצי/ ווכס	Comments			Extract within 36-Hours of sampling							440-98715 Chain of Custody		ime: (check)		Normal X	ty: (check) On loe:		· · × / 210	10. 100 Here	8.10.X
	Ъ С						<u> </u>												Tum around Time:	SID .	s n	Sample Integrity: Intact	Requiren vel IV)	7
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		,					Bottle #	-	2A, 2B	3A, 3B	4A, 4B	5A	6A	7A	8A,8B				Kelinquished By	Photo	Relinquished By	Relinquished By	are ived		2	
CUSTODY		er Park			1061(cell)	on: 608(cell)	Preservative	HNO3	None	Ŗ	None	None	Na2S2O3	Na2S2O3	None					05	Th:	<u>}</u>	·			
CHAIN OF C		NPDES Simi-Fronti			, 858.337.4061(cell)		Sampling Date/Time	01/11/15 11:00	01/11/15 11:00	01/11/15 11:00	01/11/15 11:00	<u> </u>	01/11/15 11:00	01/11/15 11:00	01/11/15 11:00					2	115/13:					
CHA	Project:	Boeing-SSFL NPDES Annual Arroyo Simi-Frontier		Phone Numher	619.285.7132,	Field Manager: Jeff Bannon: 818.350.7340, 818.414.5608(cell)	Sample I.D.	ArroyoSimi- 20150111	ArroyoSimi- 20150111	ArroyoSimi- 20150111	- ArroyoSimi- 20150111	ArroyoSimi- 20150111	ArroyoSimi- 20150111	АrroyoSimi- 20150111	ArroyoSimi- 20150111				Date/Time:	21-11-12	Date/Time:	Date/Time:				
9/2010		50		n D	5	2	# of Cont.	1	2	2	2 🗸	1	$1\sqrt{1}$	1	2				, Date	とく	/ Date	Date				
Test America version 7/19/2010	SS:	Haley & Aldrich, Inc. 9040 Friars Road Suite 220	0000-0	Test America Contact: Debby Wilson Divised Manager: Nancy Gardiner		Dan Smith	Container Type	1L Poly	1L Amber	1L Amber	1L Amber	1L Poly	125mL Poly	125mL Poly	1L Amber					Y K	1280					
nerica	ie/Addre	Aldrich, ars Roa	VA 741V	a Contact:	119961. 1	Dan	Sample Matrix		3	3	8	8	3	3	8				By	RICE	By LAN	BA				
Test Ar	Client Name/Address:	Haley & Aldrich, Inc. 9040 Friars Road Sui San Diary CA 97108-5860	Salt Licky,	Test America Divisiont Ma		Sampler	Sample Description		Arroyo Simi	Arroyo Simi	Arroyo Simi	Arroyo Simí	Апоуо Simi	Arroyo Simi	Arroyo Simì				Relinquished By	ANITRA 1	Relinquished	Relinquished By		4		

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 98715 List Number: 1

Creator: Wilson, Debby S

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

Job Number: 440-98715-1

List Source: TestAmerica Irvine

Client: Haley & Aldrich, Inc.

Login Number: 98715 List Number: 2 Creator: Hytrek, Cheryl

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

Job Number: 440-98715-1

List Source: TestAmerica Sacramento

List Creation: 01/13/15 11:57 AM

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

Matrix: Water

Prep Type: Total/NA

5

14

			Р	ercent Isotop	e Dilution Re	covery (Acc	eptance Limi	ts)	
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF1
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
440-98715-1	ArroyoSimi_20150111	50	50	48	50	48	53	53	56
MB 320-62851/1-A	Method Blank	65	58	60	67	56	58	68	68
			Р	ercent Isotop	e Dilution Re	ecovery (Acc	eptance Limi	ts)	
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD	
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	
440-98715-1	ArroyoSimi_20150111	58	56	56	53	56	53	48	
MB 320-62851/1-A	Method Blank	77	70	66	64	70	67	56	
Surrogate Legend									
TCDD = 13C-2,3,7,8-T0	CDD								
TCDF = 13C-2,3,7,8-TC	CDF								
PeCDD = 13C-1,2,3,7,8	3-PeCDD								
PeCDF1 = 13C-1,2,3,7,	8-PeCDF								
PeCDF2 = 13C-2,3,4,7,	8-PeCDF								
HxCDD1 = 13C-1,2,3,4	,7,8-HxCDD								
HxCDD2 = 13C-1,2,3,6	,7,8-HxCDD								
HxCDF1 = 13C-1,2,3,4,	7,8-HxCDF								
HxCDF2 = 13C-1,2,3,6,	7,8-HxCDF								
HxCDF4 = 13C-1,2,3,7	8,9-HxCDF								
HxCDF3 = 13C-2,3,4,6,	7,8-HxCDF								
HpCDD = 13C-1,2,3,4,6	6,7,8-HpCDD								
HpCDF1 = 13C-1,2,3,4	,6,7,8-HpCDF								
HpCDF2 = 13C-1,2,3,4	,7,8,9-HpCDF								
OCDD = 13C-OCDD									

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

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)									
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF1		
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)		
LCS 320-62851/2-A	Lab Control Sample	69	71	65	65	66	63	68	68		
			P	ercent Isotop	e Dilution Re	covery (Acce	eptance Limi	ts)			
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD			
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)			
LCS 320-62851/2-A	Lab Control Sample	72	69	72	62	65	64	56			

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD TCDF = 13C-2,3,7,8-TCDF PeCDD = 13C-1,2,3,7,8-PeCDD PeCDF1 = 13C-1,2,3,7,8-PeCDF PeCDF2 = 13C-2,3,4,7,8-PeCDF HxCDD1 = 13C-1,2,3,4,7,8-HxCDD HxCDD2 = 13C-1,2,3,6,7,8-HxCDF HxCDF2 = 13C-1,2,3,6,7,8-HxCDF HxCDF4 = 13C-1,2,3,7,8,9-HxCDF HxCDF3 = 13C-2,3,4,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF OCDD = 13C-OCDD



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-99136-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-99136-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_201 50115	440-99136-1	N/A	Water	1/15/2015 8:40:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at TestAmerica-Irvine within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the samples were delivered to TestAmerica-Irvine by courier.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

Qualification Code Reference Table Cont.

- D The analysis with this flag should not be used because another more technically sound analysis is available.
- P Instrument performance for pesticides was poor.
- DNQ 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.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

The reported result is above the method detection limit but is less than the reporting limit.

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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: February 16, 2015

The sample listed in Table 1 for these analyses were validated based on the guidelines outlined in the MEC[×] Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Methods 9221E, and 9221F, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared the day it was collected, no qualifications were required.
- Calibration: Not applicable to these analyses.
- Blanks: Not applicable to these analyses.
- Blank Spikes and Laboratory Control Samples: The presumptive test showed positive results for the bacteria in each method and was deemed acceptable.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

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

Validated Sample Result Forms: 440991361

Analysis Method	SM92	221E							
Sample Name Ar	20150115	Matrix Type: WG			Rest				
Sample Date: 1/15/2015 8:4	0:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440	-99136-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	Ν	COLIFORMI AL	FEC 350	1.8	0	mpn/100			
Analysis Method	SM92	221F							
Sample Name A	royoSimi_2	20150115	Matı	rix Type:	WG	Rest	ult Type: Th	RG	
Sample Date: 1/15/2015 8:4	0:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440	-99136-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	350	1.8	0	mpn/100			



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: 440-99136-1

Client Project/Site: Annual Arroyo Semi-Frontier Park

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

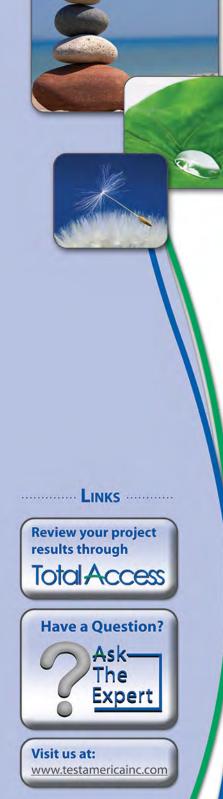
Authorized for release by: 1/29/2015 5:41:20 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.



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.

bby Wilson

Debby Wilson Manager of Project Management 1/29/2015 5:41:20 PM

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Sample Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Semi-Frontier Park TestAmerica Job ID: 440-99136-1

ab Sample ID	Client Sample ID	Matrix	Collected	Received
40-99136-1	ArroyoSimi_20150115	Water	01/15/15 08:40	01/15/15 14:11

Job ID: 440-99136-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-99136-1

Comments

No additional comments.

Receipt

The sample was received on 1/15/2015 2:11 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3° C.

Biology

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

Client Sample ID: Arroy	oSimi_20150115					Lab San	nple ID: 440-9	9136-1		
Date Collected: 01/15/15 08:40							Matrix: Water			
Date Received: 01/15/15 14:1	1									
Method: SM 9221E - Colifor	ms, Fecal (Multiple-Tube Ferment	tation)								
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Coliform, Fecal	350	1.8	1.8	MPN/100mL			01/15/15 14:36	1		
	Multiple-Tube Fermentation; EC-I	MUG)								
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Escherichia coli	350	1.8	1.8	MPN/100mL			01/15/15 14:36	1		

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Semi-Frontier Park

Method Description

Coliforms, Fecal (Multiple-Tube Fermentation)

E.Coli (Multiple-Tube Fermentation; EC-MUG)

SM = "Standard Methods For The Examination Of Water And Wastewater",

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method

SM 9221E

SM 9221F

Protocol References:

Laboratory References:

Protocol

SM

SM

Laboratory

TAL IRV

TAL IRV

5		
6	5	
8		
9		

Lab Sample ID: 440-99136-1

Matrix: Water

Client Sample ID: ArroyoSimi_20150115 Date Collected: 01/15/15 08:40

Date Received: 01/15/15 14:11

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	230269		AMH	TAL IRV
							(Start)	01/15/15 14:36		
							(End)	01/18/15 12:38		
Fotal/NA	Analysis	SM 9221F		1	100 mL	100 mL	230270		AMH	TAL IRV
							(Start)	01/15/15 14:36		
							(End)	01/18/15 12:38		

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Semi-Frontier Park

Biology

Analy	vsis	Batch:	230269
	,		

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
440-99136-1	ArroyoSimi 20150115	Total/NA	Water	SM 9221E	
-					
-					
nalysis Batch: 230	270				
- nalysis Batch: 230 - Lab Sample ID	270 Client Sample ID	Ргер Туре	Matrix	Method	Prep Bat
		Prep Type Total/NA	Matrix Water	Method SM 9221F	Prep Bat

Definitions/Glossary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Semi-Frontier Park

Glossary

Client: Haley & Project/Site: A	& Aldrich, Inc. TestAmerica Jo Annual Arroyo Semi-Frontier Park	b ID: 440-99136-1	
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		E
CFL	Contains Free Liquid		5
CNF	Contains no Free Liquid		
DER	Duplicate error ratio (normalized absolute difference)		
Dil Fac	Dilution Factor		
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample		
DLC	Decision level concentration		
MDA	Minimum detectable activity		8
EDL	Estimated Detection Limit		
MDC	Minimum detectable concentration		9
MDL	Method Detection Limit		
ML	Minimum Level (Dioxin)		
NC	Not Calculated		
ND	Not detected at the reporting limit (or MDL or EDL if shown)		
PQL	Practical Quantitation Limit		
QC	Quality Control		
RER	Relative error ratio		
RL	Reporting Limit or Requested Limit (Radiochemistry)		
RPD	Relative Percent Difference, a measure of the relative difference between two points		
TEF	Toxicity Equivalent Factor (Dioxin)		
TEO	Toxicity Equivalent Questions (Dioxin)		

TEQ Toxicity Equivalent Quotient (Dioxin)

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Semi-Frontier Park

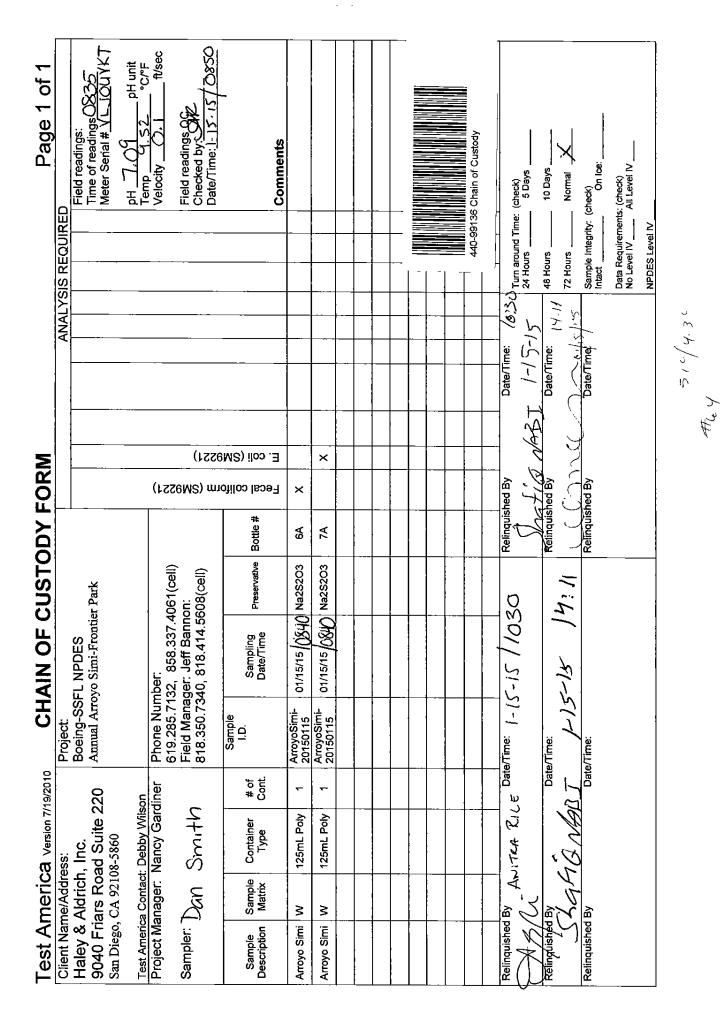
TestAmerica Job ID: 440-99136-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-15 *
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.



1/29/2015

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 99136 List Number: 1

Creator: Blocker, Kristina M

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

List Source: TestAmerica Irvine



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-99284-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-99284-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_201 50119	440-99284-1	N/A	Water	1/19/2015 9:45:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at TestAmerica-Irvine within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the samples were delivered to TestAmerica-Irvine by courier.

Qualifie	r 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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

Qualification Code Reference Table Cont.

- D The analysis with this flag should not be used because another more technically sound analysis is available.
- P Instrument performance for pesticides was poor.
- DNQ 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.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

The reported result is above the method detection limit but is less than the reporting limit.

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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: February 16, 2015

The sample listed in Table 1 for these analyses were validated based on the guidelines outlined in the MEC[×] Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Methods 9221E, and 9221F, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared the day it was collected, no qualifications were required.
- Calibration: Not applicable to these analyses.
- Blanks: Not applicable to these analyses.
- Blank Spikes and Laboratory Control Samples: Presumptive tests showed positive results for the bacteria and were deemed acceptable.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

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

Validated Sample Result Forms: 440992841

Analysis Method	SM92	21E							
Sample Name A	rroyoSimi_2	20150119	Matı	rix Type:	WG	Rest	ult Type: Th	RG	
Sample Date: 1/19/2015 9:4	-5:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440-99284-1									
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	Ν	COLIFORMI AL	FEC 920	1.8	0	mpn/100			
Analysis Method	SM92	21F							
Sample Name A	rroyoSimi_2	20150119	Matı	rix Type:	WG	Rest	ult Type: Th	RG	
Sample Date: 1/19/2015 9:4	5:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440-99284-1									
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	110	1.8	0	mpn/100			



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: 440-99284-1

Client Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

Authorized for release by: 1/29/2015 5:44:49 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.

LINKS

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results through

Dotal Access

Have a Question?
Ask
The
Expert
Visit us at:

www.testamericainc.com

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

> 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.

bby Wilson

Debby Wilson Manager of Project Management 1/29/2015 5:44:49 PM

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Sample Summary

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier TestAmerica Job ID: 440-99284-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-99284-1	ArroyoSimi_20150119	Water	01/19/15 09:45	01/19/15 15:30

TestAmerica Irvine

Job ID: 440-99284-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-99284-1

Comments

No additional comments.

Receipt

The sample was received on 1/19/2015 3:30 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Biology

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

Client Sample Results

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier TestAmerica Job ID: 440-99284-1

Client Sample ID: Arroyo	oSimi_20150119						Lab San	nple ID: 440-9	9284-1
Date Collected: 01/19/15 09:4	5							Matrix	k: Water
Date Received: 01/19/15 15:3	0								
_ Method: SM 9221E - Colifor	ms, Fecal (Multiple-	Tube Ferment	ation)						
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	920		1.8	1.8	MPN/100mL			01/19/15 15:59	1
_ Method: SM 9221F - E.Coli (Multiple-Tube Ferm	entation; EC-	MUG)						
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	110		1.8	1 0	MPN/100mL			01/19/15 15:59	1

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

TestAmerica Job ID: 440-99284-1

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9

TestAmerica Irvine

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Initial

Amount

100 mL

100 mL

Final

Amount

100 mL

100 mL

Batch

Number

230661

230663

(Start)

(End)

(Start)

(End)

Dil

1

1

Factor

Run

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

Batch

Туре

Analysis

Analysis

Client Sample ID: ArroyoSimi_20150119 Date Collected: 01/19/15 09:45 Date Received: 01/19/15 15:30

Batch

Method

SM 9221E

SM 9221F

Lab Sample ID: 440-99284-1

Analyst

ST

ST

Prepared

or Analyzed

01/19/15 15:59

01/22/15 13:24

01/19/15 15:59

01/22/15 13:26

Matrix

)-99284-1	
trix: Water	
Lab	5
TAL IRV	
TAL IRV	7
	8
	9

Laboratory References:

Prep Type

Total/NA

Total/NA

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier TestAmerica Job ID: 440-99284-1

Biology

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-99284-1	ArroyoSimi 20150119	Total/NA	Water	SM 9221E	
Analysis Batch: 230	663				
nalysis Batch: 230 - Lab Sample ID	663 Client Sample ID	Ргер Туре	Matrix	Method	Prep Ba

Definitions/Glossary

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

TestAmerica Job ID: 440-99284-1

Glossary

Client: Haley & Project/Site: Be	& Aldrich, Inc. TestAmerica Job ID: 440-99284-1 Boeing SSFL Annual Arroyo Simi-Frontier	2
Glossary		- 3
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	- 4
%R	Percent Recovery	5
CFL	Contains Free Liquid	5
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	8
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	9
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL Annual Arroyo Simi-Frontier

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-15 *
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

TestAmerica Job ID: 440-99284-1

* Certification renewal pending - certification considered valid.

TestAmerica Irvine

ANTRA RICE Date/Time: $A_{N}TRA RICE Date/Time: Tum around Time: (check) i - 19 - 15/1230 f = 0.000$

31/2.3' 12-69

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 99284 List Number: 1

Creator: Blocker, Kristina M

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

12

Job Number: 440-99284-1

List Source: TestAmerica Irvine



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-99699-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-99699-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_201 50123	440-99699-1	N/A	Water	1/23/2015 9:30:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at TestAmerica-Irvine within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the samples were delivered to TestAmerica-Irvine by courier.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics			
Н	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			
С	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.			
В	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.			
Е	Not applicable.	Duplicates showed poor agreement.			
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.			
A	Not applicable.	ICP Serial Dilution %D were not within control limits.			
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.			
Т	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

Qualification Code Reference Table Cont.

- D The analysis with this flag should not be used because another more technically sound analysis is available.
- P Instrument performance for pesticides was poor.
- DNQ 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.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

The reported result is above the method detection limit but is less than the reporting limit.

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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: February 16, 2015

The sample listed in Table 1 for these analyses were validated based on the guidelines outlined in the MEC[×] Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Methods 9221E, and 9221F, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared the day it was collected, no qualifications were required.
- Calibration: Not applicable to these analyses.
- Blanks: Not applicable to these analyses.
- Blank Spikes and Laboratory Control Samples: Presumptive tests showed positive results for the bacteria and were deemed acceptable.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

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

Validated Sample Result Forms: 440996991

Analysis Method SM9221E									
Sample Name Ar	royoSimi_2	20150123	Matrix Type: WM			Rest			
Sample Date: 1/23/2015 9:30:00 AM Validation Level: 8									
Lab Sample Name: 440-99699-1									
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	Ν	COLIFORMI AL	FEC 1600	1.8	0	mpn/100			
Analysis Method SM9221F									
Sample NameArroyoSimi_20150123Matrix Type:WMResult Type:TRG									
Sample Date: 1/23/2015 9:30:00 AM Validation Level: 8									
Lab Sample Name: 440-99699-1									
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	1600	1.8	0	mpn/100			



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: 440-99699-1 Client Project/Site: Annual Arroyro Simi-Frontier Park

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

Authorized for release by: 1/30/2015 6:33:54 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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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Sample Summary

Matrix

Water

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyro Simi-Frontier Park

Client Sample ID

ArroyoSimi_20150123

Lab Sample ID

440-99699-1

TestAmerica Job ID: 4

		1
America Job ID): 440-99699-1	
Collected	Received	3
	01/23/15 13:20	
		5
		8
		9

TestAmerica Irvine

Job ID: 440-99699-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-99699-1

Comments

No additional comments.

Receipt

The sample was received on 1/23/2015 1:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

Biology

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

Client Sample ID: Arroy	oSimi_20150123					Lab San	nple ID: 440-9	9699-1
Date Collected: 01/23/15 09:3	0						Matrix	k: Water
Date Received: 01/23/15 13:2	0							
Method: SM 9221E - Colifor	ms, Fecal (Multiple-Tube Fermen	tation)						
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	1600	1.8	1.8	MPN/100mL			01/23/15 13:34	1
- Method: SM 9221F - E.Coli	Multiple-Tube Fermentation; EC-	-MUG)						
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	1600	1.8	1.8	MPN/100mL			01/23/15 13:34	1

TestAmerica Irvine

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyro Simi-Frontier Park

5
6
8
9

TestAmerica Irvine

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: ArroyoSimi_20150123 Date Collected: 01/23/15 09:30

Date Received: 01/23/15 13:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	232015		ST	TAL IRV
							(Start)	01/23/15 13:34		
							(End)	01/25/15 14:35		
Fotal/NA	Analysis	SM 9221F		1	100 mL	100 mL	232016		ST	TAL IRV
							(Start)	01/23/15 13:34		
							(End)	01/25/15 14:36		

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyro Simi-Frontier Park TestAmerica Job ID: 440-99699-1

Biology

Analysis Batch: 232015

Lab Sample ID 440-99699-1	Client Sample ID ArroyoSimi_20150123	Prep Type Total/NA	Matrix Water	Method SM 9221E	Prep Batch
Analysis Batch: 232	016				
Analysis Batch: 232	016 Client Sample ID	Prep Type	Matrix	Method	Prep Batch

Definitions/Glossary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyro Simi-Frontier Park

Glossary

Client: Haley & Project/Site: A	& Aldrich, Inc. Te nnual Arroyro Simi-Frontier Park	estAmerica Job ID: 440-99699-1	
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		5
CFL	Contains Free Liquid		5
CNF	Contains no Free Liquid		
DER	Duplicate error ratio (normalized absolute difference)		
Dil Fac	Dilution Factor		
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample		
DLC	Decision level concentration		
MDA	Minimum detectable activity		8
EDL	Estimated Detection Limit		
MDC	Minimum detectable concentration		9
MDL	Method Detection Limit		
ML	Minimum Level (Dioxin)		
NC	Not Calculated		
ND	Not detected at the reporting limit (or MDL or EDL if shown)		
PQL	Practical Quantitation Limit		
QC	Quality Control		
RER	Relative error ratio		
RL	Reporting Limit or Requested Limit (Radiochemistry)		
RPD	Relative Percent Difference, a measure of the relative difference between two points		
TEF	Toxicity Equivalent Factor (Dioxin)		
TFO			

TEQ Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyro Simi-Frontier Park

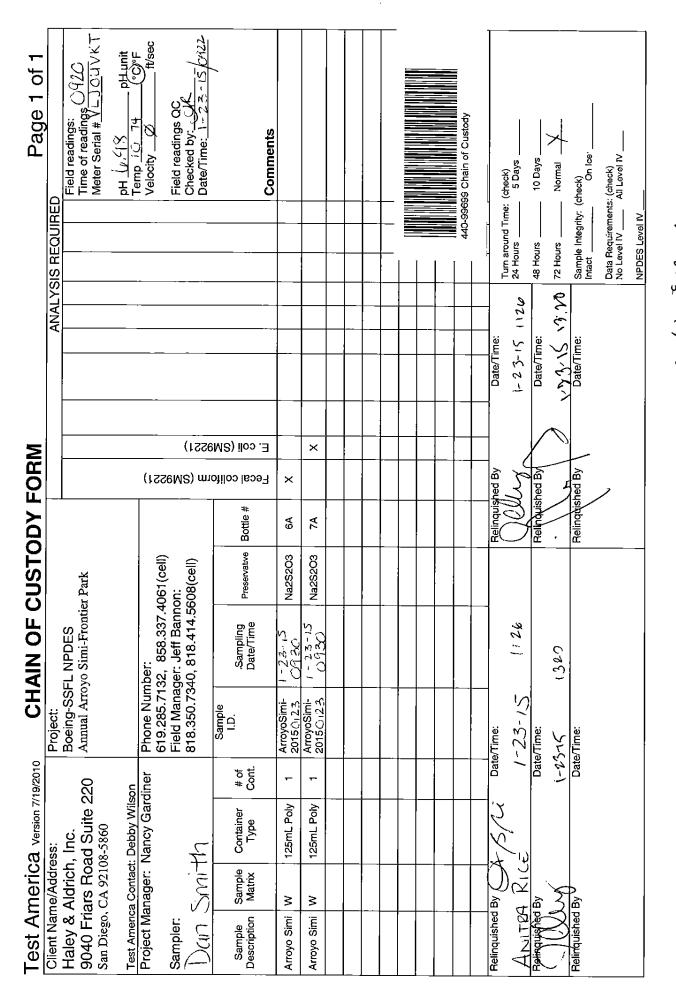
TestAmerica Job ID: 440-99699-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-15 *
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.



rf.8/4.0 = 10-64

Page 11 of 12

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 99699 List Number: 1

Creator: Soderblom, Tim

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

12

Job Number: 440-99699-1

List Source: TestAmerica Irvine



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-99908-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-99908-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_201 50127	440-99908-1	N/A	Water	1/27/2015 9:35:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at TestAmerica-Irvine within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the samples were delivered to TestAmerica-Irvine by courier.

Qualifie	r 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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	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
С	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.
В	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.
Е	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.
Μ	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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

Qualification Code Reference Table Cont.

- D The analysis with this flag should not be used because another more technically sound analysis is available.
- P Instrument performance for pesticides was poor.
- DNQ 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.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

The reported result is above the method detection limit but is less than the reporting limit.

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. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: February 16, 2015

The sample listed in Table 1 for these analyses were validated based on the guidelines outlined in the MEC[×] Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Methods for the Examination of Water and Wastewater (2006) Methods 9221E, and 9221F, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared the day it was collected, no qualifications were required.
- Calibration: Not applicable to these analyses.
- Blanks: Not applicable to these analyses.
- Blank Spikes and Laboratory Control Samples: Presumptive tests showed positive results for the bacteria and were deemed acceptable.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG. The RPDs between the results was 0%.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

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

Validated Sample Result Forms: 440999081

Analysis Method	SM92	21E							
Sample Name Ar	royoSimi_2	20150127	Matr	іх Туре:	WM	Rest	ult Type: Th	RG	
Sample Date: 1/27/2015 9:3	5:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440	-99908-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	Ν	COLIFORMI AL	FEC >1600	1.8	0	mpn/100			
Analysis Method	SM92	21F							
Sample Name Ar	royoSimi_2	20150127	Matr	ix Type:	WM	Rest	ult Type: The	RG	
Sample Date: 1/27/2015 9:3	5:00 AM	Valida	ation Level: 8						
Lab Sample Name: 440	-99908-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	Ν	ECOLI	>1600	1.8	0	mpn/100			



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: 440-99908-1 Client Project/Site: Annual Arroyo Simi-Frontier Park

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

Authorized for release by: 1/30/2015 5:42:06 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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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Sample Summary

Matrix

Water

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Client Sample ID

ArroyoSimi_20150127

Lab Sample ID

440-99908-1

TestAmerica Job ID: 440-99908-

	1
America Job ID: 440-99908-1	
Collected Received	3
01/27/15 09:35 01/27/15 14:20	
	5
	8
	9

TestAmerica Irvine

Job ID: 440-99908-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-99908-1

Comments

No additional comments.

Receipt

The sample was received on 1/27/2015 2:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

Biology

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

Client Sample ID: Arroy	oSimi_20150127					Lab San	nple ID: 440-9	9908-1
Date Collected: 01/27/15 09:3	5						Matrix	x: Water
Date Received: 01/27/15 14:2	0							
- Method: SM 9221E - Colifor	ms, Fecal (Multiple-Tube Fermen	tation)						
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	>1600	1.8	1.8	MPN/100mL			01/27/15 16:12	1
_ Method: SM 9221F - E.Coli	Multiple-Tube Fermentation; EC-	MUG)						
Analyte	Result Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	>1600	1.8	1.8	MPN/100mL			01/27/15 16:12	1

TestAmerica Irvine

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Method Description

Coliforms, Fecal (Multiple-Tube Fermentation)

E.Coli (Multiple-Tube Fermentation; EC-MUG)

SM = "Standard Methods For The Examination Of Water And Wastewater",

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method

SM 9221E

SM 9221F

Protocol References:

Laboratory References:

Protocol

SM

SM

Laboratory

TAL IRV

TAL IRV

5
6
8
9

Client Sample ID: ArroyoSimi_20150127 Date Collected: 01/27/15 09:35 te Received: 01/27/15 14:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA Anal	Analysis	SM 9221E		1	100 mL	100 mL	232651		ECK	TAL IRV
							(Start)	01/27/15 16:12		
							(End)	01/29/15 14:14		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	232652		ECK	TAL IRV
							(Start)	01/27/15 16:12		
							(End)	01/29/15 14:14		

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Biology

Analy	vsis	Batch:	232651
Anu	1313	Duton.	202001

Lab Sample ID 440-99908-1	Client Sample ID ArroyoSimi 20150127	Prep Type Total/NA	Matrix Water	Method SM 9221E	Prep Batch
Analysia Batahy 222	650				
Analysis Batch: 232	652				
Analysis Batch: 232 – Lab Sample ID	652 Client Sample ID	Prep Type	Matrix	Method	Prep Batch

Definitions/Glossary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

Client: Haley &	& Aldrich, Inc. TestAmerica Job ID: 440-99908- Annual Arroyo Simi-Frontier Park	1
Project/Site. A		
Glossary		3
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	5
CFL	Contains Free Liquid	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	8
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	9
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Arroyo Simi-Frontier Park

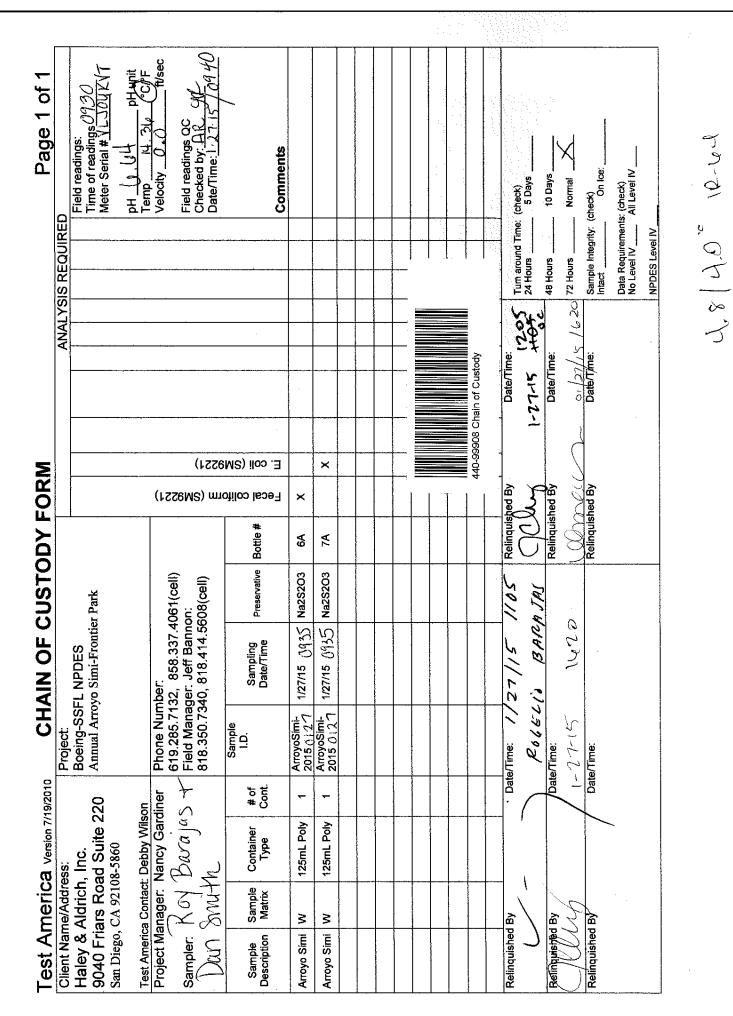
TestAmerica Job ID: 440-99908-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.



1/30/2015

11

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 99908 List Number: 1

Creator: Blocker, Kristina M

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

Job Number: 440-99908-1

List Source: TestAmerica Irvine



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-103210-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-103210-1
Project Manager:	K. Miller
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi_2015030 3	440-103210-1	N/A	Water	3/3/2015 8:24:00 AM	SM2340

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice and within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the sample container was received intact and properly preserved, as applicable. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were not utilized as the sample was delivered to the laboratory by coureir.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	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
С	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.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
Т	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

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Р	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.
*11, *111	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Ρ	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.
*11, *111	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 200.7 and SM2340B—Hardness

Reviewed By: P. Meeks Date Reviewed: March 20, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 200.7, Standard Method for the Examination of Water and Wastewater Method 2340B, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: The analytical holding time, six months, was met.
- Calibration: The ICV and CCV recoveries were within the control limits of 90-110%. The CRI recoveries were within the control limits of 70-130%.
- Blanks: Calcium was detected in the method blank but not at sufficient concentration to qualify the site sample. The method blank and CCBs had no other detects sample results.
- Interference Check Samples: Recoveries were within 80-120%.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the method control limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. MEC^X assessed method accuracy based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-," otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 4401032101

Analysis Metho	od SM23	40							
Sample Name	ArroyoSimi_2	20150303	Μ	atrix Type:	WS	Res	ult Type: T	RG	
Sample Date: 3/3/201	5 8:24:00 AM	Valid	ation Level:	8					
Lab Sample Name:	440-103210-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	Т	HARDNESS CO3	CA 260	0.33	0.17	mg/L			



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: 440-103210-1

Client Project/Site: Boeing SSFL outfalls

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

Authorized for release by: 3/17/2015 2:38:53 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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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Visit us at: www.testamericainc.com

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Sample Summary

Matrix

Water

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Client Sample ID

ArroyoSimi_20150303

Lab Sample ID

440-103210-1

Received

03/03/15 12:16

Collected

03/03/15 08:24

3
5
8
9

Job ID: 440-103210-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-103210-1

Comments

No additional comments.

Receipt

The samples were received on 3/3/2015 12:16 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1° C, 1.8° C and 1.9° C.

Metals

Method(s) 200.7 Rev 4.4: In batch 241634 the MRL check was out of range for Calcium. Since the results were higher than the LCS the data was not impacted: ArroyoSimi_20150303 (440-103210-1)

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

TestAmerica Job ID: 440-103210-1

Client Sample Results

5

Client Sample ID: ArroyoSimi_20150303 Lab Sample ID: 440-103210-1 Date Collected: 03/03/15 08:24 Matrix: Water Date Received: 03/03/15 12:16 Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable MDL Unit Dil Fac Analyte Result Qualifier RL D Prepared Analyzed 0.33 Hardness, as CaCO3 260 0.17 mg/L 03/13/15 11:54 1

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Protocol References:

Laboratory References:

Method Description

Total Hardness (as CaCO3) by calculation

SM = "Standard Methods For The Examination Of Water And Wastewater",

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method

SM 2340B

Laboratory

TAL IRV

Protocol

SM

5
6
8
9

Client Sample ID: ArroyoSimi_20150303 Lab Sample ID: 440-103210-1 Date Collected: 03/03/15 08:24 Matrix: Water Date Received: 03/03/15 12:16 Batch Batch Dil Initial Final Batch Prepared Prep Type Method or Analyzed Туре Run Factor Amount Amount Number Analyst Lab Total Recoverable Analysis SM 2340B 239938 03/13/15 11:54 NH TAL IRV

1

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

5 7

RL

MB MB

Result Qualifier

Matrix: Water

Analyte

Analysis Batch: 241916

		nple ID: M pe: Total I	
		Prep Ba	T top 1
Dil Fac	Di	Analyzed	repared
1	1	03/10/15 20	0/15 11:19
		nple ID: M	
6	cover	pe: Total I	Prep Ty
1634 8	ch: 241	Prep Ba	
Dil Fac	Di	Analyzed	repared
	Di	Analyzed	Prepared 0/15 11:19
Dil Fac	D i 5	Analyzed	0/15 11:19
Dil Fac 1 mple	Di 5	Analyzed	10/15 11:19
Dil Fac 1 mple rable	5 5 rol San	Analyzed 03/11/15 12 D: Lab Cor	10/15 11:19
Dil Fac 1 mple rable	5 5 rol San	Analyzed 03/11/15 12 : Lab Cor pe: Total F	10/15 11:19

MD	L Unit		D	Prepared	Analyzed	Dil Fac
0.01	0 mg/L			03/10/15 11:1	03/10/15 20:31	1
				Client	Sample ID: Meth	od Blank
				Prep	Type: Total Rec	overable
					Prep Batch	n: 241634
MD	L Unit		D	Prepared	Analyzed	Dil Fac
0.05	0 mg/L			03/10/15 11:1	03/11/15 12:25	1
6 LC	S			Prep	Type: Total Rec Prep Batcl %Rec.	
	alifier	Unit		D %Rec	Limits	
<u>-</u>		mg/L		<u>– – – 103</u>	85 - 115	
,		iiig/L		105	00 - 110	
			C	lient Sampl	e ID: Lab Contro	I Sample
				Prep	Type: Total Rec	overable
					Prep Batch	า: 241634
S LC	S				%Rec.	
t Qu	alifier	Unit		D %Rec	Limits	
6		mg/L		102	85 - 115	
				Clien	t Sample ID: Mat	rix Spike
				Prep	Type: Total Rec	overable
					Prep Batch	n: 241634
S MS	3				%Rec.	
• •	alifiar	Unit			Limite	

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-241634/1-A

Analyte	Res	sult Qualifier	RL	-	MDL Unit		D	P	repared	Analyzed	1	Dil Fac
Magnesium		ND	0.020) (0.010 mg/L	-		03/1	0/15 11:19	03/10/15 20	:31	1
Lab Sample ID: MB 440-241634	4/1-A								Client S	ample ID: M	ethod	Blank
Matrix: Water										Гуре: Total I		
Analysis Batch: 241999										Prep Ba		
-		МВ МВ										
Analyte	Res	sult Qualifier	RL	-	MDL Unit		D	P	repared	Analyzed	i i	Dil Fac
Calcium	0.00	683 J,DX	0.10) (0.050 mg/L	-		03/1	0/15 11:19	03/11/15 12	:25	1
Lab Sample ID: LCS 440-24163	34/3-A						CI	ient	Sample	ID: Lab Cor	trol S	ample
Matrix: Water									Prep 1	Гуре: Total I	Recov	erable
Analysis Batch: 241916										Prep Ba	tch: 2	241634
			Spike	LCS	LCS					%Rec.		
Analyte			Added	Result	Qualifier	Unit		D	%Rec	Limits		
Magnesium			2.50	2.58		mg/L		_	103	85 - 115		
Lab Sample ID: LCS 440-24163	84/3-A						CI	ient	Sample	ID: Lab Cor	trol S	ample
Matrix: Water										Type: Total I		
Analysis Batch: 241999										Prep Ba		
-			Spike	LCS	LCS					%Rec.		
Analyte			Added	Result	Qualifier	Unit		D	%Rec	Limits		
Calcium			2.50	2.56		mg/L		_	102	85 - 115		
Lab Sample ID: 440-103260-C-	1-E MS								Client	Sample ID: I	Matrix	Spike
Matrix: Water										Type: Total I		-
Analysis Batch: 241916										Prep Ba		
· ····· , ··· · ·······················	Sample	Sample	Spike	MS	MS					%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit		D	%Rec	Limits		
Magnesium	18		2.50	19.9	BB	mg/L		_	95	70 - 130		
Lab Sample ID: 440-103260-C-	1-E MS								Client	Sample ID: I	Matrix	Spike
Matrix: Water										Type: Total I		-
Analysis Batch: 241999										Prep Ba		
	Sample S	Sample	Spike	MS	MS					%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit		D	%Rec	Limits		
Calcium	53	MB	2.50	53.8	BB	mg/L		_	44	70 - 130		
Lab Sample ID: 440-103260-C-	1-F MSD						Clien	nt Sa	ample ID	: Matrix Spil	ke Dur	plicate
Matrix: Water									-	Type: Total I		-
Analysis Batch: 241916										Prep Ba		
-	Sample S	Sample	Spike	MSD	MSD					%Rec.		RPD
Analyte	Result	Qualifier	Added		Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Magnesium	18		2.50	20.1	BB	mg/L			101	70 - 130	1	20
Lab Sample ID: 440-103260-C-	1-F MSD						Clien	nt Sa	ample ID	: Matrix Spil	ke Dup	plicate
Matrix: Water									Prep 1	Гуре: Total I		
Analysis Batch: 241999										Prep Ba	tch: 2	241634
	Sample S	-	Spike		MSD					%Rec.		RPD
	D 14	O			· ····			-	0/ D	Limits	RPD	Limit
Analyte Calcium	Result 0		2.50 Added	53.1	Qualifier	_ Unit mg/L		D	%Rec	70 - 130	KFU	20

Metals

Analysis Batch: 239938

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103210-1	ArroyoSimi_20150303	Total Recoverable	Water	SM 2340B	

Client: Haley & Aldrich, Inc. Project/Site: Boeing SSFL outfalls

Glossary

Client: Haley & Aldrich, Inc. TestAmerica Job ID: 440-103. Project/Site: Boeing SSFL outfalls TestAmerica Job ID: 440-103.			
Glossary		3	
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	5	
CFL	Contains Free Liquid		
CNF	Contains no Free Liquid		
DER	Duplicate error ratio (normalized absolute difference)		
Dil Fac	Dilution Factor		
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample		
DLC	Decision level concentration		
MDA	Minimum detectable activity	8	
EDL	Estimated Detection Limit		
MDC	Minimum detectable concentration	9	
MDL	Method Detection Limit		
ML	Minimum Level (Dioxin)	10	
NC	Not Calculated		
ND	Not detected at the reporting limit (or MDL or EDL if shown)		
PQL	Practical Quantitation Limit		
QC	Quality Control		
RER	Relative error ratio		
RL	Reporting Limit or Requested Limit (Radiochemistry)		
RPD	Relative Percent Difference, a measure of the relative difference between two points		
TEF	Toxicity Equivalent Factor (Dioxin)		
TEQ	Toxicity Equivalent Quotient (Dioxin)		

Certification Summary

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15

* Certification renewal pending - certification considered valid.



Page 1 of 1

Field ReadingsMeter serial #Field readings: (include units) V H 1 V A D KTime of readings $\mathcal{K}2\mathcal{A}$ PH $2-33$ PH unit	Temp <u>9.76</u> Corr Velocity <u>0.01</u> Neec Field readings QC Checked by <u>7.7</u> <u>083</u> 0 Dater Time: <u>7.3</u> <u>7.5</u> <u>083</u> 0	Froothole 2 page E-28 of the permit etates only pH and hardness must be collected at the same time ete enhant samples. Velocity were added for informational purposes.	23°4/18°6 IR-64
ANALYSIS REQUIRED	SOJeJ es zea	Defaultime: Do S Albertime: Check	
Project Boeing-SSFL NPDES Arroyo Simi-Frontier Park (Footnote 2 E-26 with effluent)	Phone Number. Field Manager: Jeff Bannon 818.350.7340, 818.414.5608(cell)	Semple 1.D. Sampling Date Time meaning m. 2015 0503 3/3/2017 824 MGs S[3/15 5/3/15 /2:16P.	5
Цо	ney Gardiner No 2 N A D R D A A	Description Matrix Type Indicate Arroyo Simi W 1L Payy 1 ArroyoSi Arroyo Simi W Date/Time: ArroyoSi Reinquished By Date/Time: Date/Time: Date/Time: Reinquished By Date/Time: Date/Time: Date/Time:	

3/17/2015

ji Kan

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 103210 List Number: 1

Creator: Soderblom, Tim

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

Job Number: 440-103210-1

List Source: TestAmerica Irvine



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-105204-1

Prepared by

MEC^x 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order:	1272.003H.01 001
Sample Delivery Group:	440-105204-1
Project Manager:	K. Miller
Matrix:	Sediment
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Name	Sample	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi-SE- 20150324	440-105	204-1	N/A	Sediment	3/24/2015 8:20:00 AM	8081A, 8082, 9060, SM 4500 NH3 D, ASTM D422M

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice and within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the sample containers were received intact and properly preserved, as applicable. The COC was appropriately signed and dated by field and laboratory personnel. Custody seal information was not provided by the laboratory; however, the sample was delivered to the laboratory by courier.

Qualifie	r 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.
Ν	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
Н	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
С	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.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LSC/LSCD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
Е	Not applicable.	Duplicates showed poor agreement.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
Т	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

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Р	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.
* , *	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Р	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.
*11, *111	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 METHODs 8081A—Pesticides

Reviewed By: L. Calvin Date Reviewed: April 6, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Method 8081A, and the National Functional Guidelines for Superfund Organic Methods Data Review (6/08).

- Holding Times: Extraction and analytical holding times were met. The sediment sample was extracted within 14 days of collection and analyzed within 40 days of extraction.
- Calibration: The initial calibration had r² of ≥0.990 on both analytical columns. The ICV had %Ds within the QC limit of ≤15%. The chlordane CCVs bracketing the sample analysis had several peaks with marginally high responses, and the bracketing CCV had marginally high %Ds for 4,4'-DDE and dieldrin; however, as the sample had no detects, the high responses did not affect the results. As there were no primary column detects to confirm, secondary column CCVs were not assessed. The breakdown totals for endrin and 4,4'-DDT were ≤15%.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished QC limits. Chlordane and toxaphene were not spiked in the LCS.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. Recoveries and RPDs were within laboratory-established QC limits. Chlordane and toxaphene were not spiked in the MS/MSD.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.

- Compound Identification: Compound identification was verified. The laboratory analyzed for individual pesticides 4,4'-DDD, 4,4'DDE, 4,4'-DDT, and dieldrin, and for chlordane and toxaphene by Method 8081A.
- Compound Quantification and Reported Detection Limits: Sample quantitation was verified for the sample and for LCS and MS/MSD results. 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.

B. EPA METHOD 8082—PCBs

Reviewed By: L. Calvin Date Reviewed: April 6, 2015

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{\times} Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Method 8082, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The sediment sample was extracted within 14 days of collection and analyzed within 40 days of extraction.
- Calibration: The initial calibrations had %RSDs of ≤20% or r² of ≥0.990 on both analytical columns. The ICV and CCVs bracketing the sample analysis had %Ds within the QC limit of ≤15%. As there were no primary column detects to confirm, secondary column CCVs were not assessed.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. Recoveries and RPDs were within laboratory-established QC limits.
- 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. The laboratory analyzed for six Aroclors by Method 8082. Review of the sample chromatograms and retention times indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The reporting limits were supported by the lower level of the initial calibration. 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.

C. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: April 6, 2015

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Method 9060, Standard Methods for the Analysis of Water and Wastewater Method 4500 NH3 D, ASTM Method D422M, and the National Functional Guidelines for Inorganic Data Review (2014).

- Holding Times: Analytical holding times, 28 days for ammonia and TOC, were met. No holding time is published for particle size.
- Calibration: Calibration criteria were met. Initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. Calibration is not applicable to particle size.
- Blanks: Target compounds were not detected in the method blanks and CCBs. Blanks are not applicable to particle size.
- Laboratory Control Samples: Recoveries were within laboratory control limits. The LCS is not applicable to particle size.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for ammonia and TOC. Recoveries and RPDs were within laboratory control limits. MS/MSD analyses are not applicable to particle size.
- 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. 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.

The TOC method requires quadruplicate analysis. The sample and its MS/MSD were analyzed in quadruplicate; however, the calibration standards and QC samples were analyzed only once. As the true values for the initial calibration standards and QC samples were known, no qualifications were deemed necessary.

- 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: 4401052041

Sample Name	ArroyoSimi-S	E-20150324	1 N	latrix Type:	SE	Res	ult Type: Th	RG	
Sample Date: 3/24/2015 8	3:20:00 AM	Valida	ation Level:	8					
Lab Sample Name: 4	40-105204-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Coarse Sand	Ν	GSCSAND	10.71			%			
Fine Sand	Ν	GSFSAND	7.07			%			
Gravel	Ν	GRAVEL	54.13			%			
Medium Sand	Ν	GSMSAND	27.91			%			
Silt/Clay	Ν	GSSILTCLA	Y 0.17			%			
Analysis Method	SM45	500-NH31	E						
Sample Name	ArroyoSimi-S	E-20150324	1 N	latrix Type:	SE	Res	ult Type: TI	RG	
-	40-105204-1 Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Oualifier	Validation Qualifier	
Analyte		CAS No 7664-41-7N	Result Value	RL 4.54	MDL 0.909	Result Units mg/kg	Lab Qualifier J,DX	Validation Qualifier J	Validation Notes DNQ
Analyte Ammonia-Nitrogen	Fraction N	7664-41-7N	Value			Units	Qualifier	Qualifier	Notes
Analyte Ammonia-Nitrogen Analysis Method	Fraction N	7664-41-7N 981A	Value 3.14			Units mg/kg	Qualifier	Qualifier J	Notes
Analyte Ammonia-Nitrogen Analysis Method Sample Name	Fraction N SW80 ArroyoSimi-S	7664-41-7N 281A EE-20150324	Value 3.14	4.54 Iatrix Type:	0.909	Units mg/kg	Qualifier J,DX	Qualifier J	Notes
Analyte Ammonia-Nitrogen <i>Analysis Method</i> Sample Name Sample Date: 3/24/2015 8	Fraction N SW80 ArroyoSimi-S	7664-41-7N 281A EE-20150324	Value 3.14 4 M	4.54 Iatrix Type:	0.909	Units mg/kg	Qualifier J,DX	Qualifier J	Notes
Analyte Ammonia-Nitrogen Analysis Method Sample Name Sample Date: 3/24/2015 8 Lab Sample Name: 4	Fraction N SW80 ArroyoSimi-S 3:20:00 AM	7664-41-7N 981A SE-20150324 Valida	Value 3.14 4 M	4.54 Iatrix Type:	0.909	Units mg/kg	Qualifier J,DX	Qualifier J	Notes
Analyte Ammonia-Nitrogen <i>Analysis Method</i> Sample Name Sample Date: 3/24/2015 8 Lab Sample Name: 4 Analyte	SW80 ArroyoSimi-S 3:20:00 AM 40-105204-1	7664-41-7N 981A SE-20150324 Valida	Value 3.14 4 M ation Level: Result	4.54 Iatrix Type: 8	0.909 SE	Units mg/kg Result	Qualifier J,DX ult Type: Th Lab	Qualifier J RG Validation	Notes DNQ Validation
Analyte Ammonia-Nitrogen <i>Analysis Method</i> Sample Name Sample Date: 3/24/2015 8 Lab Sample Name: 4 Analyte 4,4'-DDD	Fraction N SW80 ArroyoSimi-S 3:20:00 AM 40-105204-1 Fraction	7664-41-7N 98 <i>1A</i> 3E-20150324 Valida CAS No	Value 3.14 4 M ation Level: Result	4.54 Latrix Type: 8 RL	0.909 SE	Units mg/kg Result Units	Qualifier J,DX ult Type: TH Lab Qualifier	Qualifier J RG Validation Qualifier	Notes DNQ Validation
Analyte Ammonia-Nitrogen Analysis Method Sample Name Sample Date: 3/24/2015 8 Lab Sample Name: 4 Analyte 4,4'-DDD 4,4'-DDE	Fraction N SW80 ArroyoSimi-S 3:20:00 AM 40-105204-1 Fraction N	7664-41-7N 281A 3E-20150324 Valida CAS No 72-54-8	Value 3.14 4 M ation Level: Result	4.54 Iatrix Type: 8 RL 4.9	0.909 SE MDL	Units mg/kg Result Units ug/kg	Qualifier J,DX ult Type: Th Lab Qualifier U	Qualifier J RG Validation Qualifier U	Notes DNQ Validation
Analyte Ammonia-Nitrogen Analysis Method Sample Name Sample Date: 3/24/2015 8 Lab Sample Name: 4 Analyte 4,4'-DDD 4,4'-DDE 4,4'-DDT	Fraction N SW80 ArroyoSimi-S 3:20:00 AM 40-105204-1 Fraction N N N N N N	7664-41-7N 081A 3E-20150324 Valida CAS No 72-54-8 72-55-9	Value 3.14 4 M ation Level: Result	4.54 Iatrix Type: 8 RL 4.9 4.9	0.909 SE MDL 1.5 1.5	Units mg/kg Result Units ug/kg ug/kg	Qualifier J,DX ult Type: Th Lab Qualifier U U	Qualifier J Calidation Qualifier U	Notes DNQ Validation
Analyte Ammonia-Nitrogen Analysis Method Sample Name Sample Date: 3/24/2015 8	Fraction N SW80 ArroyoSimi-S 3:20:00 AM 40-105204-1 Fraction N N N N	7664-41-7N 081A SE-20150324 Valida CAS No 72-54-8 72-55-9 50-29-3	Value 3.14 4 M ation Level: Result	4.54 Iatrix Type: 8 RL 4.9 4.9 4.9	0.909 SE MDL 1.5 1.5	Units mg/kg Result Units ug/kg ug/kg	Qualifier J,DX ult Type: TH Lab Qualifier U U U	Qualifier J Validation Qualifier U U U	Notes DNQ Validation

Analysis Method SW8082

Sample Name	ArroyoSimi-SE-20150324	Matrix Type: SE	Result Type: TRG	

Sample Date: 3/24/2015 8:20:00 AM Validation Level: 8

Lab Sample Name: 440-105204-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aroclor-1016 (PCB-1016)	Ν	12674-11-2		49	17	ug/kg	U	U	
Aroclor-1221 (PCB-1221)	Ν	11104-28-2		49	17	ug/kg	U	U	
Aroclor-1232 (PCB-1232)	Ν	11141-16-5		49	17	ug/kg	U	U	
Aroclor-1242 (PCB-1242)	Ν	53469-21-9		49	17	ug/kg	U	U	
Aroclor-1248 (PCB-1248)	Ν	12672-29-6		49	17	ug/kg	U	U	
Aroclor-1254 (PCB-1254)	Ν	11097-69-1		49	17	ug/kg	U	U	
Aroclor-1260 (PCB-1260)	Ν	11096-82-5		49	17	ug/kg	U	U	
Analysis Method	SW90	60							
Sample Name A	rroyoSimi-S	E-20150324	1]	Matrix Type:	SE	Res	ult Type: TI	RG	
Sample Date: 3/24/2015 8:2	20:00 AM	Valida	ation Level	: 8					
Lab Sample Name: 440)-105204-1								
Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon (TOC)	Ν	TOC		5000	2500	mg/kg	U	U	



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: 440-105204-1

Client Project/Site: Boeing SSFL NPDES Revision: 1

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

eather Clark

Authorized for release by: 4/10/2015 4:10:51 PM Heather Clark, Project Manager I heather.clark@testamericainc.com

Designee for

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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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Sample Summary

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-105204-1	ArroyoSimi-SE-20150324	Solid	03/24/15 08:20	03/24/15 18:45

Job ID: 440-105204-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-105204-1

Comments

No additional comments.

Receipt

The sample was received on 3/24/2015 6:45 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0° C.

GC Semi VOA

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 246639 recovered above the upper control limit for DDE, A-Chlordane, Dieldrin and G-Chlordane and technical chlordane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 440-246639/23), ArroyoSimi-SE-20150324 (440-105204-1).

Method(s) 8082: The following samples required a copper clean-up to reduce matrix interferences caused by sulfur: (440-105204-1 MS), (440-105204-1 MSD), (LCS 440-246641/5-A), (MB 440-246641/1-A), ArroyoSimi-SE-20150324 (440-105204-1).

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

General Chemistry

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

Subcontract non-Sister

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

Organic Prep

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

Date Collected: 03/24/15 08:20

Date Received: 03/24/15 18:45

Client Sample ID: ArroyoSimi-SE-20150324

Lab Sample ID: 440-105204-1

Matrix: Solid

Percent Solids: 78.1

2 3 4 5 6 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		4.9	1.5	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
4,4'-DDE	ND		4.9	1.5	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
4,4'-DDT	ND		4.9	1.5	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
Chlordane (technical)	ND		49	9.7	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
Dieldrin	ND		4.9	1.5	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
Toxaphene	ND		190	49	ug/Kg		04/02/15 10:45	04/02/15 16:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	90		45 - 120				04/02/15 10:45	04/02/15 16:31	1
	73		35 - 115				04/02/15 10:45	04/02/15 16:31	1
Tetrachloro-m-xylene Method: 8082 - Polychlorinated Analyte	d Biphenyls (PCE	3s) by Gas (Qualifier		iy MDL	Unit	D	04/02/15 10:45 Prepared	04/02/15 16:31 Analyzed	1 Dil Fac
Method: 8082 - Polychlorinated Analyte	d Biphenyls (PCE		Chromatograph	-	Unit ug/Kg	D			
Method: 8082 - Polychlorinated Analyte Aroclor 1016	d Biphenyls (PCE Result		Chromatograph RL	MDL		D	Prepared	Analyzed	Dil Fac
Method: 8082 - Polychlorinated Analyte Aroclor 1016 Aroclor 1221	d Biphenyls (PCE Result ND		Chromatograph RL 	MDL 17	ug/Kg	D	Prepared 04/02/15 10:45	Analyzed 04/02/15 16:46	Dil Fac
Method: 8082 - Polychlorinated Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232	d Biphenyls (PCE Result ND ND		Chromatograph RL 49 49	MDL 17 17	ug/Kg ug/Kg	<u>D</u>	Prepared 04/02/15 10:45 04/02/15 10:45	Analyzed 04/02/15 16:46 04/02/15 16:46	Dil Fac
Method: 8082 - Polychlorinated Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242	d Biphenyls (PCE Result ND ND ND		Chromatograph RL 49 49 49	MDL 17 17 17	ug/Kg ug/Kg ug/Kg	D	Prepared 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45	Analyzed 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46	Dil Fac 1 1
Method: 8082 - Polychlorinated Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248	d Biphenyls (PCE Result ND ND ND ND		Chromatograph 	MDL 17 17 17 17 17	ug/Kg ug/Kg ug/Kg ug/Kg	D	Prepared 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45	Analyzed 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46	Dil Fac 1 1 1
Method: 8082 - Polychlorinated Analyte Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254	d Biphenyls (PCE Result ND ND ND ND ND		Chromatograph 	MDL 17 17 17 17 17 17	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	<u>D</u>	Prepared 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45	Analyzed 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46	Dil Fac 1 1 1 1 1
Method: 8082 - Polychlorinated	d Biphenyls (PCE Result ND ND ND ND ND ND	Qualifier	Chromatograph RL 49 49 49 49 49 49 49 49 49 49	MDL 17 17 17 17 17 17 17	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg	<u>D</u>	Prepared 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45 04/02/15 10:45	Analyzed 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46 04/02/15 16:46	Dil Fac 1 1 1 1 1 1 1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		5000	2500	mg/Kg			04/02/15 13:15	1
Ammonia (as N)	3.14	J,DX	4.54	0.909	mg/Kg		03/30/15 05:30	03/30/15 06:49	1

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

Method Description

Percent Moisture

Ammonia

EPA = US Environmental Protection Agency

Organochlorine Pesticides (GC)

Organic Carbon, Total (TOC)

General Sub Contract Method

SM = "Standard Methods For The Examination Of Water And Wastewater",

PTSL = PTS Laboratories, Inc, 8100 Secura Way, Santa Fe Springs, CA 90670

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Polychlorinated Biphenyls (PCBs) by Gas Chromatography

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Method

8081A

8082 9060

Moisture

SM 4500 NH3 D

Protocol References:

NONE = NONE

Laboratory References:

Particle Size

Protocol

SW846

SW846

SW846

EPA

SM

NONE

Laboratory

TAL IRV

TAL IRV

TAL IRV

TAL IRV

TAL IRV

PTSL

5
6
8
9

Client Sample ID: ArroyoSimi-SE-20150324 Date Collected: 03/24/15 08:20 Date Received: 03/24/15 18:45

Lab Sample ID: 440-105204-1 Matrix: Solid

Percent Solids: 78.1

Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.43 g	2 mL	246641	04/02/15 10:45	ES	TAL IRV
Total/NA	Analysis	8081A		1	15.43 g	2 mL	246639	04/02/15 16:31	KS	TAL IRV
Total/NA	Prep	3546			15.43 g	2 mL	246641	04/02/15 10:45	ES	TAL IRV
Total/NA	Analysis	8082		1	15.43 g	2 mL	246428	04/02/15 16:46	CN	TAL IRV
Total/NA	Analysis	9060		1	0.1012 g	0.1012 g	246694	04/02/15 13:15	YZ	TAL IRV
Total/NA	Analysis	Moisture		1			245104	03/25/15 21:32	NTN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			5.5010 g	50 mL	245729	03/30/15 05:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1	5.5010 g	50 mL	245743	03/30/15 06:49	ΥZ	TAL IRV

Laboratory References:

PTSL = PTS Laboratories, Inc, 8100 Secura Way, Santa Fe Springs, CA 90670

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

RL

5.0

5.0

5.0

50

5.0

200

Limits

45 - 120

35 - 115

MDL Unit

1.5 ug/Kg

1.5 ug/Kg

1.5 ug/Kg

10 ug/Kg

1.5 ug/Kg

50 ug/Kg

D

Prepared

04/02/15 10:45

04/02/15 10:45

04/02/15 10:45

04/02/15 10:45

04/02/15 10:45

04/02/15 10:45

Prepared

04/02/15 10:45

04/02/15 10:45

Lab Sample ID: MB 440-246641/1-A

Matrix: Solid

Analyte

4,4'-DDD

4,4'-DDE

4,4'-DDT

Dieldrin

Toxaphene

Surrogate

Chlordane (technical)

Tetrachloro-m-xylene

Analysis Batch: 246639

Method: 8081A - Organochlorine Pesticides (GC)

MB MB Result Qualifier

ND

ND

ND

ND

ND

ND

94

62

%Recovery

MB MB

Qualifier

Client Sample ID: Method Blank

Analyzed

04/02/15 15:36

04/02/15 15:36

04/02/15 15:36

04/02/15 15:36

04/02/15 15:36

04/02/15 15:36

Analyzed

04/02/15 15:36

04/02/15 15:36

Prep Type: Total/NA Prep Batch: 246641

Dil Fac

1

1

1

1

1

1

1

1

Dil Fac

8

Lab Sample ID: LCS 440-246641/2-A
Matrix: Solid

DCB Decachlorobiphenyl (Surr)

Analysis Batch: 246639							Prep Ba	itch: 246641
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4,4'-DDD	13.3	13.4		ug/Kg		101	60 - 120	
4,4'-DDE	13.3	12.3		ug/Kg		92	60 - 120	
4,4'-DDT	13.3	13.7		ug/Kg		103	65 - 120	
alpha-Chlordane	13.3	12.0		ug/Kg		90	50 ₋ 115	
gamma-Chlordane	13.3	11.9		ug/Kg		89	50 - 115	
Dieldrin	13.3	12.4		ug/Kg		93	65 - 115	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	96		45 - 120
Tetrachloro-m-xylene	74		35 - 115

Lab Sample ID: 440-105204-1 MS

Matrix: Solid

Analysis Batch: 246639									Prep Batch: 246641
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
4,4'-DDD	ND		13.1	12.2		ug/Kg		93	40 - 130
4,4'-DDE	ND		13.1	12.3		ug/Kg		94	35 - 130
4,4'-DDT	ND		13.1	12.1		ug/Kg		93	35 - 130
alpha-Chlordane	ND		13.1	12.0		ug/Kg		92	50 - 115
gamma-Chlordane	ND		13.1	12.4	PI	ug/Kg		95	50 ₋ 115
Dieldrin	ND		13.1	11.8		ug/Kg		90	40 - 125
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						

Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	89		45 - 120
Tetrachloro-m-xylene	70		35 - 115

Client Sample ID: Lab Control Sample P

rep Type: Total/NA	
Prep Batch: 246641	

Client Sample ID: ArroyoSimi-SE-20150324 Prep Type: Total/NA

Aroclor 1260

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 440-105204-1	MOD					Oller	it Gam	pie ib. /	ArroyoSimi		
Matrix: Solid										ype: To	
Analysis Batch: 246639									Prep I	Batch: 2	46641
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD	ND		13.0	13.0		ug/Kg		99	40 - 130	6	30
4,4'-DDE	ND		13.0	12.6		ug/Kg		97	35 - 130	2	30
4,4'-DDT	ND		13.0	13.1		ug/Kg		100	35 _ 130	7	30
alpha-Chlordane	ND		13.0	12.0		ug/Kg		92	50 _ 115	0	30
gamma-Chlordane	ND		13.0	12.3	PI	ug/Kg		94	50 - 115	1	30
Dieldrin	ND		13.0	12.2		ug/Kg		94	40 - 125	4	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
DCB Decachlorobiphenyl (Surr)	90		45 - 120								
Tetrachloro-m-xylene	72		35 - 115								

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

ND

Lab Sample ID: MB 440-2466	641/1-A								Client S	ample ID: Metho	
Matrix: Solid										Prep Type: T	
Analysis Batch: 246428										Prep Batch:	246641
		3 MB									
Analyte		t Qualifier	RL		DL U	-	D		Prepared	Analyzed	Dil Fac
Aroclor 1016	N)	50			g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1221	N)	50		17 u <u></u>	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1232	N)	50		17 ug	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1242	N)	50		17 ug	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1248	N)	50		17 ug	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1254	N)	50		17 ug	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
Aroclor 1260	N)	50		17 uç	g/Kg		04/	/02/15 10:45	04/02/15 15:45	1
	М	3 <i>MB</i>									
Surrogate	%Recover	Qualifier	Limits						Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	8	3	45 - 120					04,	/02/15 10:45	04/02/15 15:45	1
Matrix: Solid Analysis Batch: 246428											otal/N/
			Spike	LCS L	_cs					Prep Type: T Prep Batch: %Rec.	
Analyte			Spike Added	LCS L Result C		er U	nit	D	%Rec	Prep Batch:	
Analyte Aroclor 1016			•				nit g/Kg	D	%Rec 92	Prep Batch: %Rec.	
			Added	Result C		uç		D		Prep Batch: %Rec. Limits	
Aroclor 1016		 s	Added	Result 244		uç	g/Kg	D	92	Prep Batch: %Rec. Limits 65 - 115	
Aroclor 1016	LCS LC %Recovery Qu		Added	Result 244		uç	g/Kg	D	92	Prep Batch: %Rec. Limits 65 - 115	
Aroclor 1016 Aroclor 1260			Added 267 267	Result 244		uç	g/Kg	D	92	Prep Batch: %Rec. Limits 65 - 115	
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr)	- [%] Recovery Qu 84		Added 267 267 Limits	Result 244		uç	g/Kg g/Kg		92 79	Prep Batch: %Rec. Limits 65 - 115 65 - 115	246641
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Lab Sample ID: 440-105204-	- [%] Recovery Qu 84		Added 267 267 Limits	Result 244		uç	g/Kg g/Kg		92 79	Prep Batch: %Rec. Limits 65 - 115 65 - 115	246641
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Lab Sample ID: 440-105204- Matrix: Solid	- [%] Recovery Qu 84		Added 267 267 Limits	Result 244		uç	g/Kg g/Kg		92 79	Prep Batch: %Rec. Limits 65 - 115 65 - 115 	246641 0150324 Fotal/NA
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Lab Sample ID: 440-105204-	- [%] Recovery Qu 84	alifier	Added 267 267 Limits	Result C 244 211		uç	g/Kg g/Kg		92 79	Prep Batch: %Rec. Limits 65 - 115 65 - 115	246641 0150324 Fotal/NA
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Lab Sample ID: 440-105204- Matrix: Solid Analysis Batch: 246428	- <u>%Recovery</u> Qu 84 1 MS Sample Sa	alifier	Added 267 267 Limits 45 - 120	Result 244 211 MS M	Qualifie	ענַ ענַ	g/Kg g/Kg		92 79 mple ID: A	Prep Batch: %Rec. Limits 65 - 115 65 - 115 65 - 115 65 - 115 	246641 0150324 Fotal/NA
Aroclor 1016 Aroclor 1260 Surrogate DCB Decachlorobiphenyl (Surr) Lab Sample ID: 440-105204- Matrix: Solid	_ <u>%Recovery</u> Qu 84	alifier	Added 267 267 <i>Limits</i> 45 - 120	Result C 244 211	Qualifie	υς υς er U	g/Kg g/Kg Clien	t Sar	92 79 mple ID: A	Prep Batch: %Rec. Limits 65 - 115 65 - 115 	246641 0150324 Fotal/NA

TestAmerica Irvine

50 - 125

71

188

ug/Kg

264

Limits

45 - 120

Spike

Added

Limits

45 - 120

266

266

MSD MSD

230

189

Result Qualifier

Unit

ug/Kg

ug/Kg

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

MS MS

Sample Sample

MSD MSD %Recovery Qualifier

ND

ND

73

Result Qualifier

%Recovery Qualifier

73

Lab Sample ID: 440-105204-1 MS

Lab Sample ID: 440-105204-1 MSD

Analysis Batch: 246428

DCB Decachlorobiphenyl (Surr)

Analysis Batch: 246428

DCB Decachlorobiphenyl (Surr)

Matrix: Solid

Matrix: Solid

Surrogate

Analyte

Aroclor 1016

Aroclor 1260

Surrogate

Prep Type: Total/NA

Prep Batch: 246641

Client Sample ID: ArroyoSimi-SE-20150324

			ArroyoSimi	ple ID: A	Sam	Client
8		ype: Tot Batch: 2				
	RPD		%Rec.			
9	Limit	RPD	Limits	%Rec	D	it
	30	2	50 - 120	86		Kg
	30	0	50 ₋ 125	71		Kg
13			ample ID:			

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-246694/6 Matrix: Solid												Client S	ample ID: Meth Prep Type:		
Analysis Batch: 246694															
		ΜВ	МВ												
Analyte	Re	esult	Qualifier		RL		MDL	Unit		D	Pr	repared	Analyzed	0	Dil Fac
Total Organic Carbon		ND			5000		2500	mg/Kg					04/02/15 13:01		1
Lab Sample ID: LCS 440-246694/5										Clie	ent	Sample	ID: Lab Contro	I Sa	mple
Matrix: Solid													Prep Type:	Tota	al/NA
Analysis Batch: 246694															
-				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Total Organic Carbon				10000		10100			mg/Kg			101	90 - 110		
Lab Sample ID: 440-105204-1 MS									Cli	ent Sa	am	ple ID: A	rroyoSimi-SE-	2015	0324
Matrix: Solid															001-
													Prep Type:		
													Prep Type:		
	Sample	Samı	ble	Spike		MS	MS						Prep Type: %Rec.		
Analysis Batch: 246694	Sample Result			Spike Added		MS Result		ifier	Unit		D	%Rec			
Analysis Batch: 246694	•			•				ifier	Unit mg/Kg		D	%Rec 105	%Rec.		
Analysis Batch: 246694 Analyte Total Organic Carbon	Result ND			Added		Result		ifier	mg/Kg			105	%Rec. Limits 70 - 130	Tota	al/NA
Analysis Batch: 246694	Result ND			Added		Result		ifier	mg/Kg			105	%Rec. Limits	Tota 	al/NA
Analysis Batch: 246694 Analyte Total Organic Carbon Lab Sample ID: 440-105204-1 MSD	Result ND			Added		Result		ifier	mg/Kg			105	%Rec. Limits 70 - 130	Tota 	al/NA
Analysis Batch: 246694 Analyte Total Organic Carbon Lab Sample ID: 440-105204-1 MSD Matrix: Solid	Result ND	Quali	fier	Added		Result			mg/Kg			105	%Rec. Limits 70 - 130	Tota 	al/NA
Analysis Batch: 246694 Analyte Fotal Organic Carbon Lab Sample ID: 440-105204-1 MSD Matrix: Solid	Result ND	Quali	ifier	Added 19600		Result 20600	Qual		mg/Kg	ent Sa		105	%Rec. Limits 70 - 130 ArroyoSimi-SE- Prep Type:	Tota 2015 Tota	al/NA 0324 al/NA

TestAmerica Irvine

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-245729/2-A												Client Sa	mple ID: M	ethod	Blanl
Matrix: Solid													Prep Ty	pe: To	tal/NA
Analysis Batch: 245743													Prep Ba	atch: 2	45729
		MB	МВ												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Pr	epared	Analyze	łł	Dil Fa
Ammonia (as N)		ND			9.99		2.00	mg/Kg		_	03/30)/15 05:30	03/30/15 06	:48	
Lab Sample ID: LCS 440-245729/1-4	4									C	lient	Sample	ID: Lab Cor	ntrol S	ampl
Matrix: Solid													Prep Ty	pe: To	tal/N/
Analysis Batch: 245743													Prep Ba	atch: 2	4572
-				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Ammonia (as N)				50.0		49.31			mg/Kg			99	85 - 115		
Lab Sample ID: 440-105204-1 MS									Cli	ent \$	Sam	ple ID: A	rroyoSimi-S	SE-201	5032 [,]
Matrix: Solid													Prep Ty	pe: To	tal/N/
Analysis Batch: 245743													Prep Ba	atch: 2	4572
-	Sample	Sam	ole	Spike		MS	MS						%Rec.		
	Result	0									-	a/ B			
Analyte	Result	Quai	ifier	Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
		J,DX		Added 22.7		Result 25.11	Qual	ifier	mg/Kg		<u> </u>	97	Limits 75 - 125		
Ammonia (as N)							Qual	ifier	mg/Kg	ent :	<u> </u>	97		E-201	50324
Ammonia (as N) Lab Sample ID: 440-105204-1 MSD							Qual	ifier	mg/Kg	ent (<u> </u>	97	75 - 125		
Ammonia (as N) Lab Sample ID: 440-105204-1 MSD Matrix: Solid							Qual	ifier	mg/Kg	ent (<u> </u>	97	75 - 125	pe: To	tal/N/
Ammonia (as N) Lab Sample ID: 440-105204-1 MSD Matrix: Solid		J,DX				25.11	Qual		mg/Kg	ent	<u> </u>	97	75 - 125 rroyoSimi-S Prep Ty	pe: To	tal/N/ 4572
Analyte Ammonia (as N) Lab Sample ID: 440-105204-1 MSD Matrix: Solid Analysis Batch: 245743 Analyte	3.14	J,DX Samj	ple	22.7		25.11	MSD		mg/Kg	ent S	<u> </u>	97	75 - 125 rroyoSimi-S Prep Ty Prep Ba	pe: To	tal/N/

Client Sample ID

ArroyoSimi-SE-20150324

Lab Control Sample

Lab Control Sample

Method Blank

Lab Control Sample

Method Blank

Client Sample ID

Lab Control Sample

Method Blank

Client Sample ID

GC Semi VOA

Lab Sample ID

440-105204-1 MS

440-105204-1 MSD

LCS 440-246641/5-A

MB 440-246641/1-A

Lab Sample ID

440-105204-1

440-105204-1 MS

440-105204-1 MSD

LCS 440-246641/2-A

MB 440-246641/1-A

Prep Batch: 246641

Lab Sample ID

440-105204-1

440-105204-1 MS

440-105204-1 MS

440-105204-1 MSD

440-105204-1 MSD

LCS 440-246641/2-A

LCS 440-246641/5-A

MB 440-246641/1-A

Analysis Batch: 246639

440-105204-1

Analysis Batch: 246428

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Solid

Solid

Solid

Solid

Solid

Matrix

Solid

Solid

Solid

Solid

Solid

Solid

Method

8082

8082

8082

8082

8082

Method

8081A

8081A

8081A

8081A

8081A

Prep Batch

246641

246641

246641

246641

246641

Prep Batch

246641

246641

246641

246641

246641

Prep Type	Matrix	Method	Prep Batch	12
Total/NA	Solid	3546		_
Total/NA	Solid	3546		13
Total/NA	Solid	3546		
Total/NA	Solid	3546		14
Total/NA	Solid	3546		
Total/NA	Solid	3546		
Total/NA	Solid	3546		

3546

General Chemistry

Analysis Batch: 245104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-105204-1	ArroyoSimi-SE-20150324	Total/NA	Solid	Moisture	
440-105206-A-15 DU	Duplicate	Total/NA	Solid	Moisture	
440-105206-A-15 MS	Matrix Spike	Total/NA	Solid	Moisture	
440-105206-A-15 MSD	Matrix Spike Duplicate	Total/NA	Solid	Moisture	

Prep Batch: 245729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-105204-1	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 B	
440-105204-1 MS	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 B	
440-105204-1 MSD	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 B	
LCS 440-245729/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
MB 440-245729/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	

Analysis Batch: 245743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-105204-1	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 D	245729
440-105204-1 MS	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 D	245729
440-105204-1 MSD	ArroyoSimi-SE-20150324	Total/NA	Solid	SM 4500 NH3 D	245729
LCS 440-245729/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	245729
MB 440-245729/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	245729

General Chemistry (Continued)

Analysis Batch: 246694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-105204-1	ArroyoSimi-SE-20150324	Total/NA	Solid	9060	
440-105204-1 MS	ArroyoSimi-SE-20150324	Total/NA	Solid	9060	
440-105204-1 MSD	ArroyoSimi-SE-20150324	Total/NA	Solid	9060	
LCS 440-246694/5	Lab Control Sample	Total/NA	Solid	9060	
MB 440-246694/6	Method Blank	Total/NA	Solid	9060	

9

Qualifiers

GC Semi VOA

GC Semi VC										
Qualifier	Qualifier Description									
PI	Primary and confirm results varied by > than 40% RPD	5								
General Chemistry										
Qualifier	Qualifier Description									
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL									

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	0
%R	Percent Recovery	9
CFL	Contains Free Liquid	10
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	13
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Certification Summary

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15

* Certification renewal pending - certification considered valid.

TestAmerica Irvine



8100 Secura Way • Santa Fe Springs, CA 90670 Telephone (562) 347-2500 • Fax (562) 907-3610

March 31, 2015

Debby S. Wilson TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817

Re: PTS File No: 45180 Physical Properties Data Boeing SSFL NPDES; 440-105204-1

Dear Ms. Wilson:

Please find enclosed report for Physical Properties analyses conducted upon the sample received from your Boeing SSFL NPDES; 440-105204-1 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The sample is currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the sample will be disposed of at that time. You may contact me regarding storage, disposal, or return of the sample.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely, PTS Laboratories, Inc.

Michael Mark Brady, P.G. Laboratory Director

Encl.

PTS Laboratories

Project	Name:
Project	Number:

Boeing SSFL NPDES 440-105204-1

PTS File No: 45180 ica Irvine

Client:	TestAmeri

TEST PROGRAM - 20150326

		Core	Grain		
CORE ID	Depth	Recovery	Size		
	ft.	ft.	Analysis		Comments
		Plugs:	Grab		
Date Received: 20150326					
ArroyoSimi_SE_20150324 (440-105204-1)	N/A	N/A	Х		
TOTALS:	1 Jar		1		

Laboratory Test Program Notes

Contaminant identification:

Standard TAT for basic analysis is 15 business days.

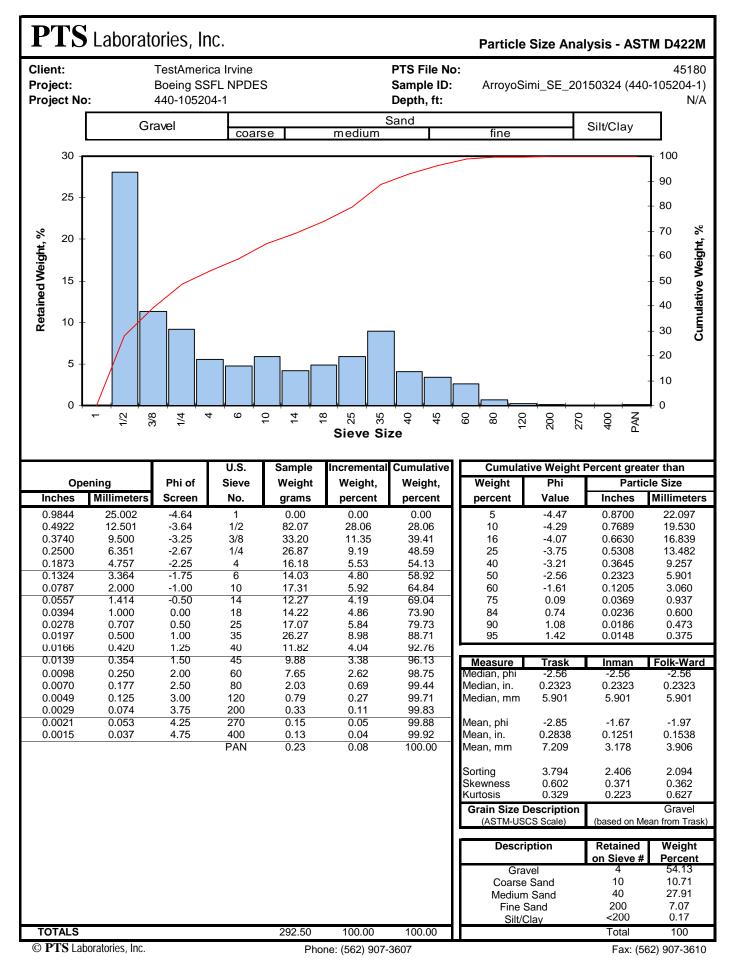
Grain Size Analysis: Laser or sieve method; includes tabular data, graphics and statistical sorting in Excel format.

PTS Laboratories, Inc.

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422M)

PROJECT NAME: PROJECT NO:	Boeing SSFL NPD 440-105204-1	ES						
		Mean Grain Size						
		Description	Median	P	article Size	Distribution	n, wt. perce	ent
		USCS/ASTM	Grain Size,	Gravel		Sand Size		Silt/Clay
Sample ID	Depth, ft.	(1)	mm		Coarse	Medium	Fine	
ArroyoSimi_SE_20150324 (440-105204-1)	N/A	Gravel	5.901	54.13	10.71	27.91	7.07	0.17



4/1092015 f 5

Custody Seals Intact: Custody Seal No.: ∆ Yes ∆ No	Date/Time:	\$26.115/	(24/15/	Empty Kit Relinquished by: Date:	Deliverable Requested: I, II, III, IV, Other (specify)	Unconfirmed	Possible Hazard Identification						ArroyoSimi_SE_20150324 (440-105204-1) 3/24/15 08:20 20/2016		Sample Identification - Client ID (Lab ID) Sample Date Time	Site:	Project Name: 44009879 Boeing SSFL NPDES 6500	Email: WO #	Phone: PO #	State, Zlp: CA, 90670	orings	Address: 3/30/2015 - 3/2000000000000000000000000000000000000	Company: PTS laboratories, Inc		Client Information (Sub Contract Lab)	Sampler.	TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Phone (249) 261-1022 Fax (949) 260-3297	
Cooler Temperature(s) °C and Other Remarks:	Company			Time:		Return To Client bisp	Sample Disposal (A fee may be as						Solid X	Preservation Code: XX	Sample Matrix Type (verwater, (C=Comp, (G=grab) 81-Tissue, A-Atri) Filed form G=grab) 81-Tissue, A-Atri) Filed Particle	id San MSD	(Yes c	r No)	No)				Analysis Req	debby.wilson@testamericainc.com	Wilson, Debby S E-Mail:	Lab PM:	Chain of Custody Record 45780	
۳۳۵۲۵: ۲، ۱ میروند کرد. ۲۵ میلوند کرد کرد کرد کرد کرد کرد کرد. ۲۵ میلوند کرد کرد کرد کرد کرد کرد کرد کرد کرد کر		DateTime: 10:46 PTS LABS	6/15/09:com DCS			Disposal By Lab Archive For Months	(A fee may be assessed if samples are retained longer than 1 month)								Total Num Special Instructions/Note:	per of	Dther:	s J - DI Water V - MCAA K - EDTA W - ph 4-5	Acid		C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S		Requested 440-105204-1 Image: Contract of the second sec	Page 1 of 1 Job #	440-00724, 1 Page:	Carrier Tracking No(s): COC No:		.

Test America Client Name/Address	meric ne/Add	Client Name/Address: Pro	n 7/19/	oject:	CHAIN OF	OF C	US1	CUSTODY FORM	0 R	5				ANAL	<u>YSIS I</u>	REQU	Page 1 of 1
Haley & Aldrich, Inc. 9040 Friars Road Su	Aldric ars Ro	Haley & Aldrich, Inc. 9040 Friars Road Suite	C)	Boeing-SSFL NPDES Annual Sediment Arroyo Simi-Frontier Park	- NPDES lent Arroy	s 'o Simi-Fr	ontier F	ark	snin	(s							Field readings (include units):
220 San Diego, CA 92108-5860	CA 921	108-5860							entse su	xicity rea giga							
Test Americ	a Conta	Test America Contact: Debby Wilson	Vilson						stori	ot o\ tsos		uo					DO = 5.13 mg/L
Project Manager: Nancy Gardiner	anager:	: Nancy		Phone Number: 619.285.7132, 858.337.4061	er: 2, 858.3		(cell)		neyoə	or Cras		oitudinte	arbon				Conductivity = 2.44 Imhos/cm
Sampler: D. Smith	Ŋ Ŋ	z tz		Fleid Contact, Jeff Bannon: 818.350.7340, 818.414.5608(cell)	t, Jeti Ba 0, 818.41	nnon: 14.5608(c	ell)		yeb-01	o silube				ləiQ ,ər			Water Velocity (ft/sec) = 0.1
Sample Description	Matrix	Container Type	t of Cont.	Sample ID	Sam Date	Sampling Date/Time	Pres	Bottle #	Chronic Toxicity	ruod-84 ≥ulitγM)	nA lstoT 	Particle	PCBs (8 PCBs (8	Chlordar	[,] (1808)		Time of readings = U.015 Comments
Arroyo Simi	v	1L wide mouth Plastic	4	ArroyoSimi- SE-20150324	03/24/15/0820	0230	4C in the Dark	1A, 1B, 1C, 1D	×	×							Keep sample in cooler in the dark until delivered to ABC Labs
Arroyo Simi	S	9 oz Jar	-	ArroyoSimi- SE-20150324	03/24/15	080	4oC	2A			×						
Arroyo Simi	S	9 oz Jar	-	ArroyoSimi- SE-20150324	03/24/15	0820	4oC	ЗА			×		×				
Arroyo Simi	S	9 oz Jar	-	ArroyoSimi- SE-20150324	03/24/15	0280/	4oC	4A			-	×					
Arroyo Simi	, ى	9 oz Jar	-	ArroyoSimi- SE-20150324	03/24/15		4oC	БA					×	×			
					•									_			
							1								+-		
			1 1														
			- 4	440-105204 Chain of Custody	of Custody												
			-+														
	Heli	Relinquished By		2 711.	2 71 IS ALL	2 V 10		Received By				Date/Time:	ime: ∙	124		55	Turn around Time: (check) 5 Days 5 Days
		Relinguished By	$\frac{1}{2}$		Date/Time:			deceived By	R	Z		Date/Time:			_ }	Ś	48 Hours 10 Days
) \`	<u>(</u>)	\ -\		3/24/1	15 12	0/	J.K.		TURNS			5/20	5/24/15		, 201 C /	
	in the second se	Relinquished By			Date/Time	ä		Received By				Date/Time:	ime:				Intact Integrity: (check) On loe: 0.7/0.0
	\mathcal{L}	while h	1 1244BT		\$1/4/15		(145	Oner	The		3	124	///2	3/34/12 18:42	52		Data Requirements: (check) No Level IV All Level IV All Level IV

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 105204 List Number: 1

Creator: Blocker, Kristina M

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

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Job Number: 440-105204-1

List Source: TestAmerica Irvine



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: 440-105204-2 Client Project/Site: Boeing SSFL NPDES

For:

Haley & Aldrich, Inc. 5333 Mission Center Road Suite 300 San Diego, California 92108

Attn: Nancy Gardiner

Debby Wilson

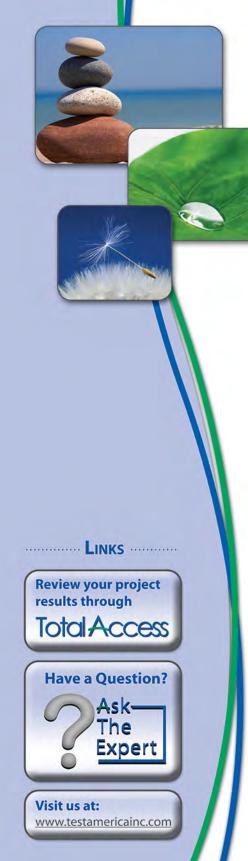
Authorized for release by: 4/17/2015 1:13:43 PM

Debby Wilson, Manager of Project Management (949)261-1022 debby.wilson@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.



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.

lebby Wilson

Debby Wilson Manager of Project Management 4/17/2015 1:13:43 PM

Table of Contents

Cover Page	1
Table of Contents	3
Sample Summary	4
Case Narrative	5
Subcontract Data	6
Chain of Custody	38
Receipt Checklists	

Sample Summary

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

Lak Osmala ID		NA - Andre	0 - 11 41	Deschard	
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
440-105204-1	ArroyoSimi-SE-20150324	Solid	03/24/15 08:20	03/24/15 18:45	

Job ID: 440-105204-2

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-105204-2

Comments

No additional comments.

Receipt

The sample was received on 3/24/2015 6:45 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0° C.

Subcontract non-Sister

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

Subcontract Work

Methods 48-hour Bivalve Embryo toxicity, Bioassay-Chronic 10day eohaustorius: These methods were subcontracted to Aquatic Bioassay

- Ventura, CA. The subcontract laboratory certifications are different from that of the facility issuing the final report.



April 17, 2015

Debby Wilson TestAmerica Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614

Dear Ms. Wilson:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136.* Results were as follows:

].

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	3/24/2015
ABC LAB. NO.:	TAM0315.232

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

! =	100.00 %
=	1.00
=	>100.00 %
= .	>100.00 %
ESULT	= PASS
	=

Yours very truly,

A Scott Johnson Laboratory Director

29 north olive st. ventura, ca 93001 (805) 643 5621 www.aquabio.org

TST Summary Sheet

	•			
Lab Name	Aquatic Bioassay & Consulting Labs.	Client Name	Test America	2
Test ID	Boeing SSFL NPDES Arroyo Simi Fro	o Test Species	Mytilus sp. (mussel)	3
Test Date	3/27/2015	Test Type	Chronic	4
Test Duration	48 hrs.	Endpoint	Larval Development	5
Critical Conc.	100%			6
				7

Statistic	Control	Critical Concentration	
Percent Mean of Raw Data	0.94	0.94	
Mean used in Calcuation (transformed)	1.33	1.33	
Variance used in Calcuation (transformed)	0.003	0.004	
Standard Deviation of Transformed Data	0.053	0.063	
CV of Transformed Data	0.040	0.048	
n	5	5	

Mean % Effect at Critical Conc. -0.09

Calculated t-value	Degrees of Freedom	Table t-value1.9432	Percent Difference
Results			
Pass	Sample is Non-toxic		

Raw Data

Contro	ol Data	Critical Conce	entration Data
No. of Organisms	Response (Final	No. of Organisms	Response (Final
Exposed or	Count, Weight,	Exposed or	Count, Weight,
Counted	Length, etc.)	Counted	Length, etc.)
224	219	224	211
224	211	224	216
224	208	224	209
224	207	224	201
224	209	224	218

CETIS Sur	nmary Repo	ort						Report Dat Test Code			-	25 (p 1 of 1) 7-6804-6637
Mussel Shell	Development Te	est						Aqua	atic B	ioassay & (Consulting	I Labs, Inc.
Batch ID: Start Date: Ending Date: Duration:	18-1591-0726 27 Mar-15 13:0 29 Mar-15 13:0 48h	1 Prot	ocol: cies:	Development-S EPA/600/R-95/ Mytilis gallopro Carlsbad Aqua	′136 (1995) vincialis			Analyst: Diluent: Brine: Age:		Freas pratory Wate	er	
•	05-7031-6221 24 Mar-15 08:20 25 Mar-15 13:20 77h		erial: rce:	TAM0315.232r Sample Water Bioassay Repo Arroyo Simi				Client: Project:		America ual Sedimer	nt Arroyo S	imi-Frontier
Comparison	Summary											
Analysis ID	Endpoint		NOEL		TOEL	PMSD	TU	Met				
08-0166-9927	Combined Prop	ortion Norm	100	>100	NA	3.59%	1	Equa	al Vari	ance t Two	Sample Te	est
Point Estimat	e Summary											
Analysis ID	Endpoint		Level	%	95% LCL	95% UCL	τu	Met	hod			
03-4982-4938	Combined Prop	ortion Norm	EC5	>100	N/A	N/A	<1	Line	ar Inte	erpolation (I	CPIN)	
			EC10	>100	N/A	N/A	<1					
			EC15	>100	N/A	N/A	<1					
			EC20	>100	N/A	N/A	<1					
			EC25	>100	N/A	N/A	<1					
			EC40		N/A	N/A	<1					
			EC50	>100	N/A	N/A	<1					
Test Accepta	bility											
Analysis ID	Endpoint		Attrib	oute	Test Stat	TAC Limi	its	Ove	rlap	Decision		
08-0166-9927	Combined Prop	ortion Norm	PMSE)	0.03591	NL - 0.25		No		Passes A	cceptability	Criteria
Combined Pr	oportion Normal	Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	c Std	Err	Std Dev	CV%	%Effect
0	Negative Contro	5	0.941	1 0.9144	0.9678	0.9241	0.97	77 0.00	9616	0.0215	2.29%	0.0%
100		5	0.942	0.905	0.9789	0.8973	0.97	732 0.01	332	0.02978	3.16%	-0.09%
Combined Pr	oportion Normal	Detail										
C-%	Control Type	Rep 1	Rep 2	2 Rep 3	Rep 4	Rep 5						
0	Negative Contro	0.9777	0.942	0.9286	0.9241	0.933						
100		0.942	0.964	3 0.933	0.8973	0.9732						
Combined Pr	oportion Normal	Binomials										
C-%	Control Type	Rep 1	Rep 2	2 Rep 3	Rep 4	Rep 5						
		•		•	•	<u> </u>						
0	Negative Contro	219/224	211/2	24 208/224	207/224	209/224						

CETIS Ana	alytical Repo	ort						ort Date: Code:			25 (p 1 of 2) 7-6804-6637
Mussel Shell	Development Te	st						Aquatic E	Bioassay & C	Consulting	g Labs, Inc.
Analysis ID: Analyzed:	08-0166-9927 16 Apr-15 11:23		•	ombined Prop trametric-Two		nal		S Version: ial Results		8.7	
Batch ID: Start Date: Ending Date: Duration:	18-1591-0726 27 Mar-15 13:07 29 Mar-15 13:07 48h	l Pro I Sp	otocol: EF ecies: My	evelopment-S PA/600/R-95/ /tilis galloprov arlsbad Aquat	136 (1995) vincialis		Anal Dilue Brine Age:	ənt: Lab ə:	Freas poratory Wate	er	
-	05-7031-6221 24 Mar-15 08:20 : 25 Mar-15 13:20 77h) Ma) So	iterial: Sa urce: Bi	M0315.232n Imple Water Dassay Repo royo Simi			Clier Proje		st America nual Sedimer	it Arroyo S	imi-Frontier
Data Transfor	ſm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Res			
Angular (Corre	ected)	NA	C > T	NA	NA		3.59%	Passes c	ombined pro	portion no	rmal
Equal Variand	ce t Two-Sample	Test									
Control	vs C-%		Test Stat	Critical	MSD DF	P-Value	P-Type	Decision	(α:5%)		
Negative Cont	rol 100		-0.1026	1.86	0.068 8	0.5396	CDF	Non-Sign	ificant Effect		
Test Acceptal	bility Criteria										
Attribute	Test Stat	TAC Lim	its	Overlap	Decision						
PMSD	0.03591	NL - 0.25		No		cceptability	Criteria				
ANOVA Table											
Source			Moon Se		DF	F Stat	P-Value	Desision	(~·E ⁰ /)		
Between	Sum Squa 3.569606E		Mean Sq 3.569606		1	0.01053	0.9208	Decision	(d:5%) ificant Effect		
Error	0.0271222		0.003390		8	0.01035	0.5200	Non-Sign			
Total	0.0271579				9	-					
Distributional	Tosts										
Attribute	Test			Test Stat	Critical		Desision	~~(19/)			
Variances	Variance I	Patio E		1.455	23.15	P-Value 0.7252	Decision(Equal Var	•			
Variances			y of Varianc		13.75	0.7252	Equal Var				
Variances	Levene Ed	-	-	0.2944	11.26	0.6022	Equal Var				
Distribution	Shapiro-W	•		0.938	0.7411	0.5314	Normal Di				
Distribution	Kolmogor			0.2172	0.3025	0.2128	Normal Di	stribution			
Distribution	D'Agostine			0.5433	2.576	0.5869	Normal Di	stribution			
Distribution	Anderson	Darling A	2 Normality	0.4399	3.878	0.2962	Normal Di	stribution			
Combined Pro	oportion Normal	Summar	/								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Negative Control		0.9411	0.9144	0.9678	0.933	0.9241	0.9777	0.009616	2.29%	0.0%
100	0	5	0.942	0.905	0.9789	0.942	0.8973	0.9732	0.01332	3.16%	-0.09%
Angular (Corr	ected) Transforn	ned Sumr	marv								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	5	1.33	1.265	1.395	1.309	1.292	1.421	0.0235	3.95%	0.0%
100	5 .	5	1.334	1.255	1.412	1.327	1.245	1.406	0.02835	4.75%	-0.28%
Combined Pro	oportion Normal	Detail						-			
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
				0.9286	0.9241	0.933					
	Negative Control	0.9777	0.942	0.5200							
0	Negative Control	0.9777 0.942	0.942 0.9643	0.9230	0.8973	0.9732					
0 100	Negative Control	0.942	0.9643			0.9732					
0 100 Angular (Corr	-	0.942	0.9643			0.9732 Rep 5					
0 100	ected) Transform	0.942 ned Detai Rep 1	0.9643	0.933	0.8973						

Analyst: ____ QA:_

4/17/2015

EIIS Ana	alytical Repo	rt					Report Date: Test Code:	16 Apr-15 11:25 (p 2 of 2) TAM0315.232myt 07-6804-6637
Mussel Shell	Development Tes	st					Aquatic E	Bioassay & Consulting Labs, Inc.
Analysis ID:	08-0166-9927	End	Ipoint: Cor	mbined Prop	portion Norn	nal	CETIS Version:	CETISv1.8.7
Analyzed:	16 Apr-15 11:23	Ana	lysis: Par	rametric-Two	o Sample		Official Results	: Yes
Combined Pr	oportion Normal	Binomials	j.					
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
	N	210/224	211/224	208/224	207/224	209/224		
	Negative Contro	219/224						
0	9	219/224	216/224	209/224	201/224	218/224		

Analyst: _____ QA:_____ 4/17/2015

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CETIS	S Ana	lytical Repo	ort						ort Date: t Code:		•	25 (p 1 of 1 07-6804-663	
Mussel	I Shell [Development Te	st						Aquatic	Bioassay & (Consultin	g Labs, Inc	
Analysi Analyze		03-4982-4938 16 Apr-15 11:23		Endpoint: Analysis:	Combined Pro				CETIS Version: CETISv1.8.7 Official Results: Yes				
Batch I	D:	18-1591-0726	Т	Test Type:	Development-S			Ana	lyst: Jo	e Freas			
Start D	ate:	27 Mar-15 13:01	1 F	Protocol:	EPA/600/R-95/	136 (1995)		Dilu	ent: La	boratory Wat	er		
Ending	Date:	29 Mar-15 13:01	1 5	Species:	Mytilis gallopro	vincialis		Brin	ie:				
Duratio	on:	48h	5	Source:	Carlsbad Aqua	farms CA		Age	:				
Sample	e ID:	05-7031-6221	0	Code:	TAM0315.232r	n		Clie	nt: Te	st America			
Sample	Date:	24 Mar-15 08:20	n o	Naterial:	Sample Water			Pro	ect: An	nual Sedime	nt Arroyo S	Simi-Frontie	
•		25 Mar-15 13:20		Source:	Bioassay Repo	ort					-		
Sample	e Age:	77h		Station:	Arroyo Simi								
Linear	Interpo	lation Options											
X Trans	sform	Y Transform	s	Seed	Resamples	Exp 95%	CL Meth	od					
Linear		Linear	C)	280	Yes	Two-	Point Interp	olation				
Point E	stimate	es											
Level	%	95% LCL	95% U	CL TU	95% LCL	95% UCL							
EC5	>100	N/A	N/A	<1	NA	NA							
EC10	>100	N/A	N/A	<1	NA	NA							
EC15	>100	N/A	N/A	<1	NA	NA							
EC20	>100	N/A	N/A	<1	NA	NA							
EC25	>100	N/A	N/A	<1	NA	NA							
EC40	>100	N/A	N/A	<1	NA	NA							
EC50	>100	N/A	N/A	<1	NA	NA							
Combir	ned Pro	portion Normal	Summa	ary		Calcu	lated Varia	te(A/B)					
C-%	C	ontrol Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	А	В	
0	N	egative Control	5	0.941	1 0.9241	0.9777	0.009616	0.0215	2.29%	0.0%	1054	1120	
100			5	0.942	0.8973	0.9732	0.01332	0.02978	3.16%	-0.09%	1055	1120	
Combir	ned Pro	portion Normal	Detail										
C-%	С	ontrol Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
C	N	egative Control	0.9777	0.942	0.9286	0.9241	0.933						
100			0.942	0.964	3 0.933	0.8973	0.9732						
Combir	ned Pro	portion Normal	Binomi	ials									
C-%		Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
C		Negative Contro	219/22	4 211/2	24 208/224	207/224	209/224						
		-	211/22	4 216/2	24 209/224	201/224	218/224						

CETIS™ v1.8.7.11 Page 11 of 39



Analyst:_____ QA:____ 4/17/2015

Mussel Ohell	D	4						A			07-6804-6637
Mussel Shell	Development Te	est				_		Aqua	tic Bioassay &	Consultin	g Labs, Inc.
Batch ID:	18-1591-0726			Development-S				Analyst:	Joe Freas		
Start Date:	27 Mar-15 13:0		Protocol:	EPA/600/R-95	. ,			Diluent:	Laboratory Wa	ter	
Ending Date:	29 Mar-15 13:0	1	Species:	Mytilis gallopro				Brine:			
Duration:	48h		Source:	Carlsbad Aqua	trarms CA			Age:			
Sample ID:	05-7031-6221	_	Code:	TAM0315.232				Client:	Test America		
•	24 Mar-15 08:2		Material:	Sample Water				Project:	Annual Sedime	ent Arroyo	Simi-Frontier
Sample Age:	25 Mar-15 13:2	0	Source: Station:	Bioassay Repo Arroyo Simi	ort						
Sample Age.	7711			Alloyo Silli							
Dissolved Ox	/gen-mg/L										
C-%	Control Type	Count		95% LCL	95% UCL	Min	Max	Std E		CV%	QA Count
0	Negative Contr		8.05	6.144	9.956	7.9	8.2	0.15	0.2121	2.64%	0
100 Overali		2 4	9.25	4.803	13.7	8.9 7.9	9.6	0.35	0.495	5.35%	0 (0%)
		4	8.65			1.9	9.6				0 (0%)
pH-Units											
C-%	Control Type	Count		95% LCL	95% UCL	Min	Max	Std E		CV%	QA Count
0	Negative Contr		7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
100 Overall		2 4	7.9	7.884	7.916	7.9 7.8	7.9	0	0	0.0%	0 (0%)
		4	7.875			1.0	7.9				0 (0%)
Salinity-ppt											
C-%	Control Type	Count		95% LCL	95% UCL		Max	Std E		CV%	QA Count
0	Negative Contr		34	34	34	34	34	0	0	0.0%	0
100 Overall		2	34	34	34	34 34	34 34	0	0	0.0%	0 (0%)
		4				54					0 (0 70)
Temperature-											_
C-%	Control Type	Count		95% LCL	95% UCL		Max	Std E		CV%	QA Count
0	Negative Contr		14.85	14.21	15.49	14.8	14.9	0.050		0.48%	0 0
100 Overall		2 4	14.85 14.85	14.21	15.49	14.8 14.8	14.9 14.9	0.050	04 0.07077	0.48%	0 (0%)
		-				14.0	14.0				0 (0 /0)
Dissolved Oxy											
C-%	Control Type	1	2								
	Negative Contr		8.2								
100		8.9	9.6								
pH-Units											
C-%	Control Type	1	2			_					
0	Negative Contr	7.9	7.8								
100		7.9	7.9								
Salinity-ppt											
C-%	Control Type	1	2								
0	Negative Contr	34	34								
100		34	34								
Temperature-	°C										
	Control Type	1	2								
0	Negative Contr	14.8	14.9								
100		14.8	14.9								

000-055-186-1

Analyst: 1 QA: 1



April 17, 2015

Debby Wilson TestAmerica Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614

Dear Ms. Wilson:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

1

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	3/24/2015
ABC LAB. NO.:	TAM0315.232

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC) =	100.00 %
TUc	=	1.00
EC25	= .	>100.00 %
EC50	=	>100.00 %
TST R	ESULI	$\Gamma = PASS$

Yours very truly,

he

Scott Johnson Laboratory Director

29 north olive st. ventura, ca 93001 (805) 643 5621 www.aquabio.org

TST Summary Sheet

Lab Name	Aquatic Bioassay & Consulting Labs.	Client Name	Test America
Test ID	Boeing SSFL NPDES Arroyo Simi Fr	o Test Species	E. Estuarius
Test Date	3/27/2015	Test Type	Chronic
Test Duration	10 Days	Endpoint	Survival
Critical Conc.	100%		

Statistic	Control	Critical Concentration	
Percent Mean of Raw Data	1.00	1.00	
Mean used in Calcuation (transformed)	1.46	1.46	
Variance used in Calcuation (transformed)	0.000	0.000	
Standard Deviation of Transformed Data	0.000	0.000	
CV of Transformed Data	0.000	0.000	
n	5	5	

Mean % Effect at Critical Conc.

0.00

Calculated t-value	Degrees of Freedom	Table t-value	Percent Difference
Results			
Pass	Sample is Non-toxic		

Raw Data

Contro	ol Data	Critical Concentration Data					
No. of Organisms	Response (Final	No. of Organisms	Response (Final				
Exposed or	Count, Weight,	Exposed or	Count, Weight,				
Counted	Length, etc.)	Counted	Length, etc.)				
20	20	20	20				
20	20	20	20				
20	20	20	20				
20	20	20	20				
20	20	20	20				

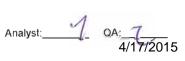
CETIS Sun	nmary Repo	rt				Report Date: Test Code:		•	:25 (p 1 of 1)1-9698-8878		
Eohaustorius	10-d Survival ar	nd Reb	urial Sedim	nent Test				Aquati	c Bioassay & (Consultin	g Labs, Inc.
Batch ID: Start Date: Ending Date: Duration:	20-8898-4613 03 Apr-15 13:01 13 Apr-15 13:01 10d 0h		Test Type: Protocol: Species: Source:	Survival-Rebur EPA/600/R-94/ Eohaustorius e Northwestern A	025 (1994) stuarius	nce, OR		Analyst: Joe Freas Diluent: Laboratory Seawater Brine: Not Applicable Age:			
•	02-7064-0869 24 Mar-15 08:20 : 24 Mar-15 13:20 10d 5h	D D	Code: Material: Source: Station:	TAM0315.232¢ Sediment Bioassay Repo Arroyo Simi (Se	، ort				Fest America Annual Sedimer	nt Arroyo S	Simi-Frontier
Comparison S	Summary										
Analysis ID	Endpoint		NOEL	LOEL	TOEL	PMSD	τU	Metho	d		
15-1306-7446	Survival Rate		100	>100	NA	NA	1	Wilcox	on Rank Sum	Two-Samp	le Test
Point Estimat	e Summary										
Analysis ID	Endpoint		Level	%	95% LCL	95% UCL	τU	Metho	d		
01-1623-7472	Survival Rate		EC5	>100	N/A	N/A	<1	Linear	Interpolation (I	CPIN)	
			EC10	>100	N/A	N/A	<1				
			EC15		N/A	N/A	<1				
			EC20	>100	N/A	N/A	<1				
			EC25	>100	N/A	N/A	<1				
			EC40		N/A	N/A	<1				
			EC50	>100	N/A	N/A	<1				
Test Acceptat	oility										
Analysis ID	Endpoint		Attrib	oute	Test Stat	TAC Lim	its	Overla	·		
01-1623-7472	Survival Rate		Contr	ol Resp	1	0.9 - NL		Yes		cceptabilit	
15-1306-7446	Survival Rate		Contr	ol Resp	1	0.9 - NL		Yes	Passes A	cceptabilit	y Criteria
Survival Rate	Summary										
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Effect
0	Negative Contro	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	1	1	1	1	1	0	0	0.0%	0.0%
Survival Rate	Detail										
C-%	Control Type	Rep 1	Rep 2	2 Rep 3	Rep 4	Rep 5					
0	Negative Contro	1	1	1	1	1					
100		1	1	1	1	1					
Survival Rate	Binomials							_			
0.04	Control Type	Rep 1	Rep 2	2 Rep 3	Rep 4	Rep 5					
C-%	Control type	IVED I									
0	Negative Contro		•		20/20	20/20					

Analyst: _____ QA:_____ 4/17/2015

CETIS Ana	lytical Repo	rt					•	ort Date: Code:		•	:25 (p 1 of 1) 01-9698-8878
Eohaustorius	10-d Survival ar	nd Reburia	l Sedimen	t Test				Aquati	c Bioassay &	Consultin	g Labs, Inc.
Analysis ID: Analyzed:	15-1306-7446 16 Apr-15 11:23			urvival Rate	-Two Sam	ble		IS Versio cial Resu		.8.7	
Batch ID: Start Date: Ending Date: Duration:	20-8898-4613 03 Apr-15 13:01 13 Apr-15 13:01 10d Oh	Pro Spe	tocol: El cies: Ec	urvival-Reburi PA/600/R-94/ phaustorius e prthwestern A	025 (1994) stuarius		Anal Dilu Brin	ent: L e: N	loe Freas .aboratory Sea Not Applicable	water	
Sample ID: Sample Date:	02-7064-0869 24 Mar-15 08:20 24 Mar-15 13:20 10d 5h	Coc) Mat) Sou	le: T/ erial: Se irce: Bi	AM0315.232e ediment oassay Repo rroyo Simi (Se	rt		Age: Clier Proj	nt: 1	Fest America Annual Sedime	nt Arroyo :	Simi-Frontier
Data Transform	m	Zeta	Alt Hyp	Trials	Seed			Test R	esult		
Angular (Corre	cted)	NA	C > T	NA	NA			Passes	s survival rate		•
Wilcoxon Ran	k Sum Two-Sam	ple Test									
Control	vs C-%		Test Sta	t Critical	Ties D	F P-Value	P-Type	Decisi	on(α:5%)		
Negative Contr	ol 100		27.5	NA	1 8	1.0000	Exact	Non-Si	ignificant Effec	t	
Test Acceptab	oility Criteria										
Attribute	Test Stat	TAC Limi	ts	Overlap	Decisio	า					
Control Resp	1	0.9 - NL		Yes	Passes	Acceptability	Criteria				
ANOVA Table											
Source	Sum Squa	res	Mean So	uare	DF	F Stat	P-Value	Decisi	on(α:5%)		
Between	0		0		1	65540	<0.0001	Signific	cant Effect		
Error	0		0		8	-					
Total	0				9			_			
Survival Rate	Summary										
	Control Type	Count	Mean	95% LCL	95% UC		Min	Max	Std Err	CV%	%Effect
	Negative Control		1	1	1	1	1	1	0 0	0.0%	0.0% 0.0%
100		5	1	1	1	1	1	1	0	0.0%	0.076
Angular (Corre	ected) Transforn	ned Summ	ary								
	Control Type	Count	Mean			_ Median	Min	Max	Std Err	<u>CV%</u>	%Effect
0 100	Negative Contr	5 5	1.459 1.459	1.458 1.458	1.459 1.459	1.459 1.459	1.459 1.459	1.459 1.459	0 0	0.0% 0.0%	0.0% 0.0%
		<u> </u>	1.100							0.070	0.070
Survival Rate											
	Control Type Negative Control	Rep 1	Rep 2	Rep 3	Rep 4 1	Rep 5 1					
100	Negative Control	1	1	1	1	1					
					-						
- ·	ected) Transforn		D 0	D	Dec. 4	D f					
	Control Type Negative Control	Rep 1	Rep 2 1.459	Rep 3 1.459	Rep 4 1.459	Rep 5 1.459					
100	gaave oonaor	1.459	1.459	1.459	1.459	1.459					
Survival Rate	Binomials				· · · ·						
	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
	Negative Contro	-	20/20	20/20	20/20	20/20					_
100	•	20/20	20/20	20/20	20/20	20/20					



	S Ana	iy dour repe	/it					Re Te	st Code:	TAM0315.2	232eoh	:25 (p 1 of 2 01-9698-887		
Eohau	storius	10-d Survival ar	nd Reburial	Sedin	ient Test				Aqua	ic Bioassay & (Consultin	g Labs, Inc		
Analys		01-1623-7472		point:					TIS Vers		.8.7			
Analyz	ed:	16 Apr-15 11:23	3 Anal	ysis:	Linear Interpola	tion (ICPIN)		Of	Official Results: Yes					
Batch	ID:	20-8898-4613	Test	Туре:	Survival-Reburial				Analyst: Joe Freas					
Start D)ate:	03 Apr-15 13:01	Prot	ocol:	EPA/600/R-94/025 (1994)				Diluent: Laboratory Seawater					
Ending	g Date:	13 Apr-15 13:01	l Spec	cies:	Eohaustorius estuarius				Brine: Not Applicable					
Duratio	on:	10d Oh	Sour	rce:	Northwestern Aquatic Science, OR				le:					
Sample	e ID:	02-7064-0869	Code	e:	TAM0315.232e			CI	ient:	Test America				
Sample	e Date:	24 Mar-15 08:20	0 Mate	erial:	Sediment			Pr	oject:	Annual Sedimer	nt Arroyo	Simi-Frontie		
Receiv	e Date:	24 Mar-15 13:20	0 Sour	'ce:	Bioassay Repo	rt								
Sample	e Age:	10d 5h	Stati	on:	Arroyo Simi (Se	ediment)								
Linear	Interpo	lation Options												
X Tran	sform	Y Transform	Seed	ł	Resamples	Exp 95%	CL Me	ethod						
Linear		Linear	0		280	Yes	Tw	o-Point Inte	rpolation					
Test Ad	cceptab	ility Criteria												
Attribu	ıte	Test Stat	TAC Limit	s	Overlap	Decision								
Control	l Resp	1	0.9 - NL		Yes	Passes Ac	cceptabili	ty Criteria						
Point E	Estimate	es												
Level	%	95% LCL	95% UCL	τu	95% LCL	95% UCL								
EC5	>100	N/A	N/A	<1	NA	NA								
EC10	>100	N/A	N/A	<1	NA	NA								
EC15	>100	N/A	N/A	<1	NA	NA								
EC20	>100	N/A	N/A	<1	NA	NA								
EC25	>100	N/A	N/A	<1	NA	NA								
EC40	>100	N/A	N/A	- 4										
	>100		IN/A	<1	NA	NA								
EC50	~100	N/A	N/A N/A	<1	NA NA	NA NA								
		N/A Summary				NA	lated Var	riate(A/B)						
EC50 Surviva C-%	al Rate				NA	NA	lated Var Std Err		v CV%	%Effect	A	В		
Surviva	al Rate C	Summary	N/A	<1	NA	NA Calcu			v <u>CV%</u> 0.0%	%Effect	A 100	B 100		
Surviva C-%	al Rate C	Summary ontrol Type	N/A Count	<1 Mean	Min	NA Calcu Max	Std Err	Std De						
Surviv a C-% 0 100	al Rate C	Summary ontrol Type egative Control	N/A Count 5	<1 Mean	NA Min 1	NA Calcu Max 1	Std Err 0	Std De	0.0%	0.0%	100	100		
Surviva C-% 0 100 Surviva	al Rate C N al Rate	Summary ontrol Type egative Control	N/A Count 5	<1 Mean	NA <u>Min</u> 1 1	NA Calcu Max 1	Std Err 0	Std De	0.0%	0.0%	100	100		
Surviv C-% 0 100 Surviv C-%	al Rate C N al Rate C	Summary ontrol Type egative Control Detail	N/A Count 5 5	<1 Mean 1 1	NA <u>Min</u> 1 1	NA Calcu Max 1 1	Std Err 0 0	Std De	0.0%	0.0%	100	100		
Surviv: C-% 0 100 Surviv: C-% 0	al Rate C N al Rate C	Summary ontrol Type egative Control Detail ontrol Type	N/A 5 5 Rep 1	<1 Mean 1 1 Rep 2	NA Min 1 1 2 Rep 3	NA Calcu Max 1 1 Rep 4	Std Err 0 0 Rep 5	Std De	0.0%	0.0%	100	100		
Surviv: C-% 0 100 Surviv: C-% 0 100	al Rate C N al Rate C N	Summary ontrol Type egative Control Detail ontrol Type	N/A <u>Count</u> 5 5 <u>Rep 1</u> 1	<1 Mean 1 1 Rep 2	NA <u>Min</u> 1 1 2 <u>Rep 3</u> 1	NA Calcu Max 1 1 1 Rep 4 1	Std Err 0 0 Rep 5	Std De	0.0%	0.0%	100	100		
Surviva C-% 0 100 Surviva C-% 0 100 Surviva	al Rate C N al Rate C N al Rate	Summary ontrol Type egative Control Detail ontrol Type egative Control Binomials	N/A 5 5 Rep 1 1 1	<1 Mean 1 1 Rep 2 1 1	NA Min 1 1 2 Rep 3 1 1 1	NA Calcu Max 1 1 1 Rep 4 1 1	Std Err 0 0 Rep 5 1	Std De	0.0%	0.0%	100	100		
Surviv: C-% 0 100 Surviv: C-% 0 100	al Rate C Al Rate C N al Rate	Summary ontrol Type egative Control Detail ontrol Type egative Control	N/A 5 5 Rep 1 1 1 Rep 1	<1 Mean 1 1 Rep 2	NA Min 1 1 2 Rep 3 1 1 2 Rep 3	NA Calcu Max 1 1 1 Rep 4 1	Std Err 0 0 Rep 5	Std De	0.0%	0.0%	100	100		



CETIS Ana	alytical Report			Report Date: Test Code:	16 Apr-15 11:25 (p 2 of 2) TAM0315.232eoh 01-9698-8878		
Eohaustorius	10-d Survival and F	leburial Sedin	Aquatic Bioassay & Consulting Labs, Inc.				
Analysis ID: Analyzed:	01-1623-7472 16 A pr-15 11:23	Endpoint: Analysis:	Survival Rate Linear Interpolation (ICPIN)	CETIS Version: Official Results			

Analyst:_____ QA:_____ 4/17/2015

CETIS Measurement Report								Report Date: 16 Apr-15 11:25 (p 1 of Test Code: TAM0315.232eoh 01-9698-88			
Eohaustorius	10-d Survival a	nd Rel	ourial Sedim	ient Test				Aquatic E	3ioassay &	Consulting	g Labs, Inc.
Batch ID: Start Date: Ending Date: Duration:	20-8898-4613 03 Apr-15 13:01 13 Apr-15 13:01 10d 0h		Test Type:Survival-ReburialProtocol:EPA/600/R-94/025 (1994)Species:Eohaustorius estuariusSource:Northwestern Aquatic Scient		nce, OR	I	Diluent: Lab	Freas ooratory Sea Applicable	water		
•	02-7064-0869 Code: : 24 Mar-15 08:20 Materia e: 24 Mar-15 13:20 Source: 10d 5h Station:			TAM0315.232e Sediment Bioassay Report Arroyo Simi (Sediment)				Client: Test America Project: Annual Sediment Arroyo Simi-Frontier			
Dissolved Ox	ygen-mg/L										
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	11	8.927	7.904	9.951	6.5	10	0.4595	1.524	17.07%	0
100		11	9.409	9.27	9.548	8.9	9.6	0.06246	0.2071	2.2%	0
Overall		22	9.168			6.5	10				0 (0%)
Total Ammon	ia (N)-mg/L										
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
100		1	0			0	0	0	0		0
Overall		2	0			0	0				0 (0%)
pH-Units						_			-		
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
100	-	2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
Overall		4	7.875			7.8	7.9				0 (0%)
Salinity-ppt											
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Мах	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
100	-	2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20			20	20				0 (0%)
Temperature-	°C										
C-%	Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	11	14.84	14.77	14.9	14.7	15	0.02788	0.09246	0.62%	0
100	-	11	14.78	14.59	14.97	14	15	0.08401	0.2786	1.89%	0
Overall		22	14.81			14	15				0 (0%)

000-055-186-1

CETIS™ v1.8.7.11

Analyst: _____ QA:____

4/17/2015

CETIS Measurement Report Eohaustorius 10-d Survival and Reburial Sediment Test								Report Date: Test Code:		16 Apr-15 11:25 (p 2 of 2) TAM0315.232eoh 01-9698-8878		
								Aquatic Bioassay & Consulting Labs, Inc.				
Dissolved Oxy	ygen-mg/L											
C-%	Control Type	1	2	3	4	5	6	7	8	9	10	
0	Negative Contr	9.9	9.8	10	10	9.9	9.8	9.5	9.6	6.5	6.6	
100		8.9	9.2	9.5	9.6	9.5	9.4	9.3	9.5	9.6	9.5	
Dissolved Oxy	ygen-mg/L											
C-%	Control Type	1	2	3	4	5	6	7	8	9	10	
0	Negative Contr	6.6										
100		9.5										
Total Ammoni	a (N)-mg/L											
C-%	Control Type	1										
0	Negative Contr	0										
100		0										
pH-Units												
C-%	Control Type	1	2									
0	Negative Contr	7.9	7.9									
100		7.9	7.8									
Salinity-ppt												
C-%	Control Type	1	2									
0	Negative Contr	20	20									
100		20	20									
Temperature-°	°C											
C-%	Control Type	1	2	3	4	5	6	7	8	9	10	
0	Negative Contr	14.8	14.9	14.8	14.7	15	14.7	14.8	14.9	14.9	14.8	
100		14	14.8	14.9	15	15	14.8	15	14.8	14.7	14.8	
Temperature-°	°C											
C-%	Control Type	1	2	3	4	5	6	7	8	9	10	
0	Negative Contr	14.9										
100		14.8										

Analyst:____

4

QA:<u>----</u> 4/17/2015

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~ ~ ~ ~



CHRONIC MYTILUS DEVELOPMENT BIOASSAY

1

DATE: 3/27/2015

STANDARD TOXICANT:

Unionized Ammonia

NOEC =

0.07500 mg/l

EC25 = EC50 = 0.09312 mg/l 0.10990 mg/l

Yours very truly,

Scott Johnson Laboratory Director

29 north olive st. ventura, ca 93001 (805) 643 5621 www.aquabio.org

5

CETIS Summary Report									Report Date: Test Code:		e:	16 Apr-15 11:25 (p 1 of 1) MYT032715m 11-3853-2256		
Mussel Shell	Development Te	est								Aquat	tic B	ioassay & C	Consulting	Labs, Inc.
Batch ID: Start Date: Ending Date: Duration:	02-0972-4444 27 Mar-15 13:0 29 Mar-15 13:0 48h	0 Pro 0 Spe	t Type: tocol: cies: irce:	EPA/600/R-95/136 (1995) Mytilis galloprovincialis										
Sample ID: Sample Date: Receive Date: Sample Age:	:	Sou	le: erial: irce: tion:	Am Ref	T032715 monia (Unic erence Toxi F TOX	,			Clier Proje			mal Lab TOX		
Comparison S	Summary													
Analysis ID 02-3894-6590	Endpoint Combined Prop	ortion Norn	NOEL n 0.075		LOEL 0.098	TOEL 0.08573	PMSD 3.17%	ΤU		Meth Dunn		ultiple Com	parison Tes	st
Point Estimate	e Summary													
Analysis ID	Endpoint		Level		mg/L	95% LCL	95% UCL	ΤU		Meth	od			
13-5054-4782	Combined Prop	ortion Norn	EC5 EC10 EC15 EC20 EC25 EC40 EC50		0.07747 0.08138 0.08529 0.0892 0.09312 0.1036 0.1099	0.0753 0.07933 0.08333 0.08709 0.09075 0.1014 0.1072	0.07922 0.08289 0.08686 0.09109 0.09555 0.106 0.1139			Linea	r Inte	erpolation (IC	CPIN)	
Test Acceptab	oility													
Analysis ID	Endpoint		Attri b			Test Stat	TAC Limi	its		Overl	lap	Decision		
02-3894-6590	Combined Prop	ortion Norn	n PMSE)		0.03171	NL - 0.25			No		Passes Ac	ceptability	Criteria
Combined Pro	oportion Normal	Summary												
	Control Type	Count	Mean		95% LCL	95% UCL	Min	Max		Std E		Std Dev	CV%	%Effect
0.029	Negative Contro	5 5	0.967 0.967		0.9536 0.9587	0.9803 0.977	0.9554 0.9598	0.98 0.97		0.004		0.01075 0.007336	1.11% 0.76%	0.0% -0.09%
0.05		5	0.971		0.9536	0.9892	0.9554	0.99		0.006		0.01433	1.48%	-0.46%
0.075		5	0.950	9	0.9224	0.9794	0.9286	0.97	777	0.010	28	0.02298	2.42%	1.66%
0.098		5	0.666	1	0.628	0.7042	0.6295	0.69	964	0.013	72	0.03067	4.61%	31.12%
0.119		5	0.345	5	0.2466	0.4444	0.2634	0.43	375	0.035	62	0.07965	23.05%	64.27%
Combined Pro	oportion Normal	Detail												
	Control Type	Rep 1	Rep 2		Rep 3	Rep 4	Rep 5							
	Negative Contro		0.982	1	0.9643	0.9598	0.9554							
0.029		0.9643	0.9777		0.9732	0.9643	0.9598							
0.05		0.9554	0.9598		0.9777	0.9911	0.9732							
0.075		0.942	0.9777		0.9732	0.9286	0.933							
0.098 0.119		0.6964 0.4375	0.692 0.2634		0.6741 0.2946	0.6295 0.308	0.6384 0.4241							
	and the second			7	0.2340	0.500	0.7241							
	oportion Normal				Dam 2	Den 1	Den f							
	Control Type Negative Contro	Rep 1	Rep 2 220/22		Rep 3 216/224	Rep 4 215/224	Rep 5 214/224							
0.029	roganie Contro	216/224	219/22		218/224	215/224	214/224							
		214/224	215/22		219/224	222/224	218/224							
0.05														
0.05 0.075		211/224	219/22	24	218/224	208/224	209/224							
		211/224 156/224	219/22 155/22		218/224 151/224	208/224 141/224	209/224 143/224							

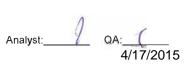


CETIS Ana	alytical Repo		•	oort Date: t Code:	16 Apr-15 11:25 (p 1 of 2) MYT032715m 11-3853-2256						
Mussel Shell	Development Te	est						Aquatic	Bioassay & C	Consulting	Labs, Inc.
Analysis ID: Analyzed:	02-3894-6590 16 Apr-15 11:23		Endpoint: Analysis:		Proportion Norr -Control vs Tre		CETIS Version: CETISv1.8.7 Official Results: Yes				
Batch ID:	02-0972-4444		Test Type:						e Freas		
Start Date:	27 Mar-15 13:00		Protocol:		-95/136 (1995)				poratory Seav	vater	
			Species:		, ,		Brin		t Applicable	Valei	
Ending Date: Duration:	48h	-	Source:		provincialis quafarms CA				(Applicable		
Duration.	4011		Source.	Cansbau P	qualantis CA		Age				
Sample ID:	03-7987-4998		Code:	MYT03271			Clie		ernal L a b		
Sample Date:	27 Mar-15		Material:	Ammonia (Unionized)		Pro	ject: RE	F TOX		
Receive Date	:		Source:	Reference	Toxicant						
Sample Age:	13h		Station:	REF TOX							
Data Transfo	rm	Zeta	Alt H	p Trials	Seed		PMSD	NOEL	LOEL	TOEL	TU
Angular (Corre	ected)	NA	C > T	NA	NA		3.17%	0.075	0.098	0.08573	
Dunnett Multi	iple Comparison	Test									
Control	vs C-mg/L		Test S	tat Critic	al MSD D	F P-Value	Р-Туре	Decisior	n(α:5%)		
Negative Cont	rol 0.029		-0.043	33 2.362	0.075 8	0.8458	CDF	Non-Sigr	nificant Effect		
	0.05		-0.504	4 2.362	0.075 8	0.9407	CDF	Non-Sigr	nificant Effect		
	0.075		1.184	2.362	0.075 8	0.3410	CDF	Non-Sigr	nificant Effect		
	0.098*		13.8	2.362	0.075 8	<0.0001	CDF	Significa			
	0.119*		24.21	2.362	0.075 8	<0.0001	CDF	Significa	nt Effect		
Test Acceptal	bility Criteria										
Attribute	Test Stat	TACL	imits	Over	ap Decision	l					
PMSD	0.03171	NL - 0	.25	No	Passes A	cceptability	Criteria				
ANOVA Table)										
Source	Sum Squa	ares	Mean	Square	DF	F Stat	P-Value	Decisior	n(α:5%)		
Between	2.632211		0.5264	421	5	211.6	<0.0001	Significa	nt Effect		
Error	0.059703		0.0024	87625	24						
Total	2.691914				29						
Distributional	l Tests										
Attribute	Test			Test \$	Stat Critical	P-Value	Decisior	n(α:1%)			
Variances	Bartlett E	quality	of Variance	8.366	15.09	0.1372	Equal Va	ariances			
Variances	Mod Leve	ne Equ	ality of Varia	nce 1.884	4.248	0.1472	Equal Va	ariances			
Variances	Levene E	quality	of Variance	5.771	3.895	0.0012	Unequal	Variances			
Distribution	Shapiro-V	Vilk W I	Normality	0.966	0.9031	0.4465	Normal E	Distribution			
Distribution	Kolmogor	ov-Smi	rnov D	0.116	0.1853	0.3707	Normal E	Distribution			
Distribution	D'Agostin	o Skew	ness	0.995	2 2.576	0.3196	Normal E	Distribution			
Distribution	D'Agostin	o Kurto	sis	0.500	2.576	0.6166		Distribution			
Distribution	-		son K2 Omn		9.21	0.5376		Distribution			
Distribution	Anderson	-Darling	g A2 Normal	ty 0.448	4 3.878	0.2829	Normai [Distribution			
Combined Pr	oportion Normal	Summ	nary								
C-mg/L	Control Type	Coun		95% L			Min	Max	Std Err	CV%	%Effect
0	Negative Control		0.967	0.953		0.9643	0.9554	0.9821	0.004808	1.11%	0.0%
0.029		5	0.9679			0.9643	0.9598	0.9777	0.00328	0.76%	-0.09%
		5	0.9714			0.9732	0.9554	0.9911	0.006407	1.48%	-0.46%
		E	0.9509	0.922	1 0.9794	0.942	0.9286	0.9777	0.01028	2.42%	1.66%
0.05 0.075		5									
		5 5 5	0.666	0.628	0.7042	0.6741 0.308	0.6295 0.2634	0.6964 0.4375	0.01372 0.03562	4.61% 23.05%	31.12% 64.27%

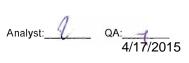
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Analyst:_____ QA:_____ 4/17/2015

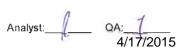
	alytical Repo				Test Code: MYT032715m 11-3853-2256							
Mussel Shell	Development Te	st					Aquatic Bioassay & Consulting Labs, Inc.					
Analysis ID: Analyzed:	02-3894-6590 16 Apr-15 11:22		•	mbined Prop rametric-Cor			CETIS Version: CETISv1.8.7 Official Results: Yes					
Angular (Cor	rected) Transform	ned Sumn	nary									
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	Negative Contr	5	1.39	1.351	1.429	1.381	1.358	1.437	0.01417	2.28%	0.0%	
0.029		5	1.392	1.365	1.418	1.381	1.369	1.421	0.009549	1.53%	-0.1%	
0.05		5	1.406	1.348	1.464	1.406	1.358	1.476	0.02101	3.34%	-1.15%	
0.075		5	1.353	1.283	1.423	1.327	1.3	1.421	0.02532	4.18%	2.69%	
0.098		5	0.955	0.9147	0.9953	0.9632	0.9164	0.9873	0.01452	3.4%	31.3%	
0.119		5	0.6266	0.5227	0.7305	0.5884	0.5389	0.7227	0.03742	13.35%	54.93%	
Combined Pr	roportion Normal	Detail										
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0	Negative Control	0.9732	0.9821	0.9643	0.9598	0.9554						
0.029		0.9643	0.9777	0.9732	0.9643	0.9598						
0.05		0.9554	0.9598	0.9777	0.9911	0.9732						
0.075		0.942	0.9777	0.9732	0.9286	0.933						
0.098		0.6964	0.692	0.6741	0.6295	0.6384						
0.119		0.4375	0.2634	0.2946	0.308	0.4241						
Angular (Cor	rected) Transform	ned Detail										
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0	Negative Control	1.406	1.437	1.381	1.369	1.358				_		
0.029		1.381	1.421	1.406	1.381	1.369						
0.05		1.358	1.369	1.421	1.476	1.406						
0.075		1.327	1.421	1.406	1.3	1.309						
0.098		0.9873	0.9824	0.9632	0.9164	0.9256						
0.119		0.7227	0.5389	0.5738	0.5884	0.7092						
Combined Pr	oportion Normal	Binomial	5									
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0	Negative Contro	218/224	220/224	216/224	215/224	214/224						
0.029		216/224	219/224	218/224	216/224	215/224						
0.05		214/224	215/224	219/224	222/224	218/224						
0.075		211/224	219/224	218/224	208/224	209/224						
0.098		156/224	155/224	151/224	141/224	143/224						
0.119		98/224	59/224	66/224	69/224	95/224						



CETIS	Analytica	al Repo	ort	•	ort Date: Code:		•	25 (p 1 of 2 1-3853-225(
Mussel	Shell Develo	pment Te	st						Aquatic	Bioassay &	Consulting	g Labs, Inc.
Analysi Analyze		54-4782 r-15 11:22			Combined Pro Linear Interpo	•			CETIS Version: CETISv1.8.7 Official Results: Yes			
Batch II	D: 02-09	72-4444	Test	Type:	Development-	Survival		Ana	yst: Jo	be Freas		
Start Da		r-15 13:00			EPA/600/R-95			Dilu		aboratory Sea	water	
Ending		r-15 13:00	•		Mytilis gallopr			Brin		ot Applicable		
Duratio	n: 48h		Sou	rce:	Carlsbad Aqu	afarms CA		Age				
Sample	ID: 03-79	37-4998	Cod	e:	MYT032715			Clie	nt: In	ternal Lab		
Sample	Date: 27 Ma	r-15	Mate	erial:	Ammonia (Un	ionized)		Proj	ect: R	EF TOX		
Receive			Sou		Reference To:	xicant						
Sample	Age: 13h		Stati	on:	REF TOX							
_inear I	nterpolation	Options										
X Trans		ransform			Resamples	Exp 95%						
Linear	Line	ear	0		280	Yes	Two-	Point Interp	olation			
Point E	stimates											
Level	mg/L 9	5% LCL	95% UCL									
EC5	-	.0753	0.07922									
EC10	0.08138 0	.07933	0.08289									
EC15		.08333	0.08686									
EC20		.08709	0.09109									
EC25		.09075	0.09555									
EC40 EC50		.1014 .1072	0.106 0.1139									
	ed Proportio						Ilated Varia					
C-mg/L	Control		Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative	Control	5	0.967	0.9554 0.9598	0.9821	0.004808 0.00328	0.01075	1.11% 0.76%	0.0%	1083	1120 1120
0.029 0.05			5 5	0.9679		0.9777 0.9911	0.00528	0.007334 0.01433	1.48%	-0.09% -0.46%	1084 1088	1120
0.075			5	0.9509		0.9777	0.01028	0.02298	2.42%	1.66%	1065	1120
0.098			5	0.6661		0.6964	0.01372	0.03067	4.61%	31.12%	746	1120
0.119			5	0.3455	0.2634	0.4375	0.03562	0.07965	23.05%	64.27%	387	1120
Combin	ed Proportio	n Normai	Detail									
C-mg/L	•		Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0 0	Negative		0.9732	0.9821		0.9598	0.9554					
0.029	· ·		0.9643	0.9777		0.9643	0.9598					
0.05			0.9554	0.9598	0.9777	0.9911	0.9732					
0.075			0.942	0.9777	0.9732	0.9286	0.933					
0.098			0.6964	0.692	0.6741	0.6295	0.6384					
0.119			0.4375	0.2634	0.2946	0.308	0.4241					
Combin	ed Proportio	n Normal	Binomials									
C-mg/L			Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	Negativ	e Contro		220/22		215/224	214/224					
0.029			216/224	219/22		216/224	215/224					
0.05			214/224	215/22		222/224	218/224					
			211/224	219/22		208/224	209/224					
			450/001	40000								
0.075 0.098 0.119			156/224 98/224	155/22 59/224		141/224 69/224	143/224 95/224					



CETIS Ana	alytical Report			Report Date: Test Code:	16 Apr-15 11:25 (p 2 of 2) MYT032715m 11-3853-2256
Mussel Shell	Development Test			Aquatic Bi	bassay & Consulting Labs, Inc.
Analysis ID: Analyzed:	13-5054-4782 16 Apr-15 11:22	Endpoint: Analysis:	Combined Proportion Normal Linear Interpolation (ICPIN)	CETIS Version: Official Results:	CETISv1.8.7 Yes



CETIS Mea	asurement l	Repoi	rt		Report Date: Test Code:			:25 (p 1 of 2) 11-3853-2256					
Mussel Shell	Development T	est						Aquatic Bioassay & Consulting Labs, Inc.					
Batch ID: Start Date: Ending Date: Duration:	02-0972-4444 27 Mar-15 13:0 29 Mar-15 13:0 48h		Test Type: Protocol: Species: Source:	Development-S EPA/600/R-95 Mytilis gallopro Carlsbad Aqua	/136 (1995) vincialis			Diluent: La	e Freas boratory Sea ot Applicable	awater			
Sample ID: Sample Date: Receive Date: Sample Age:			Code: Material: Source: Station:	MYT032715 Ammonia (Unio Reference Tox REF TOX	,				ternal La b EF TOX				
Dissolved Ox	ygen-mg/L												
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count		
	Negative Contr		6.7	5.429	7.971	6.6	6.8	0.09999	0.1414	2.11%	0		
0.029	<u> </u>	2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0		
0.05		2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0		
0.075		2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0		
0.098		2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0		
0.119		2	6.55	5.915	7.185	6.5	6.6	0.04999	0.0707	1.08%	0		
Overall		12	6.575			6.5	6.8				0 (0%)		
pH-Units													
C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count		
0	Negative Contr	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0		
0.029		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0		
0.05		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0		
0.075		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0		
0.098		2	7.95	7.315	8.585	7.9	8	0.04999	0.0707	0.89%	0		
0.119		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0		
Overall		12	7.908			7.9	8				0 (0%)		
Salinity-ppt													
-	Control Type	Count		95% LCL	95% UCL	Min	Мах	Std Err	Std Dev	CV%	QA Count		
0	Negative Contr	2	34	34	34	34	34	0	0	0.0%	0		
0.029		2	34	34	34	34	34	0	0	0.0%	0		
0.05		2	34	34	34	34	34	0	0	0.0%	0		
0.075		2	34	34	34	34	34	0	0	0.0%	0		
0.098		2	34	34	34	34	34	0	0	0.0%	0		
0.119		2	34	34	34	34	34	0	0	0.0%	0		
Overall		12	34			34	34				0 (0%)		
Temperature-											_		
C-mg/L	Control Type	Count		95% LCL	95% UCL	Min	Max		Std Dev	CV%	QA Count		
	Negative Contr		14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0		
0.029		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0		
0.05		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0		
0.075		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0		
0.098		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0		
0.119		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0 (0%)		

Analyst: _____ QA:____

4/17/2015

Mussel	Shell	Development Test
1111100001	011011	Doveropment reet

Dissolved Oxygen-mg/L

Dissolved O	xygen-mg/L		
C-mg/L	Control Type	1	2
0	Negative Contr	6.6	6.8
0.029		6.6	6.5
0.05		6.6	6.5
0.075		6.6	6.5
0.098		6.6	6.5
0.119		6.6	6.5
pH-Units			
C-mg/L	Control Type	1	2
0	Negative Contr	7.9	7.9
0.029		7.9	7.9
0.05		7.9	7.9
0.075		7.9	7.9
0.098		7.9	8
0.119		7.9	7.9
Salinity-ppt			
C-mg/L	Control Type	1	2
0	Negative Contr	34	34
0.029		34	34
0.05		34	34
0.075		34	34
0.098		34	34
0.119		34	34

Temperature-°C

C-mg/L	Control Type	1	2
0	Negative Contr	14.8	14.9
0.029		14.8	14.9
0.05		14.8	14.9
0.075		14.8	14.9
0.098	1	14.8	14.9
0.119		14.8	14.9

_ QA:___

Analyst:_



96 Hour *Eohaustorius estuarius* Survival Bioassay - Standard Toxicant

DATE: 4/3/2015

STANDARD TOXICANT:

Ammonium Chloride

ENDPOINT: SURVIVAL

Į,

AMMONIA CHLORIDE

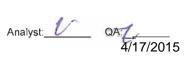
NOEC = 0.4270 mg/L

EC25 = 0.6702 mg/LEC50 = 1.4070 mg/L

Yours very truly,

P-Scott Johnson Laboratory Director

CETIS Sun	nmary Repo			Report Date: 16 Apr-15 11:25 (p 1 of Test Code: EOH040315e 08-1167-06								
Reference To:	xicant 96-h Acut	e Surv	ival Test					Aq	uatic E	Bioassay & (Consulting	Labs, Inc.
Batch ID: Start Date: Ending Date: Duration:	20-4983-1001 03 Apr-15 13:00 07 Apr-15 13:00 96h)	Test Type: Protocol: Species: Source:	Survival EPA/600/R-94/ Eohaustorius e Northwestern A	stuarius	nce, OR		Analyst:Joe FreasDiluent:Laboratory SeawaterBrine:Not ApplicableAge:				
Sample ID: Sample Date: Receive Date: Sample Age:			Code: Material: Source: Station:	EOH040315 Ammonia (Unio Reference Toxi REF TOX			Client: Internal Lab Project: REF TOX					
Comparison S	Summary											
Analysis ID	Endpoint		NOEL	LOEL	TOEL	PMSD	TU		thod			
15-9704-7227	Survival Rate		0.427	0.789	0.5804	20.1%		Ste	el Ma	ny-One Rank	CSum Test	
Point Estimate	e Summary											
Analysis ID	Endpoint		Level	mg/L	95% LCL	95% UCL	τu	Me	thod			
12-3933-9277	Survival Rate		EC5 EC10 EC15 EC20 EC25 EC40 EC50	0.4915 0.5809 0.6702 1.07	0.2528 0.2917 0.3323 0.399 0.5103 0.6729 1.163	0.5237 0.5826 0.6692 0.8212 0.9808 1.357 1.719		Lin	ear Int	terpolation (I	CPIN)	
Suminal Data	Cummon		2000	1.407		1.710			_			
Survival Rate	Control Type	Cours	Maan		95% UCL	Min	Mox		i Err	Std Dev	CV%	%Effect
	Negative Contro	Coun 4	t Mean 0.975		95% UCL	0.9	Max 1	0.0		0.05	5.13%	0.0%
0.214	Negative Contro	4	1	1	1	1	1	0.0	20	0	0.0%	-2.56%
0.427		4	0.875		1	0.8	1		4787	0.09574	10.94%	10.26%
0.789		4	0.675		0.8273	0.6	0.8	0.0	4787	0.09574	14.18%	30.77%
1.556		4	0.45	0.3581	0.5419	0.4	0.5	0.0	2887	0.05774	12.83%	53.85%
4.124		4	0.15	0	0.6274	0	0.6	0.1	5	0.3	200.0%	84.62%
Survival Rate	Detail						_					
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4							
0	Negative Contro	1	0.9	1	1							
0.214		1	1	1	1							
0.427		1	0.8	0.9	0.8							
0.789		0.7	0.8	0.6	0.6							
1.556		0.4	0.5	0.4	0.5							
4.124		0.6	0	0	0							
Survival Rate	Binomials											
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4							
0	Negative Contro	10/10	9/10	10/10	10/10							
0.214		10/10	10/10	10/10	10/10							
0.427		10/10	8/10	9/10	8/10							
		7/10	8/10	6/10	6/10							
0.789		//10	0/10	4.15								
0.789 1.556 4.124		4/10	5/10	4/10	5/10 0/10							



CETIS Analytical Report									eport Date: st Code:	16 Apr-15 11:25 (p 1 of 2) EOH040315e 08-1167-0633				
Reference To	xicant 96-h Acu	te Surv	vival Test					Aquatic Bioassay & Consulting Labs, Inc.						
Analysis ID:	15-9704-7227		Endpoint:	Survival Rate				CE	TIS Version	: CETISv1	.8.7			
Analyzed:	16 Apr-15 11:2	3	Analysis:	Nonparametric	-Contro	l vs 1	Freatments	Official Results: Yes						
Batch ID:	20-4983-1001		Test Type:	Survival				Analyst: Joe Freas						
Start Date:	03 Apr-15 13:0	0	Protocol:	EPA/600/R-94/	025 (19	94)		Diluent: Laboratory Seawater						
Ending Date:	07 Apr-15 13:0	0	Species:	Eohaustorius e	stuarius	6		Br	ine: No	t Applicable				
Duration:	96h		Source:	Northwestern A	quatic	Scier	nce, OR	Ag	e:					
Sample ID:	11-5280-0364		Code:	EOH040315				Cli	ient: Int	ernal Lab				
Sample Date:				Ammonia (Unio	onized)					FTOX				
Receive Date:			Source:	Reference Toxi	,				- ,					
Sample Age:				REF TOX										
Data Transfor	m	Zeta	Alt Hy	p Trials	Seed			PMSD	NOEL	LOEL	TOEL	TU		
Angular (Corre		NA	C > T	NA	NA			20.1%	0.427	0.789	0.5804			
•														
	ne Rank Sum Te	:51	+ . ^		T :-		- D \/-1	D 7:	Deal					
Control	vs C-mg/L		Test S		Ties		P-Value	P-Type	Decision					
Negative Cont			20	10	1	6	0.9516	Asymp	-	nificant Effect				
	0.427 0.789*		13 10	10 10	2 0	6 6	0.2311 0.0417	Asymp Asymp	Significa	nificant Effect				
	1.556*		10	10	0	6	0.0417	Asymp	Significa					
	4.124*		10	10	0	6	0.0417	Asymp	Significa					
			10	10			0.0117	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	olginiou					
ANOVA Table				•										
Source	Sum Squa	ares		Square	DF		F Stat	P-Value	1	, ,				
Between	3.444775		0.6889		5		23.7	<0.0001	Significa	nt Effect				
Error Total	0.5232763	\$	0.0290	07091	18									
TULAI	3.968051				-23									
Distributional	Tests													
Attribute	Test			Test Stat	Critic	al	P-Value	Decisio	on(α:1%)					
Variances			ality of Varia		4.248		0.6652	-	ariances					
Variances			of Variance	5.127	4.248		0.0043	•	l Variances					
Distribution	Shapiro-V			0.8115	0.884		0.0005		rmal Distribut					
Distribution	Kolmogor			0.2443	0.205		0.0007		rmal Distribut					
Distribution	D'Agostin			3.61	2.576		0.0003		rmal Distribut					
Distribution	D'Agostin			3.36	2.576		0.0008		rmal Distribut					
Distribution	-		son K2 Omni		9.21		<0.0001 0.0020		rmal Distribut					
Distribution		i-Daning	g A2 Normali	ty 1.287	3.878	_	0.0020	NON-NO	rmal Distribut	.1011				
Survival Rate	Summary													
C-mg/L	Control Type	Coun		95% LCL		JCL		Min	Max	Std Err	CV%	%Effect		
)	Negative Contro		0.975	0.8954	1		1	0.9	1	0.025	5.13%	0.0%		
0.214		4	1	1	1		1	1	1	0 0.04787	0.0%	-2.56% 10.26%		
0.427 0.789		4 4	0.875 0.675	0.7227 0.5227	1 0.827	3	0.85 0.65	0.8	1	0.04787	10.94% 14.18%	10.26% 30.77%		
1.556		4	0.675	0.5227	0.827		0.65	0.6 0.4	0.8 0.5	0.04787	14.18%	53.85%		
1.556		4	0.45	0.3581	0.541		0.45 0	0.4 0	0.5	0.02887	200.0%	55.65% 84.62%		
	a a 4 a al) 77	-			0.021	-		-			/	2		
	ected) Transfori		-	0=0/	0-01					04.15	0.101	0/ 55		
C-mg/L	Control Type	Coun		95% LCL	95% l	JCL		Min	Max	Std Err	CV%	%Effect		
	Negative Contr	4	1.371	1.242	1.501		1.412	1.249	1.412	0.04074	5.94%	0.0%		
).214		4	1.412	1.412	1.412		1.412	1.412	1.412	0	0.0%	-2.97%		
).427		4	1.219	0.9879	1.45		1.178	1.107	1.412	0.07256	11.91% 10.89%	11.12%		
0.789 1 <i>.</i> 556		4 4	0.9676 0.7351		1.135 0.827		0.9386 0.7351	0.8861 0.6847	1.107 0.7854	0.05269 0.02906	7.91%	29.44% 46.4%		
1.000														
4.124		4	0.3406	-0.238	0.919	3	0.1588	0.1588	0.8861	0.1818	106.8%	75.16%		

Analyst: _____ QA: <u>U</u>______ 4/17/2015

CETIS Analytical Report

Reference Toxicant 96-h Acute Survival Test

Analysis ID: Analyzed:	15-9704-7227 16 Apr-15 11:23		•	urvival Rate onparametri	c-Control vs Treatments	CETIS Version: Official Results:	CETISv1.8.7 Yes	
Survival Rate	e Detail							
C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4			
0	Negative Control	1	0.9	1	1			
0.214		1	1	1	1			
0.427		1	0.8	0.9	0.8			
0.789		0.7	0.8	0.6	0.6			
1.556		0.4	0.5	0.4	0.5			
4.124		0.6	0	0	0			

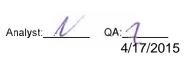
Angular (Corrected) Transformed Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
0.214		1.412	1.412	1.412	1.412
0.427		1.412	1.107	1.249	1.107
0.789		0.9912	1.107	0.8861	0.8861
1.556		0.6847	0.7854	0.6847	0.7854
4.124		0.8861	0.1588	0.1588	0.1588

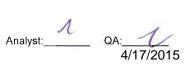
Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Contro	10/10	9/10	10/10	10/10
0.214		10/10	10/10	10/10	10/10
0.427		10/10	8/10	9/10	8/10
0.789		7/10	8/10	6/10	6/10
1.556		4/10	5/10	4/10	5/10
4.124		6/10	0/10	0/10	0/10

000-055-186-4



CETIS	Analytic	al Repo	ort						port Date: st Code:			11:25 (p 1 of 2 08-1167-063		
Referen	ice Toxicant	96-h Acut	e Survival	Test					Aquatic Bioassay & Consulting Labs,					
Analysi	s ID: 12-39	933-9277	End	point:	Survival Rate			CE	TIS Versio	on: CETISv1	1.8.7			
Analyze	ed: 16 Aj	pr-15 11:2	3 Ana	lysis:	Linear Interpo	lation (ICPIN	l)	Of	ficial Resu	Its: Yes				
Batch II		983-1001			Survival					oe Freas				
Start Da		or-15 13:00		tocol:	EPA/600/R-94					aboratory Sea	water			
Ending Duratio		or-15 13:00	•	cies: rce:	Eohaustorius (Northwestern					lot Applicable				
			300	rce:	Northwestern		Ince, OK	Ag						
Sample		280-0364	Cod		EOH040315					nternal Lab				
Sample Receive	Date: 03 Ap	or-15		erial:	Ammonia (Uni	-		Pr	oject: F	REF TOX				
	Age: 13h			rce: ion:	Reference Tox REF TOX	Ricant								
		Outland	014											
	nterpolation	•	6	لم	Decemples									
X Trans Linear		Fransform lear	0 See	a	Resamples 280	Exp 95% Yes		ethod wo-Point Inte	rnolation					
					200	100								
	stimates	050/ 1 01												
Level EC5	0	95% LCL	95% UCL											
EC5 EC10		0.2528 0.2917	0.5237 0.5826											
EC15		0.3323	0.6692											
EC20	0.5809	0.399	0.8212											
EC25	0.6702	0.5103	0.9808											
EC40	1.07	0.6729	1.357											
EC50	1.407	1.163	1.719											
Surviva	I Rate Summ	nary				Calcu	ulated Va	riate(A/B)			_			
C-mg/L	Control	Туре	Count	Mean	Min	Max	Std Eri	r Std Dev	/ CV%	%Effect	А	В		
0	Negative	e Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40		
0.214			4	1	1	1	0	0	0.0%	-2.56%	40	40		
0.427			4	0.875		1	0.0478				35	40		
0.789 1.556			4	0.675 0.45	0.6 0.4	0.8 0.5	0.0478				27 18	40 40		
4.124			4 4	0.45	0.4	0.6	0.0288	0.3	200.0%		6	40		
	Dete Detell		•								-			
	I Rate Detail	-		_										
C-mg/L		i ype e Control	Rep 1	Rep 2		Rep 4								
)).214	negative	e Control	1 1	0.9 1	1 1	1 1								
0.427			1	ı 0.8	0.9	0.8								
0.789			0.7	0.8	0.6	0.6								
1.556			0.4	0.5	0.4	0.5								
4.124			0.6	0	0	0								
Survival	I Rate Binom	nials												
		ol Type	Rep 1	Rep 2	Rep 3	Rep 4								
C-ma/L		ive Contro		9/10	10/10	10/10								
			10/10	10/10		10/10								
))	Hogan													
0 0.214	nogan		10/10	8/10	9/10	8/10								
0 0.214 0.427	rogan		10/10 7/10	8/10 8/10	9/10 6/10	8/10 6/10								
C-mg/L 0 0.214 0.427 0.789 1.556 4.124	rogai													



CETIS An	alytical Report			Report Date: Test Code:	16 Apr-15 11:25 (p 2 of 2) EOH040315e 08-1167-0633
Reference Te	oxicant 96-h Acute S	urvival Test		Aquatic Bio	bassay & Consulting Labs, Inc.
Analysis ID: Analyzed:	12-3933-9277 16 A pr-15 11:23	Endpoint: Analysis:	Survival Rate Linear Interpolation (ICPIN)	CETIS Version: Official Results:	



Analyst: ______ QA: _____ 4/17/2015

040315e 0	16 EOH0	ort Date: t Code:	•	CETIS Measurement Report									
							ival Test	e Surv	kicant 96-h Acu	Reference To			
water	oratory Sea	ient: Lab ne: Not	Dilue	nce, OR	stuarius	EPA/600/R-94/ Eohaustorius e	Test Type: Protocol: Species: Source:	0 0	•	Batch ID: Start Date: Ending Date: Duration:			
							Material: Source:			Sample ID: Sample Date: Receive Date: Sample Age:			
									aon-ma/l				
CV%	Std Dov	Std Err	Max	Min	95% 1101	95% I CI	Moon	Count					
										+			
									negative Coll	0.214			
										0.214			
										0.427			
										1.556			
										4.124			
4,1070		0.2		-	3.541	4.200				Overall			
				0.2			0.000	12					
C)/0/					0.50/ 11/01	0504 1 01			o .	pH-Units			
									Negative Contr				
		-								0.214 0.427			
	-									0.427			
	-									1.556			
										4.124			
0.0170	0.01012	0.00001			0.000	7.115				Overali			
			1.0	7.7			1.010	12					
CV%	Std Dov	Std Err	Max	Min	0.5% 1101	05% I CI	Moon	Count	Control Tuno	Salinity-ppt			
									Negative Conti	0.214			
										0.427			
										0.789			
	-	-								1.556			
										4.124			
			34	20			22.33	12		Overall			
									°C	Temperature-			
CV%	Std Dev	Std Err	Мах	Min	95% UCL	95% LCL	Mean	Count	Control Type	-			
0.48%	0.07077	0.05004	14.9	14.8	15.49	14.21	14.85	2					
0.48%	0.07077	0.05004	14.9	14.8	15.49	14.21	14.85	2	_	0.214			
0.48%	0.07077	0.05004	14.9	14.8	15.49	14.21	14.85	2		0.427			
0.48%	0.07077	0.05004	14.9	14.8	15.49	14.21	14.85	2		0.789			
0.0%	0	0	14.8	14.8	14.82	14.78	14.8	2		1.556			
0.48%	0.07077	0.05004	14.9	14.8	15.49	14.21	14.85	2		4.124			
-	CV% 2.11% 3.34% 1.08% 1.08% 1.08% 1.08% 4.16% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.	Std Dev CV% 0.1414 2.11% 0.2121 3.34% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 1.08% 0.0707 0.9% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% 0 0.0% <t< td=""><td>Aquatic Bioassay & Consultir /st: Joe Freas nt: Laboratory Seawater e: Not Applicable t: Internal Lab cct: REF TOX Std Err Std Dev CV% 0.09999 0.1414 2.11% 0.15 0.2121 3.34% 0.04999 0.0707 1.08% 0.04999 0.0707 1.08% 0.04999 0.0707 1.08% 0.2 0.2828 4.16% Std Err Std Dev CV% 0 0 0.00% 0.2 0.2828 4.16% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0 0 0.09% 0</td><td>Aquatic Bioassay & Consultin Analyst: Joe Freas Diluent: Laboratory Seawater Brine: Not Applicable Age: Stage: Client: Internal Lab Project: REF TOX 6.8 0.09999 0.1414 2.11% 6.5 0.15 0.2121 3.34% 6.6 0.04999 0.0707 1.08% 6.6 0.04999 0.0707 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Analyst: 1 QA:1

CETIS Measurement Report

0.427 0.789

1.556

4.124

C-mg/L

0.214

0.427

0.789

1.556

4.124

0

Temperature-°C

Reference Toxicant 96-h Acute Survival Test

20

20

20

20

1

14.8

14.8

14.8

14.8

14.8

14.8

Control Type

Negative Contr

20

20

20

20

2

14.9

14.9

14.9

14.9 14.8

14.9

000-055-186-1

Report Date:	16 Apr-15 11:25 (p 2 of 2)
Test Code:	EOH040315e 08-1167-0633

5

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved	Oxygen-mg/L			·				
C-mg/L	Control Type	1	2					
0	Negative Contr	6.6	6.8					
0.214		6.5	6.2					
0.427		6.6	6.5					
0.789		6.5	6.6					
1.556		6.6	6.5					
4.124		6.6	7					
pH-Units								
C-mg/L	Control Type	1	2					
0	Negative Contr	7.9	7.9				_	
0.214		7.9	7.9					
0.427		7.9	7.9					
0.789		7.9	7.9					
1.556		7.9	7.9					
4.124		7.7	7.8					
Salinity-pp	t					-		
C-mg/L	Control Type	1	2					
0	Negative Contr	20	20					
0.214		34	34					

Analyst: 📶 🛛 QA-4/17/2015

Shahis	Rélinquished By	le la	Relinguished By	2	Relinquished By						Arroyo S 9 oz Jar	Arroyo Simi S 9 oz Jar	Arroyo S 9 oz Jar	Arroyo S 9 oz Jar	Arroyo S 1L wide Simi Plastic	ter	Sampler: D. Swith	Project Manager: Nancy Gardiner	Test America Contact: Debby Wilson	ZZU San Diego, CA 92108-5860	Haley & Aldrich, Inc. 9040 Friars Road Suite	Client Name/Address:	Test America Version 7/19/2010
Laph	6	2			>	 +					1 Arroyo SE-20	1 Arroyo	1 Arroyo SE-20	1 Arroyo SE-20	4 SE-20	# of Cont. San	818.0	Phor 619.2	lson		Annu	Project:	7/19/2010
3	-	3/24		34.12							ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324		ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324	Sample ID	350.7340,	Phone Number: 619.285.7132,			Boeing-SSFL NPDES Annual Sediment Arroy	ct:	£
3/24/15	Date/Time:	1/15 1210	Date/Time:	5/0855	Date/Time:						03/24/15/0820	03/24/15/0820	03/24/15 0820	03/24/15 0820	03/24/15/0820	Sampling Date/Time	Field Contact, Jett Bannon: 818.350.7340, 818.414.5608(cell)	r: 858.337.4061(cell)			Boeing-SSFL NFUES Annual Sediment Arroyo Simi-Frontier Park		CHAIN OF CUSTODY FORM
13:26			1								4oC	4oC	4oC	40C	Dark in	Pres	cell)	(cell)			rontier Pa		TSUC
S.	Received By	Shaf	Received By	K	Received By						5A	4A	3A	2A	1A, 1B, 1C, 1D	Bottle #					ark		ODY
Y		ANAB		N	٦										×	Toxicity	r Bivalve				uarius		FORM
		7							_					×	×		edulis o				gas)	-	
لب	0				Ð								×			% Mois	ture						
2ª	Date/Time:	5/2	Date/Time:	١	Date/Time:							×					Size Di		on				
T	me:	41	me:	\mathbb{N}	ime:	+	-	$\left \right $	_	_	×		×			Total O PCBs (rganic C	arbon					
ree! (SL hree	1	15/		142/					_		×					Chlorda	ane, Diel 4,4-DDI				DT	ANALYSIS	
		2/02	<	(Saf											230							SIS REQUIRED	
	59	2 7	4	S.	_				+						P	0	- <u>-</u>	0	0	q			
Data Requirements: (check) No Level IV All Level IV NPDES Level IVOn Ice:	Intact On Ice:	72 Hours Normal X	48 Hours 10 Days	24 Hours 5 Days	um around Time: (check)										Keep sample in cooler in the dark until delivered to ABC Labs	Comments	Water Velocity (ft/sec) = $\frac{0 \cdot [}{1000 \text{ Jmm}}$	Conductivity = 2.44 Imhos/cm	DO = 5.13 mg/L	pH =pH units	Temp = 15.04 °C	ED	Page 1 of 1

Page 1 of 1		Temp = 15.04 °C	7.21	DO = 3.1.7 mg/L	Conductivity = 2.44 Imhos/cm	water Velocity (ft/sec) = $\partial \cdot l$	Time of readings = UDIX Comments	Keep sample in cooler in the dark until delivered to ABC Labs											7 CS 24 Hours (check) 5 Days	48 Hours 10 Days 72 Hours Normal X	Sample Integrity: (check)	Data Requirements: (check) No Level IVAil Level IV NPDES Level IVOn lce:	
	ANALYSIS REQUIRED	Ŧac]-⊅'⊅ '∃ əuəydı	exo	arbon T ,nih	Janic C (S82) Dield	Particle 5 Total Org PCBs (86 Chlordar (8081), 4			×	×	××						Date/Time:	3/24/	Date/Time:		3/34/12 1842	
		(576				imonia Ire	mA lstoT JisioM %		×	×	· · · · · ·			-+				Dat	/1			3/2	
-ORM			oxicity.	1 o f	ndm∃	evlsvi8	Chronic Toxicity 48-hour I (Mytilus e	×													TUNNOT	The	
CUSTODY FORM		Park					Bottle #	1A, 1B, 1C, 1D	2A	ЗА	4A	5A						Received By		Addeenved By	Received By	Over	
CUS ⁻		rontier			(cell)	(cell)	Pres	the Dark Dark	4oC	4oC	40C	40C		-							0/1	Chi S	
		o Simi-F			5	õ	Sampling Date/Time	0280	080	0820	0280	0820							555		× / ×		
CHAIN OF		L NPDES tent Arroy			oer: 2, 858.3(tt, Jeff Bai 0, 818.41	Sam Date/	03/24/15/0820	03/24/15	03/24/15	03/24/15	03/24/15	•				of Custoay	Date/Time:	324·15/0855	Date/Time:	Date/Time:	\$1/4/15	
	Project:	BOGING-SSFL NFUES Annual Sediment Arroyo Simi-Frontier Park			Phone Number: 619.285.7132,	Field Contact, Jeff Bannon: 818.350.7340, 818.414.5608(Sample ID	ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324	ArroyoSimi- SE-20150324					440-105204 Chain of Custody		324.			, ,	
17/19/20				Vilson			# af Cont.	4	-	-	-	-		~			+		V			1, ILAR I	
Fest America Version 7/19/2010	ress:	Haley & Aldrich, Inc. 9040 Friars Road Suite	108-5860	Test America Contact: Debby Wilson	: Nancy	zitz	Container Type	1L wide mouth Plastic	9 oz Jar	9 oz Jar	9 oz Jar	9 oz Jar					_	Relinauished Bv	L X	Relinquished By	Relinquished By	ref les	
meri	ne/Ado	Aldric ars R	, CA 92	a Conta	anager	IJ Ŋ	Matrix	S	S	ю	ы	, س						Reli	()			2	-
Test A	Client Name/Address	Haley & Aldrich, Inc. 9040 Friars Road Su	ZZU San Diego, CA 92108-5860	Test Americ	Project Manager: Nancy Gardiner	Sampler: D. Smith	Sample Description	Arroyo Simi	Arroyo Simi	Arroyo Simi	Arroyo Simi	Arroyo Simi											

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Login Number: 105204 List Number: 1

Creator: Blocker, Kristina M

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

List Source: TestAmerica Irvine

APPENDIX F

First Quarter 2015 Reasonable Potential Analysis (RPA) Summary Tables

Notes:

- 1. The following Reasonable Potential Analysis (RPA) provides the analytical results as performed by the procedures outlined in *Reasonable Potential Analysis Methodology Technical Memo* (MWH and Flow Science, 2006).
- 2. The monitoring data set utilized to conduct the RPA consists of all applicable and relevant data from the present reporting quarter.
- 3. As directed by the CTR and the Regional Water Control Board 2,3,7,8-TCDD (Dioxin) values are to be expressed in NPDES permitting and this RPA as TCDD Total Equivalence units (TEQs). A TCDD TEQ is determined by multiplying each of the seventeen dioxin and furan congeners by their respective toxicity equivalency factor (TEF) and bioaccumulation equivalency factor (BEF), and summing the results of those products. For the purposes of this RPA, the resulting TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 37, of the NPDES Permit Effective June 3, 2010.
- 4. In calculating the average, standard deviation, coefficient of variation, and projected maximum effluent concentration (99/99), one-half of the MDL was used for concentration results reported as ND. Data reported with qualifiers were not included in this RPA as Boeing believes qualified data are not "appropriate, valid, relevant, (nor) representative"¹ of storm water constituents and are therefore not utilized in its RPA.
- 5. All of the following abbreviations and/or notes may not occur on every table.

>=	Greater than or equal to
*	Freshwater aquatic life criteria for metals are expressed as a function of
	total hardness (mg/L) in the water body. The equations are provided in the
	CTR, (US EPA, 2000). Values displayed correspond to a total hardness of
	100 mg/l.
µg/L	Concentration units, micrograms per liter
All Data Qualified	All available monitoring data are qualified and no statistical analysis is
	performed.
Annually	The 2010 NPDES Permit requires annual monitoring.
Available Data < DL	All available monitoring data that are not qualified are below detection
	limits.
В	Background
С	Concentration
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
CTR	California Toxics Rule
CV	Coefficient of Variation
DL	Detection Limit
EPA TSD	EPA's Technical Support Document for Water Quality Based Toxics
	Control, (see references).
Fibers/L	Units for asbestos concentration, fibers per liter

Definition of Acronyms, Abbreviations, and Terminology Used

¹ SIP, p. 5.

Definition of Acronyms, Abbreviations, and Terminology Used (Continued)

Definition of Action ying, 7	<u>Abbreviations, and reminiology Osed (Obitinded)</u>
НН О	Human Health criteria for consumption of Organisms only
HH W&O	Human Health criteria for consumption of Water and Organisms
MEC	Maximum Observed Effluent Concentration
Min	Minimum
MPN/100ml	Most probable number per 100 milliliters
NA	Not Applicable
Narrative	Water quality criteria are expressed as a narrative objective rather than a numeric objective, and therefore are not part of the statistical RPA calculations.
None	No available CTR or Basin Plan criteria.
pH Dependent	CTR Criteria are based on pH.
Once Per Discharge	The 2010 NPDES Permit requires monitoring once per discharge event.
Qualified Data	Data qualifier definitions are: (a) J- The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL), (b) U/UJ- The analyte was not detected in the sample at the detection limit /estimated detection limit (EDL), (c) B - Analyte found in sample and associated blank, and (d) DNQ- Detected Not Quantified.
Reserved	EPA has reserved the CTR criteria.
RPA	Reasonable Potential Analysis
SIP	The State Water Resources Control Board "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California," (see references).
Tot	Total

Priority Pollutant RPA Column Explanation

CTR	Provides CTR constituent reference number.								
Constituent	Provides CTR constituent common name.								
Units	Provides the data set's concentration units as referenced by 2010 NPDES								
	Permit.								
MEC	Provides the outfall monitoring group's maximum value from the applicable data set.								
CV	Equal to the standard deviation divided by the average of the applicable								
	data set. If the number of samples is less than 10, the CV is assumed to be								
Step 1 identifies all applic	able water quality criteria.								
CTR Criteria	Concentration criteria as listed in the CTR.								
CMC = Acute	The Freshwater CMC is listed as the acute concentration criterion.								
CCC = Chronic	The Freshwater CCC is listed as the chronic concentration criterion.								
HH W&O (Not App)	The HH W&O is deemed not applicable based on past Regional Board								
· · · · · · · · · · · · · · · · · · ·	RPAs.								
HH O = HH	The HH O is listed as the CTR human health concentration criterion.								
Basin Plan Criteria	Applicable Basin Plan Criteria are listed for the Los Angeles River and/or								
	Calleguas Creek watersheds.								
C = Lowest Criteria	The comparison concentration (C) is equal to the lowest criterion for a								
	constituent based on the CMC, CCC, HH O, and Basin Plan Criteria listed.								
Step 2 defines the application									
Is Effluent Data	If all data is qualified, then NO. If not, then YES.								
Available									

Priority Pollutant RPA Column Explanation (Continued)

Step 3 determines the maximum observed effluent concentration.										
Was Constituent	If the constituent was detected, then YES. If all monitoring data are non-									
Detected in Effluent Data	detect or qualified then NO.									
Are all DL >C	DL >C If constituent was detected in effluent data then not applicable (NA). If									
	constituent was not detected and all analysis detection limits are greater									
	than the comparison concentration, then YES, if not then NO.									
If $DL > C$, $MEC = Min$	If the previous cell answer was yes, then the MEC is equal to the minimum									
(DL)	detection limit. If not, then NA.									
Step 4 compares the MEC	to the lowest applicable water quality criteria.									
MEC >= C	If the MEC is greater than or equal to the comparison concentration then									
	YES, if not then NO.									

Note: Steps 5 and 6 of the Priority Pollutant RPA do not apply to Boeing SSFL because the Regional Board gives no consideration for receiving water background constituent concentrations. Furthermore, Boeing SSFL defers the application of best professional judgment in Step 7 and final determination of reasonable potential in Step 8 to the Regional Board Staff.

Non-priority Pollularit RPA	
Constituent	Provides the Non Priority Pollutant constituent common name
Monitoring	Provides the 2010 NPDES Permit directed monitoring frequency
Units	Provides the data set's concentration units as referenced by 2009 NPDES
	Permit
Number of Samples	Provides the number of available samples that are not qualified
MEC	Provides the outfall monitoring group's maximum value from the applicable
	data set
CV	Equal to the standard deviation divided by the average of the applicable
	data set. If the number of samples is less than 10, the CV is assumed to be
	0.6.
Multiplier	Utilizes the EPA's TSD calculation to determine multiplier for which the
	maximum effluent concentration is calculated. (MWH and Flow Science,
	2006, or EPA TSD, 1991)
Projected Maximum	Utilizes the product of the multiplier and the MEC as an estimate for the
Effluent Concentration	projected maximum effluent concentration.
Dilution Ratio	The Regional Board allocates no dilution ratio to Boeing SSFL.
Background	The Regional Board allocates no background concentration to Boeing
Concentration	SSFL.
Projected Maximum	The Regional Board estimates the projected maximum receiving water
Receiving Water	concentration as equal to the projected maximum effluent concentration.
Concentration	
Step 1, Determine Water	The water quality objective is based on appropriate Basin Plan criteria as
Quality Objectives	noted in the Reasonable Potential Analysis Methodology Technical Memo.
BU – Beneficial Use	This is the Regional Board's Basis for determining if reasonable potential
Protection, NC – Human	should be evaluated for a non-priority pollutant.
Non-carcinogen, AP-	
Aquatic Life Protection,	
TMDL – Total Maximum	
Daily Load	
Noto: Booing SSEL boo oo	mpleted appropriate statistical calculations, but defers the application of best

Non-priority Pollutant RPA Column Explanation

Note: Boeing SSFL has completed appropriate statistical calculations, but defers the application of best professional judgment and the final determination of reasonable potential to the Regional Board Staff.

References:

- 1. Los Angeles Regional Water Quality Control Board, "Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, (Basin Plan)." June 13, 1994.
- MWH and Flow Science, "Reasonable Potential Analysis Methodology Technical Memo- Version 1, Final, Santa Susan Field Laboratory, Ventura County, California." April 28, 2006.
- 3. State Water Resources Control Board, "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, (SIP)" Resolution No. 2005-0019, February 24, 2005.
- 4. US EPA, 40CFR part 131, Water Quality Standards; Establishment of numeric Criteria for Priority Toxic Pollutants for the State of California,(CTR) Federal Registry, 2011, pp. 496 - 507
- 5. US EPA, "Technical Support Document for Water Quality-based Toxics Control." EPA/505/2-90-001, PB-91-127415, March 1991.

FIRST QUARTER 2015 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

				Step 1: Water Quality Criteria, Determine C						Step 2		Step 3		Step 4
					CTR CRI	TERIA				le Effluent	Was Constituent	Are all		
				Fres	hwater	Human Hea	alth	Basin Plan	C = Lowest	Data	Detected in	Detection	If DL > C,	MEC >= C
CTR Constituent	Units	MEC	с٧	CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH	Dasiirrian	Criteria	Available	Effluent Data	Limits > C	MEC = Min (DL)	
001 Antimony	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>14</td><td>4,300</td><td>6</td><td>6</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	14	4,300	6	6	Yes	No	No	NA	No
002 Arsenic	ug/L	Available Data <dl< td=""><td>0.6</td><td>340</td><td>150</td><td>NONE</td><td>NONE</td><td>50</td><td>50</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	340	150	NONE	NONE	50	50	Yes	No	No	NA	No
003 Beryllium	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>Narrative</td><td>Narrative</td><td>4</td><td>4</td><td></td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	Narrative	Narrative	4	4		No	No	NA	No
004 Cadmium	ug/L	Available Data <dl< td=""><td>0.6</td><td>4.3</td><td>2.2</td><td>Narrative</td><td>Narrative</td><td>5</td><td>2.2</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	4.3	2.2	Narrative	Narrative	5	2.2	Yes	No	No	NA	No
005a Chromium	ug/L	Available Data <dl< td=""><td>0.6</td><td>550</td><td>180</td><td>Narrative</td><td>Narrative</td><td>50</td><td>50</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	550	180	Narrative	Narrative	50	50	Yes	No	No	NA	No
005b Chromium VI	ug/L	All Data Qualified	0.6	16	11	Narrative	Narrative	NONE	11	No	Yes	NA	NA	No
006 Copper	ug/L	4.5	0.6	13	9	1,300	NONE	NONE	9	Yes	Yes	NA	NA	No
007 Lead	ug/L	5.8	0.6	65	2.5	Narrative	Narrative	NONE	2.5	Yes	Yes	NA	NA	Yes
008 Mercury	ug/L	Available Data <dl< td=""><td>0.6</td><td>Reserved</td><td>Reserved</td><td>0.05</td><td>0.051</td><td>2</td><td>0.051</td><td>Yes</td><td>No</td><td>Yes</td><td>0.051</td><td>No</td></dl<>	0.6	Reserved	Reserved	0.05	0.051	2	0.051	Yes	No	Yes	0.051	No
009 Nickel	ug/L	Available Data <dl< td=""><td>0.6</td><td>470</td><td>52</td><td>610</td><td>4,600</td><td>100</td><td>52</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	470	52	610	4,600	100	52	Yes	No	No	NA	No
010 Selenium	ug/L	Available Data <dl< td=""><td>0.6</td><td>Reserved</td><td>5</td><td>Narrative</td><td>Narrative</td><td>50</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	Reserved	5	Narrative	Narrative	50	5	Yes	No	No	NA	No
011 Silver	ug/L	Available Data <dl< td=""><td>0.6</td><td>3.4</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>3.4</td><td>Yes</td><td>No</td><td>Yes</td><td>3.4</td><td>No</td></dl<>	0.6	3.4	NONE	NONE	NONE	NONE	3.4	Yes	No	Yes	3.4	No
012 Thallium	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1.7</td><td>6.3</td><td>2</td><td>2</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1.7	6.3	2	2	Yes	No	No	NA	No
013 Zinc	ug/L	All Data Qualified	0.6	120	120	NONE	NONE	NONE	120	No	Yes	NA	NA	No
014 Total Cyanide	ug/L	Available Data <dl< td=""><td>0.6</td><td>22</td><td>5.2</td><td>700</td><td>220,000</td><td>200</td><td>5.2</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	22	5.2	700	220,000	200	5.2	Yes	No	No	NA	No
015 Asbestos	Fibers/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>7,000,000</td><td>NONE</td><td>7,000,000</td><td>7000000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	7,000,000	NONE	7,000,000	7000000	Yes	No	No	NA	No
016 TCDD TEQ_NoDNQ	ug/L	5.50E-10	0.6	NONE	NONE	1.30E-08	1.40E-08	3.00E-08	0.00000014	Yes	Yes	NA	NA	No
017 Acrolein	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>320</td><td>780</td><td>NONE</td><td>780</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	320	780	NONE	780	Yes	No	No	NA	No
018 Acrylonitrile	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.059</td><td>0.66</td><td>NONE</td><td>0.66</td><td>Yes</td><td>No</td><td>Yes</td><td>0.66</td><td>No</td></dl<>	0.6	NONE	NONE	0.059	0.66	NONE	0.66	Yes	No	Yes	0.66	No
019 Benzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1.2</td><td>71</td><td>1</td><td>1</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1.2	71	1	1	Yes	No	No	NA	No
020 Bromoform	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>4.3</td><td>360</td><td>NONE</td><td>360</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	4.3	360	NONE	360	Yes	No	No	NA	No
021 Carbon Tetrachloride	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.25</td><td>4.4</td><td>0.5</td><td>0.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.25	4.4	0.5	0.5	Yes	No	No	NA	No
022 Chlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>680</td><td>21,000</td><td>70</td><td>70</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	680	21,000	70	70	Yes	No	No	NA	No
023 Dibromochloromethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.401</td><td>34</td><td>NONE</td><td>34</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.401	34	NONE	34	Yes	No	No	NA	No
024 Chloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
025 2-Chloroethylvinylether	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
026 Chloroform	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>Reserved</td><td>Reserved</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	Reserved	Reserved	NONE	NONE	Yes	No	No	NA	No
027 Bromodichloromethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.56</td><td>46</td><td>NONE</td><td>46</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.56	46	NONE	46	Yes	No	No	NA	No
028 1,1-Dichloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>5</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	5	5	Yes	No	No	NA	No
029 1,2-Dichloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.38</td><td>99</td><td>0.5</td><td>0.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.38	99	0.5	0.5	Yes	No	No	NA	No
030 1,1-Dichloroethene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.057</td><td>3.2</td><td>6</td><td>3.2</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.057	3.2	6	3.2	Yes	No	No	NA	No
031 1,2-Dichloropropane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.52</td><td>39</td><td>5</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.52	39	5	5	Yes	No	No	NA	No
032 cis-1,3-Dichloropropene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>10</td><td>1,700</td><td>0.5</td><td>0.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	10	1,700	0.5	0.5	Yes	No	No	NA	No
032a trans-1,3-Dichloropropene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>10</td><td>1,700</td><td>0.5</td><td>0.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	10	1,700	0.5	0.5	Yes	No	No	NA	No
033 Ethylbenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>3,100</td><td>29,000</td><td>700</td><td>700</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	3,100	29,000	700	700	Yes	No	No	NA	No
034 Bromomethane	ug/L	Available Data <dl< td=""><td></td><td>NONE</td><td>NONE</td><td></td><td></td><td>NONE</td><td>4000</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>		NONE	NONE			NONE	4000		No		NA	No
035 Chloromethane	ug/L	Available Data <dl< td=""><td></td><td>NONE</td><td>NONE</td><td></td><td></td><td>NONE</td><td>NONE</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>		NONE	NONE			NONE	NONE		No		NA	No
036 Methylene chloride	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>4.7</td><td>1,600</td><td>NONE</td><td>1600</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	4.7	1,600	NONE	1600		No		NA	No
037 1,1,2,2-Tetrachloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td></td><td>11</td><td>1</td><td>1</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE		11	1	1		No		NA	No
038 Tetrachloroethene	ug/L	Available Data <dl< td=""><td></td><td>NONE</td><td>NONE</td><td></td><td>8.85</td><td>5</td><td>5</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>		NONE	NONE		8.85	5	5		No		NA	No
039 Toluene	ug/L	Available Data <dl< td=""><td></td><td>NONE</td><td>NONE</td><td></td><td>200,000</td><td>150</td><td>150</td><td></td><td>No</td><td></td><td>NA</td><td>No</td></dl<>		NONE	NONE		200,000	150	150		No		NA	No

See attached RPA Summary for abbreviations, definitions and other explanations for the data presented.

FIRST QUARTER 2015 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

					Step 1: Water Quality Criteria, Determine C						Step 2		Step 3		Step 4
						CTR CRI	TERIA					Was Constituent	Are all		
					Fresh	water	Human He	alth	Basin Plan	C = Lowest	Data	Detected in	Detection	If DL > C,	MEC >= C
CTR	Constituent	Units	MEC	C۷	CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH	Dasin Fian	Criteria	Available	Effluent Data	Limits > C	MEC = Min (DL)	
040	trans-1,2-Dichloroethene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>700</td><td>140,000</td><td>10</td><td>10</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	700	140,000	10	10	Yes	No	No	NA	No
041	1,1,1-Trichloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>Narrative</td><td>Narrative</td><td>200</td><td>200</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	Narrative	Narrative	200	200	Yes	No	No	NA	No
042	1,1,2-trichloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.6</td><td>42</td><td>5</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.6	42	5	5	Yes	No	No	NA	No
043	Trichloroethene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>2.7</td><td>81</td><td>5</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	2.7	81	5	5	Yes	No	No	NA	No
044	Vinyl chloride	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>2</td><td>525</td><td>0.5</td><td>0.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	2	525	0.5	0.5	Yes	No	No	NA	No
045	2-chlorophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>120</td><td>400</td><td>NONE</td><td>400</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	120	400	NONE	400	Yes	No	No	NA	No
046	2,4-Dichlorophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>93</td><td>790</td><td>NONE</td><td>790</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	93	790	NONE	790	Yes	No	No	NA	No
047	2,4-dimethylphenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>540</td><td>2,300</td><td>NONE</td><td>2300</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	540	2,300	NONE	2300	Yes	No	No	NA	No
048	2-Methyl-4,6-dinitrophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>13.4</td><td>765</td><td>NONE</td><td>765</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	13.4	765	NONE	765	Yes	No	No	NA	No
049	2,4-dinitrophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>70</td><td>14,000</td><td>NONE</td><td>14000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	70	14,000	NONE	14000	Yes	No	No	NA	No
050	2-nitrophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
051	4-nitrophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
052	4-Chloro-3-methylphenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
053	Pentachlorophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>pH dependent</td><td>pH dependent</td><td>0.28</td><td>8.2</td><td>1</td><td>1</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	pH dependent	pH dependent	0.28	8.2	1	1	Yes	No	No	NA	No
054	Phenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>21,000</td><td>4,600,000</td><td>NONE</td><td>4600000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	21,000	4,600,000	NONE	4600000	Yes	No	No	NA	No
055	2,4,6-Trichlorophenol	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>2.1</td><td>6.5</td><td>NONE</td><td>6.5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	2.1	6.5	NONE	6.5	Yes	No	No	NA	No
056	Acenaphthene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1,200</td><td>2,700</td><td>NONE</td><td>2700</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1,200	2,700	NONE	2700	Yes	No	No	NA	No
057	Acenaphthylene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
058	Anthracene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>9,600</td><td>110,000</td><td>NONE</td><td>110000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	9,600	110,000	NONE	110000	Yes	No	No	NA	No
059	Benzidine	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.00012</td><td>0.00054</td><td>NONE</td><td>0.00054</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00054</td><td>No</td></dl<>	0.6	NONE	NONE	0.00012	0.00054	NONE	0.00054	Yes	No	Yes	0.00054	No
060	Benzo(a)Anthracene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
061	Benzo(a)Pyrene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>0.2</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	0.2	0.049	Yes	No	Yes	0.049	No
062	Benzo(b)Fluoranthene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
063	Benzo(g,h,i)Perylene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
064	Benzo(k)Fluoranthene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
065	Bis(2-Chloroethoxy) methane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
066	bis (2-Chloroethyl) ether	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.031</td><td>1.4</td><td>NONE</td><td>1.4</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.031	1.4	NONE	1.4	Yes	No	No	NA	No
067	Bis(2-Chloroisopropyl) Ether	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1,400</td><td>170,000</td><td>NONE</td><td>170000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1,400	170,000	NONE	170000	Yes	No	No	NA	No
068	bis (2-ethylhexyl) Phthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1.8</td><td>5.9</td><td>4</td><td>4</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1.8	5.9	4	4	Yes	No	No	NA	No
069	4-Bromophenylphenylether	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
070	Butylbenzylphthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>3,000</td><td>5,200</td><td>NONE</td><td>5200</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	3,000	5,200	NONE	5200	Yes	No	No	NA	No
071	2-Chloronaphthalene	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td>NONE</td><td></td><td>4,300</td><td>NONE</td><td>4300</td><td>Yes</td><td>No</td><td></td><td></td><td>No</td></dl<>	0.6		NONE		4,300	NONE	4300	Yes	No			No
072	4-Chlorophenylphenylether	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6		NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
073	Chrysene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
074	Dibenzo(a,h)Anthracene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
075	1,2-Dichlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>2,700</td><td>17,000</td><td>600</td><td>600</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	2,700	17,000	600	600	Yes	No	No	NA	No
076	1,3-Dichlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>400</td><td>2,600</td><td>NONE</td><td>2600</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	400	2,600	NONE	2600	Yes	No	No	NA	No
077	1,4-Dichlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>400</td><td>2,600</td><td>5</td><td>5</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	400	2,600	5	5	Yes	No	No	NA	No
078	3,3'-Dichlorobenzidine	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td></td><td>0.04</td><td>0.077</td><td>NONE</td><td>0.077</td><td>Yes</td><td>No</td><td>Yes</td><td>0.077</td><td>No</td></dl<>	0.6			0.04	0.077	NONE	0.077	Yes	No	Yes	0.077	No
079	Diethylphthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>23,000</td><td>120,000</td><td>NONE</td><td>120000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	23,000	120,000	NONE	120000	Yes	No	No	NA	No
080	Dimethylphthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>313,000</td><td>2,900,000</td><td>NONE</td><td>2900000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	313,000	2,900,000	NONE	2900000	Yes	No	No	NA	No

See attached RPA Summary for abbreviations, definitions and other explanations for the data presented.

FIRST QUARTER 2015 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

					Step 1: Water Quality Criteria, Determine C						Step 2		Step 3		Step 4
						CTR CRI	TERIA				ls Effluent	Was Constituent	Are all		
					Fresh	water	Human He	alth	Basin Plan	C = Lowest	Data	Detected in	Detection	If DL > C,	MEC >= C
CTR	Constituent	Units	MEC	CV	CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH	Buoint lun	Criteria	Available	Effluent Data	Limits > C	MEC = Min (DL)	
081	Di-n-butylphthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>2,700</td><td>12,000</td><td>NONE</td><td>12000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	2,700	12,000	NONE	12000	Yes	No	No	NA	No
082	2,4-Dinitrotoluene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.11</td><td>9.1</td><td>NONE</td><td>9.1</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.11	9.1	NONE	9.1	Yes	No	No	NA	No
083	2,6-Dinitrotoluene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
084	Di-n-octylphthalate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
085	1,2-Diphenylhydrazine	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td>NONE</td><td>0.04</td><td>0.54</td><td></td><td>0.54</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6		NONE	0.04	0.54		0.54	Yes	No	No	NA	No
086	Fluoranthene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>300</td><td>370</td><td>NONE</td><td>370</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	300	370	NONE	370	Yes	No	No	NA	No
087	Fluorene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1,300</td><td>14,000</td><td>NONE</td><td>14000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1,300	14,000	NONE	14000	Yes	No	No	NA	No
088	Hexachlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td>NONE</td><td>0.00075</td><td>0.00077</td><td>1</td><td>0.00077</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00077</td><td>No</td></dl<>	0.6		NONE	0.00075	0.00077	1	0.00077	Yes	No	Yes	0.00077	No
089	Hexachlorobutadiene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.44</td><td>50</td><td>NONE</td><td>50</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.44	50	NONE	50	Yes	No	No	NA	No
090	Hexachlorocyclopentadiene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>240</td><td>17,000</td><td>50</td><td>50</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	240	17,000	50	50	Yes	No	No	NA	No
091	Hexachloroethane	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>1.9</td><td>8.9</td><td>NONE</td><td>8.9</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	1.9	8.9	NONE	8.9	Yes	No	No	NA	No
092	Indeno(1,2,3-cd)Pyrene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0044</td><td>0.049</td><td>NONE</td><td>0.049</td><td>Yes</td><td>No</td><td>Yes</td><td>0.049</td><td>No</td></dl<>	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	Yes	No	Yes	0.049	No
093	Isophorone	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>8.4</td><td>600</td><td>NONE</td><td>600</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	8.4	600	NONE	600	Yes	No	No	NA	No
094	Naphthalene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
095	Nitrobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>17</td><td>1,900</td><td>NONE</td><td>1900</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	17	1,900	NONE	1900	Yes	No	No	NA	No
096	N-Nitrosodimethylamine	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.00069</td><td>8.1</td><td>NONE</td><td>8.1</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.00069	8.1	NONE	8.1	Yes	No	No	NA	No
097	n-Nitroso-di-n-propylamine	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.005</td><td>1.4</td><td>NONE</td><td>1.4</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.005	1.4	NONE	1.4	Yes	No	No	NA	No
098	N-Nitrosodiphenylamine	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>5</td><td>16</td><td>NONE</td><td>16</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	5	16	NONE	16	Yes	No	No	NA	No
099	Phenanthrene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
100	Pyrene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>960</td><td>11,000</td><td>NONE</td><td>11000</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	960	11,000	NONE	11000	Yes	No	No	NA	No
101	1,2,4-Trichlorobenzene	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>70</td><td>70</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	70	70	Yes	No	No	NA	No
102	Aldrin	ug/L	Available Data <dl< td=""><td>0.6</td><td>3</td><td>NONE</td><td>0.00013</td><td>0.00014</td><td>NONE</td><td>0.00014</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00014</td><td>No</td></dl<>	0.6	3	NONE	0.00013	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
103	alpha-BHC	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.0039</td><td>0.013</td><td>NONE</td><td>0.013</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.0039	0.013	NONE	0.013	Yes	No	No	NA	No
104	beta-BHC	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.014</td><td>0.046</td><td>NONE</td><td>0.046</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	0.014	0.046	NONE	0.046	Yes	No	No	NA	No
105	Lindane (gamma-BHC)	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.95</td><td>NONE</td><td>0.019</td><td>0.063</td><td>0.2</td><td>0.063</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	0.95	NONE	0.019	0.063	0.2	0.063	Yes	No	No	NA	No
106	delta-BHC	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>NONE</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
107	Chlordane	ug/L	Available Data <dl< td=""><td>0.6</td><td>2.4</td><td>0.0043</td><td>0.00057</td><td>0.00059</td><td>0.1</td><td>0.00059</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00059</td><td>No</td></dl<>	0.6	2.4	0.0043	0.00057	0.00059	0.1	0.00059	Yes	No	Yes	0.00059	No
108	4,4'-DDT	ug/L	Available Data <dl< td=""><td>0.6</td><td>1.1</td><td>0.001</td><td>0.00059</td><td>0.00059</td><td>NONE</td><td>0.00059</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00059</td><td>No</td></dl<>	0.6	1.1	0.001	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
109	4,4'-DDE	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.00059</td><td>0.00059</td><td>NONE</td><td>0.00059</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00059</td><td>No</td></dl<>	0.6	NONE	NONE	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
110	4,4'-DDD	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>0.00083</td><td>0.00084</td><td>NONE</td><td>0.00084</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00084</td><td>No</td></dl<>	0.6	NONE	NONE	0.00083	0.00084	NONE	0.00084	Yes	No	Yes	0.00084	No
111	Dieldrin	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.24</td><td>0.056</td><td>0.00014</td><td>0.00014</td><td>NONE</td><td>0.00014</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00014</td><td>No</td></dl<>	0.6	0.24	0.056	0.00014	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
112	Endosulfan I	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.22</td><td>0.056</td><td>110</td><td>240</td><td>NONE</td><td>0.056</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	0.22	0.056	110	240	NONE	0.056	Yes	No	No	NA	No
113	Endosulfan II	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.22</td><td>0.056</td><td></td><td>240</td><td>NONE</td><td>0.056</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	0.22	0.056		240	NONE	0.056	Yes	No	No	NA	No
114	Endosulfan Sulfate	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>NONE</td><td>110</td><td>240</td><td>NONE</td><td>240</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	NONE	NONE	110	240	NONE	240	Yes	No	No	NA	No
115	Endrin	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.086</td><td>0.036</td><td>0.76</td><td>0.81</td><td>2</td><td>0.036</td><td>Yes</td><td>No</td><td>No</td><td>NA</td><td>No</td></dl<>	0.6	0.086	0.036	0.76	0.81	2	0.036	Yes	No	No	NA	No
116	Endrin Aldehyde	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td></td><td>0.76</td><td>0.81</td><td></td><td>0.81</td><td>Yes</td><td>No</td><td></td><td>NA</td><td>No</td></dl<>	0.6			0.76	0.81		0.81	Yes	No		NA	No
117	Heptachlor	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.52</td><td>0.0038</td><td>0.00021</td><td>0.00021</td><td></td><td>0.00021</td><td>Yes</td><td>No</td><td></td><td>0.00021</td><td>No</td></dl<>	0.6	0.52	0.0038	0.00021	0.00021		0.00021	Yes	No		0.00021	No
118	Heptachlor Epoxide	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.52</td><td></td><td>0.0001</td><td>0.00011</td><td></td><td>0.00011</td><td>Yes</td><td>No</td><td></td><td>0.00011</td><td>No</td></dl<>	0.6	0.52		0.0001	0.00011		0.00011	Yes	No		0.00011	No
119	Aroclor-1016	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td></td><td></td><td>0.00017</td><td></td><td>0.00017</td><td>Yes</td><td>No</td><td></td><td></td><td>No</td></dl<>	0.6				0.00017		0.00017	Yes	No			No
120	Aroclor-1221	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td></td><td></td><td>0.00017</td><td></td><td>0.00017</td><td></td><td>No</td><td></td><td></td><td>No</td></dl<>	0.6				0.00017		0.00017		No			No
	Aroclor-1232	ug/L	Available Data <dl< td=""><td>0.6</td><td></td><td></td><td></td><td>0.00017</td><td></td><td>0.00017</td><td></td><td>No</td><td></td><td></td><td>No</td></dl<>	0.6				0.00017		0.00017		No			No

See attached RPA Summary for abbreviations, definitions and other explanations for the data presented.

FIRST QUARTER 2015 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

						Step 1: Water Quality Criteria, Determine C							Step 3			
					Fresh	CTR CRI	CRITERIA Human Health		Basin Plan	C = Lowest		t Was Constituen Detected in		n If DL > C, MFC = Min (DL)	MEC >= C	
CTR	Constituent	Units	MEC	с٧	CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH		Criteria Data Available		Effluent Data	Limits > C			
122	Aroclor-1242	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>0.014</td><td>0.00017</td><td>0.00017</td><td>0.5</td><td>0.00017</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00017</td><td>No</td></dl<>	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No	
123	Aroclor-1248	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>0.014</td><td>0.00017</td><td>0.00017</td><td>0.5</td><td>0.00017</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00017</td><td>No</td></dl<>	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No	
124	Aroclor-1254	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>0.014</td><td>0.00017</td><td>0.00017</td><td>0.5</td><td>0.00017</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00017</td><td>No</td></dl<>	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No	
125	Aroclor-1260	ug/L	Available Data <dl< td=""><td>0.6</td><td>NONE</td><td>0.014</td><td>0.00017</td><td>0.00017</td><td>0.5</td><td>0.00017</td><td>Yes</td><td>No</td><td>Yes</td><td>0.00017</td><td>No</td></dl<>	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No	
126	Toxaphene	ug/L	Available Data <dl< td=""><td>0.6</td><td>0.73</td><td>0.0002</td><td>0.00073</td><td>0.00075</td><td>3</td><td>0.0002</td><td>Yes</td><td>No</td><td>Yes</td><td>0.0002</td><td>No</td></dl<>	0.6	0.73	0.0002	0.00073	0.00075	3	0.0002	Yes	No	Yes	0.0002	No	
127	E. Coli	MPN/100ml	All Data Qualified	0.6	NA	NA	NA	NA	235	235	No	Yes	NA	NA	No	

FIRST QUARTER 2015 REPORTING SUMMARY THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY NPDES PERMIT CA0001309

Outfall	Constituent	Monitoring	Units	Number of Samples	MEC	сv	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Step 1, Determine Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection TMDL-Total Maximum Daily Load
3_7,9-10	Boron	Annual	mg/L	0	All Data Qualified	0.6	All Data Qualified	All Data Qualified	0	0	All Data Qualified	1	BU
3_7,9-10	Chloride	Discharge	mg/L	2	4.5	0.6	7.4	33.3	0	0	33.3	150	BU
3_7,9-10	Fluoride	Annual	mg/L	1	0.15	0.6	13.2	1.98	0	0	1.98	1.6	BU
3_7,9-10	Nitrate + Nitrite as Nitrogen (N)	Discharge	mg/L	2	0.84	0.6	7.4	6.22	0	0	6.22	8	BU/TMDL
3_7,9-10	Oil & Grease	Discharge	mg/L	1	Available Data <dl< td=""><td>0.6</td><td>13.2</td><td>Available Data <dl< td=""><td>0</td><td>0</td><td>Available Data <dl< td=""><td>10</td><td>BU</td></dl<></td></dl<></td></dl<>	0.6	13.2	Available Data <dl< td=""><td>0</td><td>0</td><td>Available Data <dl< td=""><td>10</td><td>BU</td></dl<></td></dl<>	0	0	Available Data <dl< td=""><td>10</td><td>BU</td></dl<>	10	BU
3_7,9-10	Sulfate	Discharge	mg/L	2	4.6	0.6	7.4	34.04	0	0	34.04	300	BU
3_7,9-10	Total Dissolved Solids	Discharge	mg/L	2	90	0.6	7.4	666	0	0	666	150	BU
3_7,9-10	Total Suspended Solids	Annual	mg/L	2	33	0.6	7.4	244.2	0	0	244.2	45	BU