APPENDIX E

First Quarter 2018 Analytical Laboratory Reports and Validation Reports

APPENDIX E

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-206832-3, 440-206741-3

Prepared for

Haley & Aldrich, Inc. 600 South Meyer Avenue, Suite 100 Tucson, Arizona 85701

May 1, 2018

MEC^x, Inc. 8864 Interchange Drive Houston, Texas 77054

www.mecx.net





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I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES

Contract: 40458-078 and 40458-083

MEC^x Project No.: 1272.003H.01

Sample Delivery Group: 440-206832-3, 440-206741-3

Project Manager: Katherine Miller

Matrix: Water

QC Level: IV

No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica-Irvine

TABLE 1 - SAMPLE IDENTIFICATION

Sample Name	Lab Sample Name	Sub Lab Sample ID	Matrix	Collection	Method
Outfall002_20180323_Comp	440-206832-3	N/A	Water	3/23/2018 10:00:00 AM	Radium
Outfall009_20180322_Comp	440-206741-3	N/A	Water	3/22/2018 03:30:00 PM	Radium



II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt forms and the chains-of-custody (COCs) provided by the laboratory for multiple sample delivery groups (SDGs):

- The laboratories received the samples in these SDGs on ice and within the temperature limits of ≤6 degrees Celsius (°C) and >0°C.
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the COCs.

The following issues were noted:

- Some corrections to the original COCs were not initialed or dated.
- The client issued a list of sample collection times which affected samples in several SDGs; therefore, the sample collection dates and times on the COCs do not always match the revised collection dates and times used in the laboratory's raw data package and in this report.



TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.



TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
Н	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	The sequence or number of standards used for the calibration was incorrect.
С	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r ²) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
В	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
11	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
A	Not applicable.	Serial dilution %D was outside control limits.
М	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
Т	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.



Reason Code	Organic	Inorganic
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
\$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
Р	Instrument performance not compliant.	Post digestion spike recovery was outside of 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	Other problems identified in the data are 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.	Other problems identified in the data are 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. VARIOUS EPA METHODS — RADIONUCLIDES; RADIUM 226 AND RADIUM 228

Elizabeth Wessling of MEC^x reviewed the SDGs on May 1, 2018

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 903.0 and 904.0,* and the *National Functional Guidelines for Inorganic Data Review* (2014).

III.1. HOLDING TIMES:

The samples were received unpreserved. The samples were acidified and allowed to equilibrate. The samples were prepared within five days of preservation and analyzed following in-growth.

III.2. CALIBRATION:

The radium-226 detector efficiencies were less than 20%; therefore, the nondetected results for radium-226 were qualified as estimated (UJ) in both site samples. Carrier/tracer recoveries were within the laboratory control limits of 40-110%. All calibration checks were acceptable.

III.3. QUALITY CONTROL SAMPLES

III.3.1. METHOD BLANKS

Qualifications for activity in method blanks were not required as all sample results were nondetect.

III.3.2. LABORATORY CONTROL SAMPLES:

The recoveries and RPDs were within laboratory-established control limits.

III.3.3. LABORATORY DUPLICATES:

Laboratory duplicates were performed for radium-226 and radium-228 for sample Outfall009_20180322. Both the sample and duplicate results were nondetect.

III.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Matrix spike (MS)/MSD analyses were performed for radium-226 and radium-228 for sample Outfall009_20180322. Recoveries and RPDs were within the laboratory control limits.

III.4. SAMPLE RESULT VERIFICATION:

An EPA Level IV review was performed on a representative number of samples 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.

III.5. 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. The following are findings associated with field QC samples:

III.5.1. FIELD BLANKS AND EQUIPMENT BLANKS:

This SDG had no identified field blank or equipment blank samples.

III.5.2. FIELD DUPLICATES:

There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 4402067413

Analysis Method RADIUM

Sample Name	Outfall009_2018	0322_Com	p Mat	rix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/22/20	Validati	on Level: 8							
Lab Sample Name:	440-206741-3								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226 & 228	RADIUM2262	0.0305	0.238				U, U	UJ	C, \$

Validated Sample Result Forms: 4402068323

Analysis Method RADIUM

Sample Name	Outfall002_20180323_Comp		p Mati	rix Type:	WM	Res	ult Type: T	RG	
Sample Date: 3/23/20	18 10:00:00 AM	Validati	on Level: 8						
Lab Sample Name:	440-206832-3								
Analyte	CAS No	Result Value	Total Uncert.	RL	MDC	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226 & 228	RADIUM22622	.8 0.129	0.302				U, U	UJ	C, \$



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: 440-206741-3 Client Project/Site: Annual Outfall 009 Comp

For:

Haley & Aldrich, Inc. 400 E Van Buren St. Suite 545 Phoenix, Arizona 85004

Attn: Katherine Miller

Ilshi fatel

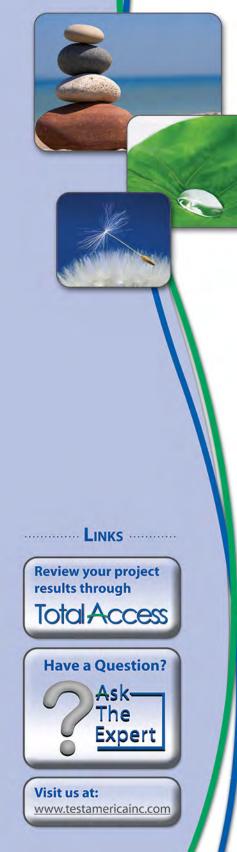
Authorized for release by: 4/23/2018 6:28:28 PM

Urvashi Patel, Manager of Project Management (949)261-1022 urvashi.patel@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.

Usli fatel

Urvashi Patel Manager of Project Management 4/23/2018 6:28:28 PM

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Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected Received
440-206741-1	Outfall009_20180322_Comp	Water	03/22/18 15:30 03/22/18 20:00

Job ID: 440-206741-3

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-206741-3

Comments

No additional comments.

Receipt

The samples were received on 3/22/2018 8:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 2.1° C, 2.1° C, 2.3° C, 3.5° C and 3.6° C.

Receipt Exceptions

Method(s) 900.0, 901.1, 903.0, 904.0, 905, A-01-R: The following samples for metals were received unpreserved and were preserved with nitric acid, lot # 1235960, upon receipt to the laboratory: Outfall009_20180322_Comp (440-206741-1), Outfall009_20180322_Comp (440-206741-1[MS]) and Outfall009_20180322_Comp (440-206741-1[MSD]). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

Method(s) 906.0: 500 mL of the following samples were poured into an unpreserved container for Tritium analysis:

Outfall009_20180322_Comp (440-206741-1), Outfall009_20180322_Comp (440-206741-1[MS]) and Outfall009_20180322_Comp (440-206741-1[MSD])

RAD

Method(s) A-01-R: Uranium prep batch 160-358015

The detection goal was not met for the following sample due to a reduced aliquot attributed to the presence of matrix interferences: Outfall009_20180322_Comp (440-206741-1). See prep NCM 135817. Analytical results are reported with the MDC achieved.

Method(s) ExtChrom: Uranium prep batch 160-358015: The following samples were yellow in color and had a strong odor. The samples were weighed at a reduced aliquot to prevent possible matrix interference.

Outfall009_20180322_Comp (440-206741-1), Outfall009_20180322_Comp (440-206741-1[MS]) and Outfall009_20180322_Comp (440-206741-1[MSD])

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

5

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00							Lab Sample ID: 440-206741-1 Matrix: Water				
Method: 900.0 - 0	Gross Alpha	and Gros	s Beta Rad	ioactivity							
			Count	Total							
			Uncert.	Uncert.							
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL		Unit	Prepared	Analyzed	Dil Fac	
Gross Alpha	0.967	U	0.841	0.849	3.00		pCi/L	03/26/18 15:25		1	
Gross Beta	2.80		0.773	0.822	4.00	0.976	pCi/L	03/26/18 15:25	03/30/18 06:16	1	
Method: 901.1 - 0	Cesium 137	& Other G	amma Emit Count	t <mark>ters (GS)</mark> Total							
			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Cesium-137	2.73		7.47	7.48	20.0	12.8		03/27/18 10:20	03/31/18 20:11	1	
Potassium-40	51.8		148	148			pCi/L		03/31/18 20:11	1	
Mothod: 002.0	Dodium 200										
Method: 903.0 - I	Radium-220	(GFPC)	Count	Total							
			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-226	0.0263		0.0527	0.0528	1.00	0.0949		03/26/18 13:00	04/17/18 05:56	1	
Corrier	9/ Vield	Qualifian	l insite					Drepared	Analyzad		
Carrier Ba Carrier		Qualifier	Limits 40 - 110					Prepared 03/26/18 13:00	Analyzed 04/17/18 05:56	Dil Fac	
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-228	0.00415		0.232	0.232	1.00		pCi/L	03/26/18 13:36	-	1	
o <i>i</i>		o					•	_ /			
Carrier		Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier Y Carrier	92.9 89.3		40 - 110 40 - 110					03/26/18 13:36	04/03/18 14:51 04/03/18 14:51	1 1	
-	00.0		40 - 110					03/20/10 13:50	04/03/10 14.01	1	
Method: 905 - St	rontium-90 (GFPC)	Count	Total							
			Count								
Analyte	Pocult	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Strontium-90			0.202	0.203	3.00		pCi/L	03/27/18 13:21	04/06/18 09:46	1	
		0	1 1				•	Durant	A	D'/ 5	
Carrier Sr Carrier		Qualifier	Limits					Prepared 03/27/18 13:21	Analyzed	Dil Fac	
Sr Carrier Y Carrier	73.9 97.6		40 - 110 40 - 110						04/06/18 09:46 04/06/18 09:46	1	
	97.0		4 0 - 110					03/21/10 13.21	0 4 /00/10 09.40	1	
Method: 906.0 - 7	Tritium, Tota	l (LSC)	A = 1	-							
			Count	Total							
Analyta	Dearit	Qualifier	Uncert.	Uncert.	וס	MDO	4 الم	Dremened	Analyzed		
Analyte		Qualifier	<u>(2σ+/-)</u>	<u>(2σ+/-)</u>	RL			Prepared	Analyzed	Dil Fac	
Tritium	-140	0	188	188	500	301	pCi/L	04/17/18 15:33	04/18/18 14:47	1	

Total

Uncert.

(2**σ**+/-)

0.715

RL

1.00

MDC Unit

1.30 pCi/L

Analyte

Tracer

Total Uranium

Uranium-232

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30 Date Received: 03/22/18 20:00

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

Result Qualifier

%Yield Qualifier

0.0411 UG

64.4

Count

Uncert.

(2**σ**+/-)

Limits

30 - 110

0.715

Prepared

Prepared

03/28/18 13:56 03/31/18 19:25

03/28/18 13:56 03/31/18 19:25

Lab Sample ID: 440-206741-1 Matrix: Water

Analyzed

Analyzed

Dil Fac

Dil Fac

1

1

Method Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp

lethod	Method Description	Protocol	Laboratory
00.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
01.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
03.0	Radium-226 (GFPC)	EPA	TAL SL
04.0	Radium-228 (GFPC)	EPA	TAL SL
05	Strontium-90 (GFPC)	EPA	TAL SL
06.0	Tritium, Total (LSC)	EPA	TAL SL
-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
vaporation	Preparation, Evaporation	None	TAL SL
xtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	TAL SL
ill_Geo-0	Fill Geometry, No In-Growth	None	TAL SL
SC_Dist_Susp	Distillation and Suspension (LSC)	None	TAL SL
recSep_0	Preparation, Precipitate Separation	None	TAL SL
recSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL
recSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	TAL SL

Protocol References:

DOE = U.S. Department of Energy EPA = US Environmental Protection Agency None = None

Laboratory References:

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

Client Sample ID: Outfall009_20180322_Comp Date Collected: 03/22/18 15:30

Date Received: 03/22/18 20:00

Lab Sample ID: 440-206741-1 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	Evaporation			200 mL	1.0 g	357678	03/26/18 15:25	MRB	TAL SL
Total/NA	Analysis	900.0		1			358309	03/30/18 06:16	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	357810	03/27/18 10:20	KRS	TAL SL
Total/NA	Analysis	901.1		1			358374	03/31/18 20:11	CDR	TAL SL
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	357667	03/26/18 13:00	TJT	TAL SL
Total/NA	Analysis	903.0		1			361425	04/17/18 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	357670	03/26/18 13:36	TJT	TAL SL
Total/NA	Analysis	904.0		1			358655	04/03/18 14:51	RTM	TAL SL
Total/NA	Prep	PrecSep-7			999.63 mL	1.0 g	357832	03/27/18 13:21	TJT	TAL SL
Total/NA	Analysis	905		1			359320	04/06/18 09:46	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.3 mL	1.0 g	361491	04/17/18 15:33	JDL	TAL SL
Total/NA	Analysis	906.0		1			361708	04/18/18 14:47	SMR	TAL SL
Total/NA	Prep	ExtChrom			100.64 mL	1.0 mL	358015	03/28/18 13:56	CMM	TAL SL
Total/NA	Analysis	A-01-R		1			358454	03/31/18 19:25	ALD	TAL SL

Laboratory References:

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

Analyte

Gross Beta

Result Qual

2.80

Added

88.7

Result Qual

86.55

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample	ID: MB 16	0-3576	78/1-A						Cl		ole ID: Metho	
Matrix: Wate	r										Prep Type: T	otal/NA
Analysis Bat	ch: 35831	9									Prep Batch:	357678
				Count	Total							
		MB	MB	Uncert.	Uncert.							
Analyte			Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC		I	Prepared	Analyzed	Dil Fa
Gross Alpha		0.05086	U	0.414	0.414	3.00	0.813	pCi/L	03/	26/18 15:25	03/30/18 06:11	
Gross Beta		0.4707	U	0.600	0.602	4.00	0.994	pCi/L	03/	26/18 15:25	03/30/18 06:11	
Lab Sample	ID: LCS 1	60-357	678/2-A					Cli	ent Sa	mple ID:	Lab Control	Sampl
Matrix: Wate	r										Prep Type: T	otal/N
Analysis Bat	ch: 35831	9									Prep Batch:	35767
						Total						
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Gross Alpha			49.8	48.97		6.95	3.00	1.39	pCi/L	98	73 - 133	
Lab Sample	ID: LCSB	160-35	7678/3-A					Cli	ent Sa	mple ID:	Lab Control	Sampl
Matrix: Wate	r										Prep Type: T	otal/N
Analysis Bat	ch: 35831	9									Prep Batch:	35767
						Total						
			Spike	LCSB	LCSB	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Gross Beta			88.7	89.43		9.48	4.00	0.973	pCi/L	101	75 - 125	
Lab Sample	ID: 440-20)6741- 1	MS				Clie	ent Sam	ple ID		09_20180322	
Matrix: Wate											Prep Type: T	
Analysis Bat	ch: 35830)9									Prep Batch:	35767
						Total						
	Sample	•	e Spike	MS	MS	Uncert.					%Rec.	
Analyte	Result		Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Gross Alpha	0.967	U	49.8	41.76		5.81	3.00	1.14	pCi/L	82	60 - 140	
Lab Sample)6741- 1	MSBT				Clie	ent Sam	ple ID		09_20180322	
Matrix: Wate											Prep Type: T	
Analysis Bat	ch: 35830)9									Prep Batch:	35767
						Total						
	Sample	•	e Spike		MSBT	Uncert.					%Rec.	
Analyte	Result	Qual	Added	Result	Qual	(2σ+/-)	RL		Unit	%Rec	Limits	
Gross Beta	2.80		88.7	85.34		9.05	4.00	0.964	pCi/L	93	60 - 140	
Lab Sample)6741- 1	MSBTD				Clie	ent Sam	ple ID		09_20180322	_
Matrix: Wate											Prep Type: T	
Analysis Bat	ch: 35830	9									Prep Batch:	35767
						Total						
	Sample	Sample	e Spike	MSBTD	MSBTD	Uncert.					%Rec.	RE
	Desult	<u> </u>	اممام ۸	Decult	Qual	(2-1/)	D 1	MDC	11	0/ Dee	Limite DE	D 1.1

	9

8

RER

0.07

Limit

1

(2**σ**+/-)

9.16

RL

4.00

MDC Unit

0.899 pCi/L

%Rec

94

Limits

60 - 140

Ba Carrier

109

40_110

8

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued) Lab Sample ID: 440-206741-1 MSD Client Sample ID: Outfall009 20180322 Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 358309 Prep Batch: 357678 Total Sample Sample Spike MSD MSD Uncert. %Rec. RER Added Analyte Result Qual **Result Qual** (2σ+/-) RL MDC Unit %Rec Limits RER Limit Gross Alpha 0.967 U 49.8 45.56 6.20 3.00 0.902 pCi/L 90 60 - 140 0.32 1 Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) Lab Sample ID: MB 160-357810/1-A **Client Sample ID: Method Blank** Matrix: Water Prep Type: Total/NA **Prep Batch: 357810** Analysis Batch: 358386 Count Total Uncert. Uncert. MB MB Analyte **Result Qualifier** (2σ+/-) (2σ+/-) RL MDC Unit Prepared Analyzed Dil Fac Cesium-137 -0.1238 U 9.59 9.59 20.0 17.7 pCi/L 03/27/18 10:20 03/31/18 22:34 1 Potassium-40 -20.81 U 92.9 93.0 186 pCi/L 03/27/18 10:20 03/31/18 22:34 1 Lab Sample ID: LCS 160-357810/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 358395 **Prep Batch: 357810** Total Spike LCS LCS Uncert. %Rec. MDC Unit Analyte Added Result Qual RL %Rec Limits (2σ+/-) Americium-241 136000 132400 15300 433 pCi/L 97 90 - 111 Cesium-137 45800 44760 20.0 4490 142 pCi/L 98 90 - 111 Cobalt-60 34300 33170 3280 86.2 pCi/L 97 89 - 110 Lab Sample ID: 440-206741-1 DU Client Sample ID: Outfall009_20180322_Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 358386 **Prep Batch: 357810** Total DU DU Sample Sample Uncert. RER Analyte **Result Qual** Result Qual (2σ+/-) RL MDC Unit RER Limit 2.73 U 20.0 Cesium-137 -1.066 U 10.6 19.6 pCi/L 0.21 1 Potassium-40 51.8 U -16.85 U 163 0.22 235 pCi/L 1 Method: 903.0 - Radium-226 (GFPC) Lab Sample ID: MB 160-357667/19-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 361426 **Prep Batch: 357667** Count Total MB MB Uncert. Uncert. **Result Qualifier** Analyte (2**σ**+/-) (2**σ**+/-) RI MDC Unit Prepared Analyzed Dil Fac Radium-226 0.007862 U 0.0388 1.00 03/26/18 13:00 04/17/18 06:00 0.0388 0.0769 pCi/L MB MB Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac

03/26/18 13:00 04/17/18 06:00

TestAmerica Irvine

1

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

Lab Sample Matrix: Wat	e ID: LCS 160-35766	7/1 -A					Clie	ent Sa	mple ID	Lab Cont Prep Typ		
Analysis Da	atch: 361425				Total					Prep Bat	.cn: 3:	00/00/
		Calles	1.00	LCS						%Rec.		
A		Spike	-		Uncert.			11	0/ D			
Analyte		Added	Result	Quai	<u>(2σ+/-)</u>	RL	MDC		%Rec	Limits		
Radium-226		11.8	11.57		1.17	1.00	0.0731	pCi/L	98	68 - 137		
	LCS LCS											
Carrier	%Yield Qualifier	Limits										
Ba Carrier	98.8	40 - 110										
l ah Camala	ID. 440 000744 4 M								Outfall	000 00400		
	e ID: 440-206741-1 M	15				Cile	ent Sam		: Outrall	009_20180		_
Matrix: Wat										Prep Typ		
Analysis Da	atch: 361425				Total					Prep Bat	.cn: 3:	00100
	Sample Sample	Spike	MS	MS	Uncert.					%Rec.		
Analyte	Result Qual	Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Radium-226	0.0263 U	11.8	9.984	Guui	1.04	1.00	0.0787			75 - 138		
		11.0	0.001			1.00	0.0707	p0#2	01	10-100		
	MS MS											
Carrier	%Yield Qualifier	Limits										
Ba Carrier	91.7	40 - 110										
Lab Sample	e ID: 440-206741-1 M	ISD				Clie	ent Sam	ple ID	: Outfall	009_20180	322_0	Comp
Matrix: Wat	er									Prep Typ	e: Tot	al/N/
Analysis Ba	atch: 361425									Prep Bat	ch: 3	5766
					Total							
	Sample Sample	Spike	MSD	MSD	llmaant					%Rec.		REF
					Uncert.							
Analyte	Result Qual	Added	Result	Qual	(2σ+/-)	RL	MDC		%Rec	Limits	RER	Limi
-	Result Qual 0.0263 U	Added	Result 10.10	Qual		RL 1.00	MDC 0.0737			Limits 75 - 138	RER 0.05	
-	0.0263 U			Qual	(2σ+/-)							
Analyte Radium-226 Carrier	0.0263 U MSD MSD	11.8		Qual	(2σ+/-)							Limi
Radium-226 <i>Carrier</i>	0.0263 U			Qual	(2σ+/-)							
Radium-226 Carrier Ba Carrier	0.0263 U MSD MSD %Yield Qualifier 92.9	11.8 Limits 40 - 110		Qual	(2σ+/-)				85	75 - 138	0.05	
Radium-226 Carrier Ba Carrier Lab Sample	0.0263 U MSD MSD %Yield Qualifier 92.9 Qualifier 91D: 460-152183-F-1	11.8 Limits 40 - 110		Qual	(2σ+/-)				85	75 - 138 Sample ID	0.05	licat
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat	0.0263 U MSD MSD %Yield Qualifier 92.9 0 DI: 460-152183-F-1 er	11.8 Limits 40 - 110		Qual	(2σ+/-)				85	75 - 138 Sample ID Prep Typ	0.05	licat
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat	0.0263 U MSD MSD %Yield Qualifier 92.9 Qualifier 91D: 460-152183-F-1	11.8 Limits 40 - 110		Qual	(2σ+/-) 1.05				85	75 - 138 Sample ID	0.05	licat
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat	0.0263 U MSD MSD %Yield Qualifier 92.9 PID: 460-152183-F-1 rer atch: 361425	11.8 Limits 40 - 110	10.10		(2σ+/-) 1.05 –				85	75 - 138 Sample ID Prep Typ	0.05	licati al/N/ 5766
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat Analysis Ba	e ID: 460-152183-F-1 er atch: 361425 Sample Sample	11.8 Limits 40 - 110	10.10 DU	DU	(2σ+/-) 1.05 	1.00	0.0737	pCi/L	85	75 - 138 Sample ID Prep Typ	0.05 : Dup e: Tot sch: 3	licato al/NA 5766 REI
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat Analysis Ba Analyte	D.0263 U MSD MSD %Yield Qualifier 92.9 D: 460-152183-F-1 er atch: 361425 Sample Sample Result Qual	11.8 Limits 40 - 110	10.10 DU Result	DU Qual	(2σ+/-) 1.05 Total Uncert. (2σ+/-)		0.0737	pCi/L Unit	85	75 - 138 Sample ID Prep Typ	0.05 : Dup e: Tot cch: 35 RER	licat al/N/ 5766 RE Lim
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat Analysis Ba Analyte	e ID: 460-152183-F-1 er atch: 361425 Sample Sample	11.8 Limits 40 - 110	10.10 DU	DU Qual	(2σ+/-) 1.05 	1.00	0.0737	pCi/L Unit	85	75 - 138 Sample ID Prep Typ	0.05 : Dup e: Tot sch: 3	licat al/N/ 5766 RE Lim
Radium-226 <i>Carrier</i> Ba Carrier Lab Sample Matrix: Wat Analysis Ba Analyte	D.0263 U MSD MSD %Yield Qualifier 92.9 D: 460-152183-F-1 er atch: 361425 Sample Sample Result Qual	11.8 Limits 40 - 110	10.10 DU Result	DU Qual	(2σ+/-) 1.05 Total Uncert. (2σ+/-)		0.0737	pCi/L Unit	85	75 - 138 Sample ID Prep Typ	0.05 : Dup e: Tot cch: 35 RER	licate al/N/
Radium-226 Carrier Ba Carrier Lab Sample Matrix: Wat	0.0263 U MSD MSD %Yield Qualifier 92.9 PID: 460-152183-F-1 rer atch: 361425 Sample Sample Result Qual 0.0469 U	11.8 Limits 40 - 110	10.10 DU Result	DU Qual	(2σ+/-) 1.05 Total Uncert. (2σ+/-)		0.0737	pCi/L Unit	85	75 - 138 Sample ID Prep Typ	0.05 : Dup e: Tot cch: 35 RER	licato al/N/ 5766 REI Limi

Method: 904.0 - Radium-228 (GFPC)

MB MB

MB MB

%Yield Qualifier

0.2098 U

109

Result Qualifier

Lab Sample ID: MB 160-357670/19-A

Matrix: Water

Analyte

Carrier

Ba Carrier

Radium-228

Analysis Batch: 358655

Client Sample ID: Method Blank

03/26/18 13:36 04/03/18 14:54

03/26/18 13:36 04/03/18 14:54

Analyzed

Analyzed

Prepared

Prepared

Prep Type: Total/NA

Prep Batch: 357670

Dil Fac

Dil Fac

1

1

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Da Camer	109		40 - 110					03/2	.0/10 15.50	0-703/101	7.57	1
Y Carrier	89.3		40 - 110					03/2	26/18 13:36	6 04/03/18	4:54	1
Lab Sample Matrix: Wate Analysis Ba		0/1-A					Cli	ent Sai	mple ID:	Lab Con Prep Typ Prep Ba	e: Tot	al/NA
Analysis Da					Total					Пер Ба		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		Spike	LCS	LCS	Uncert.					%Rec.		
Analyte		Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Radium-228		8.43	7.164		0.866	1.00	0.319		85	56 - 140		
a .	LCS LCS	,										
Carrier	<u>%Yield</u> Qualifier	Limits										
Ba Carrier	98.8	40 - 110 40 - 110										
Y Carrier	89.3	40 - 110										
- I ah Sample	ID: 440-206741-1 N	IS				Clie	nt Sam	nle ID:	Outfall	009_20180	1322 (Comp
Matrix: Wate						•	int outin		outiun	Prep Typ		
Analysis Ba										Prep Ba		
					Total							
	Sample Sample	Spike	MS	MS	Uncert.					%Rec.		
Analyte	Result Qual	Added	Result	Qual	(2σ+/-)	RL	MDC	Unit	%Rec	Limits		
Radium-228	0.00415 U	8.42	6.838		0.862	1.00	0.411	pCi/L	81	45 - 150		
	MS MS											
Carrier	%Yield Qualifier	Limits										
Ba Carrier	91.7	40 - 110										
Y Carrier	88.6	40 - 110										
Lab Sample	ID: 440-206741-1 N	ISD				Clie	nt Sam	ple ID:	Outfall	009_2018)322_0	Comp
Matrix: Wate	er									Prep Typ	e: Tot	al/NA
Analysis Ba	tch: 358655									Prep Ba	tch: 3	57670
					Total							
	Sample Sample	Spike	-	MSD	Uncert.					%Rec.		RER
Analyte	Result Qual	Added	Result	Qual	(2σ+/-)	RL	MDC		%Rec	Limits	RER	Limit
Radium-228	0.00415 U	8.43	8.755		1.03	1.00	0.352	pCi/L	104	45 - 150	1.01	1
	MSD MSD											
Carrier	%Yield Qualifier	Limits										
Po Corrier		40 110										

MDC Unit

0.334 pCi/L

QC Sample Results

Total

Uncert.

(2**σ**+/-)

0.207

RL

1.00

Count

Uncert.

(2**σ**+/-)

Limits

40 - 110

0.206

Carrier	%Yield Qua	lifier Limits
Ba Carrier	92.9	40 - 110
Y Carrier	87.5	40 - 110

8 9

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

Lab Sample		52183-F	-1-N DU								ample ID: Du	
Matrix: Wate											Prep Type: To	
Analysis Ba	tch: 3586	55				Total					Prep Batch:	357670
	Sample	e Sample		ווס	DU	Uncert.						REF
Analyte		t Qual	•	Result		(2σ+/-)	RL	MDC	Unit		REF	
Radium-228	0.184			0.08239		0.205	1.00	0.353			0.20	
	ווח	DU										
Carrier		Qualifier	Limits									
Ba Carrier	98.5		40 - 110	-								
Y Carrier	90.5		40 - 110									
lethod: 90	5 - Stro	ntium-	90 (GFPC)								
Lab Sample	ID: MB 1	60-3578	32/11-A	-					Clie	ent Samo	ole ID: Method	d Blan
Matrix: Wate											Prep Type: To	
Analysis Ba	tch: 3593	20									Prep Batch:	
-				Count	Total							
		MB	MB	Uncert.	Uncert.							
Analyte			Qualifier	(2 σ +/-)	(2σ+/-)	RL		Unit		repared	Analyzed	Dil Fa
Strontium-90		0.1136	U	0.153	0.153	3.00	0.254	pCi/L	03/2	27/18 13:21	04/06/18 09:46	
		МВ	МВ									
Carrier		%Yield	Qualifier	Limits					P	repared	Analyzed	Dil Fa
Sr Carrier		85.8		40 - 110					03/2	27/18 13:21	04/06/18 09:46	
Y Carrier		100		40 - 110					03/2	27/18 13:21	04/06/18 09:46	
Lab Sample	ID: LCS	160-357	832/1-A					Cli	ent Sa	mple ID:	Lab Control	Sampl
Matrix: Wate											Prep Type: To	
Analysis Ba	tch: 3593	20									Prep Batch:	
-						Total						
			Spike	LCS	LCS	Uncert.					%Rec.	
Analyte			Added	Result	Qual	(2σ+/-)	RL		Unit	%Rec	Limits	_
Strontium-90			8.28	9.309		0.949	3.00	0.294	pCi/L	112	75 - 125	
	LCS	LCS										
Carrier	%Yield	Qualifier	Limits									
Sr Carrier	83.2		40 - 110	-								
Y Carrier	94.2		40 - 110									
Lab Sample		206741-1	MS				Clie	ent Sam	ple ID:		09_20180322	
Matrix: Wate											Prep Type: To	
Analysis Ba	tch: 3593	20				Total					Prep Batch:	35783
	Sample	e Sample	e Spike	MS	MS	Uncert.					%Rec.	
Analyte		t Qual	Added	Result	Qual	(2 σ +/-)	RL	MDC	Unit	%Rec	Limits	
Strontium-90	0.322	2	8.28	8.130		0.864	3.00	0.311	pCi/L	94	19 - 150	
	MS	MS										
Carrier		Qualifier	Limits									
Sr Carrier	76.8			_								

 Sr Carrier
 76.8
 40 - 110

 Y Carrier
 96.4
 40 - 110

Tritium

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

Lab Sample Matrix: Wate		06741-1	MSD				Clie	ent Sam	ple ID:		09_201803 Prep Type		
Analysis Ba		20									Prep Bate		
, ,						Total							
	Sample	Sample	Spike	MSD	MSD	Uncert.					%Rec.		RE
Analyte	Result	Qual	Added	Result	Qual	(2 σ +/-)	RL	MDC	Unit	%Rec	Limits	RER	Lim
Strontium-90	0.322		8.27	9.160		0.941	3.00	0.289	pCi/L	107	19 - 150	0.57	
	MSD	MSD											
Carrier	%Yield	Qualifier	Limits										
Sr Carrier	80.9		40 - 110	-									
Y Carrier	95.7		40 - 110										
lethod: 90	6.0 - Trit	ium, T	otal (LSC	;)									
Lab Sample Matrix: Wate		0-36149	1/1 -A						Clie		ole ID: Met Prep Type		
Analysis Ba	tch: 36170	8									Prep Bate		
				Count	Total								
		MB N	ИB	Uncert.	Uncert.								
Analyte		Result 0		(2 σ +/-)	(2 σ +/-)	RL	MDC			repared	Analyze		Dil Fa
Tritium		-172.5 l	J	183	183	500	355	pCi/L	04/1	7/18 15:33	04/18/18 14	1:05	
Lab Sample	ID: LCS 1	60-3614	91/2-A					Cli	ent Sa	mple ID:	Lab Conti	rol Sa	ampl
Matrix: Wate	ər										Prep Type	: Tot	al/N
Analysis Ba	tch: 36170	8									Prep Bate	ch: 3	6149
						Total							
			Spike		LCS	Uncert.					%Rec.		
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC		%Rec	Limits		
Tritium			2760	2640		432	500	367	pCi/L	96	74 - 114		
Lab Sample	ID: 440-20	06741-1	MS				Clie	ent Sam	ple ID:	Outfall0	09_20180	322	Com
Matrix: Wate	ər								-		Prep Type	: Tot	al/N
Analysis Ba	tch: 36170	8									Prep Bate	ch: 3	6149
						Total							
	-	Sample	Spike		MS	Uncert.					%Rec.		
Analyte	Result		Added	Result	Qual	(2σ+/-)	RL		Unit	%Rec	Limits		
Tritium	-140	U	2760	2509		422	500	369	pCi/L	91	67 - 130		
Lab Sample	ID: 440-20	06741-1	MSD				Clie	ent Sam	ple ID:	Outfall0	09_20180	322 (Com
Matrix: Wate											Prep Type		
Analysis Ba		8									Prep Bate		
-						Total					•		
	Sample	Sample	Spike	MSD	MSD	Uncert.					%Rec.		RE

Sample	Sample	Spike	MSD MSD	Uncert.				%Rec.		RER
Result	Qual	Added	Result Qual	(2σ+/-)	RL	MDC Unit	%Rec	Limits	RER	Limit
 -140	U	2760	2347	391	500	335 pCi/L	85	67 - 130	0.20	1

QC Sample Results

8

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) Lab Sample ID: MB 160-358015/1-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 358407 **Prep Batch: 358015** Count Total MB MB Uncert. Uncert. Analyte **Result Qualifier** (2σ+/-) (2σ+/-) RL MDC Unit Prepared Analyzed Dil Fac **Total Uranium** 0.08637 Ū 0.1188 0.1188 1.00 0.159 pCi/L 03/28/18 13:56 03/31/18 19:25 1 MB MB Tracer Qualifier Limits %Yield Prepared Analyzed Dil Fac Uranium-232 96.5 30 - 110 03/28/18 13:56 03/31/18 19:25 1 Lab Sample ID: LCS 160-358015/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 358445 Prep Batch: 358015 Total Spike LCS LCS %Rec. Uncert. Analyte Added Result Qual (2**σ**+/-) RL MDC Unit %Rec Limits Uranium-234 12.7 12.75 1.52 1.00 0.156 pCi/L 100 84 - 120 Uranium-238 13.0 13.94 1.63 1.00 0.148 pCi/L 107 83 - 121 LCS LCS %Yield Qualifier Limits Tracer Uranium-232 93.5 30 - 110 Lab Sample ID: 440-206741-1 MS Client Sample ID: Outfall009_20180322_Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 358462 **Prep Batch: 358015** Total Sample Sample Spike MS MS Uncert. %Rec. Added Analyte **Result Qual** RL MDC Unit Limits Result Qual (2σ+/-) %Rec Uranium-234 -0.144 UG 8.10 1.00 1.34 pCi/L 65 - 146 64.1 61.00 95 Uranium-238 0.338 UG 65.5 8.80 68 - 143 68.71 1.00 1.34 pCi/L 104 MS MS Tracer %Yield Qualifier Limits Uranium-232 30 - 110 64.3 Lab Sample ID: 440-206741-1 MSD Client Sample ID: Outfall009 20180322 Comp **Matrix: Water** Prep Type: Total/NA Analysis Batch: 358408 **Prep Batch: 358015** Total Sample Sample Spike MSD MSD Uncert. %Rec. RER Analyte **Result Qual** Added Result Qual (2**σ**+/-) RL MDC Unit %Rec Limits RER I imit Uranium-234 -0.144 UG 63.8 59.79 1.00 65 - 146 8.01 1.05 pCi/L 94 0.07 1 Uranium-238 0.338 UG 65.2 64.10 8.40 1.00 0.920 pCi/L 98 68 - 143 0 27 1 MSD MSD %Yield Qualifier Limits Tracer Uranium-232 65.0 30 - 110

QC Association Summary

8 9 10 11 12 13

Prep	Batch:	357667

440-206741-1 MSD

Outfall009_20180322_Comp

Rad

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	PrecSep-21	
MB 160-357667/19-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-357667/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
440-206741-1 MS	Outfall009 20180322 Comp	Total/NA	Water	PrecSep-21	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	PrecSep-21	
460-152183-F-1-M DU	Duplicate	Total/NA	Water	PrecSep-21	
Prep Batch: 357670					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	PrecSep_0	
MB 160-357670/19-A	Method Blank	Total/NA	Water	PrecSep_0	
_CS 160-357670/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	PrecSep_0	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	PrecSep_0	
460-152183-F-1-N DU	Duplicate	Total/NA	Water	PrecSep_0	
rep Batch: 357678					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	Evaporation	
VIB 160-357678/1-A	Method Blank	Total/NA	Water	Evaporation	
_CS 160-357678/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
CSB 160-357678/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
40-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	Evaporation	
40-206741-1 MSBT	Outfall009_20180322_Comp	Total/NA	Water	Evaporation	
440-206741-1 MSBTD	Outfall009_20180322_Comp	Total/NA	Water	Evaporation	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	Evaporation	
rep Batch: 357810					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	Fill_Geo-0	
MB 160-357810/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
_CS 160-357810/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
440-206741-1 DU	Outfall009_20180322_Comp	Total/NA	Water	Fill_Geo-0	
rep Batch: 357832					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	PrecSep-7	
MB 160-357832/11-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-357832/1-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	PrecSep-7	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	PrecSep-7	
rep Batch: 358015					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	ExtChrom	
MB 160-358015/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-358015/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	ExtChrom	
440 206744 4 MCD	0.46-11000 00400000 0.5	T - 4 - 1/N I A	\A/atan	E. tOhnen	

ExtChrom

Total/NA

Water

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual Outfall 009 Comp TestAmerica Job ID: 440-206741-3

Rad (Continued)

Prep Batch: 361491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206741-1	Outfall009_20180322_Comp	Total/NA	Water	LSC_Dist_Susp	
MB 160-361491/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-361491/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
440-206741-1 MS	Outfall009_20180322_Comp	Total/NA	Water	LSC_Dist_Susp	
440-206741-1 MSD	Outfall009_20180322_Comp	Total/NA	Water	LSC_Dist_Susp	

Qualifiers

Dad

Rad		
Qualifier	Qualifier Description	
U	Result is less than the sample detection limit.	5
G	The Sample MDC is greater than the requested RL.	J

Glossary

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	8
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	9
DER	Duplicate Error Ratio (normalized absolute difference)	_
Dil Fac	Dilution Factor	10
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	13
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
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 (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

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Laboratory: TestAmerica Irvine

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18 *
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18 *
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Michigan	State Program	5	9005	06-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18 *
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18 *
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Patel, Urvashi

From: Sent: To: Cc: Subject: Attachments:

Baluran, Dwayne <DBaluran@haleyaldrich.com> Friday, March 30, 2018 3:25 PM Patel, Urvashi Miller, Katherine SSFL Boeing - COC 440-206741 COC 440-206741 (201803222242)_20180328_DB update.pdf

-External Email-

Hi Urvashi,

Catching up on the recent sampling events that occurred, could you please ensure that sample delivery group **440-206741** (OF009 – Annual Composite) reflects the following:

• COC had no sample time written on; lab listed time in receipt from labels. Updated COC sample times to 15:30, scanned, and is attached here.

If you have any questions feel free to contact me.

Thank you, **Dwayne Baluran, EIT, QSP** Staff Engineer

Haley & Aldrich, Inc. 5850 Canoga Avenue | Suite 400 Woodland Hills, CA 91367

T: (978) 234.5022 C: (818) 224.0704

www.haleyaldrich.com

Test America

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Phone (949) 261-1022 Fax (949) 260-3297	Client Information (Sub Contract Lab)	Shipping/Receiving	company; TestAmerica Laboratories, Inc.	Address. 13715 Rider Trail North,	Earth City	State, Zp; MO, 63045	3.1006 3.142298-8566(Tel) 314-298-8757(Fax) Email:	Princet Names	Boeing NPDES SSFL outfalls Site:		Sample Identification - Client ID (Lab ID)		Outrail009_20180322_Comp (440-206741-1)	Outfall009_20180322_Comp (440-206741-1MS)	Outfall009_20180322_Comp (440-206741-1MSD)				Ince laboratory accreditations are subject to change, TestAmerica Lat Y maintiain accreditation in the State of Origin listed above for analysis, pries, Inc. attention incompared on the state of Origin listed above for analysis.	ble Hazard Identification	Unconfirmed	where requested: J.H. III, IV, Other (specify)	Reinquistade by MM	Antennis addition of the second second	Reinquistred by:

4/23/2018

Ver: 09/20/2016

Client: Haley & Aldrich, Inc.

Login Number: 206741 List Number: 1 Creator: Garcia, Veronica G

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.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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: 440-206741-3

List Source: TestAmerica Irvine

Client: Haley & Aldrich, Inc.

Login Number: 206741 List Number: 2 Creator: Clarke, Jill C

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	0.2, 0.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-206741-3

List Source: TestAmerica St. Louis

List Creation: 03/24/18 09:55 AM

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)	
		Ba Carrier		
Lab Sample ID	Client Sample ID	(40-110)		
440-206741-1	Outfall009_20180322_Comp	92.9		
440-206741-1 MS	Outfall009_20180322_Comp	91.7		
440-206741-1 MSD	Outfall009_20180322_Comp	92.9		
460-152183-F-1-M DU	Duplicate	98.5		
LCS 160-357667/1-A	Lab Control Sample	98.8		
MB 160-357667/19-A	Method Blank	109		
Tracer/Carrier Legend				
Ba Carrier = Ba Carrier				

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

				Percent Yield (Acceptance Limits)	
		Ba Carrier	Y Carrier		
Lab Sample ID	Client Sample ID	(40-110)	(40-110)		
440-206741-1	Outfall009_20180322_Comp	92.9	89.3		
440-206741-1 MS	Outfall009_20180322_Comp	91.7	88.6		- 22
440-206741-1 MSD	Outfall009_20180322_Comp	92.9	87.5		1
460-152183-F-1-N DU	Duplicate	98.5	90.5		
LCS 160-357670/1-A	Lab Control Sample	98.8	89.3		
MB 160-357670/19-A	Method Blank	109	89.3		

Tracer/Carrier Legend

Ba Carrier = Ba Carrier Y Carrier = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

– Sr Carrier Y Ca	arrior
)-110)
440-206741-1 Outfall009_20180322_Comp 73.9 97	97.6
440-206741-1 MS Outfall009_20180322_Comp 76.8 96	96.4
440-206741-1 MSD Outfall009_20180322_Comp 80.9 95	95.7
LCS 160-357832/1-A Lab Control Sample 83.2 94	94.2
MB 160-357832/11-A Method Blank 85.8 10	100
Tracer/Carrier Legend Sr Carrier = Sr Carrier Y Carrier = Y Carrier	

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

Prep Type: Total/NA

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)
		ranium-23	
Lab Sample ID	Client Sample ID	(30-110)	
440-206741-1	Outfall009_20180322_Comp	64.4	

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

		Prep Type: Total/NA
		Percent Yield (Acceptance Limits)
	ranium-23	
Client Sample ID	(30-110)	
Outfall009_20180322_Comp	64.3	
Outfall009_20180322_Comp	65.0	
Lab Control Sample	93.5	
Method Blank	96.5	
d		
	Outfall009_20180322_Comp Outfall009_20180322_Comp Lab Control Sample Method Blank	Client Sample ID(30-110)Outfall009_20180322_Comp64.3Outfall009_20180322_Comp65.0Lab Control Sample93.5Method Blank96.5

Uranium-232 = Uranium-232



THE LEADER IN ENVIRONMENTAL TESTING

Si	440-206741 Field Sheet
Job:	

Tracking # 4176 2740 8505 SO (PO / FO

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

1			
Cooler Custody Seal:			
Sample Custody Seal:			
Temp: Observed			
From: Temp Blank D Sample	A		
NCM Filed: Yes D No			
	Yes	No	NA
Perchlorate has headspace?			Ô
CoC is complete w/o discrepancies?	D'		
Samples received within holding time?	Þ		
Sample preservatives verified?	'n		00
Cooler compromised/tampered with?		б	
Samples compromised/tampered with?		ø	
Samples w/o discrepancies?	ø	D	
Sample containers have legible labels?	Ø		
Containers are not broken or leaking?	Ø		
Sample date/times are provided.	E		
Appropriate containers are used?	9		П
Sample bottles are completely filled?	p		
Zero headspace?*			b
Multiphasic samples are not present?	Ø		П
Sample temp OK?	ď		
Sample out of temp?		6	
		-	
	Ice K Gel Cooler Custody Seal: Sample Custody Seal: Sample Custody Seal: Cooler ID: Cooler ID: IGF2 Temp: Observed ZdG From: Temp Blank □ Sample NCM Filed: Yes □ No Perchlorate has headspace? CoC is complete w/o discrepancies? Samples received within holding time? Sample preservatives verified? Cooler compromised/tampered with? Samples compromised/tampered with? Samples w/o discrepancies? Sample containers have legible labels? Containers are not broken or leaking? Sample date/times are provided. Appropriate containers are used? Sample bottles are completely filled? Zero headspace?* Multiphasic samples are not present? Sample temp OK?	Ice K Wet Gel Othe Cooler Custody Seal:	Cooler ID: Temp: Observed From: Temp Blank Sample NCM Filed: Yes No Perchlorate has headspace? Image: Cooler complete w/o discrepancies? Image: Cooler compromised/tampered with? Image: Cooler compr

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QA-812 RKE 01/26/2018

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DATA VALIDATION REPORT

Boeing SSFL Arroyo Simi

SAMPLE DELIVERY GROUP: 440-206645-1

Prepared for

Haley & Aldrich

April 3, 2018

MEC^x, Inc. 8864 Interchange Drive Houston, Texas 77054

www.mecx.net





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TABLES

1 – Sample Identification

V.4. V.5.

- 2 Data Qualifier Reference
- 3 Reason Code Reference



I. INTRODUCTION

Task Order Title: Boeing SSFL Arroyo Simi

Contract: 40458-078 and 40458-083

MEC^x Project No.: 1272.003D.01 002

Sample Delivery Group: 440-206645-1

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	Matrix	Collection	Method
Arroyo_Simi_20180322_Grab	440-206645-1	Water	3/22/2018 8:15:00 AM	200.8, 218.6, 245.1, 608, SM2340B, SM9221F, SM2540D



II. SAMPLE MANAGEMENT

According to the case narrative, sample condition upon receipt form and the chain-of-custody (COC) provided by the laboratory for sample delivery group (SDG) 440-206645-1:

- The laboratory received the sample in this sample delivery group (SDG) on ice and within the temperature limits of less than 6 degrees Celsius (°C) and greater than 0°C.
- The laboratory received the sample containers intact and properly preserved, as applicable.
- Field and laboratory personnel signed and dated the COC.
- According to the sample receipt form, custody seals were absent.
- Methods 245.1 and 218.6 were added to the requested analyses per client request. These analyses, while not listed on the original COC, were reported in SDG 440-206645-4 and were reviewed for this report.
- Per client request, Method 608 for full-list pesticides was added to this revision of the original data validation report.



TABLE 2 - DATA QUALIFIER REFERENCE

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For dioxins or PCB congeners, the associated value is the quantitation limit or the estimated detection limit.	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. For perchlorate, the associated value is the sample detection limit or the quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.



TABLE 3 - REASON CODE REFERENCE

Reason Code	Organic	Inorganic
Н	Holding time was exceeded.	Holding time was exceeded.
S	Surrogate recovery was outside control limits.	Not applicable.
С	Calibration percent relative standard deviation (%RSD) or percent deviation (%D) were noncompliant, or coefficient of determination (r ²) was <0.990.	Correlation coefficient (r) was <0.995.
R	Calibration relative response factor (RRF) was <0.05.	Percent recovery (%R) for calibration was outside control limits.
В	The analyte was detected in an associated blank as well as in the sample.	The analyte was detected in an associated blank as well as in the sample.
L	Laboratory control sample (LCS) or /LCS duplicate (LCSD) %R was outside the control limits.	LCS or LCSD %R was outside the control limits.
L1	LCS/LCSD relative percent difference (RPD) was outside the control limit.	LCS/LCSD RPD was outside the control limit.
Q	Matrix spike/matrix spike duplicate (MS/MSD) %R was outside control limits.	MS or MSD %R was outside the control limit.
Q1	MS/MSD RPD was outside the control limit.	MS/MSD RPD was outside the control limit.
E	Result was reported as an estimated maximum possible concentration (EMPC).	Laboratory duplicate RPD was outside the control limit.
I	Internal standard recovery was outside control limits.	Inductively coupled plasma (ICP) interference check standard (ICSA/ICSAB) result was outside control limits.
11	Not applicable.	ICP mass spectrometer (ICPMS) internal standard recovery was outside control limits.
А	Not applicable.	Serial dilution %D was outside control limits.
М	Tuning (BFB or DFTPP) was not compliant.	ICPMS tune was not compliant.
Т	The analyte was detected in an associated trip blank as well as in the sample.	Not applicable.
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.



Reason Code	Organic	Inorganic
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
F1	Field duplicate RPD was outside the control limit.	Field duplicate RPD was outside the control limit.
\$	The reviewer corrected the reported result and/or other information.	The reviewer corrected the reported result and/or other information.
D	The analysis was not used because another more technically sound analysis was available.	The analysis was not used because another more technically sound analysis was available.
Р	Instrument performance not compliant.	Post digestion spike recovery was outside of 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	Other problems identified in the data are 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.	Other problems identified in the data are 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. EPA METHODS 200.8, 245.1 AND 2340B — METALS, MERCURY AND HARDNESS

Marcia Hilchey of MEC^x reviewed the SDG on April 3 and April 18, 2018.

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. 2), EPA Methods 200.8, 245.1, Standard Methods for the Examination of Water and Wastewater 2340B, and the National Functional Guidelines for Inorganic Data Review (2014).

III.1. HOLDING TIMES

The analytical holding times, 28 days for mercury and six months for the metals, were met.

III.2. MS TUNING AND CALIBRATION

ICPMS mass calibrations were within 0.1 atomic mass units of the true value and the %RSDs were \leq 5%.

QAPP calibration criteria were met. A blank and one standard were used for calibration of all ICP-AES target analytes. A blank and 4 standards were used for calibration of all ICP-MS target analytes. A blank and 5 standards were used for calibration of mercury. The initial calibration r values for ICPMS and CVAA were \geq 0.995. CRQL recoveries were within the laboratory control limits of 50-150%. ICV and CCV recoveries were within NFG control limits of 90-110%.

III.3. QUALITY CONTROL SAMPLES

III.3.1. METHOD BLANKS

There were no target analyte detections in the calibration blanks or method blanks with the following exceptions. Mercury was reported in the initial calibration blank (-0.159 μ g/L), bracketing continuing calibration blank (-0.135 μ g/L) and method blank (-0.134 μ g/L) at negative concentrations greater than the absolute value of the MDL. The sample result for mercury was nondetect and was qualified as estimated (UJ).

III.3.2. INTERFERENCE CHECK SAMPLES:

ICP-MS ICSAB recoveries were within the control limits of 80-120% or $\pm 2x$ the reporting limit, whichever is greater. All of the interferents were present in the site samples at concentrations less than half that of the ICSA, therefore, the sample was not assessed for matrix interference.

III.3.3. LABORATORY CONTROL SAMPLES

Laboratory control sample recoveries were within the method control limits of 85-115%.

III.3.4. LABORATORY DUPLICATES:

Laboratory duplicate analyses were not performed on the sample in this SDG.

III.3.5. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed on the sample in this SDG for Methods 200.7 (supporting Method 2340B) and 245.1. Results were not assessed when the parent sample concentration exceeded the spike amount by 4×. Recoveries and RPDs were within the method control limits of 70-130% and \leq 20%, respectively. MS/MSD analyses were not performed on the sample in this SDG for Method 200.8.



III.4. SERIAL DILUTION

No serial dilution analyses were reported.

III.1. INTERNAL STANDARDS PERFORMANCE

Sample internal standard recoveries for ICPMS were within 60-125% of the calibration blank.

III.2. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Calculations were verified and the reported sample results were verified against the raw data. No transcription errors or calculation errors were noted. Detects between the MDL and the RL were qualified as estimated (J) and coded with DNQ to comply with the NPDES permit. Nondetects are valid to the MDL.

III.3. FIELD QC SAMPLES

MEC^x evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

III.3.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

III.3.2. FIELD DUPLICATES

There were no field duplicate samples identified for this SDG.

IV. EPA METHOD 608 – PESTICIDES

L. Calvin of MEC^x reviewed the SDG on April 18, 2018

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. 1), EPA Method 608, and the National Functional Guidelines for Superfund Organic Methods Data Review (2014).

IV.1.HOLDING TIMES

Extraction and analytical holding times were met. The sample was extracted within seven days of collection and analyzed within 40 days of extraction.

IV.2. CALIBRATION

The initial calibration %RSDs were within the control limits of $\leq 10\%$ or $r^2 \geq 0.990$. The initial calibration verification (ICV) and continuing calibration verification (CCV) %Ds were within the control limit of $\leq 15\%$.

IV.3.QUALITY CONTROL SAMPLES

IV.3.1. METHOD BLANKS

Target compounds were not detected in method blank.

IV.3.2. LABORATORY CONTROL SAMPLES

LCS/LCSD recoveries and RPDs were within the laboratory control limits.



IV.3.3. SURROGATE RECOVERY

The surrogate recovery for TCMX was within the laboratory control limits of 10-150% in the site sample.

IV.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample in this SDG. MEC^x evaluated method accuracy and precision based on the LCS/LCSD results.

IV.4. FIELD QC SAMPLES

MEC^x evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^x used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.

IV.4.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

IV.4.2. FIELD DUPLICATES

Field duplicate samples were not identified in this SDG.

IV.5. COMPOUND IDENTIFICATION

Compound identification was verified. Review of the sample chromatograms and retention times indicated no issues with target compound identification. The laboratory analyzed for 20 pesticides by Method 608.

IV.6. COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Reported nondetects are valid to the reporting limit. The intercolumn RPD for the Endosulfan I detect in the sample was <40%. The sample did not require dilution.

IV.7.System Performance

Review of the raw data indicated no issues with system performance.

V. METHODS SM 2540D, E218.6 AND SM 9221F— TOTAL SUSPENDED SOLIDS (TSS), HEXAVALENT CHROMIUM AND E. COLI

Marcia Hilchey of MEC^x reviewed the SDG on April 3 and April 18, 2018.

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. 1), EPA Method 218.6, Standard Methods for the Examination of Water and Wastewater 2540D and 9221F, and the National Functional Guidelines for Inorganic Superfund Data Review (2014).

V.1. HOLDING TIMES

The analytical holding times, 7 days for TSS and 30 hours for E. Coli by Method 9221F as stated in the QAPP and 8 hours as requested on the CoC, were met. The analytical holding time for hexavalent chromium, 24 hours from collection, was not met. The analysis was added to the COC past the HT



requirement, and the sample was analyzed 23 days after collection. The result for hexavalent chromium was qualified as estimated with a potential negative bias (J-).

V.2. CALIBRATION

The analytical balance was properly calibrated. Biological controls were acceptable. Initial calibration requirements were met for hexavalent chromium. Initial and continuing calibration (CCV) and low level CCV recoveries for hexavalent chromium were within laboratory control limits.

V.3. QUALITY CONTROL SAMPLES

V.3.1. METHOD BLANKS

The TSS and hexavalent chromium method blanks had no detects. The negative biological control sample was acceptable. The calibration blanks for hexavalent chromium had no detects.

V.3.2. LABORATORY CONTROL SAMPLES

Laboratory control sample recoveries for TSS and hexavalent chromium were within the laboratory control limits. The presumptive test was analyzed with the positive detects for the target bacteria.

V.3.3. LABORATORY DUPLICATES

Laboratory duplicate analyses were not performed on the sample in this SDG.

V.3.4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample in this SDG.

V.4. SAMPLE RESULT VERIFICATION

Calculations were verified and the reported sample results were verified against the raw data. No transcription errors or calculation errors were noted.

V.5. FIELD QC SAMPLES

MEC^x evaluated 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. MEC^x used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.

V.5.1. FIELD BLANKS AND EQUIPMENT BLANKS

Field blank or equipment blank samples were not identified for this SDG.

V.5.2. FIELD DUPLICATES

Field duplicate samples were not identified in this SDG.

Validated Sample Result Forms: 4402066451

Sample Name Ar	royo_Simi_20	180322_Grab	Matrix Type: WS			Res			
Sample Date: 3/22/20	018 8:15:00 AM	Valida	tion Level: 8						
Lab Sample Name:	440-206645-1								
Analyte	Fractio	on: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	Т	7440-36-0	0.95	2.0	0.50	ug/L	J,DX	J	DNQ
Arsenic	Т	7440-38-2	2.0	1.0	0.50	ug/L			
Beryllium	Т	7440-41-7		0.50	0.25	ug/L	U	U	
Cadmium	Т	7440-43-9	0.29	1.0	0.25	ug/L	J,DX	J	DNQ
Chromium	Т	7440-47-3	5.8	2.0	0.50	ug/L			
Copper	Т	7440-50-8	9.9	2.0	0.50	ug/L			
Lead	Т	7439-92-1	1.7	1.0	0.50	ug/L			
Nickel	Т	7440-02-0	5.7	2.0	0.50	ug/L			
Selenium	Т	7782-49-2	1.5	2.0	0.50	ug/L	J,DX	J	DNQ
Silver	Т	7440-22-4		1.0	0.50	ug/L	U	U	
Thallium	Т	7440-28-0		1.0	0.50	ug/L	U	U	
Zinc	Т	7440-66-6	45	20	2.5	ug/L			
Analysis Meth	od E60)8							
Sample Name Ar	royo_Simi_20	180322_Grab	Ma	trix Type:	WS	Res	ult Type: Th	RG	
Sample Date: 3/22/20	018 8:15:00 AM	Valida	tion Level: 8						
- Lab Sample Name:	440-206645-1								
•	Fractio	on: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Analyte	Fractio N	on: CAS No 72-54-8		RL 0.0051	MDL 0.0041				
Analyte						Units	Qualifier	Qualifier	
Analyte 4,4'-DDD 4,4'-DDE	N	72-54-8		0.0051	0.0041	Units ug/L	Qualifier U	Qualifier U	
Analyte 4,4'-DDD 4,4'-DDE 4,4'-DDT	N N	72-54-8 72-55-9		0.0051	0.0041	Units ug/L ug/L	Qualifier U U	Qualifier U U	
Analyte 4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin	N N N	72-54-8 72-55-9 50-29-3		0.0051 0.0051 0.010	0.0041 0.0031 0.0041	Units ug/L ug/L ug/L	Qualifier U U U	Qualifier U U U	
Analyte 4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC beta-BHC	N N N N	72-54-8 72-55-9 50-29-3 309-00-2		0.0051 0.0051 0.010 0.0051	0.0041 0.0031 0.0041 0.0015	Units ug/L ug/L ug/L ug/L	Qualifier U U U U U	Qualifier U U U U	Validation Notes

0.0051

0.0051

0.0051

0.0051

0.010

0.0051

0.010

0.010

0.010

0.042

0.0036

0.0020

0.0031

0.0020

0.0031

0.0020

0.0020

0.0071

0.0031

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U

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U

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ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

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U

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U

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U

U

Wednesday, April 18, 2018

gamma-BHC (Lindane)

319-86-8

60-57-1

959-98-8

33213-65-9

1031-07-8

7421-93-4

53494-70-5

58-89-9

72-20-8

Ν

Ν

Ν

Ν

Ν

Ν

Ν

Ν

Ν

delta-BHC

Endosulfan I

Endosulfan II

Endosulfan sulfate

Endrin aldehyde

Endrin ketone

Dieldrin

Endrin

Analysis Method	E60	8							
Heptachlor	Ν	76-44-8		0.010	0.0031	ug/L	U	U	
Heptachlor epoxide	Ν	1024-57-3		0.0051	0.0026	ug/L	U	U	
Methoxychlor	Ν	72-43-5		0.0051	0.0036	ug/L	U	U	
Toxaphene	Ν	8001-35-2		0.51	0.26	ug/L	U	U	
Analysis Method	SM2	2340							
Sample Name Arroyo_	Simi_20	180322_Grab	Mat	rix Type:	WS	Res	ult Type: TI	RG	
Sample Date: 3/22/2018 8:1	5:00 AM	Validati	on Level: 8						
Lab Sample Name: 440	-206645-1								
Analyte	Fractio	n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	Т	HARDNESSCA CO3	120	0.33	0.17	mg/L			
Analysis Method	SM2	2540D							
Analysis Method Sample Name Arroyo_			Mat	rix Type:	WS	Res	ult Type: TI	RG	
v	_Simi_20	180322_Grab	Mat	rix Type:	WS	Res	ult Type: TI	RG	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1	_Simi_20	180322_Grab		rix Type:	WS	Res	ult Type: Th	RG	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440	_Simi_20 5:00 AM 0-206645-1	180322_Grab		rix Type: RL	ws MDL	Result Units	ult Type: ^{TI} Lab Qualifier	RG Validation Qualifier	Validation Notes
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte	_Simi_20 5:00 AM 0-206645-1	180322_Grab Validati	on Level: 8 Result			Result	Lab	Validation	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte Total Suspended Solids (TSS)	_Simi_20 5:00 AM 0-206645-1 Fractio	180322_Grab Validati n: CAS No	on Level: 8 Result Value	RL	MDL	Result Units	Lab	Validation	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte Fotal Suspended Solids (TSS) Analysis Method	Simi_20 5:00 AM 0-206645-1 Fractio N SMS	180322_Grab Validati n: CAS No TSS 9221F	on Level: 8 Result Value 63	RL	MDL	Result Units mg/L	Lab	Validation Qualifier	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte Fotal Suspended Solids (TSS) Analysis Method Sample Name Arroyo_	_Simi_20 5:00 AM)-206645-1 Fractio N <i>SM</i> 9 _Simi_20	180322_Grab Validati n: CAS No TSS 9221F 180322_Grab	on Level: 8 Result Value 63	RL	MDL 2.5	Result Units mg/L	Lab Qualifier	Validation Qualifier	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte Total Suspended Solids (TSS) Analysis Method Sample Name Arroyo_ Sample Date: 3/22/2018 8:1	_Simi_20 5:00 AM)-206645-1 Fractio N <i>SM</i> 9 _Simi_20	180322_Grab Validati n: CAS No TSS 9221F 180322_Grab	on Level: 8 Result Value 63 Mat	RL	MDL 2.5	Result Units mg/L	Lab Qualifier	Validation Qualifier	
Sample Name Arroyo_ Sample Date: 3/22/2018 8:1 Lab Sample Name: 440 Analyte Total Suspended Solids (TSS) <i>Analysis Method</i> Sample Name Arroyo_ Sample Date: 3/22/2018 8:1	Simi_20 5:00 AM -206645-1 Fractio N SM9 Simi_20 5:00 AM	180322_Grab Validati n: CAS No TSS 9221F 180322_Grab	on Level: 8 Result Value 63 Mat	RL	MDL 2.5	Result Units mg/L	Lab Qualifier	Validation Qualifier	

Validated Sample Result Forms: 4402066454

Analysis Method	E21	8.6							
Sample Name Arroyo_	Simi_201	180322_Grab	Mat	trix Type:	WS	Res	ult Type: TI	RG	
Sample Date: 3/22/2018 8:1	5:00 AM	Valida	tion Level: 8						
Lab Sample Name: 440	-206645-1								
Analyte	Fractio	n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chromium VI (Hexavalent)	Т	18540-29-9	0.62	1.0	0.25	ug/L	J,DXBU	J-	Н
Analysis Method	E24	5.1							
Sample Name Arroyo_	Simi_201	180322_Grab	Mat	rix Type:	WS	Res	ult Type: The The The The The The The The Type The	RG	
Sample Date: 3/22/2018 8:1	5:00 AM	Valida	tion Level: 8						
Lab Sample Name: 440	-206645-1								
Analyte	Fractio	n: CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	Т	7439-97-6		0.20	0.10	ug/L	U	UJ	В



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: 440-206645-1

Client Project/Site: Annual 5 Year Arroyo Simi-Frontier Park Revision: 1

For:

Haley & Aldrich, Inc. 400 E Van Buren St. Suite 545 Phoenix, Arizona 85004

Attn: Katherine Miller

Usli fatel

Authorized for release by: 4/16/2018 12:15:18 PM Urvashi Patel, Manager of Project Management (949)261-1022 urvashi.patel@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.



Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

> 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.

Ushi fatel

Urvashi Patel Manager of Project Management 4/16/2018 12:15:18 PM

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Sample Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park TestAmerica Job ID: 440-206645-1

Lab Sample ID	Client Sample ID	Matrix	Collected Received
440-206645-1	Arroyo_Simi_20180322_Grab	Water	03/22/18 08:15 03/22/18 15:15

Job ID: 440-206645-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-206645-1

Comments

Subcontract analysis moved to job-2. Report revised to included PP Pest list from original analytical run.

Receipt

The samples were received on 3/22/2018 3:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.2° C, 2.6° C and 3.3° C.

GC/MS VOA

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

GC/MS Semi VOA

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-466272 and analytical batch 440-466864 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 440-466272 and analytical batch 440-466864 was outside control limits. Sample matrix interference is suspected.

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 (MS/MSD) associated with preparation batch 440-466023 and analytical batch 440-466579. 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.

Metals

Method(s) 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-466285 and analytical batch 440-466523 were outside control limits for Calcium. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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.

Subcontract non-Sister

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

Organic Prep

Method(s) 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-466023.

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

Client Sample Results

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Method: 624 - Volatile Organic Compounds

TestAmerica Job ID: 440-206645-1

Client Sample ID: Arroyo_Simi_20180322_Grab Date Collected: 03/22/18 08:15 Date Received: 03/22/18 15:15

)322_Grat)			La	b Sample	ID: 440-206 Matrix	645-1 : Water	
(GC/MS) ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50		ug/L			03/26/18 11:34	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			03/23/18 15:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Acrolein	ND		5.0	2.5	ug/L			03/23/18 15:26	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Acrylonitrile	ND		2.0	1.0	ug/L			03/23/18 15:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.50	ug/L			03/26/18 11:34	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Benzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Bromoform	ND		1.0	0.40	ug/L			03/26/18 11:34	1
Bromomethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Chlorobenzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Dibromochloromethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Chloroethane	ND		1.0	0.40	ug/L			03/26/18 11:34	1
Chloroform	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Chloromethane	ND		0.50		ug/L			03/26/18 11:34	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Methylene Chloride	ND		2.0		ug/L			03/26/18 11:34	1
Tetrachloroethene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Toluene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/26/18 11:34	1
Vinyl chloride	ND		0.50		ug/L			03/26/18 11:34	1
Trichloroethene	ND		0.50		ug/L			03/26/18 11:34	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			03/26/18 11:34	1
Naphthalene	ND		1.0	0.40	ug/L			03/26/18 11:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128			-		03/23/18 15:26	1
Dibromofluoromethane (Surr)	103		76 - 132					03/23/18 15:26	1

Toluene-d8 (Surr)	102	80 - 128	03/23/18 15:26	1
Dibromofluoromethane (Surr)	103	76 - 132	03/23/18 15:26	1
4-Bromofluorobenzene (Surr)	98	80 - 120	03/23/18 15:26	1
4-Bromofluorobenzene (Surr)	97	80 - 120	03/26/18 11:34	1
Dibromofluoromethane (Surr)	96	76 - 132	03/26/18 11:34	1
Toluene-d8 (Surr)	103	80 - 128	03/26/18 11:34	1

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

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	0.526	0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1
Acenaphthylene	ND	0.526	0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1
Anthracene	ND	0.526	0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1
Benzidine	ND	10.5	5.26	ug/L		03/27/18 09:48	03/29/18 16:26	1

Client Sample ID: Arroyo_Simi_20180322_Grab Date Collected: 03/22/18 08:15 Date Received: 03/22/18 15:15

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

Lab Sample ID: 440-206645-1 Matrix: Water

Analyte		Qualifier R		Unit	D	Prepared	Analyzed	Dil Fac	5
Benzo[a]anthracene	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Benzo[b]fluoranthene	ND	2.1	1 1.05	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Benzo[k]fluoranthene	ND	0.52	6 0.263	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Benzo[a]pyrene	ND	2.1	1 0.526	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Bis(2-chloroethoxy)methane	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Bis(2-chloroethyl)ether	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	0
Bis(2-ethylhexyl) phthalate	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	0
4-Bromophenyl phenyl ether	ND	1.0	5 0.526	ug/L		03/27/18 09:48	03/29/18 16:26	1	0
Butyl benzyl phthalate	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	9
4-Chloro-3-methylphenol	ND	2.1	1 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2-Chloronaphthalene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2-Chlorophenol	ND	1.0	5 0.526	ug/L		03/27/18 09:48	03/29/18 16:26	1	
4-Chlorophenyl phenyl ether	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Chrysene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Dibenz(a,h)anthracene	ND	0.52	6 0.263	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Di-n-butyl phthalate	ND	2.1	1 1.05	ug/L		03/27/18 09:48	03/29/18 16:26	1	
1,2-Dichlorobenzene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	13
1,3-Dichlorobenzene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
1,4-Dichlorobenzene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	
3,3'-Dichlorobenzidine	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2,4-Dichlorophenol	ND	2.1	1 1.05	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Diethyl phthalate	ND	1.0	5 0.526	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2,4-Dimethylphenol	ND	2.1	1 1.05	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Dimethyl phthalate	ND	0.52	6 0.263	ug/L		03/27/18 09:48	03/29/18 16:26	1	
4,6-Dinitro-2-methylphenol	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2,4-Dinitrophenol	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2,4-Dinitrotoluene	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
2,6-Dinitrotoluene	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Di-n-octyl phthalate	ND	5.2	6 2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1	
1,2-Diphenylhydrazine(as Azobenzene)	ND	1.0	5 0.526	ug/L		03/27/18 09:48	03/29/18 16:26	1	
Fluoranthene	ND			ug/L		03/27/18 09:48	03/29/18 16:26	1	
Fluorene	ND	0.52		ug/L		03/27/18 09:48	03/29/18 16:26	1	
Hexachlorobenzene	ND			ug/L		03/27/18 09:48	03/29/18 16:26	1	
Hexachlorobutadiene	ND	2.1	1 0.526	ug/L			03/29/18 16:26	1	
Hexachloroethane	ND	3.1					03/29/18 16:26	1	
Hexachlorocyclopentadiene	ND	5.2		ug/L		03/27/18 09:48	03/29/18 16:26	1	
Indeno[1,2,3-cd]pyrene	ND	2.1		ug/L			03/29/18 16:26	1	
Isophorone	ND			ug/L			03/29/18 16:26	1	
Naphthalene	ND	1.0		ug/L			03/29/18 16:26	1	
Nitrobenzene	ND	1.0		ug/L			03/29/18 16:26	1	
2-Nitrophenol	ND			ug/L			03/29/18 16:26	1	
4-Nitrophenol	ND	5.2		ug/L			03/29/18 16:26	1	
N-Nitrosodimethylamine	ND			ug/L			03/29/18 16:26	1	
N-Nitrosodiphenylamine	ND			ug/L			03/29/18 16:26	1	
N-Nitrosodi-n-propylamine	ND	2.1		ug/L			03/29/18 16:26	1	
Pentachlorophenol	ND	2.1		ug/L			03/29/18 16:26	1	
Phenanthrene	ND	0.52		ug/L			03/29/18 16:26	1	
Phenol	ND	1.0		ug/L			03/29/18 16:26	1	
Pyrene	ND	0.52	6 0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1	

RL

1.05

1.05

MDL Unit

0.526 ug/L

0.526 ug/L

Analyte

1,2,4-Trichlorobenzene

2,4,6-Trichlorophenol

Client Sample ID: Arroyo_Simi_20180322_Grab Date Collected: 03/22/18 08:15 Date Received: 03/22/18 15:15

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

Result Qualifier

ND

ND

Lab Sample ID: 440-206645-1 Matrix: Water

03/27/18 09:48 03/29/18 16:26

03/27/18 09:48 03/29/18 16:26

Analyzed

Prepared

D

5

Dil Fac

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_, ., p					- 3				-
Benzo[g,h,i]perylene	ND		5.26	2.11	ug/L		03/27/18 09:48	03/29/18 16:26	1
bis (2-chloroisopropyl) ether	ND		0.526	0.211	ug/L		03/27/18 09:48	03/29/18 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	73		50 - 120				03/27/18 09:48	03/29/18 16:26	1
2-Fluorophenol	75		30 - 120				03/27/18 09:48	03/29/18 16:26	1
2,4,6-Tribromophenol	94		40 - 120				03/27/18 09:48	03/29/18 16:26	1
Nitrobenzene-d5	79		45 - 120				03/27/18 09:48	03/29/18 16:26	1
Terphenyl-d14	88		37 - 144				03/27/18 09:48	03/29/18 16:26	1
Phenol-d6	38		35 - 120				03/27/18 09:48	03/29/18 16:26	1
Method: 608 - Organochi	orine Pesticides	in Water							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.082	ug/L		03/26/18 11:53	03/28/18 11:39	1
Dieldrin	ND		0.0051	0.0020	ug/L		03/26/18 11:53	03/28/18 11:39	1
Toxaphene	ND		0.51		ug/L		03/26/18 11:53	03/28/18 11:39	1
4,4'-DDD	ND		0.0051	0.0041	ug/L		03/26/18 11:53	03/28/18 11:39	1
4,4'-DDE	ND		0.0051	0.0031	ug/L		03/26/18 11:53	03/28/18 11:39	1
4,4'-DDT	ND		0.010	0.0041	ug/L		03/26/18 11:53	03/28/18 11:39	1
Endrin ketone	ND		0.010	0.0071	-			03/28/18 11:39	1
alpha-BHC	ND		0.0051	0.0026	-		03/26/18 11:53	03/28/18 11:39	1
gamma-BHC (Lindane)	ND		0.010	0.0031	ug/L		03/26/18 11:53	03/28/18 11:39	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		03/26/18 11:53	03/28/18 11:39	1
delta-BHC	ND		0.0051	0.0036	ug/L		03/26/18 11:53	03/28/18 11:39	1
Aldrin	ND		0.0051	0.0015	ug/L		03/26/18 11:53	03/28/18 11:39	1
Endosulfan sulfate	ND		0.010	0.0031	ug/L		03/26/18 11:53	03/28/18 11:39	1
Endosulfan I	0.042		0.0051	0.0031	ug/L		03/26/18 11:53	03/28/18 11:39	1
Endrin	ND		0.0051	0.0020	•		03/26/18 11:53	03/28/18 11:39	1
Endosulfan II	ND		0.0051	0.0020	ug/L		03/26/18 11:53	03/28/18 11:39	1
beta-BHC	ND		0.010	0.0041	ug/L		03/26/18 11:53	03/28/18 11:39	1
Heptachlor	ND		0.010	0.0031	ug/L		03/26/18 11:53	03/28/18 11:39	1
Methoxychlor	ND		0.0051	0.0036	ug/L		03/26/18 11:53	03/28/18 11:39	1
Heptachlor epoxide	ND		0.0051	0.0026	ug/L		03/26/18 11:53	03/28/18 11:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		10 - 150				03/26/18 11:53	03/28/18 11:39	1

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

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.29	J,DX	1.0	0.25	ug/L		03/27/18 10:40	03/27/18 19:34	1
Copper	9.9		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Lead	1.7		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Antimony	0.95	J,DX	2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Selenium	1.5	J,DX	2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Thallium	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Beryllium	ND		0.50	0.25	ug/L		03/27/18 10:40	03/27/18 19:34	1
Nickel	5.7		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Silver	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0		1.0	0.50	ug/L	_	03/27/18 10:40	03/27/18 19:34	1
Zinc	45		20	2.5	ug/L		03/27/18 10:40	03/27/18 19:34	1
Chromium	5.8		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:34	1
Method: SM 2340B - Total H	ardness (as C	CaCO3) by ca	alculation -	Total R	ecoverable	l.			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	120		0.33	0.17	mg/L	_		03/29/18 15:10	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total Suspended Solids	63		5.0	2.5	mg/L	-		03/28/18 18:04	
Cyanide, Total	ND		5.0	2.5	ug/L		03/23/18 10:40	03/24/18 09:57	
Method: SM 9221F - E.Coli (Multiple Tube	Formontati	on: EC.MU	2)					
Analyte	•	Qualifier		RL	Unit	D	Prepared	Analyzed	Dil Fa
Escherichia coli	11000		1.8	1.8	MPN/100mL	_		03/22/18 15:45	

Lab Sample ID: 440-206645-1 Matrix: Water

Method Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

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lethod	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
25	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
608	Organochlorine Pesticides in Water	40CFR136A	TAL IRV
00.8	Metals (ICP/MS)	EPA	TAL IRV
M 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL IRV
M 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
M 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
M 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

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

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: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Client Sample ID: Arroyo_Simi_20180322_Grab Date Collected: 03/22/18 08:15 Date Received: 03/22/18 15:15

Lab Sample ID: 440-206645-1 Matrix: Water

Bron Tuno	Batch	Batch Method	Dun	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared	Analyst	Lab
Prep Type	Туре		Run	Factor		Amount		or Analyzed	Analyst	
Total/NA	Analysis	624		1	10 mL	10 mL	465948	03/26/18 11:34	RM	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	465505	03/23/18 15:26	WC	TAL IRV
Total/NA	Prep	625			950 mL	2.0 mL	466272	03/27/18 09:48	JS1	TAL IRV
Total/NA	Analysis	625		1			466864	03/29/18 16:26	DF	TAL IRV
Total/NA	Prep	608			980 mL	2 mL	466023	03/26/18 11:53	L1A	TAL IRV
Total/NA	Analysis	608		1			466579	03/28/18 11:39	IVA	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	466289	03/27/18 10:40	MN1	TAL IRV
Total Recoverable	Analysis	200.8		1			466563	03/27/18 19:34	B1H	TAL IRV
Total Recoverable	Analysis	SM 2340B		1			466436	03/29/18 15:10	A1S	TAL IRV
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	466721	03/28/18 18:04	XL	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	465583	03/23/18 10:40	KMY	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			465829	03/24/18 09:57	KMY	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	466353		CMM	TAL IRV
							(Start)	03/22/18 15:45		
							(End)	03/25/18 14:12		

Laboratory References:

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

Client Sample ID: Method Blank

Prep Type: Total/NA

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

Analysis Batch: 465505 LCS LCS Spike %Rec. Analyte Added **Result Qualifier** Unit D %Rec Limits 2-Chloroethyl vinyl ether 25.0 17.3 ug/L 69 37 - 150 Acrolein 25.0 21.6 87 ug/L 10 - 145 250 Acrylonitrile 208 ug/L 83 48 - 140

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
Dibromofluoromethane (Surr)	98		76 - 132
4-Bromofluorobenzene (Surr)	96		80 - 120

Lab Sample ID: LCSD 440-465505/8 **Matrix: Water** Analysis Batch: 465505

Lab Sample ID: LCS 440-465505/6

Matrix: Water

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Chloroethyl vinyl ether	25.0	18.2		ug/L		73	37 - 150	5	25
Acrolein	25.0	25.0		ug/L		100	10 - 145	14	30
Acrylonitrile	250	226		ug/L		90	48 - 140	8	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
Dibromofluoromethane (Surr)	100		76 - 132
4-Bromofluorobenzene (Surr)	99		80 - 120

Lab Sample ID: 440-206688-A-1 MS Matrix: Water Analysis Batch: 465505

Analysis Baten: 400000	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2-Chloroethyl vinyl ether	ND		25.0	17.2		ug/L		69	10 - 140	
Acrolein	ND		25.0	24.7		ug/L		99	10 - 147	
Acrylonitrile	ND		250	210		ug/L		84	38 - 144	

TestAmerica Irvine

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Sample	Results
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Lab Sample ID: MB 440-465505/5	
Lab Sample ID. NID 440-405505/5	
Matrix: Water	

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

Analysis Batch: 465505 MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac 2.0 2-Chloroethyl vinyl ether ND 1.0 ug/L 03/23/18 08:38 1 Acrolein ND 5.0 03/23/18 08:38 2.5 ug/L 1 2.0 ND 03/23/18 08:38 Acrylonitrile 1.0 ug/L 1 MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 103 80 - 128 03/23/18 08:38 1 Dibromofluoromethane (Surr) 100 76 - 132 03/23/18 08:38 1 4-Bromofluorobenzene (Surr) 92 80 - 120 03/23/18 08:38 1

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

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

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

Lab Sample ID: 440-206688-A-1 MS Matrix: Water

Analysis Batch: 465505

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
Dibromofluoromethane (Surr)	103		76 - 132
4-Bromofluorobenzene (Surr)	99		80 - 120

Lab Sample ID: 440-206688-A-1 MSD Matrix: Water

Analysis Batch: 465505

Allalysis Balch. 405505											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Chloroethyl vinyl ether	ND		25.0	16.4		ug/L		65	10 - 140	5	25
Acrolein	ND		25.0	20.3		ug/L		81	10 - 147	20	40
Acrylonitrile	ND		250	191		ug/L		77	38 - 144	9	40
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	101		80 - 128								
Dibromofluoromethane (Surr)	103		76 - 132								
4-Bromofluorobenzene (Surr)	97		80 - 120								

Lab Sample ID: MB 440-465948/5 Matrix: Water Analysis Batch: 465948

MB MB **Result Qualifier** RL MDL Unit Prepared Dil Fac Analyte D Analyzed ND 0.50 0.25 ug/L 1,1,1-Trichloroethane 03/26/18 08:29 1 1,1,2,2-Tetrachloroethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 ND 0.50 1,1,2-Trichloroethane 0.25 ug/L 03/26/18 08:29 1 1,1,2-Trichloro-1,2,2-trifluoroethane ND 2.0 0.50 ug/L 03/26/18 08:29 1 1,1-Dichloroethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 1,1-Dichloroethene ND 0.50 0.25 ug/L 03/26/18 08:29 1 1.2-Dichlorobenzene ND 0.50 0.25 ug/L 03/26/18 08:29 1 1,2-Dichloroethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 1,2-Dichloropropane ND 0.50 0.25 ug/L 03/26/18 08:29 1 ND 0.50 0.25 ug/L 1,3-Dichlorobenzene 03/26/18 08:29 1 1,4-Dichlorobenzene ND 0.50 0.25 ug/L 03/26/18 08:29 1 Benzene ND 0.50 0.25 ug/L 03/26/18 08:29 1 Bromoform ND 1.0 0.40 ug/L 03/26/18 08:29 1 Bromomethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 Carbon tetrachloride ND 0.50 0.25 ug/L 03/26/18 08:29 1 Chlorobenzene ND 0.50 0.25 ug/L 03/26/18 08:29 1 Dibromochloromethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 0.40 ug/L Chloroethane ND 1.0 03/26/18 08:29 1 Chloroform ND 0.50 0.25 ug/L 03/26/18 08:29 1 Chloromethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 cis-1,3-Dichloropropene ND 0.50 0.25 ug/L 03/26/18 08:29 1 Bromodichloromethane ND 0.50 0.25 ug/L 03/26/18 08:29 1 ND Ethylbenzene 0.50 0.25 ug/L 03/26/18 08:29 1 ND Methylene Chloride 2.0 0.88 ug/L 03/26/18 08:29 1 Tetrachloroethene ND 0.50 0.25 ug/L 03/26/18 08:29 1

TestAmerica Irvine

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

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

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Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Lab Sample ID: MB 440-465948/5

Matrix: Water

Analyte

Toluene

Vinyl chloride

Naphthalene

Surrogate

Toluene-d8 (Surr)

Trichloroethene

Analysis Batch: 465948

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

cis-1,2-Dichloroethene

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

TestAmerica Job ID: 440-206645-1

Client Sample ID: Method Blank

Analyzed

03/26/18 08:29

03/26/18 08:29

03/26/18 08:29

03/26/18 08:29

03/26/18 08:29

Prep Type: Total/NA

Prep Type: Total/NA

1	
1	
1	
1	
1	8
1	
1	9
ac	
1	

03/26/18 08:29 1	
03/26/18 08:29 1	9
Analyzed Dil Fac	
03/26/18 08:29 1	
03/26/18 08:29 1	
03/26/18 08:29 1	

Dil Fac

Lab Sample ID: LCS 440-465948/6 **Matrix: Water** Analysis Batch: 465948

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane		25.1		ug/L		100	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	24.8		ug/L		99	63 - 130	
1,1,2-Trichloroethane	25.0	27.0		ug/L		108	70 - 130	
1,1-Dichloroethane	25.0	24.7		ug/L		99	64 - 130	
1,1-Dichloroethene	25.0	23.8		ug/L		95	70 - 130	
1,2-Dichlorobenzene	25.0	27.2		ug/L		109	70 - 130	
1,2-Dichloroethane	25.0	25.9		ug/L		103	57 _ 138	
1,2-Dichloropropane	25.0	25.6		ug/L		102	67 - 130	
1,3-Dichlorobenzene	25.0	26.7		ug/L		107	70 - 130	
1,4-Dichlorobenzene	25.0	26.8		ug/L		107	70 - 130	
Benzene	25.0	25.7		ug/L		103	68 - 130	
Bromoform	25.0	26.1		ug/L		104	60 - 148	
Bromomethane	25.0	21.5		ug/L		86	64 - 139	
Carbon tetrachloride	25.0	26.2		ug/L		105	60 - 150	
Chlorobenzene	25.0	25.7		ug/L		103	70 - 130	
Dibromochloromethane	25.0	27.3		ug/L		109	69 - 145	
Chloroethane	25.0	22.4		ug/L		90	64 - 135	
Chloroform	25.0	24.7		ug/L		99	70 - 130	
Chloromethane	25.0	20.9		ug/L		84	47 _ 140	
cis-1,3-Dichloropropene	25.0	26.2		ug/L		105	70 - 133	
Bromodichloromethane	25.0	25.9		ug/L		104	70 - 132	
Ethylbenzene	25.0	27.0		ug/L		108	70 - 130	
Methylene Chloride	25.0	22.7		ug/L		91	52 - 130	
Tetrachloroethene	25.0	27.2		ug/L		109	70 - 130	
Toluene	25.0	27.0		ug/L		108	70 - 130	
trans-1,2-Dichloroethene	25.0	24.2		ug/L		97	70 - 130	
trans-1,3-Dichloropropene	25.0	25.3		ug/L		101	70 - 132	
Vinyl chloride	25.0	23.0		ug/L		92	59 - 133	
Trichloroethene	25.0	26.6		ug/L		107	70 - 130	
cis-1,2-Dichloroethene	25.0	24.6		ug/L		99	70 - 133	
				-				

TestAmerica Irvine

RL

0.50

0.50

0.50

0.50

0.50

0.50

1.0

Limits

80 - 120

76 - 132

80 - 128

MDL Unit

0.25 ug/L

0.25 ug/L

0.25 ug/L

0.25 ug/L

0.25 ug/L

0.25 ug/L

0.40 ug/L

D

Prepared

Prepared

Client Sample ID: Lab Control Sample

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

MB MB

ND

ND

ND

ND

ND

ND

ND

95

98

102

%Recovery

MB MB

Qualifier

Result Qualifier

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

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

Lab Sample ID: LCS 440 Matrix: Water	-465948/6					Clie	ent Sai	nple ID	: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 465948 Analyte Naphthalene			Spike Added 25.0	-	LCS Qualifier	Unit ug/L	D	%Rec	%Rec. Limits
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)			80 - 120						
Dibromofluoromethane (Surr)	102		76 - 132						
Toluene-d8 (Surr)	100		80 - 128						
Lab Sample ID: 320-3726 Matrix: Water	6-C-1 MS						CI	ient Sa	mple ID: Matrix Spike Prep Type: Total/NA
Analysis Batch: 465948	Sample	Sample	Spike	MS	MS				%Rec.

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	ND		25.0	25.6		ug/L		102	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	26.5		ug/L		106	63 - 130	
1,1,2-Trichloroethane	ND		25.0	27.9		ug/L		112	70 - 130	
1,1-Dichloroethane	ND		25.0	25.1		ug/L		100	65 - 130	
1,1-Dichloroethene	ND		25.0	23.2		ug/L		93	70 - 130	
1,2-Dichlorobenzene	ND		25.0	27.8		ug/L		111	70 - 130	
1,2-Dichloroethane	ND		25.0	25.9		ug/L		103	56 - 146	
1,2-Dichloropropane	ND		25.0	25.3		ug/L		101	69 - 130	
1,3-Dichlorobenzene	ND		25.0	27.7		ug/L		111	70 - 130	
1,4-Dichlorobenzene	ND		25.0	27.6		ug/L		110	70 - 130	
Benzene	ND		25.0	25.4		ug/L		102	66 - 130	
Bromoform	ND		25.0	27.0		ug/L		108	59 - 150	
Bromomethane	ND		25.0	21.6		ug/L		86	62 - 131	
Carbon tetrachloride	ND		25.0	26.6		ug/L		106	60 - 150	
Chlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130	
Dibromochloromethane	ND		25.0	27.6		ug/L		110	70 - 148	
Chloroethane	ND		25.0	22.4		ug/L		89	68 ₋ 130	
Chloroform	ND		25.0	24.9		ug/L		100	70 - 130	
Chloromethane	ND		25.0	20.9		ug/L		84	39 - 144	
cis-1,3-Dichloropropene	ND		25.0	26.4		ug/L		106	70 - 133	
Bromodichloromethane	ND		25.0	25.8		ug/L		103	70 - 138	
Ethylbenzene	ND		25.0	27.4		ug/L		109	70 - 130	
Methylene Chloride	ND		25.0	21.3		ug/L		85	52 - 130	
Tetrachloroethene	ND		25.0	27.8		ug/L		111	70 - 137	
Toluene	ND		25.0	27.9		ug/L		112	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	24.9		ug/L		100	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	25.8		ug/L		103	70 - 138	
Vinyl chloride	ND		25.0	22.9		ug/L		92	50 - 137	
Trichloroethene	ND		25.0	26.6		ug/L		107	70 - 130	
cis-1,2-Dichloroethene	ND		25.0	24.3		ug/L		97	70 - 130	
Naphthalene	ND		25.0	28.6		ug/L		114	60 - 140	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

TestAmerica Irvine

TestAmerica Job ID: 440-206645-1

Limits 80 - 128

Lab Sample ID: 320-37266-C-1 MS

Matrix: Water

Toluene-d8 (Surr)

Surrogate

Analysis Batch: 465948

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

MS MS

%Recovery Qualifier

101

Client Sample ID: Matrix Spike

Prep Type: Total/NA

8 9 10 11 12 13

Lab Sample ID: 320-37266 Matrix: Water Analysis Batch: 465948	-C-1 MSD					Client	Samp	le ID: N	latrix Spil Prep Ty		
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	ND		25.0	25.7		ug/L		103	70 - 130	0	20
1,1,2,2-Tetrachloroethane	ND		25.0	26.5		ug/L		106	63 - 130	0	30
1,1,2-Trichloroethane	ND		25.0	27.3		ug/L		109	70 - 130	2	25
1,1-Dichloroethane	ND		25.0	25.6		ug/L		102	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	24.1		ug/L		96	70 - 130	4	20
1,2-Dichlorobenzene	ND		25.0	28.5		ug/L		114	70 - 130	2	20
1,2-Dichloroethane	ND		25.0	26.1		ug/L		104	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	26.3		ug/L		105	69 - 130	4	20
1,3-Dichlorobenzene	ND		25.0	28.0		ug/L		112	70 - 130	1	20
1,4-Dichlorobenzene	ND		25.0	28.2		ug/L		113	70 - 130	2	20
Benzene	ND		25.0	26.1		ug/L		104	66 - 130	3	20
Bromoform	ND		25.0	26.7		ug/L		107	59 ₋ 150	1	25
Bromomethane	ND		25.0	22.4		ug/L		90	62 - 131	4	25
Carbon tetrachloride	ND		25.0	26.6		ug/L		106	60 - 150	0	25
Chlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130	4	20
Dibromochloromethane	ND		25.0	27.2		ug/L		109	70 - 148	2	25
Chloroethane	ND		25.0	22.3		ug/L		89	68 - 130	0	25
Chloroform	ND		25.0	25.9		ug/L		104	70 - 130	4	20
Chloromethane	ND		25.0	21.4		ug/L		85	39 - 144	2	25
cis-1,3-Dichloropropene	ND		25.0	26.2		ug/L		105	70 - 133	1	20
Bromodichloromethane	ND		25.0	26.5		ug/L		106	70 - 138	3	20
Ethylbenzene	ND		25.0	26.9		ug/L		107	70 - 130	2	20
Methylene Chloride	ND		25.0	21.6		ug/L		86	52 - 130	1	20
Tetrachloroethene	ND		25.0	27.3		ug/L		109	70 ₋ 137	2	20
Toluene	ND		25.0	27.5		ug/L		110	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.7		ug/L		103	70 - 130	3	20
trans-1,3-Dichloropropene	ND		25.0	25.2		ug/L		101	70 - 138	3	25
Vinyl chloride	ND		25.0	23.4		ug/L		94	50 - 137	2	30
Trichloroethene	ND		25.0	27.7		ug/L		111	70 - 130	4	20
cis-1,2-Dichloroethene	ND		25.0	25.8		ug/L		103	70 - 130	6	20
Naphthalene	ND		25.0	29.5		ug/L		118	60 - 140	3	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								

ounoguic	/incectively	Quanner	Linito
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	96		80 - 128

Lab Sample ID: MB 440-466272/1-A

Matrix: Water

Analysis Batch: 466864

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

MB MB

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 466272

	MB	MB								
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Acenaphthene	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Acenaphthylene	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Anthracene	ND		0.505	0.202	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Benzidine	ND		10.1	5.05	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Benzo[a]anthracene	ND		5.05	2.02	ug/L		03/27/18 09:48	03/29/18 12:03	1	8
Benzo[b]fluoranthene	ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Benzo[k]fluoranthene	ND		0.505	0.253	ug/L		03/27/18 09:48	03/29/18 12:03	1	9
Benzo[a]pyrene	ND		2.02	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Bis(2-chloroethoxy)methane	ND		0.505	0.202	-		03/27/18 09:48	03/29/18 12:03	1	
Bis(2-chloroethyl)ether	ND		0.505	0.202	-		03/27/18 09:48	03/29/18 12:03	1	
Bis(2-ethylhexyl) phthalate	ND		5.05		ug/L		03/27/18 09:48	03/29/18 12:03	1	
4-Bromophenyl phenyl ether	ND		1.01	0.505	-			03/29/18 12:03	1	
Butyl benzyl phthalate	ND		5.05		ug/L		03/27/18 09:48	03/29/18 12:03	1	
4-Chloro-3-methylphenol	ND		2.02	0.202	-			03/29/18 12:03	1	
2-Chloronaphthalene	ND		0.505	0.202	-			03/29/18 12:03	1	
2-Chlorophenol	ND		1.01	0.505	-			03/29/18 12:03	· · · · · · · · · · · · · · · · · · ·	
4-Chlorophenyl phenyl ether	ND		0.505	0.202	-			03/29/18 12:03	1	
Chrysene	ND		0.505	0.202	-			03/29/18 12:03	1	
Dibenz(a,h)anthracene	ND		0.505	0.253	-			03/29/18 12:03	· · · · · · · · 1	
Di-n-butyl phthalate	ND		2.02	1.01	-			03/29/18 12:03	1	
1,2-Dichlorobenzene	ND		0.505	0.202	-			03/29/18 12:03	1	
1,3-Dichlorobenzene	ND		0.505	0.202	-			03/29/18 12:03	····· 1	
	ND		0.505	0.202	-			03/29/18 12:03	1	
1,4-Dichlorobenzene 3,3'-Dichlorobenzidine	ND		5.05		ug/L			03/29/18 12:03	1	
	ND		2.02		ug/L			03/29/18 12:03	· · · · · · · · 1	
2,4-Dichlorophenol					-				1	
Diethyl phthalate	ND		1.01	0.505	-			03/29/18 12:03	1	
2,4-Dimethylphenol	ND		2.02		ug/L			03/29/18 12:03		
Dimethyl phthalate	ND		0.505	0.253	-			03/29/18 12:03	1	
4,6-Dinitro-2-methylphenol	ND		5.05		ug/L			03/29/18 12:03	1	
2,4-Dinitrophenol	ND		5.05	2.02	-			03/29/18 12:03	1	
2,4-Dinitrotoluene	ND		5.05		ug/L			03/29/18 12:03	1	
2,6-Dinitrotoluene	ND		5.05		ug/L			03/29/18 12:03	1	
Di-n-octyl phthalate	ND		5.05		ug/L			03/29/18 12:03	1	
1,2-Diphenylhydrazine(as	ND		1.01	0.505	ug/L		03/27/18 09:48	03/29/18 12:03	1	
Azobenzene) Fluoranthene	ND		0.505	0.202	ua/l		03/27/18 09:48	03/29/18 12:03	1	
Fluorene	ND		0.505	0.202	-			03/29/18 12:03	1	
Hexachlorobenzene	ND		1.01	0.202				03/29/18 12:03		
Hexachlorobutadiene	ND		2.02	0.505				03/29/18 12:03	1	
Hexachloroethane	ND		3.03	0.505				03/29/18 12:03	1	
Hexachlorocyclopentadiene	ND		5.05					03/29/18 12:03	····· 1	
, , , , , , , , , , , , , , , , , , ,					ug/L				-	
Indeno[1,2,3-cd]pyrene	ND		2.02		ug/L			03/29/18 12:03	1 1	
Isophorone	ND		1.01	0.505				03/29/18 12:03		
Naphthalene	ND		1.01	0.505				03/29/18 12:03	1	
Nitrobenzene	ND		1.01	0.505	-			03/29/18 12:03	1	
2-Nitrophenol	ND		2.02		ug/L			03/29/18 12:03	1	
4-Nitrophenol	ND		5.05		ug/L			03/29/18 12:03	1	
N-Nitrosodimethylamine	ND		2.02	1.01	ug/L		03/27/18 09:48	03/29/18 12:03	1	

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Lab Sample ID: MB 440-466272/1-A

Matrix: Water

Analvte

Phenol

Pyrene

Surrogate

2-Fluorobiphenyl

2.4.6-Tribromophenol

2-Fluorophenol

Nitrobenzene-d5

Terphenyl-d14

Phenol-d6

Analysis Batch: 466864

N-Nitrosodiphenylamine

1,2,4-Trichlorobenzene

2,4,6-Trichlorophenol

Benzo[g,h,i]perylene

bis (2-chloroisopropyl) ether

Pentachlorophenol

Phenanthrene

N-Nitrosodi-n-propylamine

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

MB MB

ND

71

66

95

74

83

71

%Recovery

MR MR

Qualifier

Result Qualifier

Client Sample ID: Method Blank

03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

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03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

03/27/18 09:48 03/29/18 12:03

Prep Type: Total/NA

Prep Batch: 466272

Dil Fac

1

1

1

1

1

1

1

1

1

Analyzed

Analyzed

8
9

Lab Sample ID:	LCS 440-466272/2-A
Matrix: Water	

Analysis Batch: 466864

Analysis Batch: 466864	Spike	LCS	109				Prep Batch: 466272 %Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Acenaphthene	10.2	8.031		ug/L		79	47 - 145
Acenaphthylene	10.2	7.949		ug/L		78	33 - 145
Anthracene	10.2	8.037		ug/L		79	27 - 133
Benzidine	10.2	ND		ug/L		33	5 - 66
Benzo[a]anthracene	10.2	8.265		ug/L		81	33 - 143
Benzo[b]fluoranthene	10.2	8.071		ug/L		79	24 - 150
Benzo[k]fluoranthene	10.2	8.234		ug/L		81	11 - 150
Benzo[a]pyrene	10.2	8.051		ug/L		79	17 - 150
Bis(2-chloroethoxy)methane	10.2	7.948		ug/L		78	33 - 150
Bis(2-chloroethyl)ether	10.2	8.040		ug/L		79	12 - 150
Bis(2-ethylhexyl) phthalate	10.2	8.614		ug/L		85	10 - 150
4-Bromophenyl phenyl ether	10.2	7.758		ug/L		76	53 - 127
Butyl benzyl phthalate	10.2	8.578		ug/L		84	10 - 150
4-Chloro-3-methylphenol	10.2	8.551		ug/L		84	22 - 147
2-Chloronaphthalene	10.2	7.858		ug/L		77	60 - 118
2-Chlorophenol	10.2	7.397		ug/L		73	23 - 134
4-Chlorophenyl phenyl ether	10.2	7.862		ug/L		77	25 - 150
Chrysene	10.2	8.188		ug/L		81	17 - 150
Dibenz(a,h)anthracene	10.2	7.596		ug/L		75	10 - 150
Di-n-butyl phthalate	10.2	8.540		ug/L		84	10 - 118
1,2-Dichlorobenzene	10.2	7.083		ug/L		70	32 - 129
1,3-Dichlorobenzene	10.2	6.868		ug/L		68	10 - 150
1,4-Dichlorobenzene	10.2	6.990		ug/L		69	20 - 124
3,3'-Dichlorobenzidine	10.2	7.083		ug/L		70	10 - 150

TestAmerica Irvine

RL

1.01

2.02

2.02

0.505

1.01

0.505

1.01

1.01

5.05

0.505

Limits

50 - 120

30 - 120

40 - 120

45 - 120

37 - 144

35 - 120

MDL Unit

0.505 ug/L

1.01 ug/L

1.01 ug/L

0.202 ug/L

0.505 ug/L

0.202 ug/L

0.505 ug/L

0.505 ug/L

2.02 ug/L

0.202 ug/L

D

Prepared

Prepared

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

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

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

Lab Sample ID: LCS 440-466272/2-A Matrix: Water					: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 466864					Prep Batch: 466272
	Spike	LCS			%Rec.
Analyte	Added		Qualifier Unit	D %Rec	Limits
2,4-Dichlorophenol	10.2	7.801	ug/L	77	39 - 135
Diethyl phthalate	10.2	8.136	ug/L	80	10 - 114
2,4-Dimethylphenol	10.2	7.566	ug/L	75	32 - 119
Dimethyl phthalate	10.2	7.954	ug/L	78	10 - 112
4,6-Dinitro-2-methylphenol	20.3	15.44	ug/L	76	10 - 150
2,4-Dinitrophenol	20.3	13.90	ug/L	68	50 - 150
2,4-Dinitrotoluene	10.2	7.950	ug/L	78	39 - 139
2,6-Dinitrotoluene	10.2	8.066	ug/L	79	50 - 150
Di-n-octyl phthalate	10.2	8.989	ug/L	89	10 - 146
1,2-Diphenylhydrazine(as Azobenzene)	10.3	7.646	ug/L	75	47 - 116
Fluoranthene	10.2	8.634	ug/L	85	26 - 137
Fluorene	10.2	7.974	ug/L	79	59 ₋ 121
Hexachlorobenzene	10.2	8.139	ug/L	80	10 - 150
Hexachlorobutadiene	10.2	6.205	ug/L	61	24 - 116
Hexachloroethane	10.2	6.210	ug/L	61	40 - 113
Hexachlorocyclopentadiene	10.2	3.903	J,DX ug/L	38	10 - 67
Indeno[1,2,3-cd]pyrene	10.2	8.113	ug/L	80	10 - 150
Isophorone	10.2	8.559	ug/L	84	21 - 150
Naphthalene	10.2	7.377	ug/L	73	21 - 133
Nitrobenzene	10.2	7.602	ug/L	75	35 - 150
2-Nitrophenol	10.2	7.443	ug/L	73	29 - 150
4-Nitrophenol	20.3	14.35	ug/L	71	10 - 132
N-Nitrosodimethylamine	10.2	8.272	ug/L	81	26 - 117
N-Nitrosodiphenylamine	10.2	7.673	ug/L	76	54 - 110
N-Nitrosodi-n-propylamine	10.2	8.247	ug/L	81	10 - 150
Pentachlorophenol	20.3	14.13	ug/L	70	14 - 150
Phenanthrene	10.2	8.169	ug/L	80	54 - 120
Phenol	10.2	7.026	ug/L	69	10 - 112
Pyrene	10.2	8.160	ug/L	80	52 - 115
1,2,4-Trichlorobenzene	10.2	7.170	ug/L	71	44 - 142
2,4,6-Trichlorophenol	10.2	8.278	ug/L	82	37 - 144
Benzo[g,h,i]perylene	10.2	7.599	ug/L	75	10 - 150
bis (2-chloroisopropyl) ether	10.2	7.265	ug/L	72	47 - 103
LCS LCS					
Surrogate %Recovery Quali	fier Limits				

LUS	LC3	
%Recovery	Qualifier	Limits
77		50 - 120
67		30 - 120
86		40 - 120
75		45 - 120
79		37 - 144
74		35 - 120
	%Recovery 77 67 86 75 79	67 86 75 79

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

Matrix: Water Analysis Batch: 466864									Prep Ty Prep Ba		
Milaiysis Dalcii: 400004	Sample	Sample	Spike	MSD	MSD				Ргер Ва %Rec.	ucii: 4	RPD
Analyte	-	Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene	ND		9.62	6.859		ug/L		71	47 - 145	11	25
Acenaphthylene	ND		9.62		LN BA	ug/L		29	33 - 145	32	25
Anthracene	ND		9.62	5.557		ug/L		58	27 - 133	8	25
Benzidine	ND		9.62		LN	ug/L		0	30 - 160	NC	35
Benzo[a]anthracene	ND		9.62	6.822		ug/L		71	33 - 143	14	20
Benzo[b]fluoranthene	ND		9.62	8.092		ug/L		84	24 - 150	17	25
Benzo[k]fluoranthene	ND		9.62	7.614		ug/L		79	11 - 150	20	30
Benzo[a]pyrene	ND		9.62	4.242	BA	ug/L		44	17 - 150	33	25
Bis(2-chloroethoxy)methane	ND		9.62	0.3898	J,DX LN BA	ug/L		4	33 - 150	64	25
Bis(2-chloroethyl)ether	ND		9.62	7.190		ug/L		75	12 - 150	5	25
Bis(2-ethylhexyl) phthalate	ND		9.62	7.671		ug/L		80	10 - 150	17	25
4-Bromophenyl phenyl ether	ND		9.62	7.247		ug/L		75	53 - 127	11	25
Butyl benzyl phthalate	ND		9.62	4.422	J,DX BA	ug/L		46	10 - 150	59	25
4-Chloro-3-methylphenol	ND		9.62	7.766		ug/L		81	22 - 147	12	25
2-Chloronaphthalene	ND		9.62	7.116		ug/L		74	60 - 118	7	20
2-Chlorophenol	ND		9.62	6.505		ug/L		68	23 - 134	10	25
4-Chlorophenyl phenyl ether	ND		9.62	7.711		ug/L		80	25 - 150	7	25
Chrysene	ND		9.62	6.961		ug/L		72	17 - 150	14	25
Dibenz(a,h)anthracene	ND		9.62	6.106		ug/L		64	10 - 150	17	30
Di-n-butyl phthalate	ND		9.62	7.834		ug/L		81	10 - 118	12	25
1,2-Dichlorobenzene	ND		9.62	6.506		ug/L		68	32 - 129	3	25
1,3-Dichlorobenzene	ND		9.62	6.199		ug/L		64	10 - 150	4	25
1,4-Dichlorobenzene	ND		9.62	6.276		ug/L		65	20 - 124	5	25
3,3'-Dichlorobenzidine	ND		9.62	ND	LN	ug/L		0	10 - 150	NC	25
2,4-Dichlorophenol	ND		9.62	6.908		ug/L		72	39 - 135	12	25
Diethyl phthalate	ND		9.62	7.616		ug/L		79	10 - 114	11	30
2,4-Dimethylphenol	ND		9.62	6.869		ug/L		71	32 - 119	10	25
Dimethyl phthalate	ND		9.62	7.357		ug/L		77	10_112	9	30
4,6-Dinitro-2-methylphenol	ND		19.2	14.18		ug/L		74	10 - 150	10	25
2,4-Dinitrophenol	ND		19.2	13.45		ug/L		70	50 ₋ 150	13	25
2,4-Dinitrotoluene	ND		9.62	7.447		ug/L		77	39 - 139	12	25
2,6-Dinitrotoluene	ND		9.62	7.602		ug/L		79	50 ₋ 150	9	20
Di-n-octyl phthalate	ND		9.62	8.001		ug/L		83	10 - 146	13	20
1,2-Diphenylhydrazine(as Azobenzene)	ND		9.71	1.132	LN BA	ug/L		12	60 - 120	32	25
Fluoranthene	ND		9.62	7.797		ug/L		81	26 - 137	12	25
Fluorene	ND		9.62	7.485		ug/L		78	59 - 121	8	25
Hexachlorobenzene	ND		9.62	7.366		ug/L		77	10 - 150	9	25
Hexachlorobutadiene	ND		9.62	6.376		ug/L		66	24 - 116	3	25
Hexachloroethane	ND		9.62	5.922		ug/L		62	40 - 113	1	25
Hexachlorocyclopentadiene	ND		9.62	3.791	J,DX	ug/L		39	25 - 120	4	30
Indeno[1,2,3-cd]pyrene	ND		9.62	5.768		ug/L		60	10 - 150	22	30
Isophorone	ND		9.62	7.567		ug/L		79	21 - 150	9	25
Naphthalene	ND		9.62	6.580		ug/L		68	21 - 133	8	25
Nitrobenzene	ND		9.62	6.635		ug/L		69	35 - 150	8	25
2-Nitrophenol	ND		9.62	6.629		ug/L		69	29 - 150	10	25
4-Nitrophenol	ND		19.2	13.71		ug/L		71	10 - 132	13	30

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Client Sample ID: Matrix Spike

Prep Type: Total/NA

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

Lab Sample ID: 440-2067 Matrix: Water							Sample ID:	Prep Ty			
Analysis Batch: 466864	Sample	Sample	Spike	MSD	MSD			Prep B %Rec.	-		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D %Ree	: Limits	RPD	Limit	
N-Nitrosodimethylamine	ND		9.62	7.451		ug/L	7	7 12 - 123	0	35	
N-Nitrosodiphenylamine	ND		9.62	2.702	LN BA	ug/L	28	3 60 ₋ 120	32	25	
N-Nitrosodi-n-propylamine	ND		9.62	7.129		ug/L	74	10 ₋ 150	7	25	
Pentachlorophenol	ND		19.2	13.48		ug/L	70) 14 - 150	13	25	
Phenanthrene	ND		9.62	7.313		ug/L	76	6 54 ₋ 120	10	25	
Phenol	ND		9.62	5.856		ug/L	6	l 10-112	9	25	
Pyrene	ND		9.62	6.399		ug/L	67	7 52 - 115	20	25	
1,2,4-Trichlorobenzene	ND		9.62	6.552		ug/L	68	3 44 ₋ 142	7	20	
2,4,6-Trichlorophenol	ND		9.62	7.398		ug/L	7	7 37 - 144	11	30	
Benzo[g,h,i]perylene	ND		9.62	4.957		ug/L	52	2 10 - 150	30	30	
bis (2-chloroisopropyl) ether	ND		9.62	6.165		ug/L	64	45 - 120	7	25	
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobiphenyl	71		50 - 120								
2-Fluorophenol	62		30 - 120								
2,4,6-Tribromophenol	84		40 - 120								
Nitrobenzene-d5	67		45 - 120								
Terphenyl-d14	79		37 - 144								
Phenol-d6	54		35 - 120								

Lab Sample ID: 440-206741-M-1-M MS Matrix: Water Analysis Batch: 466864

Analysis Batch: 466864	A 1	. .	o "						Prep Batch: 466272
	•	Sample	Spike		MS		_	a/ -	%Rec.
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits
Acenaphthene	ND		9.71	7.630		ug/L		79	47 - 145
Acenaphthylene	ND		9.71	3.848		ug/L		40	33 - 145
Anthracene	ND		9.71	6.008		ug/L		62	27 - 133
Benzidine	ND		9.71	ND	LN	ug/L		0	30 - 160
Benzo[a]anthracene	ND		9.71	7.868		ug/L		81	33 - 143
Benzo[b]fluoranthene	ND		9.71	9.597		ug/L		99	24 - 150
Benzo[k]fluoranthene	ND		9.71	9.334		ug/L		96	11 - 150
Benzo[a]pyrene	ND		9.71	5.917		ug/L		61	17 - 150
Bis(2-chloroethoxy)methane	ND		9.71	0.7542	LN	ug/L		8	33 - 150
Bis(2-chloroethyl)ether	ND		9.71	6.855		ug/L		71	12 - 150
Bis(2-ethylhexyl) phthalate	ND		9.71	9.068		ug/L		93	10 - 150
4-Bromophenyl phenyl ether	ND		9.71	8.050		ug/L		83	53 - 127
Butyl benzyl phthalate	ND		9.71	8.121		ug/L		84	10 - 150
4-Chloro-3-methylphenol	ND		9.71	8.763		ug/L		90	22 - 147
2-Chloronaphthalene	ND		9.71	7.638		ug/L		79	60 - 118
2-Chlorophenol	ND		9.71	7.168		ug/L		74	23 - 134
4-Chlorophenyl phenyl ether	ND		9.71	8.231		ug/L		85	25 - 150
Chrysene	ND		9.71	7.978		ug/L		82	17 - 150
Dibenz(a,h)anthracene	ND		9.71	7.217		ug/L		74	10 - 150
Di-n-butyl phthalate	ND		9.71	8.849		ug/L		91	10 - 118
1,2-Dichlorobenzene	ND		9.71	6.679		ug/L		69	32 - 129
1,3-Dichlorobenzene	ND		9.71	6.470		ug/L		67	10 - 150
1,4-Dichlorobenzene	ND		9.71	6.592		ug/L		68	20 - 124

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

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

74

93

64

Nitrobenzene-d5

Terphenyl-d14

Phenol-d6

Lab Sample ID: 440-20674	41-M-1-M MS	5					CI	ient Sa	mple ID: Matrix Spik
Matrix: Water									Prep Type: Total/N/
Analysis Batch: 466864									Prep Batch: 46627
	-	Sample	Spike		MS				%Rec.
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits
3,3'-Dichlorobenzidine	ND		9.71		LN	ug/L		0	10 - 150
2,4-Dichlorophenol	ND		9.71	7.750		ug/L		80	39 - 135
Diethyl phthalate	ND		9.71	8.532		ug/L		88	10 - 114
2,4-Dimethylphenol	ND		9.71	7.614		ug/L		78	32 - 119
Dimethyl phthalate	ND		9.71	8.086		ug/L		83	10_112
4,6-Dinitro-2-methylphenol	ND		19.4	15.65		ug/L		81	10 - 150
2,4-Dinitrophenol	ND		19.4	15.33		ug/L		79	50 - 150
2,4-Dinitrotoluene	ND		9.71	8.376		ug/L		86	39 - 139
2,6-Dinitrotoluene	ND		9.71	8.322		ug/L		86	50 - 150
Di-n-octyl phthalate	ND		9.71	9.142		ug/L		94	10 - 146
1,2-Diphenylhydrazine(as	ND		9.81	0.8200	J,DX LN	ug/L		8	60 - 120
Azobenzene)									
Fluoranthene	ND		9.71	8.754		ug/L		90	26 - 137
Fluorene	ND		9.71	8.131		ug/L		84	59 ₋ 121
Hexachlorobenzene	ND		9.71	8.042		ug/L		83	10 - 150
Hexachlorobutadiene	ND		9.71	6.583		ug/L		68	24 - 116
Hexachloroethane	ND		9.71	6.006		ug/L		62	40 - 113
Hexachlorocyclopentadiene	ND		9.71	3.630	J,DX	ug/L		37	25 - 120
ndeno[1,2,3-cd]pyrene	ND		9.71	7.167		ug/L		74	10 - 150
sophorone	ND		9.71	8.242		ug/L		85	21 - 150
Naphthalene	ND		9.71	7.147		ug/L		74	21 - 133
Nitrobenzene	ND		9.71	7.179		ug/L		74	35 - 150
2-Nitrophenol	ND		9.71	7.337		ug/L		76	29 - 150
4-Nitrophenol	ND		19.4	15.54		ug/L		80	10 - 132
N-Nitrosodimethylamine	ND		9.71	7.460		ug/L		77	12 - 123
N-Nitrosodiphenylamine	ND		9.71	3.731	LN	ug/L		38	60 - 120
N-Nitrosodi-n-propylamine	ND		9.71	7.681		ug/L		79	10 - 150
Pentachlorophenol	ND		19.4	15.29		ug/L		79	14 - 150
Phenanthrene	ND		9.71	8.076		ug/L		83	54 - 120
Phenol	ND		9.71	6.438		ug/L		66	10 - 112
Pyrene	ND		9.71	7.844		ug/L		81	52 - 115
1,2,4-Trichlorobenzene	ND		9.71	7.041		ug/L		73	44 - 142
2,4,6-Trichlorophenol	ND		9.71	8.235		ug/L		85	37 - 144
Benzo[g,h,i]perylene	ND		9.71	6.686		ug/L		69	10 - 150
bis (2-chloroisopropyl) ether	ND		9.71	6.582		ug/L		68	45 - 120
		MS				-			
Surrogate	ws %Recovery		Limits						
2-Fluorobiphenyl	77		50 - 120						
2-Fluorophenol	67		30 - 120						
2,4,6-Tribromophenol	92		40 - 120						
-, ., - ,			10 - 120						

TestAmerica Irvine

45 - 120

37 - 144

35 - 120

Method: 608 - Organochlorine Pesticides in Water

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1 1	9
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Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 466023

Matrix: Water Analysis Batch: 466579

Lab Sample ID: MB 440-466023/1-A

	МВ	МВ								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Chlordane (technical)	ND		0.10	0.080	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Dieldrin	ND		0.0050	0.0020	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Toxaphene	ND		0.50	0.25	ug/L		03/26/18 11:53	03/28/18 10:55	1	
4,4'-DDD	ND		0.0050	0.0040	ug/L		03/26/18 11:53	03/28/18 10:55	1	Ē
4,4'-DDE	ND		0.0050	0.0030	ug/L		03/26/18 11:53	03/28/18 10:55	1	
4,4'-DDT	ND		0.010	0.0040	ug/L		03/26/18 11:53	03/28/18 10:55	1	ĩ
Endrin ketone	ND		0.010	0.0070	ug/L		03/26/18 11:53	03/28/18 10:55	1	
alpha-BHC	ND		0.0050	0.0025	ug/L		03/26/18 11:53	03/28/18 10:55	1	ł
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Endrin aldehyde	ND		0.010	0.0020	ug/L		03/26/18 11:53	03/28/18 10:55	1	
delta-BHC	ND		0.0050	0.0035	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Aldrin	ND		0.0050	0.0015	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Endosulfan sulfate	ND		0.010	0.0030	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Endosulfan I	ND		0.0050	0.0030	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Endrin	ND		0.0050	0.0020	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Endosulfan II	ND		0.0050	0.0020	ug/L		03/26/18 11:53	03/28/18 10:55	1	
beta-BHC	ND		0.010	0.0040	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Heptachlor	ND		0.010	0.0030	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Methoxychlor	ND		0.0050	0.0035	ug/L		03/26/18 11:53	03/28/18 10:55	1	
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		03/26/18 11:53	03/28/18 10:55	1	
	MB	MB								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	

Tetrachloro-m-xylene	

 $\frac{10.150}{10.150}$

70

Lab Sample ID: LCS 440-466023/2-A Matrix: Water Analysis Batch: 466579

Client Sample ID: Lab Control Sample

03/26/18 11:53 03/28/18 10:55 1

Prep Type: Total/NA Prep Batch: 466023

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dieldrin	0.200	0.200		ug/L		100	36 - 146
4,4'-DDD	0.200	0.208		ug/L		104	31 - 141
4,4'-DDE	0.200	0.195		ug/L		98	30 - 145
4,4'-DDT	0.200	0.214		ug/L		107	25 - 150
Endrin ketone	0.200	0.202		ug/L		101	52 - 115
alpha-BHC	0.200	0.180		ug/L		90	37 - 134
gamma-BHC (Lindane)	0.200	0.190		ug/L		95	32 - 127
Endrin aldehyde	0.200	0.182		ug/L		91	47 - 115
delta-BHC	0.200	0.184		ug/L		92	19 - 140
Aldrin	0.200	0.176		ug/L		88	42 - 122
Endosulfan sulfate	0.200	0.199		ug/L		100	26 - 144
Endosulfan I	0.200	0.195		ug/L		97	45 - 150
Endrin	0.200	0.195		ug/L		97	30 - 147
Endosulfan II	0.200	0.197		ug/L		99	10 - 150
beta-BHC	0.200	0.179		ug/L		90	17 - 147
Heptachlor	0.200	0.188		ug/L		94	34 - 115
Methoxychlor	0.200	0.207		ug/L		103	55 - 115
Heptachlor epoxide	0.200	0.191		ug/L		95	37 - 142

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

Lab Sample ID: LCS 440-466023/2-A

Method: 608 - Organochlorine Pesticides in Water (Continued)

Matrix: Water									Prep Ty	p <mark>e: Tot</mark>	al/NA
Analysis Batch: 466579)								Prep Ba	atch: 46	36023
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
Tetrachloro-m-xylene	87		10 - 150								
Lab Sample ID: LCSD 4	40-466023/3-A				C	Client Sa	ample	ID: Lab		Sample	e Dup
Matrix: Water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 466579)								Prep Ba	atch: 40	66023
-			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dieldrin			0.200	0.196		ug/L		98	36 - 146	2	35
4,4'-DDD			0.200	0.204		ug/L		102	31 - 141	2	35
4,4'-DDE			0.200	0.189		ug/L		94	30 - 145	3	35
4,4'-DDT			0.200	0.203		ug/L		102	25 - 150	5	35
Endrin ketone			0.200	0.197		ug/L		99	52 - 115	2	35
alpha-BHC			0.200	0.168		ug/L		84	37 - 134	7	35
gamma-BHC (Lindane)			0.200	0.189		ug/L		94	32 - 127	1	35
Endrin aldehyde			0.200	0.173		ug/L		86	47 - 115	5	35
delta-BHC			0.200	0.204		ug/L		102	19 - 140	10	35
Aldrin			0.200	0.172		ug/L		86	42 - 122	2	35
Endosulfan sulfate			0.200	0.196		ug/L		98	26 - 144	2	35
Endosulfan I			0.200	0.189		ug/L		95	45 - 150	3	35
Endrin			0.200	0.188		ug/L		94	30 - 147	3	35
Endosulfan II			0.200	0.178		ug/L		89	10 - 150	10	35
beta-BHC			0.200	0.177		ug/L		89	17 _ 147	1	35
Heptachlor			0.200	0.186		ug/L		93	34 - 115	1	35
Methoxychlor			0.200	0.172		ug/L		86	55 - 115	19	35
Heptachlor epoxide			0.200	0.187		ug/L		93	37 - 142	2	35
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								

Method: 200.8 - Metals (ICP/MS)

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Lab Sample ID: MB 440-466289/1-A **Matrix: Water** Analysis Batch: 466563

Tetrachloro-m-xylene

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/27/18 10:40	03/27/18 19:19	1
Copper	ND		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Lead	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Antimony	ND		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Selenium	ND		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Thallium	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Beryllium	ND		0.50	0.25	ug/L		03/27/18 10:40	03/27/18 19:19	1
Nickel	ND		2.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Silver	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Arsenic	ND		1.0	0.50	ug/L		03/27/18 10:40	03/27/18 19:19	1
Zinc	ND		20	2.5	ug/L		03/27/18 10:40	03/27/18 19:19	1

10 - 150

TestAmerica Irvine

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 466289

Lab Sample ID: MB 440-466289/1-A

Client Sample ID: Method Blank

Matrix: Water									F	Prep Type	e: Total Reco		4
Analysis Batch: 466563	МВ	МВ									Prep Batch:	400209	5
Analyte	Result	Qualifier		RL	I	MDL	Unit) Р	repared	Analyzed	Dil Fac	
Chromium	ND			2.0		0.50	ug/L		03/2	27/18 10:40	03/27/18 19:19	1	
Lab Sample ID: LCS 440-466289 Matrix: Water	9/2-A							Clier			Lab Control Se: Total Reco		7
Analysis Batch: 466563			Spike		1.09	LCS	•				Prep Batch: %Rec.	466289	8
Analyte			Added		Result			Unit	D	%Rec	Limits		
Cadmium			80.0		84.5			ug/L		106	85 - 115		9
Copper			80.0		83.3			ug/L		104	85 - 115		
Lead			80.0		88.9			ug/L		111	85 - 115		
Antimony			80.0		85.8			ug/L		107	85 ₋ 115		
Selenium			80.0		87.0			ug/L		109	85 - 115		
Thallium			80.0		81.1			ug/L		101	85 - 115		
Beryllium			80.0		85.7			ug/L		107	85 - 115		
Nickel			80.0		82.6			ug/L		103	85 - 115		
Silver			80.0		82.1			ug/L		103	85 - 115		
Arsenic			80.0		84.3			ug/L		105	85 - 115		
Zinc			80.0		86.7			ug/L		108	85 - 115		
Chromium			80.0		83.0			ug/L		104	85 - 115		

Lab Sample ID: 440-206292-I-1-C MS Matrix: Water 400500

Analysis Batch: 466563	Sample	Sample	Spike	MS	MS				Prep Batch: 466289 %Rec.
Analyte	•	Qualifier	Added	-	Qualifier	Unit	D	%Rec	Limits
Cadmium	ND		80.0	76.5		ug/L		96	70 - 130
Copper	9.6		80.0	80.2		ug/L		88	70 - 130
Lead	ND		80.0	79.2		ug/L		99	70 - 130
Antimony	ND		80.0	82.2		ug/L		103	70 - 130
Selenium	0.72	J,DX	80.0	75.9		ug/L		94	70 - 130
Thallium	ND		80.0	74.0		ug/L		93	70 - 130
Beryllium	ND		80.0	80.8		ug/L		101	70 - 130
Nickel	1.6	J,DX	80.0	75.2		ug/L		92	70 - 130
Silver	ND		80.0	75.1		ug/L		94	70 - 130
Arsenic	0.84	J,DX	80.0	81.7		ug/L		101	70 - 130
Zinc	2.8	J,DX	80.0	77.2		ug/L		93	70 - 130
Chromium	1.1	J,DX	80.0	78.1		ug/L		96	70 - 130

Lab Sample ID: 440-206292-I-1-D MSD **Matrix: Water** Analysis Batch: 466563

Prep Batch: 466289 Sample Sample Spike MSD MSD %Rec. RPD **Result Qualifier** Analyte Added **Result Qualifier** Unit D %Rec Limits RPD Limit Cadmium ND 80.0 99 3 79.0 ug/L 70 - 130 20 20 Copper 9.6 80.0 82.4 ug/L 91 70 - 130 3 ND 80.0 81.0 101 70 - 130 20 Lead ug/L 2 ND 104 Antimony 80.0 83.4 ug/L 70 - 130 1 20 Selenium 0.72 J,DX 80.0 77.8 ug/L 96 70 - 130 2 20 Thallium ND 80.0 75.0 ug/L 94 70 - 130 20 1

TestAmerica Irvine

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

4/16/2018 (Rev. 1)

Client Sample ID: Matrix Spike Prep Type: Total Recoverable Potoh

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Spike

Added

80.0

80.0

80.0

80.0

80.0

80.0

MSD MSD

79.5

77.9

76.7

82.3

81.4

79.9

Result Qualifier

Unit

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

Lab Sample ID: 440-206292-I-1-D MSD

Matrix: Water

Analyte

Nickel

Silver

Zinc

Arsenic

Chromium

Matrix: Water

Beryllium

Analysis Batch: 466563

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

Sample Sample

ND

ND

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

Result Qualifier

1.6 J,DX

0.84 J,DX

2.8 J,DX

1.1 J,DX

Prep Type: Total Recoverable

%Rec.

Limits

70 - 130

70 - 130

70 - 130

70 - 130

70 - 130

70 - 130

Client Sample ID: Lab Control Sample

Prep Batch: 466289

RPD

2

3

2

1

5

2

Client Sample ID: Matrix Spike Duplicate

1 2 3 4 5 6 7

8

RPD

Limit

20

20

20

20

20

20

Client Sample ID: Method Blank

D %Rec

99

95

96

102

98

98

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Duplicate

Analysis Batch: 466721									
-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			03/28/18 18:04	1

Lab Sample ID: LCS 440-466721/2 Matrix: Water Analysis Batch: 466721

Lab Sample ID: MB 440-466721/1

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Suspended Solids	1000	995		mg/L		100	85 - 115	

Lab Sample ID: 440-206870-G-2 DU Matrix: Water Analysis Batch: 466721 Sample

	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Total Suspended Solids	120		 120		mg/L		 	2	10

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

Lab Sample ID: MB 440-465 Matrix: Water Analysis Batch: 465829		МВ					Clie		ole ID: Method Prep Type: T Prep Batch:	otal/NA
Analyte	Result	Qualifier		RL	MDL Unit	D	Р	repared	Analyzed	Dil Fac
Cyanide, Total	ND			5.0	2.5 ug/L		03/2	3/18 10:40	03/24/18 09:55	1
Lab Sample ID: LCS 440-46	5583/2-A					Clien	t Sa	mple ID:	Lab Control	Sample
Matrix: Water									Prep Type: To	otal/NA
Analysis Batch: 465829									Prep Batch:	465583
-			Spike	LC	S LCS				%Rec.	
Analyte			Added	Resu	t Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total			100	10	5	ug/L		105	90 - 110	

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

Lab Sample ID: 440-20634 Matrix: Water Analysis Batch: 465829		Sample	Spike	MS	MS		CI	ient Sa	mple ID: I Prep Ty Prep Ba %Rec.	pe: Tot	al/NA
Analyte	•	Qualifier	Added	-	Qualifier	Unit	D	%Rec	Limits		
Cyanide, Total	ND		100	80.1		ug/L		80	70 - 115		
Lab Sample ID: 440-20634	8-I-1-C MSE)				Client	Samp	le ID: N	latrix Spil	ke Dup	licate
Matrix: Water									Prep Ty		
Analysis Batch: 465829									Prep Ba		
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Total	ND		100	83.4		ug/L		83	70 - 115	4	15

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

GC/MS VOA

Analysis Batch: 465505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	624	
MB 440-465505/5	Method Blank	Total/NA	Water	624	
LCS 440-465505/6	Lab Control Sample	Total/NA	Water	624	
LCSD 440-465505/8	Lab Control Sample Dup	Total/NA	Water	624	
440-206688-A-1 MS	Matrix Spike	Total/NA	Water	624	
440-206688-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
Analysis Batch: 4659	48				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	624	
MB 440-465948/5	Method Blank	Total/NA	Water	624	
LCS 440-465948/6	Lab Control Sample	Total/NA	Water	624	
320-37266-C-1 MS	Matrix Spike	Total/NA	Water	624	
320-37266-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
GC/MS Semi VOA					
Prep Batch: 466272					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	625	
MB 440-466272/1-A	Method Blank	Total/NA	Water	625	
LCS 440-466272/2-A	Lab Control Sample	Total/NA	Water	625	
440-206741-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	
440-206741-M-1-M MS	Matrix Spike	Total/NA	Water	625	
Analysis Batch: 4668	64				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	625	466272
MB 440-466272/1-A	Method Blank	Total/NA	Water	625	466272
LCS 440-466272/2-A	Lab Control Sample	Total/NA	Water	625	466272
440-206741-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	466272
440-200741-L-1-B MSD	Matrix Opine Duplicate	1 Otdi 1 Ot			

GC Semi VOA

Prep Batch: 466023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	608	
MB 440-466023/1-A	Method Blank	Total/NA	Water	608	
LCS 440-466023/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-466023/3-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 466579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	608	466023
MB 440-466023/1-A	Method Blank	Total/NA	Water	608	466023
LCS 440-466023/2-A	Lab Control Sample	Total/NA	Water	608	466023
LCSD 440-466023/3-A	Lab Control Sample Dup	Total/NA	Water	608	466023

QC Association Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park TestAmerica Job ID: 440-206645-1

5 6 9

Prep Batch: 466289
Lab Sample ID
440-206645-1
MB 440-466289/1-A

Metals

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total Recoverable	Water	200.2	
MB 440-466289/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-466289/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-206292-I-1-C MS	Matrix Spike	Total Recoverable	Water	200.2	
440-206292-I-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
Analysis Batch: 4664	36				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total Recoverable	Water	SM 2340B	
Analysis Batch: 4665	63				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total Recoverable	Water	200.8	466289
MB 440-466289/1-A	Method Blank	Total Recoverable	Water	200.8	466289
LCS 440-466289/2-A	Lab Control Sample	Total Recoverable	Water	200.8	46628
440-206292-I-1-C MS	Matrix Spike	Total Recoverable	Water	200.8	466289
440-206292-I-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	46628
General Chemistr	v				
	,				
	<u>, </u>				
Prep Batch: 465583 Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batcl
rep Batch: 465583 Lab Sample ID	-	Prep Type Total/NA	Matrix Water	Method Distill/CN	Prep Batcl
Prep Batch: 465583	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank				Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1	Client Sample ID Arroyo_Simi_20180322_Grab	Total/NA	Water	Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank	Total/NA Total/NA	Water Water	Distill/CN Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample	Total/NA Total/NA Total/NA	Water Water Water	Distill/CN Distill/CN Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate	Total/NA Total/NA Total/NA Total/NA	Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate	Total/NA Total/NA Total/NA Total/NA	Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate	Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN	Prep Batcl
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID 440-206645-1	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 29 Client Sample ID	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type	Water Water Water Water Water Matrix	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN	Prep Batcl 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 29 Client Sample ID Arroyo_Simi_20180322_Grab	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Mater Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E	Prep Batcl 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD malysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA	Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Matrix Spike Duplicate	Total/NA	Water Water Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E SM 4500 CN E SM 4500 CN E	
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD analysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-B MS 440-206348-I-1-C MSD analysis Batch: 4667 Lab Sample ID	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 29 Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 21 Client Sample ID	Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID 440-206348-I-1-B MS 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4667 Lab Sample ID	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Matrix Spike Duplicate	Total/NA	Water Water Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E SM 4500 CN E SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD Analysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 29 Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate 21 Client Sample ID	Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558 46558 46558
Prep Batch: 465583 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD analysis Batch: 4658 Lab Sample ID 440-206645-1 MB 440-465583/1-A LCS 440-465583/1-A LCS 440-465583/2-A 440-206348-I-1-B MS 440-206348-I-1-C MSD analysis Batch: 4667 Lab Sample ID 440-206645-1	Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Method Blank Lab Control Sample Matrix Spike Matrix Spike Matrix Spike Duplicate Client Sample ID Arroyo_Simi_20180322_Grab Client Sample ID Arroyo_Simi_20180322_Grab	Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water	Distill/CN Distill/CN Distill/CN Distill/CN Distill/CN Method SM 4500 CN E SM 4500 CN E	Prep Batcl 46558 46558 46558 46558 46558

Analysis Batch: 466353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-206645-1	Arroyo_Simi_20180322_Grab	Total/NA	Water	SM 9221F	

Qualifiers

GC/MS Semi VOA	GC/	MS	Semi	
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Qualifier	Qualifier Description	
BA	Relative percent difference out of control	
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)	5
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	
Metals		
Qualifier	Qualifier Description	
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	
		c

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	9
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	10
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	11
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	12
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	13
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	14
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
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 (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEO	Toxicity Equivalent Quotient (Diovin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Project/Site: Annual 5 Year Arroyo Simi-Frontier Park

11 12 13

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program		EPA Region	Identification Number	Expiration Date
California	State Pro	gram	9	CA ELAP 2706	06-30-18
The following analytes	s are included in this repo	ort, but accreditation	certification is not off	ered by the governing autho	ority:
Analysis Method	Prep Method	Matrix	Analyt	e	
608	608	Water	Endrin	ketone	
608	608	Water	Metho	xychlor	
624		Water	1,1,2-7	Frichloro-1,2,2-trifluoroethar	ne
624		Water	cis-1,2	P-Dichloroethene	
624		Water	Naphti	halene	
625	625	Water	1 2-Dir	phenylhydrazine(as Azober	izene)

Patel, Urvashi

Miller, Katherine <kmiller@haleyaldrich.com> Wednesday, March 28, 2018 3:14 PM Patel, Urvashi 440-206645-1 Arroyo Simi</kmiller@haleyaldrich.com>
High
Follow up Flagged Red Category

-External Email-

HI Urvashi,

Please analyze the asbestos for 440-206645-1 Arroyo Simi.

Thanks, Katherine

Katherine Miller Project Manager

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

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

www.haleyaldrich.com

Patel, Urvashi

From: Sent: To: Cc: Subject: Miller, Katherine <KMiller@haleyaldrich.com> Friday, April 13, 2018 12:07 PM Patel, Urvashi Nguyen, Jocelyn RE: 206645 RUSH request

-External Email-

Yes, those are the correct list below. We were sampling the 5 year Arroyo Simi requirements, not annual hence the additions.

Katherine Miller HALEY & ALDRICH Tel: 520.289.8606

From: Patel, Urvashi <<u>Urvashi.Patel@testamericainc.com</u>> Sent: Friday, April 13, 2018 12:05 PM To: Miller, Katherine <<u>KMiller@haleyaldrich.com</u>> Cc: Nguyen, Jocelyn <<u>Jocelyn.Nguyen@testamericainc.com</u>> Subject: RE: 206645 RUSH request

Hi Katherine

Does the PP list include the analytes below? Please confirm and I'll ask if we can report from the original run. I had not made any changes to the project and the 608Pest for Arroyo only listed the short list.

Aldrin	309-00-2
alpha-BHC	319-84-6
beta-BHC	319-85-7
Chlordane (technical)	12789-03-6
delta-BHC	319-86-8
Dieldrin	60-57-1
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Endrin ketone	53494-70-5
gamma-BHC (Lindane)	58-89-9
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Methoxychlor	72-43-5
Toxaphene	8001-35-2
4,4'-DDD	72-54-8
4,4'-DDE	72-55-9
4,4'-DDT	50-29-3
Chlordane (n.o.s.)	57-74-9
Tetrachloro-m-xylene	877-09-8
DCB Decachlorobiphenyl (Surr)	2051-24-3

I'll add the CrVI (218.6) Mercury (245.1) to this job.

Thank you,

URVASHI PATEL

Manager of Project Management

Test America THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Ave, Suite #100 Irvine, CA 92614 TEL 949-261-1022 | FAX 949-260-3297 DIRECT 949-260-3269 CELL 949-333-9055

www.testamericainc.com

From: Miller, Katherine [mailto:KMiller@haleyaldrich.com]
Sent: Friday, April 13, 2018 11:44 AM
To: Patel, Urvashi
Cc: Nguyen, Jocelyn
Subject: 206645 RUSH request
Importance: High

-External Email-

Urvashi,

The lab report for Arroyo Simi didn't include the full priority pollutant list requested on the COC. Please add aldrin, alpha-BHC, endrin, etc

PP PCBs/Pesticidea (606)

Also, could the lab analyze hexavalent chromium and mercury with the remaining volume? Please put on rush.

Katherine

Katherine Miller Project Manager

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

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

www.haleyaldrich.com

Chent Name/Adress: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108	Test America Contact: Litvashi Patel 17461 Dentan Ave Suite #100 Invine CA 92614		fastômenca's services under this CoC anat be performed in accordance with the T&Os within Banket Service Sprement 2015:4: Fortunencia by and between Haley & Autanh, Inc., its subsidialities and affaultes, and substructure Landon Sciastics inc.	Daniel Ent 200 Balajus	Sample I D Sampling Date/Time Na	<u> </u>				-	Arroyo_Simi_20180322_Grab 3/22/2018 / V							Der		Date/Time:	-22-18/	Detertime 22-19/2	~ _	Date/Time					
F Boeing-S Per Per Annual S Year An Dry			5	ф 	Sample Container Type # of Matrix Container Type Cont	250 mL Poly	fi. Glass Amber	WS 1L Glass Amber 2 WS 11 Publy 5	WS 1L Glass Amber 2		WS 125 mL Poly 3	V/ 2 / 6 22/ 1	+	VOAS	WS VOAs 3	╇	1L Glass Amber	11. Glass Amber		Company	1300 Heb. AM	Compeny 2. / C	× 1 ×	Company:					
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CHAIN OF CUSTODY FORM

Page 1 of 1

Test America

4/16/2018 (Rev. 1)

Page 36 of 39

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Contraction Example of entities		Phone:	E-Mail Urvas	hi.patel@testamericainc.com	State of Origin: California	Page: Page 1 of 1
Alternation Antitypes	Company: TestAmerica Laboratories, Inc.			Accreditations Required (See note) State Program - California		Job #: 440-206645-1
Office Office<	Address: 880 Riverside Parkway,	Due Date Requested: 4/3/2018		Analys	is Requested	Ū
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	-					Ver: 09/20/2016

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4/16/2018 (Rev. 1)

Client: Haley & Aldrich, Inc.

Login Number: 206645 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.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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: 440-206645-1

List Source: TestAmerica Irvine



THE LEADER IN ENVIRONMENTAL TESTING



Tracking # 4176 2740 8505 SO PO/FO

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:	Ice Wet Gel Ot	her	-
	Cooler Custody Seal: Ser		
	Sample Custody Seal:		
	1 a da		
	Cooler ID:		
	Temp: Observed 2/0		
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	Samples compromised/tampered with?	a c	
	Samples w/o discrepancies?		
	Sample containers have legible labels?	a d	
	Sample date/times are provided.		
	Appropriate containers are used?		
	Zero headspace?*		jan
	Multiphasic samples are not present?		
	Sample temp OK?		
	Sample out of temp?	50 C	
	Initials: 10 H Date: 3/24/18 Time	910	
	*Containers requiring zero headspace have no headspace, or b	ubble < 6 m	im (1/4'

Q:\DOCUMENT-MANAGEMENT\FORMS\QA-812 REV. 1.5 SAMPLE RECEIVING NOTES 2018-01-26.DOC

QA-812 RKE 01/26/2018

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