APPENDIX G

Section 14

Outfall 018 – April 12 & 13, 2012 Test America Analytical Laboratory Report



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: 440-8616-1 Client Project/Site: Routine Outfall 018 Composite

For:

MWH Americas Inc 618 Michillinda Avenue, Suite 200 Arcadia, California 91007

Attn: Bronwyn Kelly



Authorized for release by: 5/20/2012 4:10:36 PM

Debby Wilson Project Manager I debby.wilson@testamericainc.com

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

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

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

LINKS Review your project results through TOTOLACCESS Have a Question? Have a Question?

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

abby Wilson

Debby Wilson Project Manager I 5/20/2012 4:10:36 PM

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Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite TestAmerica Job ID: 440-8616-1

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9	

Job ID: 440-8616-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-8616-1

Comments

No additional comments.

Receipt

The samples were received on 4/13/2012 7:00 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.4 C and 3.5 C.

GC/MS VOA

Method(s) 624, 8260B: The continuing calibration verification (CCV) for Acetone associated with batch 20367 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. (CCVIS 440-20367/2)

Method(s) 624, 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 20367 exceeded control limits for the following analytes: Acetone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. (LCS 440-20367/6)

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 625: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 20598. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 625: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 20598 exceeded control limits for the following analytes: 2-nitroaniline and 4-nitrophenol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 625: The laboratory control sample (LCS) and / or the laboratory control sample duplicate (LCSD) for batch 20598 exceeded control limits for the following analytes: benzidine. Per the EPA method, benzidine is known to be subject to oxidative losses during solvent concentration.

Method(s) 625: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 20598 exceeded control limits for the following analytes: n-nitrosodimethylamine.

Method(s) 625: Surrogate recovery for the following sample(s) was outside the upper control limit: (MB 440-20598/1-A). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

HPLC

No analytical or quality issues were noted.

GC Semi VOA

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

No other analytical or quality issues were noted.

Metals

Manganese was not analyzed per client request.

No analytical or quality issues were noted.

1 2 3 4 5 6 7 8 9 10 11

Job ID: 440-8616-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

General Chemistry

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

No other analytical or quality issues were noted.

WATER, 1613B, Dioxins/Furans with Totals

Sample: 1

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

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

Organic Prep

No analytical or quality issues were noted.

Date Collected: 04/13/12 12:18

Client Sample ID: Outfall 018 Composite

Lab Sample ID: 440-8616-1

Matrix: Water

Method: 625 - Semivolatile Organi Analyte		S (GC/MS) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		5.66	0.0943	ug/L		04/18/12 18:02	04/22/12 21:16	
Bis(2-ethylhexyl) phthalate	ND		4.72	1.60	ug/L		04/18/12 18:02	04/22/12 21:16	
N-Nitrosodimethylamine	ND	BA	4.72	0.0943	ug/L		04/18/12 18:02	04/22/12 21:16	
Pentachlorophenol	ND		4.72	0.377	ug/L		04/18/12 18:02	04/22/12 21:16	
2,4-Dinitrotoluene	ND		4.72	0.189	ug/L		04/18/12 18:02	04/22/12 21:16	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2,4,6-Tribromophenol	98		40 - 120				04/18/12 18:02	04/22/12 21:16	
2-Fluorobiphenyl	84		50 - 120				04/18/12 18:02	04/22/12 21:16	
2-Fluorophenol	68		30 - 120				04/18/12 18:02	04/22/12 21:16	
Nitrobenzene-d5	89		45 - 120				04/18/12 18:02	04/22/12 21:16	
Phenol-d6	79		35 - 120				04/18/12 18:02	04/22/12 21:16	
Terphenyl-d14	105		50 - 125				04/18/12 18:02	04/22/12 21:16	
Analyte alpha-BHC	ND		0.0047	0.0024	ug/L		Prepared 04/15/12 14:34	04/16/12 16:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	61		35 - 115				04/15/12 14:34	04/16/12 16:03	
Method: 300.0 - Anions, Ion Chror		Overlifter	5		11		Durante	Amelianad	D!! F-
Analyte		Qualifier			Unit	D	Prepared	Analyzed	Dil Fa
Chloride	29	LDY			mg/L			04/14/12 00:45	1
Nitrate as N	0.080	J,DX	0.11	0.080	0			04/14/12 00:28	
Nitrate Nitrite as N	ND		0.26		mg/L			04/14/12 00:28	
Sulfate	180 ND		5.0		mg/L			04/14/12 15:19	1
	ND		0.15	0.11	mg/L			04/14/12 00:28	
	ND								
Nitrite as N Method: 314.0 - Perchlorate (IC) Analyte		Qualifier	RL	МП	Unit	D	Prepared	Analyzed	Dil Fa

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000096	0.0000046	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
Total TCDD	0.0000017	JQB	0.0000096	0.00000060	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,7,8-PeCDD	0.0000022	JQ	0.000048	0.00000010	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
Total PeCDD	0.0000022	JQ	0.000048	0.00000010	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,4,7,8-HxCDD	0.0000035	JQB	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,6,7,8-HxCDD	0.0000025	JQB	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,7,8,9-HxCDD	0.0000034	JB	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
Total HxCDD	0.0000094	JQB	0.000048	0.00000030	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,4,6,7,8-HpCDD	0.0000056	JQB	0.000048	0.00000020	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
Total HpCDD	0.000089	JQB	0.000048	0.00000020	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
OCDD	0.000024	JB	0.000096	0.00000040	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
2,3,7,8-TCDF	0.0000017	J	0.0000096	0.0000032	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
2,3,7,8-TCDF	ND		0.0000096	0.0000019	ug/L		04/23/12 09:00	04/25/12 04:16	0.96
Total TCDF	0.0000017	J	0.0000096	0.0000032	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
1,2,3,7,8-PeCDF	0.0000062	JB	0.000048	0.0000039	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
2,3,4,7,8-PeCDF	0.0000029	JQB	0.000048	0.00000041	ug/L		04/23/12 09:00	04/24/12 21:32	0.96
Total PeCDF	0.0000091	JQB	0.000048	0.00000040	ug/L		04/23/12 09:00	04/24/12 21:32	0.96

ML

0.000096

0.000048 0.00000040

0.000048 0.00000040

0.000048 0.00000040

0.000048 0.000000040

0.000048 0.000000040

0.000048 0.00000020 ug/L

0.000048 0.00000030 ug/L

0.000048 0.00000020 ug/L

0.00000015 ug/L

Analyte

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

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

2,3,4,6,7,8-HxCDF

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

1,2,3,4,6,7,8-HpCDF

1,2,3,4,7,8,9-HpCDF

Total HxCDF

Total HpCDF

OCDF

Surrogate 37CI4-2,3,7,8-TCDD 37CI4-2,3,7,8-TCDD Internal Standard 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD

13C-OCDD 13C-2,3,7,8-TCDF 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF 13C-1.2.3.7.8.9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,7,8-HxCDF

Client Sample ID: Outfall 018 Composite Date Collected: 04/13/12 12:18 Date Received: 04/13/12 19:00

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

Result Qualifier

0.0000082 JB

0.0000041 JB

0.0000034 JQB

0.0000045 JQB

0.000025 JQB

0.0000062 JQB

0.0000057 JQB

0.000015 JQB

0.0000087 JB

D

Prepared

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

TestAmerica Job ID: 440-8616-1

Lab Sample ID: 440-8616-1

Analyzed

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

04/24/12 21:32

Matrix: Water

Dil Fac

0.96

0.96

0.96

0.96

0.96

0.96

0.96

0.96

0.96

%Reco	overy Qualifier	Limits	Prepared	Analyzed	Dil Fac
	83	35 - 197	04/23/12 09:00	04/24/12 21:32	0.96
	114	35 - 197	04/23/12 09:00	04/25/12 04:16	0.96
%Reco	overy Qualifier	Limits	Prepared	Analyzed	Dil Fac
	52	25 - 164	04/23/12 09:00	04/24/12 21:32	0.96
	55	25 - 181	04/23/12 09:00	04/24/12 21:32	0.96
	54	32 - 141	04/23/12 09:00	04/24/12 21:32	0.96
	59	28 - 130	04/23/12 09:00	04/24/12 21:32	0.96
	75	23 - 140	04/23/12 09:00	04/24/12 21:32	0.96
	57	17 _ 157	04/23/12 09:00	04/24/12 21:32	0.96
	44	24 - 169	04/23/12 09:00	04/24/12 21:32	0.96
	68	24 - 169	04/23/12 09:00	04/25/12 04:16	0.96
	43	24 - 185	04/23/12 09:00	04/24/12 21:32	0.96
	46	21 - 178	04/23/12 09:00	04/24/12 21:32	0.96
	57	26 - 123	04/23/12 09:00	04/24/12 21:32	0.96
	49	28 - 136	04/23/12 09:00	04/24/12 21:32	0.96
	53	29 - 147	04/23/12 09:00	04/24/12 21:32	0.96
	55	28 - 143	04/23/12 09:00	04/24/12 21:32	0.96
	62	26 - 138	04/23/12 09:00	04/24/12 21:32	0.96
	49	26 - 152	04/23/12 09:00	04/24/12 21:32	0.96

EDL Unit

ug/L

ug/L

ug/L

ug/L

ug/L

Method: 200.7 Rev 4.4 - M	letals (ICP) - Total Red	coverable							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.040	0.015	mg/L		04/23/12 08:06	04/24/12 14:22	1
Zinc	ND		20	6.0	ug/L		04/23/12 08:06	04/24/12 14:22	1
_ Method: 200.7 Rev 4.4 - M	letals (ICP) - Dissolve	d							
Analyte	· · · ·	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.040	0.015	mg/L		04/23/12 10:11	04/24/12 12:57	1
Zinc	ND		20	6.0	ug/L		04/23/12 10:11	04/24/12 12:57	1
_									
– Method: 200.8 - Metals (IC Analyte			RL	MDL	Unit	D	Prepared	Analvzed	Dil Fac
Method: 200.8 - Metals (IC Analyte Cadmium		rable Qualifier		MDL 0.10		D	Prepared 04/23/12 17:06	Analyzed 04/28/12 19:16	Dil Fac
Analyte	Result			0.10	Unit ug/L ug/L	D			Dil Fac
Analyte Cadmium	Result ND		1.0	0.10 0.50	ug/L ug/L	D	04/23/12 17:06	04/28/12 19:16	Dil Fac 1 1 1
Analyte Cadmium Copper	Result ND ND		1.0 2.0	0.10 0.50 0.20	ug/L ug/L	<u>D</u>	04/23/12 17:06 04/23/12 17:06	04/28/12 19:16 04/28/12 19:16	Dil Fac 1 1 1
Analyte Cadmium Copper Lead	Result ND ND ND ND		1.0 2.0 1.0	0.10 0.50 0.20	ug/L ug/L ug/L	<u>D</u>	04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/28/12 19:16 04/28/12 19:16 04/28/12 19:16	Dil Fac 1 1 1 1
Analyte Cadmium Copper Lead Selenium	Result ND ND ND ND ND ND ND ND ND ND		1.0 2.0 1.0	0.10 0.50 0.20 0.50	ug/L ug/L ug/L ug/L	D	04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/28/12 19:16 04/28/12 19:16 04/28/12 19:16	Dil Fac 1 1 1 1 Dil Fac

Client Sample Results

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Date Collected: 04/13/12 12:18

Date Received: 04/13/12 19:00

Client Sample ID: Outfall 018 Composite

TestAmerica Job ID: 440-8616-1

Lab Sample ID: 440-8616-1

Matrix: Water

7 8 9

Method: 200.8 - Metals (ICP/MS) - Dis Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Copper	0.55		2.0	0.50	ug/L		04/23/12 10:08	05/01/12 22:55	
Lead	ND	J,DX	1.0	0.20	ug/L		04/23/12 10:08	05/01/12 22:55	
	ND		2.0					05/01/12 22:55	
Selenium	ND		2.0	0.50	ug/L		04/23/12 10:08	05/01/12 22:55	
Method: 245.1 - Mercury (CVAA)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	ND		0.20	0.10	ug/L		04/16/12 15:03	04/17/12 12:47	
Method: 245.1 - Mercury (CVAA) - Dis	solved								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	ND		0.20	0.10	ug/L		04/17/12 08:33	04/18/12 13:11	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Turbidity	0.27		0.10	0.040				04/14/12 12:18	Dirta
Fotal Dissolved Solids	400		10		mg/L			04/16/12 10:21	
	400 ND		10		0			04/19/12 23:17	
Fotal Suspended Solids					mg/L		04/00/40 40:04		
Cyanide, Total	ND		5.0		ug/L		04/26/12 18:24	04/26/12 21:25	
Ammonia (as N)	0.280	J,DX	0.400	0.157	•		04/25/12 20:35	04/25/12 22:00	
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			04/13/12 22:48	
Biochemical Oxygen Demand	1.1	J,DX	2.0	0.50	mg/L			04/14/12 10:27	
Method: Gamma Spec K-40 CS-137 -	General S	ub Contract M	ethod						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Cesium-137	-2.11	U	20		pCi/L		04/25/12 00:00	04/25/12 00:00	
Potassium-40	19	U	25		pCi/L		04/25/12 00:00	04/25/12 00:00	
Method: Gross Alpha and Beta - Gros	ss Alpha/E	Beta							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gross Alpha	-0.184	U	3		pCi/L		04/26/12 00:00	04/26/12 16:42	
Gross Beta	3.3	J	4		pCi/L		04/26/12 00:00	04/26/12 16:42	
Method: Radium 228 - RAD-226-228 c	ombined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Radium-226	0.141	U	1		pCi/L		05/04/12 00:00	05/04/12 15:06	
Radium-228	0.034	U	1		pCi/L		05/04/12 00:00	05/04/12 15:06	
Method: Strontium 90 - General Sub (Contract N	lethod							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Strontium-90	0.061	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	
	act Metho	d							
Method: Tritium - General Sub Contra		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
	Result				pCi/L		04/19/12 00:00	04/19/12 20:21	
Analyte	32.2	U	500		point				
Analyte	32.2		500		p0//E				
Method: Tritium - General Sub Contra Analyte Fritium Method: Uranium, Combined - Genera Analyte	32.2 al Sub Co		500 RL	МОІ	Unit	D	Prepared	Analyzed	Dil Fa

Client Sample ID: Outfall 018 Grab Date Collected: 04/13/12 12:45 Date Received: 04/13/12 19:00

TestAmerica	Job	ID:	440-8616-1

Lab Sample ID: 440-8623-1

Matrix: Water

Method: 624 - Volatile Organic C Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/18/12 01:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30				04/18/12 01:06	1
1,1,2-Trichloroethane	ND		0.50	0.30				04/18/12 01:06	1
1,1-Dichloroethane	ND		0.50	0.40				04/18/12 01:06	
1,1-Dichloroethene	ND		0.50	0.42				04/18/12 01:06	1
1.2-Dichlorobenzene	ND		0.50	0.32				04/18/12 01:06	1
1,2-Dichloroethane	ND		0.50	0.28				04/18/12 01:06	
1,2-Dichloropropane	ND		0.50	0.35	-			04/18/12 01:06	1
1.3-Dichlorobenzene	ND		0.50	0.35	-			04/18/12 01:06	1
1,2,3-Trichloropropane	ND		0.50	0.40				04/18/12 01:06	
1,4-Dichlorobenzene	ND		0.50	0.37	-			04/18/12 01:06	1
Benzene	ND		0.50	0.37	-			04/18/12 01:00	1
Bromoform	ND			0.20				04/18/12 01:06	
			0.50						
Bromomethane	ND		0.50	0.42				04/18/12 01:06	1
Carbon tetrachloride	ND		0.50	0.28				04/18/12 01:06	1
	ND		0.50	0.36	-			04/18/12 01:06	1
Dibromochloromethane	ND		0.50	0.40				04/18/12 01:06	1
Chloroethane	ND		0.50	0.40				04/18/12 01:06	1
Chloroform	ND		0.50	0.33				04/18/12 01:06	1
Chloromethane	ND		0.50	0.40				04/18/12 01:06	1
is-1,3-Dichloropropene	ND		0.50	0.22				04/18/12 01:06	1
Bromodichloromethane	ND		0.50	0.30				04/18/12 01:06	1
Ethylbenzene	ND		0.50	0.25				04/18/12 01:06	1
lethylene Chloride	0.97	J,DX	1.0	0.95	ug/L			04/18/12 01:06	1
etrachloroethene	ND		0.50	0.32	ug/L			04/18/12 01:06	1
oluene	ND		0.50	0.36	ug/L			04/18/12 01:06	1
rans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/18/12 01:06	1
ert-Butanol	ND		10	6.5	ug/L			04/18/12 01:06	1
rans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/18/12 01:06	1
Frichlorofluoromethane	ND		0.50	0.34	ug/L			04/18/12 01:06	1
/inyl chloride	ND		0.50	0.40	ug/L			04/18/12 01:06	1
Frichloroethene	ND		0.50	0.26	ug/L			04/18/12 01:06	1
sis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/18/12 01:06	1
I,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/18/12 01:06	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/18/12 01:06	1
Methyl tert-butyl ether	ND		0.50	0.32	-			04/18/12 01:06	1
Vaphthalene	ND		0.50	0.41				04/18/12 01:06	1
· Fert-amyl methyl ether	ND		0.50	0.33	-			04/18/12 01:06	1
Ethyl tert-butyl ether	ND		0.50	0.28				04/18/12 01:06	1
Xylenes, Total	ND		1.0	0.90				04/18/12 01:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzad	Dil Fac
-Bromofluorobenzene (Surr)		guainer	80 - 120				Frepareu	Analyzed 04/18/12 01:06	
									1
Dibromofluoromethane (Surr) Foluene-d8 (Surr)	108 105		80 - 120 80 - 120					04/18/12 01:06 04/18/12 01:06	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7		mg/L		04/25/12 06:36	04/25/12 11:28	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample Results

Client: MWH Americas Inc

Project/Site: Routine Outfall 018 Composite

TestAmerica Job ID: 440-8616-1

Client Sample ID: Outfall 018	Grab		Lab Sample ID: 440-8623-						
Date Collected: 04/13/12 12:45								Matrix	x: Water
Date Received: 04/13/12 19:00									
General Chemistry (Continued)									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Settleable Solids	ND		0.10	0.10	mL/L/Hr			04/14/12 11:53	1
- Diant Comula ID: Trin Dianka							Lah Ca		0000.0
Client Sample ID: Trip Blanks Date Collected: 04/13/12 12:45							Lab Sa	mple ID: 440-	
Date Collected: 04/13/12 12:45								Matri	x: Water
-									
Method: 624 - Volatile Organic Co	mpounds (GC	;/MS)							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30				04/17/12 04:46	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 04:46	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 04:46	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 04:46	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 04:46	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 04:46	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 04:46	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 04:46	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 04:46	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/17/12 04:46	1
1,4-Dichlorobenzene	ND		0.50	0.37	0			04/17/12 04:46	1
Benzene	ND		0.50	0.28	-			04/17/12 04:46	1
Bromoform	ND		0.50	0.40				04/17/12 04:46	
Bromomethane	ND		0.50	0.40				04/17/12 04:46	1
Carbon tetrachloride	ND		0.50	0.28				04/17/12 04:46	1
Chlorobenzene	ND		0.50	0.20				04/17/12 04:46	' 1
									1
Dibromochloromethane	ND		0.50	0.40				04/17/12 04:46	•
Chloroethane	ND		0.50	0.40				04/17/12 04:46	1
Chloroform	ND		0.50	0.33				04/17/12 04:46	1
Chloromethane	ND		0.50	0.40	0			04/17/12 04:46	1
cis-1,3-Dichloropropene	ND		0.50	0.22				04/17/12 04:46	1
Bromodichloromethane	ND		0.50	0.30				04/17/12 04:46	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 04:46	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 04:46	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 04:46	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 04:46	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 04:46	1
tert-Butanol	ND		10	6.5	ug/L			04/17/12 04:46	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 04:46	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 04:46	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 04:46	1
Trichloroethene	ND		0.50		ug/L			04/17/12 04:46	1
cis-1,2-Dichloroethene	ND		0.50	0.32	•			04/17/12 04:46	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40				04/17/12 04:46	1
Diisopropyl ether	ND		0.50	0.25	•			04/17/12 04:46	1
Methyl tert-butyl ether	ND		0.50		ug/L			04/17/12 04:46	י 1
	ND							04/17/12 04:46	י 1
Naphthalene			0.50		ug/L				ן ג
Tert-amyl methyl ether	ND		0.50		ug/L			04/17/12 04:46	1
Ethyl tert-butyl ether	ND		0.50	0.28				04/17/12 04:46	
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 04:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120			-		04/17/12 04:46	1

Lab Sample ID: 440-8623-2 Matrix: Water

Matrix. Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepare	d Analyzed	Dil Fac	
Dibromofluoromethane (Surr)	96		80 - 120		04/17/12 04:46	1	
Toluene-d8 (Surr)	102		80 - 120		04/17/12 04:46	1	

Client Sample ID: Outfall 018 Composite

Lab Sample ID: 440-8616-1

Matrix: Water

Date Collected: 04/13/12 12:18 Date Received: 04/13/12 19:00

	Batch	Batch		Dil	Init	al	Fina	al	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amo	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	625			1060	mL	2	mL	20598	04/18/12 18:02	DM	TAL IRV
Total/NA	Analysis	625		1					21217	04/22/12 21:16	AI	TAL IRV
Total/NA	Prep	608			1060	mL	2	mL	19875	04/15/12 14:34	AB	TAL IRV
Total/NA	Analysis	608 Pesticides		1					19946	04/16/12 16:03	DD	TAL IRV
Total/NA	Analysis	300.0		1	1	mL	1.0	mL	19534	04/14/12 00:28	NN	TAL IRV
Total/NA	Analysis	300.0		10	1	mL	1.0	mL	19535	04/14/12 00:45	NN	TAL IRV
Total/NA	Analysis	300.0		10	1	mL	1.0	mL	19785	04/14/12 15:19	KS	TAL IRV
Total/NA	Analysis	314.0		1	5	mL	1.0	mL	21754	04/25/12 10:33	MN	TAL IRV
Total	Prep	3542			1038.82	mL	20	uL	2114077_P	04/23/12 09:00	TL	TAL WS
Total	Analysis	1613B		0.96					2114077	04/24/12 21:32	LLH	TAL WS
Total	Analysis	1613B		0.96					2114077	04/25/12 04:16	LLH	TAL WS
Total/NA	Prep	245.1			20	mL	20	mL	20031	04/16/12 15:03	SN	TAL IRV
Total/NA	Analysis	245.1		1					20257	04/17/12 12:47	MP	TAL IRV
Dissolved	Prep	245.1			20	mL	20	mL	20049	04/17/12 08:33	SN	TAL IRV
Dissolved	Analysis	245.1		1					20502	04/18/12 13:11	MP	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	21302	04/23/12 10:11	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1					21614	04/24/12 12:57	VS	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21269	04/23/12 08:06	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1					21678	04/24/12 14:22	DP	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21402	04/23/12 17:06	SC	TAL IRV
Total Recoverable	Analysis	200.8		1					22628	04/28/12 19:16	RC	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	21301	04/23/12 10:08	EN	TAL IRV
Dissolved	Analysis	200.8		1					23203	05/01/12 22:55	RC	TAL IRV
Total/NA	Analysis	SM 5540C		1	100	mL	100	mL	19748	04/13/12 22:48	NEA	TAL IRV
Total/NA	Analysis	SM5210B		1					19790	04/14/12 10:27	RS	TAL IRV
Total/NA	Analysis	180.1		1					19801	04/14/12 12:18	EC	TAL IRV
Total/NA	Analysis	SM 2540C		1	100	mL	100	mL	19957	04/16/12 10:21	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	100	mL	100	mL	20891	04/19/12 23:17	DK	TAL IRV
Total/NA	Prep	Distill/CN			50	mL	50	mL	22248	04/26/12 18:24	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1					22273	04/26/12 21:25	PQI	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50	mL	50	mL	22283	04/25/12 20:35	PQI	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1					22286	04/25/12 22:00	PQI	TAL IRV
Total/NA	Analysis	Gamma Spec K-40 CS-137		1					8609	04/25/12 00:00	LS	Eber-Ric
Total/NA	Prep	General Prep		1					8609_P	04/25/12 00:00		Eber-Ric
Total/NA	Prep	General Prep		1					8609_P	04/26/12 00:00		Eber-Ric
Total/NA	Analysis	Gross Alpha and Beta		1					8609	04/26/12 16:42	DVP	Eber-Ric
Total/NA	Prep	General Prep		1					8609_P	04/30/12 00:00		Eber-Ric
Total/NA	Prep	General Prep		1					8609_P	05/04/12 00:00		Eber-Ric
Total/NA	Analysis	Radium 228		1					8609	05/04/12 15:06	ТМ	Eber-Ric
Total/NA	Analysis	Strontium 90		1					8609	04/26/12 12:35	TSC	Eber-Ric
Total/NA	Prep	General Prep		1					8609_P	04/19/12 00:00		Eber-Ric
Total/NA	Analysis	Tritium		1					8609	04/19/12 20:21	WL	Eber-Ric

Lab Sample ID: 440-8616-1

Lab Sample ID: 440-8623-1

Lab Sample ID: 440-8623-2

Matrix: Water

Matrix: Water

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Matrix: Water

Client Sample ID: Outfall 018 Composite

Date Collected: 04/13/12 12:18 Date Received: 04/13/12 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	General Prep		1			8609_P	04/27/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8609	04/27/12 09:38	LS	Eber-Rich

Client Sample ID: Outfall 018 Grab Date Collected: 04/13/12 12:45 Date Received: 04/13/12 19:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	20297	04/18/12 01:06	YK	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	19792	04/14/12 11:53	EC	TAL IRV
Total/NA	Analysis	120.1		1			19954	04/16/12 10:13	XL	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	21756	04/25/12 06:36	DA	TAL IRV
Total/NA	Analysis	1664A		1			21846	04/25/12 11:28	DA	TAL IRV

Client Sample ID: Trip Blanks Date Collected: 04/13/12 12:45 Date Received: 04/13/12 19:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	20084	04/17/12 04:46	YK	TAL IRV

Laboratory References:

Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804

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

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

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

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

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

Matrix: Water Analysis Batch: 20084

Lab Sample ID: MB 440-20084/4

	MB	MB						
Analyte	Result	Qualifier	RL	MDL		D Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L		04/16/12 21:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L		04/16/12 21:06	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L		04/16/12 21:06	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L		04/16/12 21:06	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L		04/16/12 21:06	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L		04/16/12 21:06	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L		04/16/12 21:06	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L		04/16/12 21:06	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L		04/16/12 21:06	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L		04/16/12 21:06	1
1,4-Dichlorobenzene	ND		0.50	0.37			04/16/12 21:06	1
Benzene	ND		0.50	0.28	-		04/16/12 21:06	1
Bromoform	ND		0.50	0.40			04/16/12 21:06	1
Bromomethane	ND		0.50	0.42	-		04/16/12 21:06	1
Carbon tetrachloride	ND		0.50	0.28			04/16/12 21:06	1
Chlorobenzene	ND		0.50	0.36			04/16/12 21:06	· · · · · · · · 1
Dibromochloromethane	ND		0.50	0.40			04/16/12 21:06	1
Chloroethane	ND		0.50	0.40			04/16/12 21:06	1
Chloroform	ND		0.50	0.40			04/16/12 21:06	· · · · · · 1
								1
Chloromethane	ND		0.50	0.40			04/16/12 21:06	
cis-1,3-Dichloropropene	ND		0.50	0.22			04/16/12 21:06	1
Bromodichloromethane	ND		0.50	0.30			04/16/12 21:06	1
Ethylbenzene	ND		0.50	0.25			04/16/12 21:06	1
Methylene Chloride	ND		1.0	0.95			04/16/12 21:06	1
Tetrachloroethene	ND		0.50	0.32			04/16/12 21:06	1
Toluene	ND		0.50	0.36			04/16/12 21:06	1
trans-1,2-Dichloroethene	ND		0.50	0.30			04/16/12 21:06	1
tert-Butanol	ND		10		ug/L		04/16/12 21:06	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L		04/16/12 21:06	1
Trichlorofluoromethane	ND		0.50	0.34			04/16/12 21:06	1
Vinyl chloride	ND		0.50	0.40	ug/L		04/16/12 21:06	1
Trichloroethene	ND		0.50	0.26	ug/L		04/16/12 21:06	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L		04/16/12 21:06	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L		04/16/12 21:06	1
Diisopropyl ether	ND		0.50	0.25	ug/L		04/16/12 21:06	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L		04/16/12 21:06	1
Naphthalene	ND		0.50	0.41	ug/L		04/16/12 21:06	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L		04/16/12 21:06	1
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L		04/16/12 21:06	1
Xylenes, Total	ND		1.0	0.90	ug/L		04/16/12 21:06	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	<u>%Recovery</u> 97	Quanner	80 - 120			riepaieu		1
Dibromofluoromethane (Surr)	90		80 - 120 80 - 120				04/16/12 21:06	1
Toluene-d8 (Surr)	90 104		80 - 120 80 - 120				04/16/12 21:06	1

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

Lab Sample ID: LCS 440-20084/5 Matrix: Water

Analysis Batch: 20084	Spike	LCS	LCS		%Rec.
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits
I,1,1-Trichloroethane		24.8	ug/L	99	65 - 135
,1,2,2-Tetrachloroethane	25.0	27.7	ug/L	111	55 ₋ 130
,1,2-Trichloroethane	25.0	24.6	ug/L	98	70 ₋ 125
,1-Dichloroethane	25.0	24.2	ug/L	97	70 ₋ 125
,1-Dichloroethene	25.0	23.8	ug/L	95	70 - 125
,2-Dichlorobenzene	25.0	27.0	ug/L	108	75 ₋ 120
,2-Dichloroethane	25.0	25.5	ug/L	102	60 - 140
,2-Dichloropropane	25.0	25.0	ug/L	100	70 ₋ 125
,3-Dichlorobenzene	25.0	27.3	ug/L	109	75 ₋ 120
,2,3-Trichloropropane	25.0	25.5	ug/L	102	60 - 130
,4-Dichlorobenzene	25.0	25.6	ug/L	102	75 ₋ 120
lenzene	25.0	22.9	ug/L	92	70 - 120
Bromoform	25.0	20.3	ug/L	81	55 ₋ 130
Bromomethane	25.0	29.0	ug/L	116	65 ₋ 140
Carbon tetrachloride	25.0	27.8	ug/L	111	65 - 140
Chlorobenzene	25.0	22.3	ug/L	89	75 ₋ 120
Dibromochloromethane	25.0	26.9	ug/L	108	70 - 140
Chloroethane	25.0	24.2	ug/L	97	60 - 140
Chloroform	25.0	23.8	ug/L	95	70 ₋ 130
Chloromethane	25.0	28.2	ug/L	113	50 - 140
is-1,3-Dichloropropene	25.0	24.3	ug/L	97	75 - 125
Bromodichloromethane	25.0	25.6	ug/L	102	70 - 135
Ethylbenzene	25.0	21.1	ug/L	84	75 - 125
lethylene Chloride	25.0	21.5	ug/L	86	55 ₋ 130
etrachloroethene	25.0	25.0	ug/L	100	70 - 125
oluene	25.0	22.3	ug/L	89	70 - 120
ans-1,2-Dichloroethene	25.0	25.4	ug/L	102	70 - 125
ert-Butanol	125	131	ug/L	105	70 - 135
rans-1,3-Dichloropropene	25.0	25.7	ug/L	103	70 - 125
richlorofluoromethane	25.0	25.8	ug/L	103	65 - 145
/inyl chloride	25.0	27.8	ug/L	111	55 - 135
richloroethene	25.0	27.1	ug/L	108	70 - 125
sis-1,2-Dichloroethene	25.0	25.8	ug/L	103	70 - 125
,2-Dibromoethane (EDB)	25.0	24.9	ug/L	100	75 ₋ 125
Disopropyl ether	25.0	24.6	ug/L	98	60 ₋ 135
lethyl tert-butyl ether	25.0	22.7	ug/L	91	60 - 135
laphthalene	25.0	27.1	ug/L	108	55 - 135
ert-amyl methyl ether	25.0	21.8	ug/L	87	60 - 135
Ethyl tert-butyl ether	25.0	22.2	ug/L	89	65 ₋ 135
Kylenes, Total	75.0	66.8	ug/L	89	70 ₋ 125

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

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

Client Sample ID: Matrix Spike

Prep Type: Total/NA

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

Lab Sample ID: 440-8626-A-3 MS Ν

Matrix: Water
Analysis Batch: 20084

Toluene-d8 (Surr)

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits
I,1,1-Trichloroethane	ND		25.0	26.1		ug/L		104	65 - 140
,1,2,2-Tetrachloroethane	ND		25.0	28.6		ug/L		114	55 - 135
,1,2-Trichloroethane	ND		25.0	26.5		ug/L		106	65 - 130
,1-Dichloroethane	ND		25.0	25.3		ug/L		101	65 - 130
I,1-Dichloroethene	16		25.0	41.5		ug/L		104	60 - 130
1,2-Dichlorobenzene	ND		25.0	27.8		ug/L		111	75 - 125
,2-Dichloroethane	0.61		25.0	28.9		ug/L		113	60 - 140
,2-Dichloropropane	ND		25.0	27.1		ug/L		108	65 - 130
1,3-Dichlorobenzene	ND		25.0	27.6		ug/L		110	75 - 125
1,2,3-Trichloropropane	ND		25.0	25.9		ug/L		104	55 - 135
I,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	75 - 125
Benzene	ND		25.0	24.3		ug/L		97	65 - 125
Bromoform	ND		25.0	20.5		ug/L		82	55 ₋ 135
Bromomethane	ND		25.0	30.0		ug/L		120	55 ₋ 145
Carbon tetrachloride	0.30	J,DX	25.0	30.3		ug/L		120	65 - 140
Chlorobenzene	ND		25.0	23.2		ug/L		93	75 - 125
Dibromochloromethane	ND		25.0	27.7		ug/L		111	65 - 140
Chloroethane	ND		25.0	24.7		ug/L		99	55 _ 140
Chloroform	0.99		25.0	26.2		ug/L		101	65 - 135
Chloromethane	ND		25.0	27.9		ug/L		112	45 - 145
is-1,3-Dichloropropene	ND		25.0	25.5		ug/L		102	70 - 130
Bromodichloromethane	ND		25.0	27.4		ug/L		110	70 - 135
thylbenzene	ND		25.0	21.1		ug/L		84	65 - 130
Aethylene Chloride	ND		25.0	22.7		ug/L		91	50 - 135
Fetrachloroethene	0.33	J,DX	25.0	27.0		ug/L		107	65 - 130
oluene	ND		25.0	23.7		ug/L		95	70 - 125
rans-1,2-Dichloroethene	ND		25.0	25.9		ug/L		104	65 - 130
ert-Butanol	ND		125	143		ug/L		114	65 ₋ 140
rans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	65 - 135
Frichlorofluoromethane	ND		25.0	27.1		ug/L		108	60 - 145
/inyl chloride	ND		25.0	28.0		ug/L		112	45 - 140
Frichloroethene	29		25.0	56.2		ug/L		111	65 - 125
cis-1,2-Dichloroethene	ND		25.0	26.5		ug/L		106	65 - 130
I,2-Dibromoethane (EDB)	ND		25.0	26.5		ug/L		106	70 - 130
Diisopropyl ether	ND		25.0	25.6		ug/L		102	60 ₋ 140
Methyl tert-butyl ether	ND		25.0	20.0		ug/L		96	55 ₋ 145
Vaphthalene	ND		25.0	24.0		ug/L		110	50 - 140
Fert-amyl methyl ether	ND		25.0	27.0		ug/L ug/L		88	60 ₋ 140
Ethyl tert-butyl ether	ND		25.0	22.0		ug/L ug/L		95	60 ₋ 135
Kylenes, Total	ND		75.0	67.9		ug/L		93 91	60 - 130
Ayichico, Tulai			75.0	07.9		uy/L		91	00 - 100
		MS							
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	94		80 - 120						
Dibromofluoromethane (Surr)	98		80 - 120						

80 - 120

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

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

Matrix: Water Analysis Batch: 20084

Analysis Batch: 20084	Samala	Sampla	Spike	Men	MSD				%Rec.		RPD	
Analita	-	Sample	Spike			11	D	9/ Daa		000		ŝ
Analyte		Qualifier	Added	24.9	Qualifier	Unit		%Rec 100	Limits	RPD	Limit 20	
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane	ND		25.0 25.0	24.9		ug/L		113	65 ₋ 140 55 ₋ 135	4.71 1.05	30	ŝ
						ug/L						
1,1,2-Trichloroethane 1.1-Dichloroethane	ND ND		25.0 25.0	24.0		ug/L		96 99	65 ₋ 130 65 ₋ 130	9.90 2.00	25 20	5
,				24.8		ug/L						
1,1-Dichloroethene	16 ND		25.0	39.5 27.1		ug/L		96	60 - 130 75 - 135	4.94	20	
1,2-Dichlorobenzene			25.0			ug/L		108	75 - 125	2.55	20	
1,2-Dichloroethane	0.61		25.0	26.7		ug/L		104	60 - 140	7.91	20	
1,2-Dichloropropane	ND		25.0	25.1		ug/L		100	65 - 130 75 - 135	7.66	20	
1,3-Dichlorobenzene	ND		25.0	27.1		ug/L		108	75 - 125	1.83	20	
1,2,3-Trichloropropane	ND		25.0	25.7		ug/L		103	55 - 135	1.00	30	
1,4-Dichlorobenzene	ND		25.0	25.7		ug/L		103	75 ₋ 125	3.82	20	
Benzene	ND		25.0	22.8		ug/L		91	65 - 125	6.37	20	
Bromoform	ND		25.0	21.6		ug/L		86	55 - 135	5.23	25	
Bromomethane	ND		25.0	28.2		ug/L		113	55 - 145	6.19	25	ŝ
Carbon tetrachloride		J,DX	25.0	28.2		ug/L		112	65 - 140	7.18	25	
Chlorobenzene	ND		25.0	23.7		ug/L		95	75 - 125	2.13	20	ł
Dibromochloromethane	ND		25.0	28.3		ug/L		113	65 - 140	2.14	25	
Chloroethane	ND		25.0	23.4		ug/L		94	55 _ 140	5.41	25	
Chloroform	0.99		25.0	24.4		ug/L		94	65 - 135	7.11	20	
Chloromethane	ND		25.0	26.8		ug/L		107	45 - 145	4.02	25	
cis-1,3-Dichloropropene	ND		25.0	24.3		ug/L		97	70 - 130	4.82	20	
Bromodichloromethane	ND		25.0	25.9		ug/L		104	70 - 135	5.63	20	
Ethylbenzene	ND		25.0	21.8		ug/L		87	65 - 130	3.26	20	
Methylene Chloride	ND		25.0	21.5		ug/L		86	50 - 135	5.43	20	
Tetrachloroethene		J,DX	25.0	27.5		ug/L		109	65 - 130	1.83	20	
Toluene	ND		25.0	22.0		ug/L		88	70 - 125	7.44	20	
trans-1,2-Dichloroethene	ND		25.0	24.4		ug/L		98	65 - 130	5.96	20	
tert-Butanol	ND		125	137		ug/L		110	65 - 140	4.36	25	
trans-1,3-Dichloropropene	ND		25.0	25.4		ug/L		102	65 - 135	8.66	25	
Trichlorofluoromethane	ND		25.0	25.4		ug/L		102	60 - 145	6.48	25	
Vinyl chloride	ND		25.0	27.0		ug/L		108	45 - 140	3.64	30	
Trichloroethene	29		25.0	53.3		ug/L		99	65 - 125	5.30	20	
cis-1,2-Dichloroethene	ND		25.0	25.6		ug/L		102	65 - 130	3.45	20	
1,2-Dibromoethane (EDB)	ND		25.0	26.4		ug/L		106	70 - 130	0.000	25	
Diisopropyl ether	ND		25.0	24.3		ug/L		97	60 - 140	5.21	25	
Methyl tert-butyl ether	ND		25.0	23.1		ug/L		92	55 - 145	3.82	25	
Naphthalene	ND		25.0	25.4		ug/L		102	50 - 140	7.94	30	
Tert-amyl methyl ether	ND		25.0	21.7		ug/L		87	60 - 140	1.37	30	
Ethyl tert-butyl ether	ND		25.0	22.3		ug/L		89	60 - 135	6.09	25	
Xylenes, Total	ND		75.0	69.3		ug/L		92	60 ₋ 130	2.04	20	
	MSD	MSD										
Surrogate	%Recovery	Qualifier	Limits									

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	103		80 - 120

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

Lab Sample ID: MB 440-20297/4

Matrix: Water

Toluene-d8 (Surr)

Analysis Batch: 20297

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

MB MB

Client Sample ID: Method Blank

Prep Type: Total/NA

2 3 5 6

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	IVID								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 18:28	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 18:28	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 18:28	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 18:28	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/17/12 18:28	1
Benzene	ND		0.50	0.28	ug/L			04/17/12 18:28	1
Bromoform	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Bromomethane	ND		0.50	0.42	ug/L			04/17/12 18:28	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/17/12 18:28	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/17/12 18:28	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Chloroethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Chloroform	ND		0.50	0.33	ug/L			04/17/12 18:28	1
Chloromethane	ND		0.50	0.40	ug/L			04/17/12 18:28	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/17/12 18:28	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/17/12 18:28	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 18:28	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 18:28	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 18:28	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 18:28	1
tert-Butanol	ND		10	6.5	ug/L			04/17/12 18:28	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 18:28	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 18:28	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/17/12 18:28	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/17/12 18:28	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/17/12 18:28	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L			04/17/12 18:28	1
Naphthalene	ND		0.50	0.41	ug/L			04/17/12 18:28	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L			04/17/12 18:28	1
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L			04/17/12 18:28	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 18:28	1
		MB					. .	.	5 % -
Surrogate	%Recovery		Limits			-	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120					04/17/12 18:28	1
Dibromofluoromethane (Surr)	101		80 - 120					04/17/12 18:28	1

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04/17/12 18:28

80 - 120

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

Lab Sample ID: LCS 440-20297/5 Matrix: Water

Analysis Batch: 20297	Spike	LCS	LCS		%Rec.
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits
1,1,1-Trichloroethane		26.7	ug/L	107	65 - 135
1,1,2,2-Tetrachloroethane	25.0	26.5	ug/L	106	55 ₋ 130
1,1,2-Trichloroethane	25.0	24.4	ug/L	98	70 _ 125
1,1-Dichloroethane	25.0	26.3	ug/L	105	70 _ 125
1,1-Dichloroethene	25.0	24.1	ug/L	96	70 - 125
1,2-Dichlorobenzene	25.0	26.2	ug/L	105	75 _ 120
1,2-Dichloroethane	25.0	28.3	ug/L	113	60 - 140
1,2-Dichloropropane	25.0	25.0	ug/L	100	70 _ 125
1,3-Dichlorobenzene	25.0	27.9	ug/L	112	75 - 120
1,2,3-Trichloropropane	25.0	25.5	ug/L	102	60 - 130
1,4-Dichlorobenzene	25.0	26.5	ug/L	106	75 - 120
Benzene	25.0	23.7	ug/L	95	70 - 120
Bromoform	25.0	19.7	ug/L	79	55 - 130
Bromomethane	25.0	26.6	ug/L	106	65 - 140
Carbon tetrachloride	25.0	24.8	ug/L	99	65 - 140
Chlorobenzene	25.0	27.4	ug/L	110	75 - 120
Dibromochloromethane	25.0	26.0	ug/L	104	70 - 140
Chloroethane	25.0	23.3	ug/L	93	60 - 140
Chloroform	25.0	27.2	ug/L	109	70 - 130
Chloromethane	25.0	24.8	ug/L	99	50 - 140
sis-1,3-Dichloropropene	25.0	25.5	ug/L	102	75 - 125
Bromodichloromethane	25.0	27.2	ug/L	109	70 - 135
Ethylbenzene	25.0	26.7	ug/L	107	75 - 125
Methylene Chloride	25.0	24.4	ug/L	98	55 - 130
Fetrachloroethene	25.0	26.3	ug/L	105	70 ₋ 125
Foluene	25.0	25.6	ug/L	102	70 _ 120
rans-1,2-Dichloroethene	25.0	24.8	ug/L	99	70 - 125
ert-Butanol	125	140	ug/L	112	70 - 135
rans-1,3-Dichloropropene	25.0	26.8	ug/L	107	70 - 125
Trichlorofluoromethane	25.0	31.3	ug/L	125	65 - 145
/inyl chloride	25.0	25.1	ug/L	100	55 ₋ 135
Trichloroethene	25.0	26.8	ug/L	107	70 - 125
cis-1,2-Dichloroethene	25.0	25.6	ug/L	102	70 - 125
1,2-Dibromoethane (EDB)	25.0	26.2	ug/L	105	75 - 125
Diisopropyl ether	25.0	24.0	ug/L	96	60 - 135
Methyl tert-butyl ether	25.0	24.9	ug/L	100	60 - 135
Naphthalene	25.0	19.8	ug/L	79	55 - 135
Fert-amyl methyl ether	25.0	25.2	ug/L	101	60 - 135
Ethyl tert-butyl ether	25.0	24.6	ug/L	98	65 - 135
Xylenes, Total	75.0	80.7	ug/L	108	70 - 125

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		80 - 120
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	104		80 - 120

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

Client Sample ID: Matrix Spike

Prep Type: Total/NA

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

Lab Sample ID: 440-8650-A-3 MS N

	inple iD.	440-0000-
latrix:	Water	

Toluene-d8 (Surr)

Analysis Batch: 20297		. .							~ -	
		Sample	Spike		MS		_	a/ 5	%Rec.	
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits 65 - 140	
1,1,1-Trichloroethane	ND		25.0	25.6		ug/L		102		
1,1,2,2-Tetrachloroethane	ND		25.0	25.3		ug/L		101	55 - 135	
1,1,2-Trichloroethane	ND		25.0	23.7		ug/L		95	65 - 130	
1,1-Dichloroethane	ND		25.0	25.0		ug/L		100	65 - 130	
1,1-Dichloroethene	ND		25.0	22.7		ug/L		91	60 - 130	
1,2-Dichlorobenzene	ND		25.0	25.4		ug/L		102	75 - 125	
I,2-Dichloroethane	ND		25.0	27.5		ug/L		110	60 - 140	
1,2-Dichloropropane	ND		25.0	24.1		ug/L		96	65 - 130	
1,3-Dichlorobenzene	ND		25.0	26.3		ug/L		105	75 - 125	
1,2,3-Trichloropropane	ND		25.0	25.0		ug/L		100	55 - 135	
1,4-Dichlorobenzene	ND		25.0	25.3		ug/L		101	75 - 125	
Benzene	ND		25.0	22.9		ug/L		92	65 - 125	
Bromoform	ND		25.0	19.8		ug/L		79	55 ₋ 135	
Bromomethane	ND		25.0	25.2		ug/L		101	55 - 145	
Carbon tetrachloride	ND		25.0	23.7		ug/L		95	65 - 140	
Chlorobenzene	ND		25.0	26.6		ug/L		106	75 _ 125	
Dibromochloromethane	ND		25.0	26.3		ug/L		105	65 - 140	
Chloroethane	ND		25.0	22.2		ug/L		89	55 - 140	
Chloroform	ND		25.0	26.6		ug/L		106	65 ₋ 135	
Chloromethane	ND		25.0	23.3		ug/L		93	45 - 145	
cis-1,3-Dichloropropene	ND		25.0	24.9		ug/L		100	70 - 130	
Bromodichloromethane	ND		25.0	27.9		ug/L		112	70 - 135	
Ethylbenzene	ND		25.0	25.6		ug/L		102	65 - 130	
Methylene Chloride	1.9		25.0	25.2		ug/L		93	50 ₋ 135	
Tetrachloroethene	7.8		25.0	33.3		ug/L		102	65 - 130	
Toluene	ND		25.0	24.3		ug/L		97	70 ₋ 125	
rans-1,2-Dichloroethene	ND		25.0	24.5		ug/L		95	65 <u>-</u> 130	
ert-Butanol	ND		125	135				108	65 ₋ 140	
						ug/L				
rans-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	65 - 135	
Trichlorofluoromethane	ND		25.0	30.6		ug/L		122	60 - 145	
/inyl chloride	ND		25.0	23.2		ug/L		93	45 - 140	
Trichloroethene	84		25.0	106		ug/L		88	65 - 125	
cis-1,2-Dichloroethene	ND		25.0	25.1		ug/L		100	65 ₋ 130	
1,2-Dibromoethane (EDB)	ND		25.0	26.7		ug/L		107	70 _ 130	
Diisopropyl ether	ND		25.0	23.5		ug/L		94	60 - 140	
Vethyl tert-butyl ether	ND		25.0	24.7		ug/L		99	55 _ 145	
Naphthalene	ND		25.0	19.1		ug/L		76	50 - 140	
Tert-amyl methyl ether	ND		25.0	24.8		ug/L		99	60 - 140	
Ethyl tert-butyl ether	ND		25.0	24.4		ug/L		98	60 ₋ 135	
Xylenes, Total	ND		75.0	78.2		ug/L		104	60 - 130	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	114		80 - 120							
Dibromofluoromethane (Surr)	105		80 - 120							

80 - 120

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

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

Lab Sample ID: 440-8650-A-3 MSD

Matrix: Water Analysis Batch: 20297

Analysis Batch: 20297	_		_									
	•	Sample	Spike		MSD				%Rec.		RPD	i
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
1,1,1-Trichloroethane	ND		25.0	25.4		ug/L		102	65 - 140	1.00	20	
1,1,2,2-Tetrachloroethane	ND		25.0	25.0		ug/L		100	55 _ 135	1.19	30	
1,1,2-Trichloroethane	ND		25.0	23.3		ug/L		93	65 - 130	1.70	25	
1,1-Dichloroethane	ND		25.0	24.8		ug/L		99	65 - 130	1.00	20	
1,1-Dichloroethene	ND		25.0	23.1		ug/L		92	60 - 130	1.75	20	
1,2-Dichlorobenzene	ND		25.0	25.1		ug/L		100	75 ₋ 125	1.19	20	
1,2-Dichloroethane	ND		25.0	27.1		ug/L		108	60 - 140	1.47	20	
1,2-Dichloropropane	ND		25.0	23.2		ug/L		93	65 _ 130	3.81	20	
1,3-Dichlorobenzene	ND		25.0	26.5		ug/L		106	75 _ 125	1.00	20	
1,2,3-Trichloropropane	ND		25.0	24.8		ug/L		99	55 - 135	1.00	30	
1,4-Dichlorobenzene	ND		25.0	25.1		ug/L		100	75 - 125	1.00	20	
Benzene	ND		25.0	22.5		ug/L		90	65 - 125	1.76	20	
Bromoform	ND		25.0	19.5		ug/L		78	55 _ 135	1.53	25	
Bromomethane	ND		25.0	25.0		ug/L		100	55 ₋ 145	1.00	25	
Carbon tetrachloride	ND		25.0	24.0		ug/L		96	65 - 140	1.26	25	
Chlorobenzene	ND		25.0	25.6		ug/L		102	75 _ 125	3.83	20	
Dibromochloromethane	ND		25.0	25.7		ug/L		103	65 _ 140	2.31	25	
Chloroethane	ND		25.0	22.9		ug/L		92	55 _ 140	3.10	25	
Chloroform	ND		25.0	26.0		ug/L		104	65 _ 135	2.28	20	
Chloromethane	ND		25.0	23.5		ug/L		94	45 - 145	1.00	25	
cis-1,3-Dichloropropene	ND		25.0	24.6		ug/L		98	70 - 130	1.21	20	
Bromodichloromethane	ND		25.0	26.6		ug/L		106	70 - 135	4.77	20	
Ethylbenzene	ND		25.0	25.1		ug/L		100	65 - 130	1.97	20	
Methylene Chloride	1.9		25.0	24.7		ug/L		91	50 ₋ 135	2.00	20	
Tetrachloroethene	7.8		25.0	32.4		ug/L		99	65 _ 130	2.74	20	
Toluene	ND		25.0	24.4		ug/L		98	70 - 125	0.000	20	
trans-1,2-Dichloroethene	ND		25.0	23.6		ug/L		94	65 _ 130	0.000	20	
tert-Butanol	ND		125	133		ug/L		107	65 ₋ 140	1.56	25	
trans-1,3-Dichloropropene	ND		25.0	25.5		ug/L		102	65 ₋ 135	3.09	25	
Trichlorofluoromethane	ND		25.0	29.5		ug/L		118	60 - 145	3.66	25	
Vinyl chloride	ND		25.0	23.3		ug/L		93	45 _ 140	0.000	30	
Trichloroethene	84		25.0	102		ug/L		72	65 - 125	3.66	20	
cis-1,2-Dichloroethene	ND		25.0	24.6		ug/L		98	65 - 130	2.01	20	
1,2-Dibromoethane (EDB)	ND		25.0	25.6		ug/L		102	70 - 130	4.21	25	
Diisopropyl ether	ND		25.0	23.2		ug/L		93	60 - 140	1.28	25	
Methyl tert-butyl ether	ND		25.0	24.2		ug/L		97	55 ₋ 145	2.04	25	
Naphthalene	ND		25.0	19.2		ug/L		77	50 - 140	1.00	30	
Tert-amyl methyl ether	ND		25.0	24.7		ug/L		99	60 - 140	0.000	30	
Ethyl tert-butyl ether	ND		25.0	23.6		ug/L		94	60 - 135	3.33	25	
Xylenes, Total	ND		75.0	75.7		ug/L		101	60 - 130	3.25	20	
· · · · · · ·		MSD				· J =						
Surrogata			Limito									
Surrogate	%Recovery	Quaimer	Limits									

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: MB 440-20598/1-A

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

2 3 ank 4 /NA 5598 5 1 Fac 6

5
7
8
9

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 20598

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 20598

Matrix: Water Analysis Batch: 21217

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		6.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		04/18/12 18:02	04/22/12 15:46	1
N-Nitrosodimethylamine	ND		5.00	0.100	ug/L		04/18/12 18:02	04/22/12 15:46	1
Pentachlorophenol	ND		5.00	0.400	ug/L		04/18/12 18:02	04/22/12 15:46	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		04/18/12 18:02	04/22/12 15:46	1
	MB	MB							
Surrogate	%Recoverv	Qualifier	Limits				Prepared	Analvzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepar	ea	Analyzed	Dii Fac
2,4,6-Tribromophenol	127	AY	40 - 120	04/18/12	18:02	04/22/12 15:46	1
2-Fluorobiphenyl	117		50 _ 120	04/18/12	18:02	04/22/12 15:46	1
2-Fluorophenol	88		30 - 120	04/18/12	18:02	04/22/12 15:46	1
Nitrobenzene-d5	107		45 - 120	04/18/12	18:02	04/22/12 15:46	1
Phenol-d6	96		35 _ 120	04/18/12	18:02	04/22/12 15:46	1
Terphenyl-d14	114		50 _ 125	04/18/12	18:02	04/22/12 15:46	1

Lab Sample ID: LCS 440-20598/2-A Matrix: Water Analysis Batch: 21217

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
2,4,6-Trichlorophenol	10.0	9.980		ug/L		100	55 - 120
Bis(2-ethylhexyl) phthalate	10.0	11.60		ug/L		116	65 - 130
N-Nitrosodimethylamine	10.0	7.360		ug/L		74	45 - 120
Pentachlorophenol	10.0	8.920		ug/L		89	24 ₋ 121

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol	104		40 - 120
2-Fluorobiphenyl	100		50 - 120
2-Fluorophenol	74		30 - 120
Nitrobenzene-d5	103		45 _ 120
Phenol-d6	84		35 - 120
Terphenyl-d14	108		50 - 125

Lab Sample ID: LCSD 440-20598/3-A Matrix: Water Analysis Batch: 21217

Analysis Batch: 21217							Prep	Batch:	20598
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4,6-Trichlorophenol	10.0	10.54		ug/L		105	55 _ 120	5	30
Bis(2-ethylhexyl) phthalate	10.0	11.38		ug/L		114	65 _ 130	2	20
N-Nitrosodimethylamine	10.0	10.18	BA	ug/L		102	45 _ 120	32	20
Pentachlorophenol	10.0	8.280		ug/L		83	24 - 121	7	25

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol	104		40 - 120
2-Fluorobiphenyl	108		50 - 120
2-Fluorophenol	84		30 - 120
Nitrobenzene-d5	110		45 - 120
Phenol-d6	98		35 - 120

Lab Sample ID: LCSD 440-20598/3 Matrix: Water	3- A						Clien	t Sam	ple ID: L	ab Control S Prep Typ	e: Tot	al/NA
Analysis Batch: 21217										Prep B	atch:	20598
	LCSD	LCS	D									
Surrogate	%Recovery	Qual	lifier	Limits								
Terphenyl-d14	111			50 - 125								
lethod: 608 Pesticides - Org	anochlo	rine	Pestic	ides Low le	vel							
- Lab Sample ID: MB 440-19875/1-/									Client Sa	ample ID: Mo	ethod	Blank
Matrix: Water										Prep Typ		
Analysis Batch: 19946										Prep B		
		ΜВ	мв									
Analyte	Re	esult	Qualifier	RL		MDL Unit	D	Р	repared	Analyzed		Dil Fac
alpha-BHC		ND		0.0050	0.	0025 ug/L		04/1	5/12 14:34	04/16/12 12	.21	1
	0/ D	ΜВ						_				
Surrogate Tetrachloro-m-xylene	%Reco	82	Qualifier	Limits 					repared 5/12 14:34	Analyzed		Dil Fac
		02		00-110				04/1	0/12 14.04	04/10/12 12		,
Lab Sample ID: LCS 440-19875/2-	A							Client	Sample	ID: Lab Con	trol Sa	ample
Matrix: Water										Prep Typ		
Analysis Batch: 19946										Prep B		
				Spike	LCS	LCS				%Rec.		
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits		
alpha-BHC		-		0.500	0.489		ug/L		98	45 - 115		
	LCS	100										
Surrogate	%Recovery		lifior	Limits								
Tetrachloro-m-xylene	80	Qua		35 - 115								
	00			001110								
Lab Sample ID: LCSD 440-19875/	3-A						Clien	t Sam	nple ID: L	ab Control	Sampl	e Dup
										Prep Typ		
Matrix: Water										Prep B		
Matrix: Water Analysis Batch: 19946				Spike	LCSD	LCSD				%Rec.		RPD
				Spike Added		LCSD Qualifier	Unit	D	%Rec		RPD	
Analysis Batch: 19946				•			Unit ug/L	D	%Rec	%Rec.	RPD 6.11	Limi
Analysis Batch: 19946 Analyte				Added	Result			_ D		%Rec. Limits		Limit
Analysis Batch: 19946 Analyte alpha-BHC	LCSD %Recovery			Added	Result			_ <u>D</u>		%Rec. Limits		RPD Limit 30

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-19534/2 Matrix: Water Analysis Batch: 19534	MB	мв					Client Sa	ample ID: Metho Prep Type: 1	
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			04/13/12 10:41	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/13/12 10:41	1
Nitrite as N	ND		0.15	0.11	mg/L			04/13/12 10:41	1

Spike

Added

1.13

2.65

1.52

LCS LCS

1.09

2.61

1.52

Result Qualifier

Lab Sample ID: LCS 440-19534/3

Lab Sample ID: 440-8571-N-1 MS

Matrix: Water

Analyte

Nitrate as N

Nitrite as N

Nitrate Nitrite as N

Analysis Batch: 19534

Method: 300.0 - Anions, Ion Chromatography (Continued)

Client Sample ID: Lab Control Sample

%Rec.

Limits

90 - 110

90 - 110

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

D

Unit

mg/L

mg/L

mg/L

%Rec

97

98

100

7

90 - 110 **Client Sample ID: Matrix Spike** Prep Type: Total/NA

Matrix: Water Analysis Batch: 19534

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	30		11.3	41.2		mg/L		99	80 - 120	
Nitrate Nitrite as N	30		26.5	57.8		mg/L		105	80 - 120	
Nitrite as N	ND		15.2	16.6		mg/L		109	80 - 120	

Lab Sample ID: 440-8571-N-1 MSD Matrix: Water Analysis Batch: 19534

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	30		11.3	41.8		mg/L		104	80 - 120	1	20
Nitrate Nitrite as N	30		26.5	58.3		mg/L		107	80 - 120	1	20
Nitrite as N	ND		15.2	16.5		mg/L		108	80 - 120	0	20

Lab Sample ID: MB 440-19535/2 Matrix: Water 40505

Analysis Batch: 19535									
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L			04/13/12 10:41	1
Sulfate	ND		0.50	0.40	mg/L			04/13/12 10:41	1

Lab Sample ID: LCS 440-19535/3 Matrix: Water

Analysis Batch: 19535								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	 5.00	4.76		mg/L	_	95	90 _ 110	
Sulfate	10.0	9.46		mg/L		95	90 _ 110	

Lab Sample ID: 440-8571-N-1 MS Matrix: Water Analysis Batch: 19535

Analysis Baten. 10000	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	170		50.0	214		mg/L		88	80 - 120	
Sulfate	110		100	197		mg/L		86	80 - 120	

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-8571-N-1 MSD Matrix: Water								Clien	τ Sa	ampie IL	: Matrix Sp Prep T		-
Analysis Batch: 19535													
-	Sample	Sample	Spike		MSD	MSD					%Rec.		RPI
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limi
Chloride	170		50.0		218		mg/L		_	96	80 - 120	2	2
Sulfate	110		100		199		mg/L			89	80 - 120	1	2
Lab Sample ID: MB 440-19785/2										Client S	ample ID: I	Method	l Blan
Matrix: Water										onent o	Prep T		
Analysis Batch: 19785											Fieb 1	ype. it	
Analysis Datch. 19705		МВ МВ											
Analyte	R	esult Qualifier		RL		MDL Unit		D	P	repared	Analyz	ha	Dil Fa
Chloride				0.50		0.40 mg/L				opulou	04/14/12		Dirta
Sulfate		ND		0.50		0.40 mg/L					04/14/12		
						-							
Lab Sample ID: LCS 440-19785/3								Cli	ent	Sample	ID: Lab Co		
Matrix: Water											Prep T	ype: To	otal/N/
Analysis Batch: 19785													
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		
Chloride			5.00		4.68		mg/L			94	90 - 110		
Sulfate			10.0		9.37		mg/L			94	90 - 110		
Lab Sample ID: 440-8670-A-1 MS										Client	Sample ID:	Matrix	(Snik
Matrix: Water										onent	Prep T		
Analysis Batch: 19785											Tiebi	ype. re	
Analysis Datch. 19705	Sample	Sample	Spike		MS	MS					%Rec.		
Analyte		Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits		
Chloride	0.93		5.00		5.48		mg/L		—	91	80 - 120		
Sulfate	1.4		10.0		10.7		mg/L			93	80 - 120		
								0					
Lab Sample ID: 440-8670-A-1 MSD								Clien	τ 5a	imple IL	: Matrix Sp		
Matrix: Water											Prep T	ype: To	otal/N/
Analysis Batch: 19785													
	-	Sample	Spike		MSD	MSD			_	a/ 5	%Rec.		RP
Analyte		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits	RPD	Lim
Chloride	0.93		5.00		5.46		mg/L			90	80 - 120	0	2
Sulfate	1.4		10.0		10.8		mg/L			94	80 - 120	1	2
lethod: 314.0 - Perchlorate (IC	C)												
Lab Sample ID: MB 440-21754/5										Client S	ample ID: I		
Matrix: Water											Prep T	ype: To	otal/N
Analysis Batch: 21754													
		MB MB											
Analyte	R	esult Qualifier		RL		MDL Unit		D	P	repared	Analyz	ed	Dil Fa
Perchlorate		ND		4.0		0.95 ug/L					04/25/12 (08:33	
Lab Sample ID: LCS 440-21754/2								Cli	ent	Sample	ID: Lab Co	ontrol S	Sampl
Matrix: Water											Prep T		
Analysis Batch: 21754												,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
			Spike		LCS	LCS					%Rec.		
						-							
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 440-21754/3 M Matrix: Water	NRL						Client	Sample	ID: Lab C Prep T	ontrol S ype: To	
Analysis Batch: 21754											
-			Spike	MRL	MRL				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Perchlorate			4.00	3.75	J,DX	ug/L		94			
Lab Sample ID: 440-8994-N-5 MS								Client	Sample ID	: Matrix	Spike
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 21754											
-	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Perchlorate	ND		25.0	21.4		ug/L		86	80 - 120		
- Lab Sample ID: 440-8994-N-5 MSD							Client Sa	ample IC): Matrix S	pike Dup	olicate
Matrix: Water								- C.		ype: To	
Analysis Batch: 21754											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perchlorate	ND		25.0	22.1		ug/L		88	80 - 120	3	20

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

Lab Sample ID: G2D230000077B Matrix: Water Analysis Batch: 2114077								ample ID: Metho Prep Typ Prep Batch: 211	e: Total
	MB	MB							
Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000093	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total TCDD	0.000038	JQ	0.000010	0.00000041	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8-HxCDD	0.0000011	JQ	0.000050	0.00000013	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,6,7,8-HxCDD	0.0000017	J	0.000050	0.00000013	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8,9-HxCDD	0.0000024	J	0.000050	0.00000011	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HxCDD	0.0000053	JQ	0.000050	0.00000012	ug/L		04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,6,7,8-HpCDD	0.0000037	J	0.000050	0.00000057	ug/L		04/23/12 09:00	04/24/12 16:35	1
Total HpCDD	0.0000064	J	0.000050	0.00000057	ug/L		04/23/12 09:00	04/24/12 16:35	1
			/ -						

Total HxCDD	0.0000053	JQ	0.000050	0.00000012	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,6,7,8-HpCDD	0.0000037	J	0.000050	0.00000057	ug/L	04/23/12 09:00	04/24/12 16:35	1
Total HpCDD	0.0000064	J	0.000050	0.00000057	ug/L	04/23/12 09:00	04/24/12 16:35	1
OCDD	0.000016	J	0.00010	0.00000040	ug/L	04/23/12 09:00	04/24/12 16:35	1
2,3,7,8-TCDF	ND		0.000010	0.0000088	ug/L	04/23/12 09:00	04/24/12 16:35	1
Total TCDF	ND		0.000010	0.0000088	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8-PeCDF	0.0000031	JQ	0.000050	0.00000049	ug/L	04/23/12 09:00	04/24/12 16:35	1
2,3,4,7,8-PeCDF	0.0000019	JQ	0.000050	0.0000048	ug/L	04/23/12 09:00	04/24/12 16:35	1
Total PeCDF	0.0000050	JQ	0.000050	0.00000048	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8-HxCDF	0.0000037	JQ	0.000050	0.00000030	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,6,7,8-HxCDF	0.0000020	J	0.000050	0.00000030	ug/L	04/23/12 09:00	04/24/12 16:35	1
2,3,4,6,7,8-HxCDF	0.0000020	J	0.000050	0.00000030	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,7,8,9-HxCDF	0.0000016	JQ	0.000050	0.00000030	ug/L	04/23/12 09:00	04/24/12 16:35	1
Total HxCDF	0.000011	JQ	0.000050	0.00000030	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,6,7,8-HpCDF	0.000035	J	0.000050	0.0000016	ug/L	04/23/12 09:00	04/24/12 16:35	1
1,2,3,4,7,8,9-HpCDF	0.0000041	J	0.000050	0.0000018	ug/L	04/23/12 09:00	04/24/12 16:35	1
Total HpCDF	0.0000094	J	0.000050	0.00000017	ug/L	04/23/12 09:00	04/24/12 16:35	1
OCDF	0.0000070	J	0.00010	0.0000031	ug/L	04/23/12 09:00	04/24/12 16:35	1

Limits

Limits

25 - 164

25 - 181

32 - 141

28 - 130

23 - 140

17 - 157

24 - 169

24 - 185

21 - 178

26 - 123

28 - 136

29 147

28 - 143

26 - 138

26 - 152

35 - 197

Lab Sample ID: G2D230000077B

Analysis Batch: 2114077

Matrix: Water

37CI4-2,3,7,8-TCDD

Internal Standard

13C-2,3,7,8-TCDD

13C-OCDD

13C-2,3,7,8-TCDF

13C-1,2,3,7,8-PeCDF

13C-2,3,4,7,8-PeCDF

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

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

13C-1,2,3,4,6,7,8-HpCDF

13C-1,2,3,4,7,8,9-HpCDF

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

13C-1,2,3,7,8-PeCDD

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

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

13C-1,2,3,4,6,7,8-HpCDD

Surrogate

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

MB MB Qualifier

MB MB

Qualifier

86

41

50

54

53

72

56

34

39

43

50

47

50

52

58

47

%Recoverv

%Recovery

Client Sample ID: Method Blank

Analyzed

04/24/12 16:35

Analyzed

04/24/12 16:35

04/24/12 16:35

04/24/12 16:35

04/24/12 16:35

04/24/12 16:35

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Prepared

04/23/12 09:00

Prepared

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04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

04/23/12 09:00

Prep Type: Total

Dil Fac

Dil Fac

1

Prep Batch: 2114077 P

	1	8
	1	
	1	g
	1	
	1	
	1	
	1	
	1	
	1	

1

1

1

1

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

LCS LCS %Rec. Spike Analyte Added **Result Qualifier** Unit D %Rec Limits 2,3,7,8-TCDD 0.000200 0.000181 67 - 158 ug/L 91 1,2,3,7,8-PeCDD 0.00100 0.000877 ug/L 88 70 - 142 0.00100 0.000920 B 1,2,3,4,7,8-HxCDD ug/L 92 70 - 164 90 1,2,3,6,7,8-HxCDD 0.00100 0.000904 B 76 - 134 ug/L 1,2,3,7,8,9-HxCDD 0.00100 0.000924 B ug/L 92 64 - 162 1,2,3,4,6,7,8-HpCDD 0.00100 0.000954 B 95 70 - 140 ug/L OCDD 0.00200 0.00188 B ug/L 94 78 - 144 ug/L 2.3.7.8-TCDF 0.000200 0.000194 75 - 158 97 1,2,3,7,8-PeCDF 0.00100 0.000945 B ug/L 94 80 - 134 2,3,4,7,8-PeCDF 0.00100 0.000869 B ug/L 87 68 - 160 1,2,3,4,7,8-HxCDF 0.00100 0.000957 B ug/L 96 72 - 134 1,2,3,6,7,8-HxCDF 0.00100 0.000963 B ug/L 96 84 - 130 95 70 - 156 2,3,4,6,7,8-HxCDF 0.00100 0.000955 B ug/L 0.00100 101 78 - 130 1,2,3,7,8,9-HxCDF 0.00101 B ug/L 1,2,3,4,6,7,8-HpCDF 0.000948 B 0.00100 ug/L 95 82 - 122 1,2,3,4,7,8,9-HpCDF 0.00100 0.000904 B ug/L 90 78 - 138 OCDF 0.00200 0.00173 B 87 63 - 170ug/L

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191
	LCS	LCS	
Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	41		20 - 175
13C-1,2,3,7,8-PeCDD	48		21 - 227

Client Sample ID: Lab Control Sample Prep Type: Total

Prep Batch: 2114077_P

7

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

43

Lab Sample ID: G2D230000077C **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total Prep Batch: 2114077_P Analysis Batch: 2114077 LCS LCS Internal Standard %Recovery Qualifier Limits 13C-1,2,3,4,7,8-HxCDD 51 21 _ 193 13C-1,2,3,6,7,8-HxCDD 50 25 - 163 13C-1,2,3,4,6,7,8-HpCDD 71 26 - 166 13C-OCDD 13 - 199 58 22 - 152 13C-2,3,7,8-TCDF 34 13C-1,2,3,7,8-PeCDF 36 21 - 192 13C-2,3,4,7,8-PeCDF 40 13 - 328 13C-1,2,3,6,7,8-HxCDF 48 21 - 159 13C-2,3,4,6,7,8-HxCDF 44 22 - 176 13C-1,2,3,7,8,9-HxCDF 48 17 - 205 13C-1,2,3,4,6,7,8-HpCDF 52 21_158 13C-1,2,3,4,7,8,9-HpCDF 58 20 - 186

19 - 202

Method: 200.7 Rev 4.4 - Metals (ICP)

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

Lab Sample ID: MB 440-21269/1-A Matrix: Water Analysis Batch: 21678											ample ID: Meth ype: Total Rec Prep Bate	overable
	MB											
Analyte	Result	Qualifier	R	-	MDL	Unit		D	Р	repared	Analyzed	Dil Fac
Iron	ND		0.04)	0.015	mg/L			04/2	3/12 08:06	04/24/12 14:17	1
Zinc	ND		2)	6.0	ug/L			04/2	3/12 08:06	04/24/12 14:17	1
Lab Sample ID: LCS 440-21269/2-A								c	lient	Sample	ID: Lab Contro	I Sample
Matrix: Water										Prep T	ype: Total Rec	overable
Analysis Batch: 21678											Prep Bato	h: 21269
			Spike	LCS	LCS						%Rec.	
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits	
Iron			0.500	0.490			mg/L			98	85 - 115	
Zinc			500	489			ug/L			98	85 - 115	
Lab Sample ID: 440-8616-1 MS								Clie	ent S	ample ID:	: Outfall 018 Co	omposite
Matrix: Water											ype: Total Rec	

Analysis Batch: 21678									Prep	Batch: 21269
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Iron	ND		0.500	0.498		mg/L		100	70 - 130	
Zinc	ND		500	510		ug/L		102	70 - 130	

Lab Sample ID: 440-8616-1 MS	ample II	D: Outfall (018 Com	posite							
Matrix: Water								Prep	Type: Tota	al Recov	erable
Analysis Batch: 21678									Pre	p Batch:	21269
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	ND		0.500	0.508		mg/L		102	70 - 130	2	20
Zinc	ND		500	522		ug/L		104	70 - 130	2	20

RL

20

0.040

Spike

Added

0.500

500

MDL Unit

0.015 mg/L

LCS LCS

0.506

502

Result Qualifier

6.0 ug/L

D

Unit

mg/L

ug/L

Prepared

04/23/12 10:11

04/23/12 10:11

Client Sample ID:

%Rec

101

100

D

Prep Type

85 - 115

Lab Sample ID: MB 440-21302/1-A

Lab Sample ID: LCS 440-21302/2-A

Matrix: Water

Matrix: Water

Analyte

Analyte

Iron

Zinc

Iron

Zinc

Analysis Batch: 21614

Analysis Batch: 21614

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

MB MB Result Qualifier

ND

ND

Analyzed

04/24/12 11:42

04/24/12 11:42

Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 21302 Dil Fac 1 1

7

Dulliah Control Commis	
D: Lab Control Sample	
ype: Total Recoverable	
Prep Batch: 21302	
%Rec.	
Limits	
85 - 115	

Sample ID:	Matrix Spike
Data a Tra	Disseluted

,	
2	

Lab Sample ID: 440-8609-F-12	-F MS							Client	Sample ID	D: Matrix Spike	
Matrix: Water									Prep Ty	pe: Dissolved	40
Analysis Batch: 21614									Pre	o Batch: 21302	12
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		13
Iron	0.13		0.500	0.613		mg/L		97	70 _ 130		
Zinc	ND		500	495		ug/L		99	70 - 130		

Lab Sample ID: 440-8609-F-12-G MSD CI									Client Sample ID: Matrix Spike Duplicate					
Matrix: Water									Prep Ty	/pe: Diss	solved			
Analysis Batch: 21614									Prep	Batch:	21302			
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Iron	0.13		0.500	0.632		mg/L		101	70 - 130	3	20			
Zinc	ND		500	499		ug/L		100	70 - 130	1	20			

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-21402/1 Matrix: Water Analysis Batch: 22628							mple ID: Metho /pe: Total Reco Prep Batch	verable
	MB MB				_			
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	1.0	0.10	ug/L		04/23/12 17:06	04/28/12 18:39	1
Copper	ND	2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1
Lead	ND	1.0	0.20	ug/L		04/23/12 17:06	04/28/12 18:39	1
Selenium	ND	2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1
Lab Sample ID: LCS 440-21402/2	2- A				c	lient Sample I	D: Lab Control	Sample

Matrix: Water Prep Type: Total Recoverable Analysis Batch: 22628 Prep Batch: 21402 Spike LCS LCS %Rec. Analyte Added **Result Qualifier** Unit D %Rec Limits Cadmium 80.0 79.1 99 85 - 115 ug/L Copper 80.0 76.4 ug/L 96 85 - 115 Lead 80.0 79.2 ug/L 99 85 - 115 Selenium 80.0 86.4 ug/L 108 85 - 115

Spike

Added

80.0

MS MS

82.4

Result Qualifier

Unit

ug/L

D

%Rec

103

Lab Sample ID: 440-8779-K-1-D MS

Matrix: Water

Analyte

Cadmium

Analysis Batch: 22628

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

Sample Sample

ND

Result Qualifier

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

%Rec.

Limits

70 - 130

Prep Batch: 21402

7

Caumum	ND		60.0		02.4		ug/L		103	10 - 130		
Copper	1.6	J,DX	80.0		74.7		ug/L		91	70 - 130		
Lead	ND		80.0		81.3		ug/L		102	70 - 130		
Selenium	1.0	J,DX	80.0		86.8		ug/L		107	70 - 130		
_ Lab Sample ID: 440-8779-K-1-E	MSD							Client S	Sample ID:	: Matrix Sp	ike Du	plicate
Matrix: Water										ype: Total		-
Analysis Batch: 22628									i icp i			21402
Analysis Datch. 22020	Sample	Sample	Spike		мер	MSD				%Rec.	Datch.	RPD
Analyta	-	Qualifier	Added			Qualifier	Unit	D	%Rec	Limits	RPD	
Analyte						Quaimer						Limit
Cadmium	ND		80.0		80.2		ug/L		100	70 - 130	3	20
Copper		J,DX	80.0		73.3		ug/L		90	70 - 130	2	20
Lead	ND		80.0		81.7		ug/L		102	70 - 130	1	20
Selenium -	1.0	J,DX	80.0		85.1		ug/L		105	70 - 130	2	20
Lab Sample ID: MB 440-20065/	1-B								Client Sa	ample ID: M	Nethod	l Blank
Matrix: Water										Prep Typ	oe: Dis	solved
Analysis Batch: 23203										Prep	Batch:	21301
		MB MB										
Analyte	R	esult Qualifier		RL		MDL Unit		DI	Prepared	Analyz	ed	Dil Fac
Cadmium		ND		1.0		0.10 ug/L		04/	23/12 10:08	05/01/12 2	22:05	1
Copper		ND		2.0		0.50 ug/L		04/	23/12 10:08	05/01/12 2	22:05	1
Lead		ND		1.0		0.20 ug/L			23/12 10:08	05/01/12 2		1
Selenium		ND		2.0		0.50 ug/L			23/12 10:08	05/01/12 2		1
- - 	(0 D							011-0-0	4 O I			
Lab Sample ID: LCS 440-20065	/ 2-D							Clien	it Sample	ID: Lab Co		
Matrix: Water										Prep Ty		
Analysis Batch: 23203			• •								Batch:	21301
			Spike		LCS					%Rec.		
Analyte			Added			Qualifier	Unit	D	%Rec	Limits		
Cadmium			80.0		84.5		ug/L		106	85 - 115		
Copper			80.0		82.7		ug/L		103	85 - 115		
Lead			80.0		75.8		ug/L		95	85 - 115		
Selenium			80.0		77.3		ug/L		97	85 - 115		
_ Lab Sample ID: 440-8609-F-11-	EMS								Client	Sample ID:	Matrix	Spike
Matrix: Water										Prep Typ	oe: Dis	solved
Analysis Batch: 23203												21301
· · · · · , · · · · · · · · · · · · · · · · · · ·	Sample	Sample	Spike		MS	MS				%Rec.		
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit	D	%Rec	Limits		
Cadmium	ND		80.0		85.8		ug/L		107	70 - 130		
Copper	2.9		80.0		82.3		ug/L		99	70 - 130		
Lead	ND		80.0		76.3		ug/L		99 95	70 - 130 70 - 130		
Selenium 	ND		80.0		77.3		ug/L		97	70 - 130		
Lab Sample ID: 440-8609-F-11-	F MSD							Client S	ample ID:	Matrix Sp		
Matrix: Water										Prep Typ		
Analysis Batch: 23203										Prep	Batch:	21301
	Sample	Sample	Spike		MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0		85.1		ug/L		106	70 - 130	1	20
			-							Test	America	Irvine
			Page 3	31 of	114					5	5/20/20)12

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

Lab Sample ID: 440-8609-F-11 Matrix: Water Analysis Batch: 23203	I-F MSD						Client Sa	ample IC		pike Dup pe: Diss Batch: :	solved
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Copper	2.9		80.0	82.2		ug/L		99	70 - 130	0	20
Lead	ND		80.0	76.2		ug/L		95	70 - 130	0	20
Selenium	ND		80.0	76.7		ug/L		96	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-20031/1-A										Client Sa	mple ID: N		
Matrix: Water											Prep Ty		
Analysis Batch: 20257											Prep l	Batch:	2003
		MB MB											
Analyte	R	esult Quali	fier	RL		MDL Unit		D .		repared	Analyze		Dil Fa
Mercury		ND		0.20		0.10 ug/L			04/16	6/12 15:03	04/17/12 1	2:34	
Lab Sample ID: LCS 440-20031/2-A	κ							CI	lient	Sample	D: Lab Co	ntrol S	ampl
Matrix: Water											Prep Ty	pe: To	tal/N/
Analysis Batch: 20257											Prep l	Batch:	2003
			Spike		LCS	LCS					%Rec.		
Analyte			Added	I	Result	Qualifier	Unit		D	%Rec	Limits		
Mercury			8.00		8.15		ug/L			102	85 - 115		
Lab Sample ID: 440-8609-G-14-B N	NS									Client S	Sample ID:	Matrix	Spik
Matrix: Water											Prep Ty	pe: To	tal/N/
Analysis Batch: 20257											Prep	Batch:	2003
-	Sample	Sample	Spike		MS	MS					%Rec.		
Analyte	Result	Qualifier	Added	1	Result	Qualifier	Unit		D	%Rec	Limits		
Mercury	ND		8.00		7.88		ug/L			98	70 - 130		
- Lab Sample ID: 440-8609-G-14-C N	ISD							Clier	nt Sa	mple ID:	Matrix Spi	ke Du	olicat
Matrix: Water											Prep Ty	pe: To	tal/N/
Analysis Batch: 20257												Batch:	
	Sample	Sample	Spike		MSD	MSD					«Rec.		RP
Analyte	Result	Qualifier	Added	I	Result	Qualifier	Unit		D	%Rec	Limits	RPD	Lim
											70 400	1.86	2
	ND		8.00		8.03		ug/L			100	70 - 130	1.00	-
Mercury			8.00		8.03		ug/L						Blan
Mercury Lab Sample ID: MB 440-19679/1-C			8.00		8.03		ug/L				mple ID: N	lethod	
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water			8.00		8.03		ug/L				mple ID: N Prep Typ	lethod e: Diss	solve
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water		МВ МВ	8.00		8.03		ug/L				mple ID: N Prep Typ	lethod	olve
Mercury Lab Sample ID: MB 440-19679/1-C		MB MB esult Qualit		RL		MDL Unit	ug/L	D			mple ID: N Prep Typ	lethod e: Diss Batch:	solve 2004
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte				RL 0.20		MDL Unit	ug/L		Pr	Client Sa	mple ID: M Prep Typ Prep I	lethod e: Diss Batch: d	olve 2004 Dil Fa
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte Mercury	R	esult Quali					ug/L		Pr 04/16	Client Sa repared 5/12 15:30	Ample ID: M Prep Typ Prep I Analyze 04/18/12 12	lethod e: Diss Batch: d 2:13	Dil Fa
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte Mercury Lab Sample ID: LCS 440-19679/2-C	R	esult Quali					ug/L		Pr 04/16	Client Sa repared 5/12 15:30	Analyze 04/18/12 12	lethod e: Diss Batch: d 2:13 -	olve 2004 Dil Fa
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte Mercury Lab Sample ID: LCS 440-19679/2-C Matrix: Water	R	esult Quali					ug/L		Pr 04/16	Client Sa repared 5/12 15:30	Analyze 04/18/12 1: D: Lab Co Prep Typ	lethod e: Diss Batch: d 2:13 ntrol S e: Diss	olve 2004 Dil Fa ampl solve
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte Mercury Lab Sample ID: LCS 440-19679/2-C Matrix: Water	R	esult Quali					ug/L		Pr 04/16	Client Sa repared 5/12 15:30	Analyze 04/18/12 1: D: Lab Co Prep Typ	lethod e: Diss Batch: d 2:13 -	2004 Dil Fa ample
Mercury Lab Sample ID: MB 440-19679/1-C Matrix: Water Analysis Batch: 20502 Analyte Mercury Lab Sample ID: LCS 440-19679/2-C	R	esult Quali	fier	0.20	LCS	0.10 ug/L	ug/L		Pr 04/16	Client Sa repared 5/12 15:30	Analyze 04/18/12 1: D: Lab Co Prep Typ Prep Typ	lethod e: Diss Batch: d 2:13 ntrol S e: Diss	2004 2004 Dil Fa ample

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

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 440-8443-G-1-C	S MS									Client	Sample ID		
Matrix: Water											Prep Ty	-	
Analysis Batch: 20502												Batch:	20049
	Sample			Spike		MS			_		%Rec.		
Analyte	Result	Qualifi	ier	Added		Qualifier	Unit		D	%Rec	Limits		
Mercury	ND			8.00	8.10		ug/L			101	70 - 130		
Lab Sample ID: 440-8443-G-1-D	MSD							Client	Sa	mple ID	: Matrix S	oike Du	olicate
Matrix: Water											Prep Ty	pe: Diss	solved
Analysis Batch: 20502											Prep	Batch:	20049
-	Sample	Sampl	le	Spike	MSD	MSD					%Rec.		RPD
Analyte	Result	Qualifi	ier	Added	Result	Qualifier	Unit	0	C	%Rec	Limits	RPD	Limit
				8.00	8.18		ug/L			102	70 - 130	1.00	20
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1		c Co	nducta							Client S	ample ID:		
Mercury lethod: 120.1 - Conductivi Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954	ty, Specifi									Client S		Method ype: To	
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954	ty, Specifi 1	MB N	МВ								Prep T	уре: То	tal/NA
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte	ty, Specifi 1	MB N esult C			RL	RL Unit		D		Client S epared	Prep T Analyz	ype: To	tal/NA
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water	ty, Specifi 1	MB N	МВ				Dos/cm	D			Prep T	ype: To	tal/NA
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte	ty, Specifi 1 	MB N esult C	МВ		RL		- ps/cm		Pr	epared	Prep T Analyz	2ed 10:13	Dil Fac
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte Specific Conductance	ty, Specifi 1 	MB N esult C	МВ		RL		os/cm		Pr	epared	Prep T 	2ed 10:13	Dil Fac
lethod: 120.1 - Conductivit Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte Specific Conductance Lab Sample ID: LCS 440-19954/	ty, Specifi 1 	MB N esult C	МВ		RL		os/cm		Pr	epared	Prep T 	ype: To 2ed 10:13 - ontrol S	Dil Fac
lethod: 120.1 - Conductivin Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte Specific Conductance Lab Sample ID: LCS 440-19954/ Matrix: Water	ty, Specifi 1 	MB N esult C	МВ	INCE Spike	RL 1.0		os/cm		Pr	epared Sample	Prep T Analyz 04/16/12 ID: Lab C Prep T %Rec.	ype: To 2ed 10:13 - ontrol S	Dil Fac
lethod: 120.1 - Conductivin Lab Sample ID: MB 440-19954/1 Matrix: Water Analysis Batch: 19954 Analyte Specific Conductance Lab Sample ID: LCS 440-19954/ Matrix: Water	ty, Specifi 1 	MB N esult C	МВ	ince	RL 1.0 LCS	1.0 umho	os/cm	Clie	Pr	epared	Prep T Analyz 04/16/12 ID: Lab Co Prep T	ype: To 2ed 10:13 - ontrol S	Dil Fac

Prep Type: Total/NA

Analysis Batch: 19954									
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RP	D	Limit
Specific Conductance	750		 755		umhos/cm	_	 0.	7	5

Method: 1664A - HEM and SGT-HEM

Matrix: Water

Lab Sample ID: MB 440-21756/1-A Matrix: Water Analysis Batch: 21846	мв	МВ									Client Sa	ample ID: Metho Prep Type: ⁻ Prep Batc	Total/NA
Analyte	Result	Qualifier		RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
НЕМ	ND			5.0		1.4	mg/L		_	04/2	5/12 06:36	04/25/12 11:29	1
Lab Sample ID: LCS 440-21756/2-A									с	lient	Sample	ID: Lab Control	Sample
Matrix: Water												Prep Type: ⁻	Total/NA
Analysis Batch: 21846												Prep Batc	h: 21756
			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Qual	ifier	Unit		D	%Rec	Limits	
HEM			20.0		19.0			mg/L		_	95	78 - 114	

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

Lab Sample ID: LCSD 440-21756/3-A Matrix: Water				Clie	nt Sam	ple ID:	Lab Contro Prep T	l Sampl ype: To	
Analysis Batch: 21846							Prep	Batch:	21756
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
HEM	20.0	18.6		mg/L		93	78 ₋ 114	2	11

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-19801/6										Client	Sample ID: Metho	d Blank
Matrix: Water											Prep Type: ⁻	Total/NA
Analysis Batch: 19801												
-		MB MB										
Analyte	Re	sult Qualifier		RL		MDL	Unit		D	Prepared	Analyzed	Dil Fa
Turbidity		ND		0.10		0.040	NTU				04/14/12 12:18	
Lab Sample ID: MRL 440-19801/4 M	RL								Clier	it Sampl	le ID: Lab Control	Sample
Matrix: Water											Prep Type: ⁻	Total/NA
Analysis Batch: 19801												
			Spike		MRL	MRL					%Rec.	
Analyte			Added		Result	Quali	fier	Unit	D	%Rec	Limits	
Turbidity			1.00		1.04			NTU		104		
Lab Sample ID: 440-8616-1 DU									Client \$	Sample	ID: Outfall 018 Co	mposite
Matrix: Water											Prep Type: ⁻	Total/NA
Analysis Batch: 19801												
	Sample	Sample			DU	DU						RPD
Analyte	Result	Qualifier			Result	Quali	fier	Unit	D		RP	D Limi

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

Lab Sample ID: MB 440-19957/1 Matrix: Water											C	Client S	ample ID: Meth Prep Type:		
Analysis Batch: 19957		MB N	ИВ										гер туре.	TOLA	
Analyte	R		Qualifier		RL		MDL	Unit		D	Pre	pared	Analyzed	Di	il Fac
Total Dissolved Solids		ND			10		10	mg/L					04/16/12 10:21		1
Lab Sample ID: LCS 440-19957/2										Clie	nt S	Sample	ID: Lab Contro	l San	nple
Matrix: Water													Prep Type:	Tota	I/NA
Analysis Batch: 19957															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		2	%Rec	Limits		
Total Dissolved Solids				1000		934			mg/L			93	90 - 110		
Lab Sample ID: 440-8418-B-1 DU												Clie	ent Sample ID: [Dupli	cate
Matrix: Water													Prep Type:	Tota	I/NA
Analysis Batch: 19957															
	Sample	Sampl	le			DU	DU								RPD
Analyte	Result	Qualif	ier			Result	Qual	ifier	Unit		C		RP	D	Limit
Total Dissolved Solids	2600					2710			mg/L		_		3.0	00	10

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

Lab Sample ID: MB 440-20891/1 Matrix: Water											•	Client S	ample ID: Metho Prep Type:		
Analysis Batch: 20891		мв	мв										Trop Type.		
Analyte	R		Qualifier		RL		MDL	Unit		D	Pr	epared	Analyzed	I	Dil Fac
Total Suspended Solids		ND	·		10		10	mg/L					04/19/12 23:17		1
 Lab Sample ID: LCS 440-20891/2										Clie	nt	Sample	ID: Lab Control	l Sa	ample
Matrix: Water													Prep Type:	Tot	al/NA
Analysis Batch: 20891															
-				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit	I	D	%Rec	Limits		
Total Suspended Solids				1000		1000			mg/L			100	85 - 115		
Lab Sample ID: 440-8689-H-1 DU												Clie	ent Sample ID: D)up	licate
Matrix: Water													Prep Type:	Tot	al/NA
Analysis Batch: 20891															
-	Sample	Samp	le			DU	DU								RPD
Analyte	Result	Qualit	fier			Result	Qual	ifier	Unit	I	D		RP	D	Limit
Total Suspended Solids	63					64.0			mg/L				2.0	00	10

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

Lab Sample ID: MB 440-22248/1-A Matrix: Water Analysis Batch: 22273	MB MB								Client Sa		Method ype: To Batch:	tal/NA
Analyte	Result Qualifi	er	RL		MDL Uni	t	D	Р	repared	Analyz	ed	Dil Fac
Cyanide, Total	ND		5.0		3.0 ug/l	_			6/12 18:24	04/26/12		1
Lab Sample ID: LCS 440-22248/2-A							С	lient	Sample	ID: Lab Co	ontrol Sa	ample
Matrix: Water										Prep T	ype: To	tal/NA
Analysis Batch: 22273										Prep	Batch:	22248
		Spike		LCS	LCS					%Rec.		
Analyte		Added		Result	Qualifier	Unit		D	%Rec	Limits		
Cyanide, Total		100		110		ug/L			110	90 - 110		
Lab Sample ID: 440-9403-A-1-A MS									Client	Sample ID	: Matrix	Spike
Matrix: Water										Prep T	ype: To	tal/NA
Analysis Batch: 22273										Prep	Batch:	22248
Sample	Sample	Spike		MS	MS					%Rec.		
Analyte Result	Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits		
Cyanide, Total ND		100		104		ug/L			104	70 _ 115		
Lab Sample ID: 440-9403-A-1-C MSD							Clie	nt Sa	ample ID:	: Matrix Sp	oike Dup	licate
Matrix: Water									-	· Prep T	ype: To	tal/NA
Analysis Batch: 22273											Batch:	
Sample	Sample	Spike		MSD	MSD					%Rec.		RPD
Analyte Result	Qualifier	Added		Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Cyanide, Total ND		100		108		ug/L			108	70 _ 115	4	15

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-22283/1-A												Client Sa	mple ID:	Method	Blank
Matrix: Water													Prep [·]	Type: To	tal/NA
Analysis Batch: 22286													Pre	p Batch:	22283
		MB I	MB												
Analyte	Re	esult (Qualifier		RL		MDL	Unit		D	P	repared	Analy	zed	Dil Fac
Ammonia (as N)		ND			0.400		0.157	mg/L			04/2	5/12 20:35	04/25/12	22:00	1
Lab Sample ID: LCS 440-22283/2-A										Cli	ent	Sample	ID: Lab C	ontrol S	ample
Matrix: Water													Prep [·]	Type: To	tal/NA
Analysis Batch: 22286													Pre	p Batch:	22283
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Ammonia (as N)				10.0		9.520			mg/L		_	95	85 - 115		
Lab Sample ID: 440-8616-1 MS										Clien	t Sa	ample ID:	Outfall ()18 Com	posite
Matrix: Water													Prep [·]	Туре: То	tal/NA
Analysis Batch: 22286													Pre	p Batch:	22283
-	Sample	Samp	le	Spike		MS	MS						%Rec.		
Analyte	Result	Qualif	ier	Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Ammonia (as N)	0.280	J,DX		10.0		9.800			mg/L		_	95	70 - 120		
Lab Sample ID: 440-8616-1 MSD										Clien	t Sa	ample ID:	Outfall ()18 Com	posite
Matrix: Water													Prep [·]	Туре: То	tal/NA
Analysis Batch: 22286													Pre	p Batch:	22283
	Sample	Samp	le	Spike		MSD	MSD						%Rec.		RPD
Analyte	Result	Qualif	ier	Added		Result	Qual	ifier	Unit		D	%Rec	Limits	RPD	Limit
				10.0		9.800			mg/L		_	95	70 - 120	0	15

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

Lab Sample ID: MB 440-19718/3 Matrix: Water												Client S	ample ID: Metho Prep Type: 1	
Analysis Batch: 19718														
		МВ	МВ											
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Pr	epared	Analyzed	Dil Fac
Methylene Blue Active Substances		ND			0.10		0.050	mg/L					04/13/12 18:44	1
- Lab Sample ID: LCS 440-19718/4										Clie	ent	Sample	ID: Lab Control	Sample
Matrix: Water													Prep Type: 1	Fotal/NA
Analysis Batch: 19718														
-				Spike		LCS	LCS						%Rec.	
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Methylene Blue Active				0.250		0.252			mg/L			101	90 - 110	
Substances														
 Lab Sample ID: 440-8447-S-2 MS												Client	Sample ID: Matr	ix Spike
Matrix: Water													Prep Type: 1	Total/NA
Analysis Batch: 19718														
-	Sample	Sam	ple	Spike		MS	MS						%Rec.	
Analyte	Result	Qual	ifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Methylene Blue Active	ND			0.250		0.241			mg/L			97	50 - 125	
Substances														

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

Lab Sample ID: 440-8447-S-2 MSD Matrix: Water Analysis Batch: 19718									Clien	t Sa	imple ID): Matrix Sp Prep T	oike Dup ype: To	
-	Sample	Samp	le	Spike	MSI) MS	SD					%Rec.		RPD
Analyte	Result	Qualif	ier	Added	Resul	t Qu	alifier	Unit		D	%Rec	Limits	RPD	Limit
Methylene Blue Active Substances	ND			0.250	0.23	3		mg/L			95	50 - 125	1.47	20
Method: SM5210B - BOD, 5 Day Lab Sample ID: USB 440-19790/1 US											Client S	iompio ID:	Mathad	Plank
Matrix: Water											Chefit 3	ample ID:	vpe: To	
Analysis Batch: 19790												Fiehi	ype. To	lai/INA
		USB	USB											
Analyte	R	esult (Qualifier		RL	MDI	L Unit		D	Pr	repared	Analyz	ed	Dil Fac
Biochemical Oxygen Demand		ND			2.0	0.50	0 mg/L					04/14/12	10:27	1

Lab Sample ID: LCS 440-19790/4 Matrix: Water					Client	Sample	ID: Lab Contro Prep Type:	
Analysis Batch: 19790	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Biochemical Oxygen Demand	199	197		mg/L		99	85 - 115	
Lab Sample ID: LCSD 440-19790/5				Clie	ent San	nple ID: I	Lab Control Sa	mple Dup
Matrix: Water							Prep Type:	: Total/NA
Analysis Batch: 19790								

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Biochemical Oxygen Demand	199	198		mg/L		99	85 - 115	0	20	

Method: Gross Alpha and Beta - Gross Alpha/Beta

Lab Sample ID: S204070-04 Matrix: WATER Analysis Batch: 8609	Blank					Client Sa	mple ID: Metho Prep Type: 1 Prep Batch:	otal/NA
		RL	MDL	Unit		Dremered	A maily maid	Dil Fac
	Qualifier		MDL		D	Prepared	Analyzed	
Tritium 60	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1
Lab Sample ID: S204070-04						Client Sa	mple ID: Metho	d Blank
Matrix: WATER							Prep Type: 1	
Analysis Batch: 8609							Prep Batch:	
	Blank							
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90 0.067	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	1
Lab Sample ID: S204070-04						Client Sa	mple ID: Metho	d Blank
Matrix: WATER							Prep Type: 1	
Analysis Batch: 8609							Prep Batch:	
	Blank							
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137 -0.94	U	20		pCi/L		04/26/12 00:00	04/27/12 00:00	1
Potassium-40 1.73	U	25		pCi/L		04/26/12 00:00	04/27/12 00:00	1

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

Lab Sample ID: S204070-04											Client Sa	mple ID: Metho	
Matrix: WATER												Prep Type:	
Analysis Batch: 8609	Blank	Blank										Prep Batch	: 8609_P
Analyta		Qualifier		RL		мпі	Unit		D	Б	roparod	Analyzod	Dil Fac
Analyte Uranium, Total				1			pCi/L				repared 7/12 00:00	Analyzed 04/27/12 09:20	1
	0	0		1			poi/L			04/2	1/12 00.00	04/27/12 09.20	i
Lab Sample ID: S204070-04											Client Sa	mple ID: Metho	od Blank
Matrix: WATER												Prep Type:	
Analysis Batch: 8609												Prep Batch	
	Blank	Blank											
Analyte	Result	Qualifier		RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fac
Gross Alpha	-0.192	U		3			pCi/L			04/2	6/12 00:00	04/30/12 08:23	1
Gross Beta	0.051	U		4			pCi/L			04/2	6/12 00:00	04/30/12 08:23	1
— Г													
Lab Sample ID: S204070-04											Client Sa	ample ID: Metho	
Matrix: WATER												Prep Type:	
Analysis Batch: 8609												Prep Batch	: 8609_P
		Blank							_	_	<u>.</u>		
Analyte		Qualifier		RL		MDL	Unit		D		repared	Analyzed	Dil Fac
Radium-228	-0.122	U		1			pCi/L			04/3	0/12 00:00	04/30/12 14:11	1
Lab Sample ID: S204070-04											Client Sa	mple ID: Metho	od Blank
Matrix: WATER												Prep Type:	
Analysis Batch: 8609												Prep Batch	
Analysis Batom sooo	Blank	Blank										Trop Baton	
Analyte	Result	Qualifier		RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fac
Radium-226	0.182	U		1			pCi/L			05/0	4/12 00:00	05/04/12 13:45	1
— [
Lab Sample ID: S204070-03									С	lient	Sample	ID: Lab Contro	
Matrix: WATER												Prep Type:	
Analysis Batch: 8609												Prep Batch	: 8609_P
			Spike		LCS					_		%Rec.	
Analyte			Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Tritium			2440		2380			pCi/L			98	80 - 120	
Lab Sample ID: S204070-03									С	lient	Sample	ID: Lab Control	Sample
Matrix: WATER												Prep Type:	
Analysis Batch: 8609												Prep Batch	
·			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Cesium-137			147		149			pCi/L			101	80 - 120	
Cobalt-60			130		126			pCi/L			97	80 - 120	
Lab Sample ID: S204070-02									~	liant	Comple		Comme
Lab Sample ID: S204070-03									U	nent	Sample	ID: Lab Control	
Matrix: WATER												Prep Type:	
Analysis Batch: 8609			Spike		109	LCS						Prep Batch %Rec.	. 0009_P
			Added							_	%Rec		
Analyte					Result	()))2	litier	Unit		D	%Rec	Limits	

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

Lab Sample ID: S204070-03							Client	t Sample	ID: Lab Co	ntrol S	ample
Matrix: WATER									Prep Ty		
Analysis Batch: 8609									Prep B	-	
-			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Uranium, Total			56.5	64.2		pCi/L		114	80 - 120		
Lab Sample ID: S204070-03							Client	t Sample	e ID: Lab Co	ntrol S	ample
Matrix: WATER									Prep Ty	/pe: To	tal/NA
Analysis Batch: 8609									Prep B	atch: 8	609_P
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Radium-228			4.41	4.73		pCi/L		107	60 - 140		
Lab Sample ID: S204070-03							Client	t Sample	BID: Lab Co	ntrol S	ample
Matrix: WATER									Prep Ty	/pe: To	tal/NA
Analysis Batch: 8609									Prep B	atch: 8	609_P
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gross Alpha			37	40.4		pCi/L		109	70 - 130		
Gross Beta			34	32.6		pCi/L		96	70 - 130		
Lab Sample ID: S204070-03							Client	t Sample	e ID: Lab Co	ntrol S	ample
Matrix: WATER									Prep Ty	/pe: To	tal/NA
Analysis Batch: 8609									Prep B	atch: 8	609_P
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Radium-226			50.1	48.5		pCi/L		97	80 - 120		
Lab Sample ID: S204070-05								Cli	ent Sample	ID: Dup	plicate
Matrix: WATER									Prep Ty	/pe: To	tal/NA
Analysis Batch: 8609									Prep B	atch: 8	609_P
	Sample	Sample		Duplicate	Duplicate						RPD
Analyte		Qualifier			Qualifier	Unit	D			RPD	Limit
Tritium	19.4			18.5	U	pCi/L				0	
Lab Sample ID: S204070-05								Cli	ent Sample	ID: Dup	plicate
Matrix: WATER									Prep Ty	/pe: To	tal/NA
Analysis Batch: 8609									Prep B	atch: 8	609_P
	Sample	Sample		Duplicate	Duplicate						RPD
Analyte	Result	Qualifier			Qualifier	Unit	D			RPD	Limit
Strontium-90	-0.131			0.038	U	pCi/L				0	
Lab Sample ID: S204070-05								Cli	ent Sample		
Matrix: WATER									Prep Ty	-	
Analysis Batch: 8609									Prep B	atch: 8	609_P
	-	Sample		-	Duplicate						RPD
Analyte		Qualifier			Qualifier	Unit	D			RPD	Limit
Cesium-137	0.152			-0.761		pCi/L				0	
Potassium-40	-4.54			3.82	U	pCi/L				0	

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

Lab Sample ID: S204070-05							Client Sample ID: Duplicate
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8609							Prep Batch: 8609_P
	Sample	Sample	Duplicate	Duplicate			RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD Limit
Uranium, Total	0.172		0.183	J	pCi/L		6
Lab Sample ID: S204070-05							Client Sample ID: Duplicate
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8609							Prep Batch: 8609_P
	Sample	Sample	Duplicate	Duplicate			RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD Limit
Radium-228	0.295		0.333	U	pCi/L		0
Lab Sample ID: S204070-05							Client Sample ID: Duplicate
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8609							Prep Batch: 8609_P
	Sample	Sample	Duplicate	Duplicate			RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD Limit
Gross Alpha	1.34		2.68	J	pCi/L		67
Gross Beta	4.81		5.29		pCi/L		10
Lab Sample ID: S204070-05							Client Sample ID: Duplicate
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8609							Prep Batch: 8609_P
	Sample	Sample	Duplicate	Duplicate			RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD Limit
Radium-226	0.266		0.08	U	pCi/L		

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Water

Water

Matrix

Water

Water

Water

Water

Water

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Client Sample ID

Matrix Spike Duplicate

Lab Control Sample

Trip Blanks

Matrix Spike

Method Blank

Client Sample ID

Outfall 018 Grab

Matrix Spike Duplicate

Lab Control Sample

Matrix Spike

Method Blank

Method

624

624

624

624

624

Method

624 624

624

624

624

Prep Batch

Prep Batch

8 9 1(

GC/MS Semi VOA

Prep Batch: 20598

GC/MS VOA

Lab Sample ID

440-8626-A-3 MS

440-8626-A-3 MSD

LCS 440-20084/5

MB 440-20084/4

Lab Sample ID

440-8650-A-3 MS

440-8650-A-3 MSD

LCS 440-20297/5

MB 440-20297/4

440-8623-1

Analysis Batch: 20297

440-8623-2

Analysis Batch: 20084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bat
440-8616-1	Outfall 018 Composite	Total/NA	Water	625	
LCS 440-20598/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-20598/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-20598/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 21217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	625	20598
LCS 440-20598/2-A	Lab Control Sample	Total/NA	Water	625	20598
LCSD 440-20598/3-A	Lab Control Sample Dup	Total/NA	Water	625	20598
MB 440-20598/1-A	Method Blank	Total/NA	Water	625	20598

GC Semi VOA

Prep Batch: 19875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	608	
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-19875/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 19946

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	608 Pesticides	19875
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	19875
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 Pesticides	19875

HPLC/IC

Analysis Batch: 19534

Lab Sample	e ID Client Sa	mple ID Prep	Type Matrix	Method	Prep Batch
440-8571-N	-1 MS Matrix Sp	ike Total/I	NA VVater	300.0	

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Water

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Client Sample ID

Matrix Spike Duplicate

Outfall 018 Composite

Lab Control Sample

Method Blank

Method

300.0

300.0

300.0

300.0

Prep Batch

Analysis Batch: 19535

HPLC/IC (Continued)

Lab Sample ID

440-8616-1

440-8571-N-1 MSD

LCS 440-19534/3

MB 440-19534/2

Analysis Batch: 19534 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8571-N-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8571-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8616-1	Outfall 018 Composite	Total/NA	Water	300.0	
LCS 440-19535/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19535/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 19785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	300.0	
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 440-19785/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19785/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 21754

Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Outfall 018 Composite	Total/NA	Water	314.0	
Matrix Spike	Total/NA	Water	314.0	
Matrix Spike Duplicate	Total/NA	Water	314.0	
Lab Control Sample	Total/NA	Water	314.0	
Method Blank	Total/NA	Water	314.0	
Lab Control Sample	Total/NA	Water	314.0	
	Outfall 018 Composite Matrix Spike Matrix Spike Duplicate Lab Control Sample Method Blank	Outfall 018 Composite Total/NA Matrix Spike Total/NA Matrix Spike Duplicate Total/NA Lab Control Sample Total/NA Method Blank Total/NA	Outfall 018 Composite Total/NA Water Matrix Spike Total/NA Water Matrix Spike Duplicate Total/NA Water Lab Control Sample Total/NA Water Method Blank Total/NA Water	Outfall 018 CompositeTotal/NAWater314.0Matrix SpikeTotal/NAWater314.0Matrix Spike DuplicateTotal/NAWater314.0Lab Control SampleTotal/NAWater314.0Method BlankTotal/NAWater314.0

Specialty Organics

Analysis Batch: 2114077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total	Water	1613B	
G2D230000077B	Method Blank	Total	Water	1613B	
G2D230000077C	Lab Control Sample	Total	Water	1613B	
∟ Prep Batch: 2114077 __ ┌─	_P				
Prep Batch: 2114077_ Lab Sample ID	_P Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
г [.]	-	Prep Type Total	Matrix Water	Method 3542	Prep Batch
Lab Sample ID	Client Sample ID				Prep Batch

Metals

Prep Batch: 20031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-8616-1	Outfall 018 Composite	Total/NA	Water	245.1	
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Metals	(Continued)
	(

Prep	Batch:	20031	(Continued)

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	
rep Batch: 20049					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	
440-8616-1	Outfall 018 Composite	Dissolved	Water	245.1	
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	
nalysis Batch: 20257					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	2003
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	2003
440-8616-1	Outfall 018 Composite	Total/NA	Water	245.1	2003
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	2003
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	2003
nalysis Batch: 20502					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	2004
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	2004
440-8616-1	Outfall 018 Composite	Dissolved	Water	245.1	2004
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	2004
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	2004
Prep Batch: 21269					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batcl
440-8616-1	Outfall 018 Composite	Total Recoverable	Water	200.2	
440-8616-1 MS	Outfall 018 Composite	Total Recoverable	Water	200.2	
440-8616-1 MSD	Outfall 018 Composite	Total Recoverable	Water	200.2	
LCS 440-21269/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21269/1-A	Method Blank	Total Recoverable	Water	200.2	
rep Batch: 21301					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
440-8609-F-11-E MS	Matrix Spike	Dissolved	Water	200.2	
440-8609-F-11-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-8616-1	Outfall 018 Composite	Dissolved	Water	200.2	
LCS 440-20065/2-B	Lab Control Sample	Dissolved	Water	200.2	
MB 440-20065/1-B	Method Blank	Dissolved	Water	200.2	
rep Batch: 21302					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batcl
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.2	
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
	Outfall 018 Composite	Dissolved	Water	200.2	
440-8616-1	Outian 010 Composite	Dissolved			
440-8616-1 LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.2	

Prep Type

Total Recoverable

Total Recoverable

Total Recoverable

Total Recoverable

Matrix

Water

Water

Water

Water

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Client Sample ID

Matrix Spike

Outfall 018 Composite

Matrix Spike Duplicate

Lab Control Sample

Metals (Continued)

Prep Batch: 21402 Lab Sample ID

440-8779-K-1-D MS

LCS 440-21402/2-A

440-8779-K-1-E MSD

440-8616-1

Method

200.2

200.2

200.2

200.2

Prep Batch

200 440 2 1402/2 //	Lab Control Campic	Total Recoverable	Water	200.2	
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.2	
– Analysis Batch: 21614					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	2130
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	21302
440-8616-1	Outfall 018 Composite	Dissolved	Water	200.7 Rev 4.4	2130
LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	2130
MB 440-21302/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	2130
Analysis Batch: 21678					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-8616-1	Outfall 018 Composite	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8616-1 MS	Outfall 018 Composite	Total Recoverable	Water	200.7 Rev 4.4	21269
440-8616-1 MSD	Outfall 018 Composite	Total Recoverable	Water	200.7 Rev 4.4	21269
LCS 440-21269/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	2126
MB 440-21269/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21269
Analysis Batch: 22628					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-8616-1	Outfall 018 Composite	Total Recoverable	Water	200.8	2140
440-8779-K-1-D MS	Matrix Spike	Total Recoverable	Water	200.8	2140
440-8779-K-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	2140
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.8	2140
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.8	21402
Analysis Batch: 23203					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-8609-F-11-E MS	Matrix Spike	Dissolved	Water	200.8	2130
440-8609-F-11-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	2130
440-8616-1	Outfall 018 Composite	Dissolved	Water	200.8	2130
LCS 440-20065/2-B	Lab Control Sample	Dissolved	Water	200.8	2130
MB 440-20065/1-B	Method Blank	Dissolved	Water	200.8	2130
General Chemistry					
Analysis Batch: 19718					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-8447-S-2 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-8447-S-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
LCS 440-19718/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-19718/3	Method Blank	Total/NA	Water	SM 5540C	
Analysis Batch: 19748					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-8616-1	Outfall 018 Composite	Total/NA	Water	SM 5540C	

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

General Chemistry (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	SM5210B	
LCS 440-19790/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-19790/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-19790/1 USB	Method Blank	Total/NA	Water	SM5210B	
analysis Batch: 19792					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8623-1	Outfall 018 Grab	Total/NA	Water	SM 2540F	
nalysis Batch: 19801					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-8616-1	Outfall 018 Composite	Total/NA	Water	180.1	
440-8616-1 DU	Outfall 018 Composite	Total/NA	Water	180.1	
MB 440-19801/6	Method Blank	Total/NA	Water	180.1	
MRL 440-19801/4 MRL	Lab Control Sample	Total/NA	Water	180.1	
nalysis Batch: 19954					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-8522-A-2 DU	Duplicate	Total/NA	Water	120.1	
440-8623-1	Outfall 018 Grab	Total/NA	Water	120.1	
LCS 440-19954/2	Lab Control Sample	Total/NA	Water	120.1	
MB 440-19954/1	Method Blank	Total/NA	Water	120.1	
Analysis Batch: 19957					
•		D	1 - 4		Dura Datak
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Lab Sample ID 440-8418-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1	Duplicate Outfall 018 Composite	Total/NA Total/NA	Water Water	SM 2540C SM 2540C	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2	Duplicate	Total/NA	Water	SM 2540C	Prep Batch
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1	Duplicate Outfall 018 Composite Lab Control Sample	Total/NA Total/NA Total/NA	Water Water Water	SM 2540C SM 2540C SM 2540C	Prep Batch
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 nalysis Batch: 20891	Duplicate Outfall 018 Composite Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA	Water Water Water	SM 2540C SM 2540C SM 2540C	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 nalysis Batch: 20891 Lab Sample ID	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID	Total/NA Total/NA Total/NA	Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 nalysis Batch: 20891 Lab Sample ID 440-8616-1	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite	Total/NA Total/NA Total/NA Total/NA Prep Type	Water Water Water Water Matrix	SM 2540C SM 2540C SM 2540C SM 2540C Method	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 nalysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Matrix Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA	Water Water Water Water Matrix Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D SM 2540D	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA	Water Water Water Water Matrix Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D SM 2540D SM 2540D SM 2540D SM 2540D	
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 nalysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 rep Batch: 21756	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA	Water Water Water Water Matrix Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D SM 2540D SM 2540D SM 2540D SM 2540D	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 rep Batch: 21756 Lab Sample ID	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 rep Batch: 21756 Lab Sample ID 440-8623-1	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type	Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 rep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 Analysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 Prep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample	Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C Method SM 2540D SM 2640D SM 2640D SM 2640D SM 2640D SM 2640D	Prep Batch
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/1 rep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A MB 440-21756/1-A	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample Lab Control Sample Lab Control Sample Dup	Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C Method SM 2540D	Prep Batch
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 rep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A MB 440-21756/1-A	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample Lab Control Sample Lab Control Sample Dup	Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C Method SM 2540D	Prep Batch
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 malysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/1 rep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A MB 440-21756/1-A malysis Batch: 21846 Lab Sample ID	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample Control Sample Control Sample Lab Control Sample Lab Control Sample	Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D SM 2640D SM 2640A 1664A 1664A 1664A 1664A	Prep Batcl
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 Analysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/1 Prep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A MB 440-21756/1-A	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample Lab Control Sample Dup Method Blank Client Sample ID	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA Prep Type	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D SM 2640D SM 2640A 1664A 1664A 1664A 1664A Method	Prep Batch Prep Batch Prep Batch 21756
Lab Sample ID 440-8418-B-1 DU 440-8616-1 LCS 440-19957/2 MB 440-19957/1 Analysis Batch: 20891 Lab Sample ID 440-8616-1 440-8689-H-1 DU LCS 440-20891/2 MB 440-20891/1 Prep Batch: 21756 Lab Sample ID 440-8623-1 LCS 440-21756/2-A LCSD 440-21756/3-A MB 440-21756/1-A Analysis Batch: 21846 Lab Sample ID 440-8623-1	Duplicate Outfall 018 Composite Lab Control Sample Method Blank Client Sample ID Outfall 018 Composite Duplicate Lab Control Sample Method Blank Client Sample ID Outfall 018 Grab Lab Control Sample Dutfall 018 Grab Lab Control Sample Dupl Method Blank Client Sample ID Outfall 018 Grab Client Sample ID Outfall 018 Grab	Total/NA Total/NA Total/NA Total/NA Total/NA Prep Type Total/NA	Water Water	SM 2540C SM 2540C SM 2540C SM 2540C SM 2540C SM 2540D Method 1664A 1664A 1664A 1664A 1664A 1664A	Prep Batch Prep Batch Prep Batch Prep Batch 21756 21756 21756

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

General Chemistry (Continued)

Prep Batch: 22248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	Distill/CN	
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-22248/1-A	Method Blank	Total/NA	Water	Distill/CN	
Analysis Batch: 22273					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	22248
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	22248
MB 440-22248/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	22248
rep Batch: 22283					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 B	
440-8616-1 MS	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 B	
440-8616-1 MSD	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 B	
LCS 440-22283/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-22283/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
Analysis Batch: 22286	i				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 C	22283
440-8616-1 MS	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 C	22283
440-8616-1 MSD	Outfall 018 Composite	Total/NA	Water	SM 4500 NH3 C	22283
LCS 440-22283/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	22283
MB 440-22283/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	2228
Subcontract					
Analysis Batch: 8609					
-					/

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	Gamma Spec	8609_P
				K-40 CS-137	
440-8616-1	Outfall 018 Composite	Total/NA	Water	Gross Alpha	8609_P
				and Beta	
440-8616-1	Outfall 018 Composite	Total/NA	Water	Radium 228	8609_P
440-8616-1	Outfall 018 Composite	Total/NA	Water	Strontium 90	8609_P
440-8616-1	Outfall 018 Composite	Total/NA	Water	Tritium	8609_P
440-8616-1	Outfall 018 Composite	Total/NA	Water	Uranium,	8609_P
				Combined	
S204070-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8609_P
				and Beta	
S204070-04	Method Blank	Total/NA	WATER	Gross Alpha	8609_P
				and Beta	
S204070-05	Duplicate	Total/NA	WATER	Gross Alpha	8609_P
				and Beta	

Prep Batch: 8609_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8616-1	Outfall 018 Composite	Total/NA	Water	General Prep	

Subcontract (Continued)

Prep Batch: 8609_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
S204070-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204070-04	Method Blank	Total/NA	WATER	General Prep	
S204070-05	Duplicate	Total/NA	WATER	General Prep	

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

Qualifiers

GC/MS VOA				
Qualifier	Qualifier Description			
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL			
GC/MS Sem	i VOA			
Qualifier	Qualifier Description			
BA	Relative percent difference out of control			
AY	Matrix Interference suspected			
HPLC/IC				
Qualifier	Qualifier Description			
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL			
DIOXIN				
Qualifier	Qualifier Description			
J	Estimated result. Result is less than the reporting limit.			
Q	Estimated maximum possible concentration (EMPC).			
В	Method blank contamination. The associated method blank contains the target analyte at a reportable level.			
Metals				
Qualifier	Qualifier Description			
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL	1		
General Ch	emistry			
Qualifier	Qualifier Description			
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL			

Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
‡	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc Project/Site: Routine Outfall 018 Composite

aboratory	Authority	Program	EPA Region	Certification ID
estAmerica Irvine	Arizona	State Program	9	AZ0671
estAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
estAmerica Irvine	California	NELAC	9	1108CA
estAmerica Irvine	California	State Program	9	2706
estAmerica Irvine	Guam	State Program	9	Cert. No. 12.002r
estAmerica Irvine	Hawaii	State Program	9	N/A
estAmerica Irvine	Nevada	State Program	9	CA015312007A
estAmerica Irvine	New Mexico	State Program	6	N/A
estAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
estAmerica Irvine	Oregon	NELAC	10	4005
estAmerica Irvine	USDA	Federal		P330-09-00080
estAmerica West Sacramento	A2LA	DoD ELAP		2928-01
estAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
estAmerica West Sacramento	Arizona	State Program	9	AZ0708
estAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
estAmerica West Sacramento	California	NELAC	9	1119CA
estAmerica West Sacramento	Colorado	State Program	8	N/A
estAmerica West Sacramento	Connecticut	State Program	1	PH-0691
estAmerica West Sacramento	Florida	NELAC	4	E87570
estAmerica West Sacramento	Georgia	State Program	4	960
estAmerica West Sacramento	Guam	State Program	9	N/A
estAmerica West Sacramento	Hawaii	State Program	9	N/A
estAmerica West Sacramento	Illinois	NELAC	5	200060
estAmerica West Sacramento	Kansas	NELAC	7	E-10375
estAmerica West Sacramento	Louisiana	NELAC	6	30612
estAmerica West Sacramento	Michigan	State Program	5	9947
estAmerica West Sacramento	Nevada	State Program	9	CA44
estAmerica West Sacramento	New Jersey	NELAC	2	CA005
estAmerica West Sacramento	New Mexico	State Program	6	N/A
estAmerica West Sacramento	New York	NELAC	2	11666
estAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
estAmerica West Sacramento	Oregon	NELAC	10	CA200005
estAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
estAmerica West Sacramento	South Carolina	State Program	4	87014
estAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
estAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
estAmerica West Sacramento	USDA	Federal		P330-09-00055
estAmerica West Sacramento	Utah	NELAC	8	QUAN1
estAmerica West Sacramento	Virginia	State Program	3	178
estAmerica West Sacramento	Washington	State Program	10	C581
estAmerica West Sacramento	West Virginia	State Program	3	9930C
estAmerica West Sacramento	West Virginia DEP	State Program	3	334
estAmerica West Sacramento	Wisconsin	State Program	5	998204680
estAmerica West Sacramento	Wyoming	State Program	8	8TMS-Q

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



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

May 9, 2012

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

Reference: Test America-Irvine 44002624 Eberline Analytical Report S204067-8609 Sample Delivery Group 8609

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Project No. 44002624. The sample was received on April 17, 2012.

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

Sincerely,

Joseph Verville Client Services Manager

NJV/mw

Enclosure: Level IV CLP-like Data Package CD

Eberline Analytical	l est America
Report No. S204067-8609	Test America Project No. 44002624

May 9, 2012

1.0 General Comments

Sample delivery group 8609 consists of the analytical results and supporting documentation for one water sample. Sample ID and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

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

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

For QC purposes sample OUTFALL018 (440-8616-1) was batched with other Boeing OUTFALL samples. The duplicate analysis reported herein was a duplicate analysis of sample OUTFALL002 (440-8694-1).

3.0 Method Errors

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

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

Case Narrative, pa	age 2
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May 9, 2012

4.0 **Analysis Notes**

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

5.0 **Case Narrative Certification Statement**

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

nill

Joseph Verville **Client Services Manager**

5/9/12-Date

SDG <u>8609</u> Contact <u>Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>44002624</u>

SUMMARY DATA SECTION

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EAS
TA
<u>Ver 1.0</u>
DVD-TOC
3.06
05/09/12

SDG 8609

SDG <u>8609</u> Contact <u>Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

DUPLICATES

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 1 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>05/09/12</u>

SDG 8609

SDG	8609	
Contact	<u>Joseph</u>	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples. MATRIX SPIKES The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples. DATA SHEETS The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples. METHOD SUMMARIES The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.) REPORT GUIDES The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

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Lab id <u>EAS</u> Protocol <u>TA</u>

Version <u>Ver 1.0</u> Form <u>DVD-RG</u>

Version 3.06

Report date 05/09/12

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8609

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MATRIX LEVEL

WATER

WATER WATER

WATER

SDG 8609

LAB

Contact Joseph Verville

SAMPLE ID CLIENT SAMPLE ID

S204070-03 Lab Control Sample

S204070-04 Method Blank

S204067-01 OUTFALL 018 (440-8616-1) Boeing-SSFL

S204070-05 Duplicate (S204070-01) Boeing-SSFL

LAB SAMPLE SUMMARY

LOCATION

Client Test America, Inc. Contract 44002624

CHAIN OF

440-4022.1

CUSTODY

SAS NO

<u>, , , , , , , , , , , , , , , , , , , </u>	
	5
COLLECTED	
04/13/12 12:18	
04/13/12 17:54	8
	9
	1

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LS
Version	3.06
Report date	05/09/12

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

[1	SDG 8609	[
	SDG <u>8609</u> Contact <u>Joseph Verville</u>	QC	SUMMARY	Client Contract	<u>Test America, Inc.</u> 44002624

					11 K 11 T 14		ant recut		
	8609 Joseph Vervil	lle		DG 8609	Y.			ent <u>Test Amer</u> act <u>44002624</u>	ica, Inc.
QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	ма	१ TRIX MOI:	SAMPLE ST AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED COLI		DEPARTMENT SAMPLE ID
3609	440-4022.1	OUTFALL 018 (440-8616-1)	WA	TER	10.0 L		04/17/12 4	S 204067-01	8609-001
3612		Method Blank Lab Control Sample Duplicate (S204070-01)	WA	TER TER TER	10.0 L		04/17/12 4	S204070-04 S204070-03 S204070-05	8612-004 8612-003 8612-005
				<u> </u>	<u> </u>				

Lab id <u>EAS</u> Protocol <u>TA</u> Version Ver 1.0 Form <u>DVD-QS</u> Version 3.06 Report date 05/09/12

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8609

SDG <u>8609</u>

Contact Joseph Verville

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

			PREPARATION	I ERROR			PLA	NCHETS J	ANALYZ	ied	QUALI-
TEST	MATRIX	METHOD	BATCH	2 0 %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7271-144	10.4	1			1	1	1/0/1	
SR	WATER	Strontium-90 in Water	7271-144	10.4	1			1	1	1/0/1	
Gas I	Proportion	al Counting									
80A	WATER	Gross Alpha in Water	7271-144	20.6	1			1	1	1/0/1	
80B	WATER	Gross Beta in Water	7271-144	11.0	1			1	1	1/0/1	
Gamma	a Spectros	сору									
GAM	WATER	Gamma Emitters in Water	7271-144	7.0	1			1	1	1/0/1	
Kinet	ic Pho sp h	orimetry									
U_T	WATER	Uranium, Total	7271-144		1			1	1	1/0/1	
Liqu:	id Scintil	lation Counting									
н	WATER	Tritium in Water	7271-144	10.0	1			1	1	1/0/1	
Rador	n Counting										
RA	WATER	Radium-226 in Water	7271-144	16.4	1			1	l	1/0/1	

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

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-PBS
Version	3.06
Report date	05/09/12

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8609

LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

LAB SAMPLE	CLIENT SAMPLE ID								
COLLECTED RECEIVED	LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	ву	METHOD
S204067-01	OUTFALL 018 (440-8616-1)		8609-001	80A/80		04/26/12	04/27/12	MWT	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8609-001	80B/80		04/26/12	04/27/12	MWT	Gross Beta in Water
04/17/12	440-4022.1		8609-001	AC		04/30/12	05/11/12	BW	Radium-228 in Water
			8609-001	GAM		04/25/12	05/02/12	MWT	Gamma Emitters in Water
			8609-001	Н		04/19/12	04/24/12	BW	Tritium in Water
			8609-001	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8609-001	SR		04/26/12	04/30/12	BW	Strontium-90 in Water
			8609-001	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-03	Lab Control Sample		8612-003	80A/80		05/03/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-003	80B/80		05/03/12	05/03/12	BW	Gross Beta in Water
			8612-003	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-003	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8612-003	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-003	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-003	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-003	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-04	Method Blank		8612-004	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-004	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
			8612-004	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-004	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
			8612-004	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-004	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-004	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-004	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-05	Duplicate (S204070-01)		8612-005	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8612-005	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
04/17/12			8612-005	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-005	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
			8612-005	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-005	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-005	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-005	U_T		04/27/12	04/27/12	TSC	Uranium, Total

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LWS
Version	3.06
Report date	05/09/12

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8609

SDG <u>8609</u> Contact <u>Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u>

Contract <u>44002624</u>

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

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LWS</u> Version <u>3.06</u> Report date <u>05/09/12</u>

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

SDG 8609

8612-004

Method Blank

METHOD BLANK

	8609 Joseph Verville		Test America, Inc. 44002624	
Lab sample id Dept sample id		Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.192	0.30	0.606	3.00	U	80A
Gross Beta	12587472	0.051	0.52	0.863	4.00	U	80B
Tritium	10028178	60.0	92	152	500	U	н
Radium-226	13982633	0.182	0.34	0.593	1.00	U	RA
Radium-228	15262201	-0.122	0.15	0.413	1.00	U	AC
Strontium-90	10098972	0.067	0.22	0.478	2.00	U	SR
Uranium, Total		0	0.008	0.018	1.00	U	υт
Potassium-40	13966002	1.73	18	32.1	25.0	U	GAM
Cesium-137	10045973	-0.940	1.7	3.07	20.0	U	GAM

QC-BLANK #81586

EAS		
TA		
<u>Ver 1.0</u>		
DVD-DS		
3.06		
05/09/12		

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8609

8612-003

Lab sample id S204070-03

Dept sample id 8612-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8609</u> Contact <u>Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>44002624</u> Client sample id <u>Lab Control Sample</u> Material/Matrix _______WATER

						• •= •=•=					
ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	40.4	4.2	1.66	3.00		80A	37.0	1.5	109	74-126	70-130
Gross Beta	32.6	2.5	2.14	4.00		80B	34.0	1.4	96	86-114	70-130
Tritium	2380	150	152	500		н	2440	98	98	88-112	80-120
Radium-226	48.5	2.1	0.687	1.00		RA	50.1	2.0	97	83-117	80-120
Radium-228	4.73	0.45	0.385	1.00		AC	4.41	0.18	107	84-116	60-140
Strontium-90	7.84	0.41	0.174	2.00		SR	9.34	0.37	84	89-111	80-120
Uranium, Total	64.2	7.2	0.181	1.00		U_T	56.5	2.3	114	87-113	80-120
Cobalt-60	126	6.3	6.18	10.0		GAM	130	5.2	97	91-109	80-120
Cesium-137	149	7.1	9.26	20.0		GAM	147	5.9	101	91-109	80-120

QC-LCS #81585

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8609

8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

	8609 Joseph Verville			<u>Test America, Inc.</u> 44002624
	DUPLICATE	ORIGINAL		
Lab sample id	<u>S204070-05</u> La	o sample id <u>S204070-01</u>	Client sample id	OUTFALL 002 (440-8694-1)
Dept sample id	8612-005 Dep	sample id <u>8612-001</u>	Location/Matrix	Boeing-SSFL WATER
		Received <u>04/17/12</u>	Collected/Volume	<u>04/13/12 17:54 _10.0 L</u>
			Chain of custody id	440-4025.1

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ τοτ	DER o
Gross Alpha	2.68	0.94	0.940	3.00	J	80A	1.34	0.81	1.26	J	67	103	1.9
Gross Beta	5.29	0.87	1.15	4.00		80B	4.81	0.97	1.44		10	45	0.6
Tritium	18.5	91	152	500	U	н	19.4	88	148	U	-		0
Radium-226	0.080	0.33	0.589	1.00	U	RA	0.266	0.35	0.587	U	-		0.8
Radium-228	0.333	0.17	0.404	1.00	U	AC	0.295	0.15	0.382	U	-		0.3
Strontium-90	0.038	0.35	0.808	2.00	U	SR	-0.131	0.33	0.835	U	-		0.7
Uranium, Total	0.183	0.021	0.018	1.00	J	U_T	0.172	0.020	0.018	J	6	25	0.8
Potassium-40	3.82	19	34.2	25.0	U	GAM	-4.54	15	26.9	υ	-		0.7
Cesium-137	-0.761	1.8	3.22	20.0	U	GAM	0.152	1.3	1.58	U	-		0.8

QC-DUP#1 81587

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DUP</u> Version <u>3.06</u> Report date <u>05/09/12</u>

SDG 8609

8609-001

OUTFALL 018 (440-8616-1)

DATA SHEET

	8609 Joseph Verville		Test America, Inc. 44002624	
Lab sample id Dept sample id Received	<u>8609-001</u> 04/17/12	Location/Matrix	04/13/12 12:18 10.0 L	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.184	0.59	1.12	3.00	U	80A
Gross Beta	12587472	3.30	1.1	1.58	4.00	J	80B
Tritium	10028178	32.2	91	152	500	U	Н
Radium-226	13982633	0.141	0.32	0.564	1.00	U	RA
Radium-228	15262201	0.034	0.15	0.394	1.00	U	AC
Strontium-90	10098972	0.061	0.35	0.781	2.00	U	SR
Uranium, Total		0.022	0.008	0.018	1.00	J	υτ
Potassium-40	13966002	19.0	38	65.8	25.0	U	GAM
Cesium-137	10045973	-2.11	3.4	6.06	20.0	U	GAM

Lab id	EAS			
Protocol	<u>TA</u>			
Version	<u>Ver 1.0</u>			
Form	DVD-DS			
Version	3.06			
Report date	<u>05/09/12</u>			

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11

SDG 8609

Test <u>AC</u> Matrix <u>WATER</u> SDG <u>8609</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client	<u>Test America, Inc.</u>	_
Contract	44002624	_

RESULTS

LAB	RAW SUF-	DT ANGUNG		Radium-	220
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-	228
Preparation	batch 727	1-144			
S204067-01		8609-001	OUTFALL 018 (440-8616-1)	U	
S204070-03		8612-003	Lab Control Sample	ok	
S204070-04		8612-004	Method Blank	U	
S204070-05		8612-005	Duplicate (S204070-01)	-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %		FWHM keV	 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 2σ prep error 10	.4 % Rei	ference	Lab N	lotebool	c No. 7	7271	pg.012	2				
S204067-01	OUTFALL 018 (440-8616-1)	0.394	1.80			79		150		17	04/30/12	04/30	GRB-230
S204070-03	Lab Control Sample	0.385	1.80			78		150			04/30/12	04/30	GRB-223
S204070-04	Method Blank	0.413	1.80			81		150			04/30/12	04/30	GRB-224
S204070-05	Duplicate (S204070-01)	0.404	1.80			83		150		17	04/30/12	04/30	GRB-229
Nominal val	ues and limits from method	1.00	1.80			30-10	5	50		180			

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

AVERAGES ± 2 SD	MDA <u>0.399</u> ±	0.024
FOR 4 SAMPLES	YIELD <u>80</u> ±	4

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8609

Test	SR	Matrix	WATER
SDG	8609		
Contact	Josep	oh Verv	ille

LAB METHOD SUMMARY STRONTIUM-90 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90
Preparation	batch 727	1-144		
S204067-01		8609-001	OUTFALL 018 (440-8616-1)	U
S204070-03		8612-003	Lab Control Sample	ok
S204070-04		8612-004	Method Blank	U
S204070-05		8612-005	Duplicate (S204070-01)	- U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	. batch 7271-144 2σ prep error 10	.4 % Re:	ference	Lab N	lotebool	K NO. '	7271	pg.012	2				
S204067-01	OUTFALL 018 (440-8616-1)	0.781	0.500			92		50		13	04/26/12	04/26	GRB-231
S204070-03	Lab Control Sample	0.174	1.00			93		120			04/26/12	04/26	GRB-222
S204070-04	Method Blank	0.478	1.00			88		50			04/26/12	04/26	GRB-224
S204070-05	Duplicate (S204070-01)	0.808	0.500			85		50		13	04/26/12	04/26	GRB-229
Nominal val	ues and limits from method	2.00	1.00			30-10	5	50		 180			

PROCEDURES	REFERENCE CP-380	905.0 Strontium in Water Samples, rev 5	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>0.560</u> ± <u>0.596</u> YIELD <u>90</u> ± <u>7</u>

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8609

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8609</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client	Test America, Inc.
Contract	44002624

RESULTS

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross A	lpha
Preparation	batch 727	1-144			
S204067-01	80	8609-001	OUTFALL 018 (440-8616-1)	U	
S204070-03	80	8612-003	Lab Control Sample	ok	
S204070-04	80	8612-004	Method Blank	U	
5204070-05	80	8612-005	Duplicate (S204070-01)	ok	J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-144 2σ prep error 20	.6 % Re	ference	Lab N	oteboo	c No. '	7271	pg.012	2				
S204067-01	80	OUTFALL 018 (440-8616-1)	1.12	0.220			99		400		13	04/26/12	04/26	GRB-107
S 204070-03	80	Lab Control Sample	1.66	0.300			61		100			04/26/12	05/03	GRB-214
S204070-04	80	Method Blank	0.606	0.300			63		400			04/26/12	04/30	GRB-112
S204070-05	80	Duplicate (S204070-01)	0.940	0.220			93		400		17	04/26/12	04/30	GRB-109
Nominal val	ues and li	mits from method	3.00	0.300			0-250	0	100		 180			

PROCEDURES	REFERENCE	900.0		AVE
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,		FOF
		rev 10	1	·

AVERAGES ± 2 SD	MDA <u>1.08</u> ± 0.881
FOR 4 SAMPLES	RESIDUE <u>79</u> ± 40

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8609

Test 80B Matrix WATER SDG <u>8609</u> Contact Joseph Verville

LAB METHOD SUMMARY GROSS BETA IN WATER GAS PROPORTIONAL COUNTING

Client	Test	America,	Inc.
Contract	44002	2624	

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation	batch 727	1-144		
S204067-01	80	8609-001	OUTFALL 018 (440-8616-1)	3.30 J
S204070-03	80	8612-003	Lab Control Sample	ok
S204070-04	80	8612-004	Method Blank	U
S204070-05	80	8612-005	Duplicate (S204070-01)	ok

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mg	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR	
Preparation	batch 72 7	1-144 2σ prep error 11	0 % Re	ference	Lab N	loteboo	k No.	7271	pg.012	!					1
S204067-01	80	OUTFALL 018 (440-8616-1)	1.58	0.220			99		400		13	04/26/12	04/26	GRB-107	
S204070-03	80	Lab Control Sample	2.14	0.300			61		100			04/26/12	05/03	GRB-214	
S204070-04	80	Method Blank	0.863	0.300			63		400			04/26/12	04/30	GRB-112	
S204070-05	80	Duplicate (S204070-01)	1.15	0.220			93		400		17	04/26/12	04/30	GRB-109	·
Nominal val	ues and li	mits from method	4.00	0.300			0-25	0	100		 180				

PROCEDURES	REFERENCE DWP-121	900.0 Gross Alpha and Gross Beta in Drinking Water,	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA RESIDUE	1.43 79	± - ± -	1.1: 40
		rev 10	· · · ·				

	1
Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

MDA <u>1.43</u> ± <u>1.11</u>

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8609

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8609</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

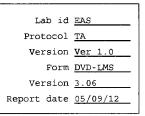
LAB	RAW SUF-					
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium	-137
Preparation	batch 727	1-144				
S204067-01		8609-001	OUTFALL 018 (440-8616-1)		U	
S204070-03		8612-003	Lab Control Sample	ok	ok	
S204070-04		8612-004	Method Blank		U	
S204070-05		8612-005	Duplicate (S204070-01)		-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 20 prep error 7.	0 % R	eference	Lab N	lotebool	k No.	7271	pg.012	2				
S204067-01	OUTFALL 018 (440-8616-1)		2.00					400		12	04/25/12	04/25	MB,G5,0
S204070-03	Lab Control Sample		2.00					400			04/26/12	04/26	MB,G6,0
S204070-04	Method Blank		2.00					400			04/26/12	04/27	MB,G3,0
S204070-05	Duplicate (S204070-01)		2.00					400		14	04/26/12	04/27	MB,G4,0
Nominal val	ues and limits from method	6.00	2.00					400		 180			

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

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SDG 8609

Test <u>U.T.</u> Matrix <u>WATER</u> SDG <u>8609</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY URANIUM, TOTAL KINETIC PHOSPHORIMETRY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

LAB	RAW SUF-		Uranium,
SAMPLE ID	TEST FIX PLAN	CHET CLIENT SAMPLE ID	Total
Preparation	batch 7271-144		
S204067-01	8609	-001 OUTFALL 018 (440-8616-1)	0.022 J
S204070-03	8612	-003 Lab Control Sample	ok
S204070-04	8612	-004 Method Blank	U
S204070-05	8612	-005 Duplicate (S204070-01)	ok J
Nominal val	ues and limits	from method RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %		COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR	ľ
Preparation	batch 7271-144 20 prep error	Ref	erence	Lab N	otebool	ĸNo.	7271	pg.012	:					I
S204067-01	OUTFALL 018 (440-8616-1)	0.018 0	.0200							14	04/27/12	04/27	KPA-001	
S204070-03	Lab Control Sample	0.181 0	.0200								04/27/12	04/27	KPA-001	
S204070-04	Method Blank	0.018 0	.0200								04/27/12	04/27	KPA-001	
S204070-05	Duplicate (S204070-01)	0.018 0	.0200							14	04/27/12	04/27	KPA-001	
Nominal val	ues and limits from method	1.00 0	.0200	<u></u>						 180				

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD	MDA <u>0.059</u> ± <u>0.163</u>
FOR 4 SAMPLES	YIELD ±

Lab id	EAS
Protocol	TA
Version	Ver 1.0
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Version	3.06
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METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8609

Test <u>H___</u> Matrix <u>WATER</u> SDG <u>8609</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY TRITIUM IN WATER LIQUID SCINTILLATION COUNTING

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

LAB RAW		CLIENT SAMPLE ID	Tritium
Preparation batch	7271-144		
S204067-01	8609-001	OUTFALL 018 (440-8616-1)	υ
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	υ
S204070-05	8612-005	Duplicate (S204070-01)	- U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min		 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 2g prep error	10.0 % R	eference	Lab N	lotebool	c No.	7271	pg.012	2				
S204067-01	OUTFALL 018 (440-8616-1) 152	0.0100			100		150		6	04/19/12	04/19	LSC-007
S204070-03	Lab Control Sample	152	0.100			10		150			04/19/12	04/19	LSC-007
S204070-04	Method Blank	152	0.100			10		150			04/19/12	04/19	LSC-007
S204070-0 5	Duplicate (S204070-01)	152	0.0100			100		150		6	04/19/12	04/19	LSC-007
Nominal val	ues and limits from method	500	0.0100					100		180			

PROCEDURES REFERENCE	906.0	AVERAGES ± 2 SD	MDA <u>152</u> ± 0
DWP-212	Tritium in Drinking Water by Distillation, rev 8	FOR 4 SAMPLES	YIELD <u>55</u> ± <u>104</u>

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METHOD SUMMARIES
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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

SDG 8609

Test RA Matrix WATER SDG <u>8609</u> Contact Joseph Verville

LAB METHOD SUMMARY RADIUM-226 IN WATER RADON COUNTING

Client Test America, Inc. Contract 44002624

RESULTS

LAB	RAW SUF-				
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-	226
Preparation	batch 727	1-144			
S 204067-01		8609-001	OUTFALL 018 (440-8616-1)	U	
S204070-03		8612-003	Lab Control Sample	ok	
S 204070-0 4		8612-004	Method Blank	U	
S204070-05		8612-005	Duplicate (S204070-01)	-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %			 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 2σ prep error 16	.4 % Re	ference	Lab N	iotebool	c No. '	7271	pg.012	:				
S204067-01	OUTFALL 018 (440-8616-1)	0.564	0.100			100		108		21	05/04/12	05/04	RN-010
S204070-03	Lab Control Sample	0.687	0.100			100		105			05/04/12	0 5/0 4	RN-009
S204070-04	Method Blank	0.593	0.100			100		80			05/04/12	05/04	RN-010
S204070-05	Duplicate (S204070-01)	0.589	0.100			100		105		21	05/04/12	05/04	RN-015
Nominal val	ues and limits from method	1.00	0.100		<u>,,,,</u> ,			100		180			

PROCEDURES REFER	RENCE 903.1		AVERAGES ± 2 SD	MDA _	<u>0.608</u> ± .	0.108
DWP-	881A Ra-226 Screenin	g in Drinking Water, rev 6	FOR 4 SAMPLES	YIELD -	<u>100</u> ± .	0

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	05/09/12

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 19

SDG 8609

SDG <u>8609</u> Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc. Contract <u>44002624</u>

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 20

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 05/09/12

Ε	в	Ε	R	L	Ι	N	Ε	A N	Α	L	Y	Т	Ι	С	Α	\mathbf{L}
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SDG 8609

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG. The following notes apply to this report: The preparation batches are shown in the same order as the Method Summary Reports are printed. Only analyses of planchets relevant to the SDG are included. * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results. * The QUALIFIERS shown are all qualifiers other than U, J, B, L The and H that occur on any analysis in the preparation batch. Method Summary Report has these qualifiers on a per sample basis. These qualifiers should be reviewed as follows: X Some data has been manually entered or modified. Transcription errors are possible. P One or more results are 'preliminary'. The data is not ready for final reporting. 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets. Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
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SDG 8609

SDG <u>8609</u> Contact <u>Joseph Verville</u>

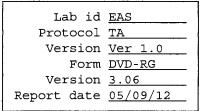
REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

WORK SUMMARY

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

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet. The following notes apply to this report: * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for. * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work. The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method. * ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report. A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time. * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG. The following qualifiers are defined by the DVD system: U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

REPORT GUIDES Page 4 SUMMARY DATA SECTION Page 23 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>05/09/12</u>

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J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
В	A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
	Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
	For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
L	Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
н	Similar to 'L' except the recovery was high.
P	The RESULT is 'preliminary'.
х	Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
2	There were two or more results available for this analyte. The reported result may not be the same as in the raw data.
	Other qualifiers are lab defined. Definitions should be in the SDG narrative.
Th	e following values are underlined to indicate possible problems:
*	An MDA is underlined if it is bigger than its RDL.
*	An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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- may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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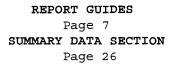
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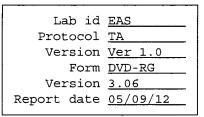
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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.
The following notes apply to this report:
 * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
 An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.
An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.
 * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
* The first, computed limits for the recovery reflect:
1. The error of RESULT, including that introduced by rounding the result prior to printing.
If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
2. The error of ADDED.
3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
 The second limits are protocol defined upper and lower QC limits for the recovery.
 The recovery is underlined if it is outside either of these ranges.





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DUPLICATE

<pre>The following notes apply to this report: * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details. If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined. * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent. If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed. For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of: 1. A fixed percentage specified in the protocol.</pre>	sup	E Duplicate Report shows all results, differences and primary oporting information for one Duplicate and associated Original sample.
 usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details. If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined. * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent. If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed. For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. * The second limit for the RPD is the larger of: 	Гhе	e following notes apply to this report:
<pre>test to the Original, the Original's RESULTs are underlined. * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent. If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed. For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of:</pre>		usage. This applies both to the Duplicate and Original sample
<pre>the difference of the RESULTS divided by their average expressed as a percent. If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed. For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of: </pre>		
 a '-' is printed. For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of: 	*	the difference of the RESULTs divided by their average expressed
<pre>data for only one, the MDA from the sample with data is used as the other's result in the RPD. * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of:</pre>		
<pre>squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing. If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of:</pre>		data for only one, the MDA from the sample with data is used as
<pre>in the RESULTS. If labeled CNT, it does not. This value reported for this limit is at most 999. * The second limit for the RPD is the larger of:</pre>	*	squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to
* The second limit for the RPD is the larger of:		
		This value reported for this limit is at most 999.
1. A fixed percentage specified in the protocol.	*	The second limit for the RPD is the larger of:
		1. A fixed percentage specified in the protocol.

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- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

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

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

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample. The following notes apply to this report: * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details. If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined. * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount. An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits. * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent. The first, computed limits for the recovery reflect: 1. The errors of the two RESULTs, including those introduced by rounding them prior to printing. If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not. 2. The error of ADDED. 3. A lab specified, per analyte bias. The bias changes the center of the computed limits. * The second limits are protocol defined upper and lower QC limits for the recovery.

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

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

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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

MDAs are underlined if greater than the printed RDL.

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

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specified for the method.

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

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

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

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

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

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

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

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

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

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

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Numb	er of samples in	shipping contai	iner:	5 Sample Mati	rix <u>WA</u>	TER	
Numb	er of containers	per sample:		_ (Or see CoC _			
Samp	les are in correct			Yes [🖍]			
•	work agrees with			Yes [🗸]			/
			,	Rad labels []		-	
Samp	les are: In go	ood condition (V] Leakir	ng [] Broken	Container []	Missing []
Samp	les are: Presen	ved [Y Not p	reserved ["	1 pH6 Pro	eservative		
Dece	ibe any anomalie						
Desci	ibe any anomalie	es:					
		es:			· · · · · · · · · · · · · · · · · · ·		
		2S:	·		······		
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Was				s[] No[
Was I Inspe ustomer	P.M. notified of a cted by Beta/Gamma	iny anomalies?	Date: (s [] No [4/17/12_ Time] Date e://:21 Beta/Gamma	0 Ion Chamber	wipe
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Was I Inspe ustomer mple No.	P.M. notified of a cted by Beta/Gamma cpm	iny anomalies?	Date: (s [] No [4/17/12_ Time] Date e://:21 Beta/Gamma	0 Ion Chamber	wipe
Was I Inspe ustomer mple No.	P.M. notified of a cted by Beta/Gamma 	iny anomalies?	Date: (s [] No [4/17/12_ Time] Date e://:21 Beta/Gamma	0 Ion Chamber	wipe
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Was I Inspe Customer Inspe Customer	P.M. notified of a cted by Beta/Gamma cpm Com Com Com Com Com Com Com Co	Ion Chamber mR/hr	Date:	s[] No[4/17/12 Time Customer Sample No.) Date Beta/Gamma cpm	O lon Chamber mR/hr	

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

LABORATORY REPORT



Date:	April	21, 2012		
	-			"dedicated to providing quality aquatic toxicity testing"
Client:		America, Irvine	100	4350 Transport Street, Unit 107
		1 Derian Ave., Suite	100	Ventura, CA 93003
	Irvine	e, CA 92614		(805) 650-0546 FAX (805) 650-0756
	Attn:	Debby Wilson		CA DOHS ELAP Cert. No.: 1775
Laboratory	No.:	A-12041404-001		
Job No.:		440-8616-1		
Sample I.D.	:	Outfall 018 (440-86	516-1)	
Sample Con	trol:	with the chain of cu	stody record attached ain runoff sample).	ed, within the recommended hold time and . Testing conducted on only one sample per The temperature was acceptable as sample
		Date Sampled: Date Received: Temp. Received:	04/13/12 04/14/12 8.3℃	

Result Summary:

Sample Analysis:

Chronic:	NOEC	TUc
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia Reproduction:	100%	1.0

0.0 mg/l

The following analyses were performed on your sample:

04/14/12 to 04/20/12

Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Quality Control:

Reviewed and approved by:

Chlorine (TRC):

Date Tested:

Joseph A. LeMa

Laboratory Directo

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-12041404-001 Client/ID: TestAmerica - Outfall 018 (440-8616-1) Date Tested: 04/14/12 to 04/20/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*. Age: < 24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: 25 +/- 1°C. Dilution water: Mod. hard reconstituted (MHRW). QA/QC Batch No.: RT-120403. Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 15 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 6 days. Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	21.2
100% Sample	100%	26.8
Sample not statistically	significantly less than Co	ontrol for either endpoint.

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (21.2 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 14.4%)
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

	/14/2012		Test ID:	120414040	C		Sample ID	•	Outfall 018	2
End Date: 4/	12012012				-		Campio 12	•	Outidit Oit	,
		14:30	Lab ID:	CAATL-Aq	uatic Test	ting Labs	Sample Ty	vpe:	SRW2-Ind	ustrial stormwater
Sample Date: 4/	/13/2012	12:18	Protocol:	FWCH-EP	A-821-R-0	02-013	Test Speci	ies:	CD-Ceriod	laphnia dubia
Comments:										
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	·	- <u>1</u> - (1972)		Not			Fisher's	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Resp	Resp	Total	N	Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis	Test (1-tail,	0.05)	NOEC	LOEC	ChV	TU			
Fisher's Exa	ict Test		100	>100		1			
Treatments	vs D-Control								
				Line	ar interpo	lation (20	0 Resam	iples)	
Point	%	SD	95%	6 CL	Skew				
IC05	>100								
IC10	>100								
IC15	>100						1.0 -	1	
IC20	>100						0.9		
IC25	>100						-		
IC40	>100						0.8 -	1	
IC50	>100					-	0.7 -]	
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Reviewed by:_ 5/20/2012

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Dose %

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			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction			
Start Date:	4/14/2012	15:00	Test ID:	12041404	с		Sample ID):	Outfall 018	3		
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Ad	uatic Test	ting Labs	Sample Ty	/pe:	SRW2-Ind	lustrial sto	rmwater	
Sample Date:	4/13/2012	12:18	Protocol:	FWCH-EF	A-821-R-0	02-013	Test Spec	ies:	CD-Cerioo	laphnia du	ıbia	
Comments:												
Conc-%	1	2	3	4	5	6	7	8	9	10		
D-Control	30.000	26.000	13.000	20.000	23.000	23.000	22.000	20.000	13.000	22.000		
100	28.000	24.000	23.000	28.000	29.000	27.000	28.000	26.000	27.000	28.000		
		<u> </u>		Transform	n: Untran	sformed		Rank	1-Tailed		Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical		Mean	N-Mea
D-Control	21.200	1.0000	21.200	13.000	30.000	24.641	10				24.000	1.000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.90116	0.905	-0.375	1.77943
F-Test indicates unequal variances (p = 6.72E-03)	7.30952	6.54109		

7.210

10

141.50

82.00

100

26.800

Hypothesis Test (1-tail, 0.05) Wilcoxon Two-Sample Test indicates no significant differences Treatments vs D-Control

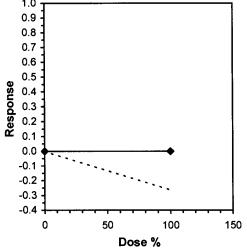
1.2642

26.800

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29.000

			Lir	near Interpolatior	(200 Resamples)	
Point	%	SD	95% CL	Skew		
C05	>100					
C10	>100					
C15	>100				1.0	
C20	>100				0.9	
C25	>100				0.8	
C40	>100				0.7	
C50	>100				0.6	
					0.5 0	



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24.000

·			Cerioda	aphnia Sui	vival and	l Reprodu	iction Tes	t-Repro	duction	
Start Date: End Date: Sample Date: Comments:	4/14/2012 4/20/2012 4/13/2012	14:30	Lab ID:	120414040 CAATL-Aq FWCH-EP	uatic Test	ting Labs :	Sample ID Sample Ty Test Spec	vpe:		3 Iustrial stormwater Iaphnia dubia
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	30.000	26.000	13.000	20.000	23.000	23.000	22.000	20.000	13.000	22.000
100	28.000	24.000	23.000	28.000	29.000	27.000	28.000	26.000	27.000	28.000

		***		Transform	n: Untran	sformed			1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	
D-Control	21.200	1.0000	21.200	13.000	30.000	24.641	10				
100	26.800	1.2642	26.800	23.000	29.000	7.210	10	-3.179	1.730	3.047	

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non	-normal dis	stribution (p <= 0.05)		0.90116		0.905		-0.375	1.77943
F-Test indicates unequal variance					7.30952		6.54109			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	3.04707	0.14373	156.8	15.5111	0.00519	1, 18
Treatments vs D-Control										

____ 4 5 Ő 11

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CERIODAPHNIA DUBIA CHRONIC BIOASSAY EPA METHOD 1002.0 Raw Data Sheet



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Lab No.: A-12041404-001

Client ID: TestAmerica - Outfall 018

Start Date: 04/14/2012

Client ID: 1	estAmeri	<u>ca - Ou</u>	ittall 01	8								Start	Date: 04	1/14/20	12
		DA	Y I	DA	Y 2	Ľ	DAY 3	DA	AY 4	DA	Y 5	D/	AY 6	DA	Y 7
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst I	nitials:	2	1	1	p	t/h	17	1	h	M	2	2	7		
Time of Re	adings:	1500	(500	1500	150	150	1430	1430	150	GW	1430	14)0	1430		
	DO	85.	7.9	8.4	80	8.1	810	820	7.9	8.1	8.0	8.7	8.7	[
Control	рН	7.7	7. 4	8.0	8.0	Da	8:0	8.0	F .(8.0	8.	8.1	8.7		
	Temp	ટે <i>પ.</i> પ	24.4	24.3	24.5	24.2	3 24.4	24.7	24.2	243	24.3	25,1	25.0		
	DO	9.1	8,0	9.4	\$.2	8.9	8,2	\$9	8.0	9.8	Bil	9,4	\$7		
100%	pН	7. 🖇	7.9	4.0	8.	7-7	8,1	2.6	8.1	26	8,0	29	8.)		1
	Temp	२५. ५	24.3	247	24.6	24.9	524.5	24.6	243	249	щ.)	24.3	25.1		
	Ad	ditional l	Paramete	rs	, and the second se				ntrol		_		100% Sam	ple	
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			ng/l CaCC					68		.	_	8		,	
			ng/l CaCO					99				(3			
	An	nmonia (n	ng/l NH ₃ -l	N)				LU.	<u> </u>			0.	9		
							ource of No								
	licate:		A A	в 34	<u>د</u> ۲۷		D 3/3	<u>Е</u> (с	F		G	н			1
	od ID:			74								<u>>F</u>	16		. (†
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		3	- 5	0	\mathcal{O}		00	14	U		2	9	10		
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		7		- -				- [-	M
	1	Total	10	X low	1021	~ \(7) ^	n Glin					~ \571		/ 11	

Circled fourth brood not used in statistical analysis. 7th day only used if <60% of the surviving control females have produced their third brood.



CHAIN OF CUSTODY

X	No Level IV: _ AI Level IV: _ NPDES Level IV:	No Level IV: _ All Level IV:	No Level I													
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	ack)	Tum-around time: (Check)	Tum-arou		17		Time:	// Date/Time:		Received By		- 1	Date/Time:			Relinguished By
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		n event.	s storn	for this	tfall 018	for Q	amples	COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 018 for this storm event.	f 3 are the	1 Page 3 o	2 of 3 and	COC Page				
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Only test if first or second rain		+	Ţ	+	╀		-		+				1			
analysis								×		17B	None	5.0	-	500 mL Amber	\$	Outfail 018
Unfiltered and unpreserved							-(:		17A	None	5-13-2012	4 1	2.5 Gal Cube		
Filter w/in 24hrs of receipt at lab									×	16	None	4-12-2012	-1	1L Poly	۷	Outfall 018
							Gyer	Tritit Com Radi	Zn, I	Bottle #	Preservative	Sampling Date/Time	# of Cont.	Container Type	Sample Matrix	Sample Description
								im ibin ium	Fe,			626) 268-6515				
								(H-3 ed F 228 <u>137</u>	Mn			Fax Number:		イ	Ś	Sampler:
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								06.0 04.0 10				Phone Number:		iwyn Kelly	ger: Bror	Project Manager: Bronwyn Kelly
Comments							14.1), Sr-90 (226 (903.), Uraniu), 901.1)	ais: Cu, I							
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								tai)& K-			1018	Routine Outfall 018	21 0	lite 200	uia a Ave. Su	618 Michillinda Ave. Suite 200
		UIRED	S REQ	ANALYSIS REQUIRED			-	' 	·			Project:			Address:	Client Name/Address
		·														
Page 3 of 3					Ã	Ę	Yac	CHAIN OF CUSTODY FORM	IAIN C	ဂ္)10	ension 7/19/20	erica v	Test America Version 7/19/2010

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		Remarks:	Cooler Temperature(s) °C and Other Remarks:	vier Temperatur	Coc						als Intact: Custody Seal No.: ∆ No	Custody Seals Intact: ∆ Yes ∆ No
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Comparty V	Date/Time:	0		Received by:	Rec	Company			Date/Time:			Relinquished by:
140 Company ATC	Date/Time: H-14-12	MM	7 ¿Yar	Kacal	Rec	Company			Date/Time:	notten	- Sec	Relinquished by:
	nipment:	Method of Shipment:	-		Time:			Date:			Empty Kit Relinquished by:	Empty Kit R
		nents:	Special Instructions/QC Requirements:	Instruction:	Specia					ſy)	Requested: I, II, III, IV, Other (specif	Deliverable
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i.												
					×	Water		12:18 Pacific	4/13/12		Outfall 018 (440-8616-1)	Outfall 018
						ation Code:		X	X	A CONTRACTOR OF A		
Special Instructions/Note:	Total Numbe				Fleid Flitered	Sample (w-water, Type S=sold (C=Comp, BT=Tissue, G=grab) A-Air)			Sample Date		Sample Identification - Client ID (Lab ID)	Sample Ide
	r of co								SSOW#:			Site: Boeing SSFL
vv - pri 4-5 Z - other (specify)	ntaine L-EDA		 						Project #: 44002624		Loutfalls	Project Name: Boeing SSFL outfalls
ler					s. A				WO #			Email:
D	G - Amchlor H - Ascorbic Acid								PO#			Phone:
	D - Nitric Acid E - NaHSO4				a. i.s							State, Zip: CA, 93003
H N - None Setate O - AsNaO2	B - NaOH C - Zn Ac				4			(days):	TAT Requested (days):		-	City: Ventura
A - HCL M - Hexane	A - HCL			 				sted:	Due Date Requested: 4/25/2012		oort #107, ,	Address: 4350 Transport #107,
6-1	Job # 440-8616-1	Requested	Analysis Requested								Company: Aquatic Testing Laboratories	Company Aquatic Te
of 1	Page: Page 1 of 1		ainc.com	E-Mail: debby.wilson@testamerica	aii: by.wilson(E-Mail: debby			Phone:		ceiving	Shipping/Receiving
6.1	vo(s): 440-4016.1	Carrier Tracking No(s):			Lab PM: Wilson, Debby	Lab PM: Wilson			Sampler:	ab)	Client Information (Sub Contract Lab)	Client In
HE LEADER IN ENVIRONMENTAL TESTING	THE LEA									:	Irvine, CA 92614-0817 Phone (949) 261-1022 Fax (949) 260-3297	Phone (94)
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•	I										TestAmerica Irvine	TestArr

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Ceriodaphnia dubia Chronic Toxicity Test Reference Toxicant Data

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*. Age: <24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: $25 + 1^{\circ}$ C. Dilution water: Mod. hard reconstituted (MHRW). Reference Toxicant: Sodium chloride (NaCl). Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 20 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 6 days. Statistics: ToxCalc computer program.

Sample Concentration	Percent Sur	vival	Mean Num Young Per I	
Control	100%		23.5	
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
4.0 g/l	0%	*	0	**
* Statistically signif ** Reproduction data from exclude	•	greater tl	nan survival NC	

RESULTS SUMMARY

CHRONIC TOXICITY

Survival LC50	2.1 g/l
Reproduction IC25	0.82 mg/l

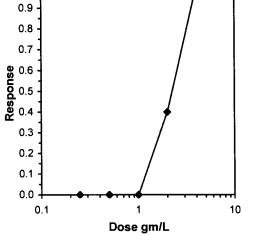
QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

			Ceriod	aphnia Sur	vival and	Reprod	uction Tes	t-Surviv	al Day 6	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	c		Sample ID):	REF-Ref 7	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Aq	uatic Test	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-0	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

				Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	Ν	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000	0.6000	4	6	10	10	0.0433	0.0500	4	10
4	0.0000	0.0000	10	0	10	10			10	10

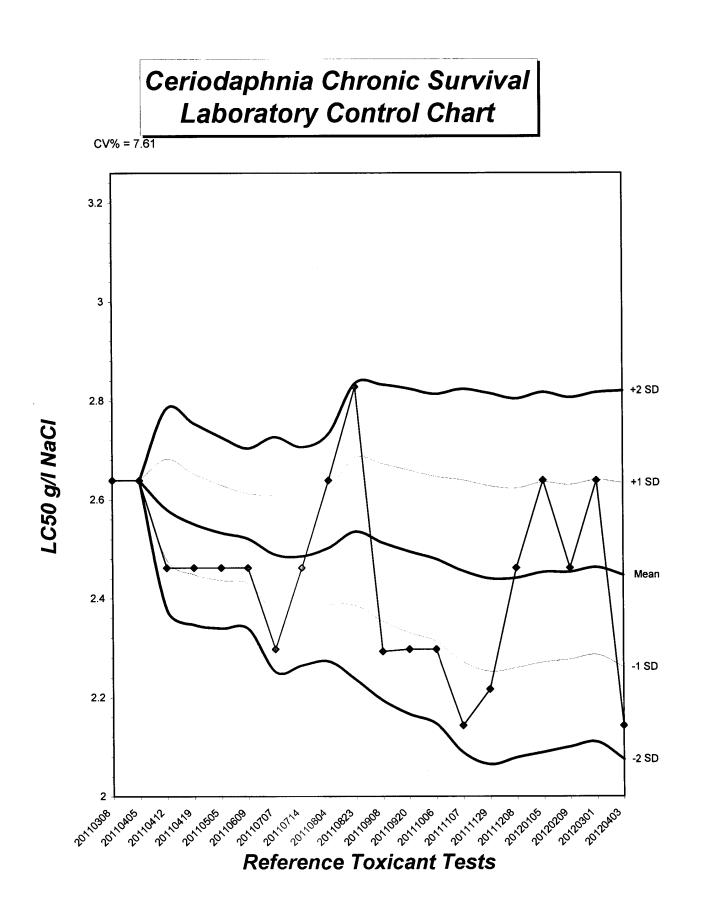
st (1-tail, I	0.05)	NOEC	LOEC	ChV	TU		
Test		1	2	1.41421	in the second second		
D-Control							
				Trimmed	Spearman-Karb	er	
EC50	95%	CL					
2.1435	1.7293	2.6571					
2.1584	1.6984	2.7429					
2.1732	1.6538	2.8556			1.0	0	•••••
2.2021	1.5017	3.2291			0.0	.1	/
2.1435	1.7293	2.6571				•	/ /
				_	0.8	8 -	
					0.7	7	
					9 .0.6	6 -	
	EC50 2.1435 2.1584 2.1732 2.2021	EC50 95% 2.1435 1.7293 2.1584 1.6984 2.1732 1.6538 2.2021 1.5017	EC50 95% CL 2.1435 1.7293 2.6571 2.1584 1.6984 2.7429 2.1732 1.6538 2.8556 2.2021 1.5017 3.2291	Ecst 1 2 D-Control 95% CL 2.1435 1.7293 2.6571 2.1584 1.6984 2.7429 2.1732 1.6538 2.8556 2.2021 1.5017 3.2291 3.2291 3.2291	Test 1 2 1.41421 D-Control Trimmed Trimmed EC50 95% CL Trimmed 2.1435 1.7293 2.6571 2.1584 1.6984 2.7429 2.1732 1.6538 2.8556 2.2021 1.5017 3.2291	Timmed Spearman-Karb EC50 95% CL 2.1435 1.7293 2.6571 2.1584 1.6984 2.7429 2.1732 1.6538 2.8556 2.2021 1.5017 3.2291 2.1435 1.7293 2.6571	EC50 95% CL 2.1435 1.7293 2.6571 2.1584 1.6984 2.7429 2.1732 1.6538 2.8556 1.0 1.0



Reviewed by: 5/20/2012

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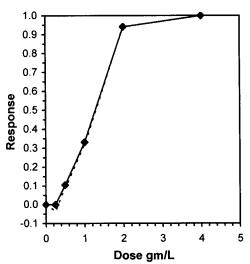
l R

-	••••••		Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	C		Sample ID):	REF-Ref 1	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27. 00 0	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.00 0	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9 .000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

- 10 BW -				Transform	n: Untran	sformed		Rank	1-Tailed	Isot	onic
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			23.900	1.0000
0.25	24.300	1.0340	24.300	17.000	29. 000	14.262	10	111.50	77.00	23.900	1.0000
0.5	21.400	0.9106	21.400	1 4 .000	24.000	16.067	10	87.00	77.00	21.400	0.8954
*1	16.000	0.6809	16.000	8.000	23.00 0	32.409	10	66.00	77.00	16.000	0.6695
2	1.400	0.0596	1.400	0.000	5.000	1 39 .6 46	10			1.400	0.0586
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	(p <= 0.05)		0.93053	0.94	-0.5964	-0.342
Bartlett's Test indicates equal var					2.22089	11.3449		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	0.5	1	0.70711					
Treatments vs D-Control								

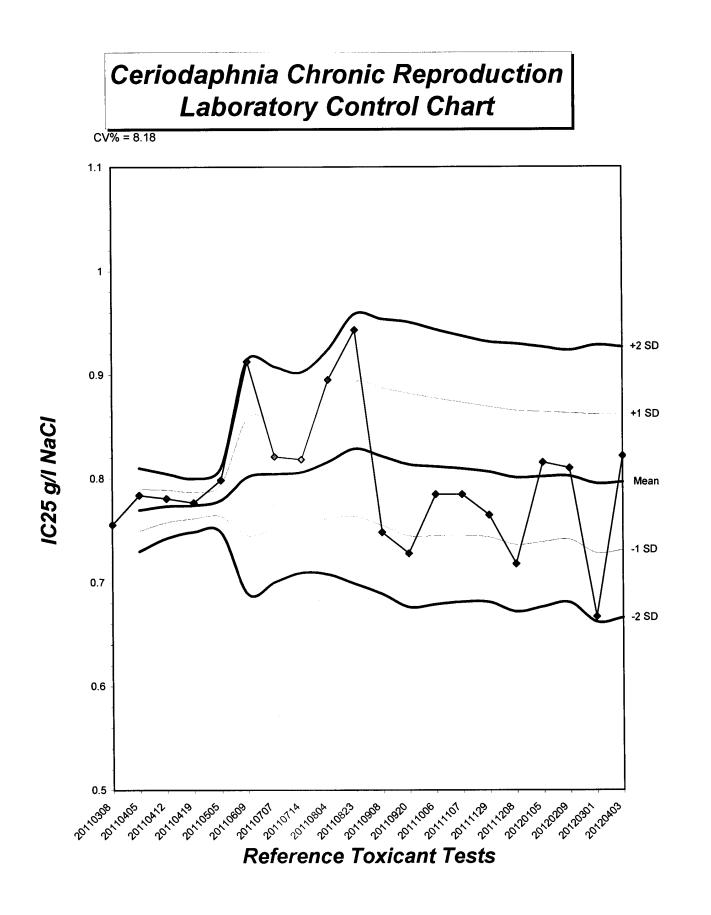
				Linea	r Interpolation	(200 Resamples)	
Point	gm/L	SD	95%	CL	Skew		
C05	0.3695	0.0911	0.1696	0.5686	0.2464		
IC10	0.4890	0.0910	0.3077	0.662 2	0.18 15		
IC15	0.6005	0.1009	0.4034	0.7714	0.1407	1.0	
IC20	0.7111	0.1157	0.4592	0.95 79	0.180 7	0.9	•
IC25	0.8218	0.1195	0.5745	1.0536	0.0455	4	
IC40	1.1137	0.1010	0.8928	1.2609	-0.5191	0.8	
IC50	1.2774	0.0905	1.0680	1. 401 9	-0.8 5 77	0.7 -	
						0.6	



Reviewed by:<u>//</u> 5/20/2012

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			Ceriod	laphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	ic		Sample ID):	REF-Ref 1	Toxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	luatic Tes	ting Labs	Sample Ty	ype:	NACL-Soc	dium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EF	A-821-R-	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

				Transform	n: Untran		1-Tailed			
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non		0.93053		0.94		-0.5964	-0.342			
Bartlett's Test indicates equal var	iances (p =	0.53)			2.22089		11.3449			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control										

Reviewed by: 5/20/2012

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



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QA/QC No.: RT-120403

Start Date:04/03/2012

0	D			Nu	mber	• of Y	Total	No.	Analyst					
Sample	Day	Α	В	С	D	E	F	G	Н	I	J	Live Young	Live Adults	Initials
Control	1	0	0	0	0	0	0	\mathcal{O}	O	C	С	\mathcal{O}	10	n
	2	0	0	\mathcal{O}	0	\mathcal{O}	\mathcal{O}	0	\mathcal{O}	Ò	0	Ò	10	Th
	3	U	0	\mathcal{C}	C	3	$<$	14	N	J	0	10	10	n
	4	3	5	4	Ч	0	4	U	0	3	4	27	10	K
	5	0	\mathcal{O}	10	8	8	9	9	10	7	8	69	10	h
	6	17	12	11	13	21	14	کا	14	10	10	129	10	To
	7	(1	~	1	-	_	ł	(. (_	-	-
	Total	20	17	25	25	24	27	28	27	20	22	235	10	h
0.25 g/l	1	0	0	0	0	0	0	0	0	Ù	\mathcal{C}	0	10	M
	2	U	\mathcal{O}	\mathcal{O}	\mathcal{O}	0	\mathcal{O}	0	0	0	0	0	10	In
	3	\bigcirc	0	\mathcal{O}	0	4	C	4	\mathcal{C}	Ù	\mathcal{C}	8	10	A
	4	5	Ч	5	5	\dot{o}	4	Ù	5	Ч	Ч	36	10	h
	5	0	Õ	10	9	lV	9	7	9	9	8	71	10	h
	6	16	13	14	12	り	12	14	13	10	11	128	10	Th
	7	-	1	-	-	-		((1	1	_		-
	Total	21	17	29	26	27	25	25	رح	23	23	243	ل ر	M
0.5 g/l	1	\mathcal{O}	0	\mathcal{O}	C	0	C	0	0	\mathcal{O}	0	\sim	10	M
	2	0	0	0	\bigcirc	0	\mathcal{C}	Ò	C	С	\sim	\mathcal{C}	10	In
	3	\mathcal{O}	\mathcal{O}	\bigcirc	C	\mathcal{C}	C	-4	\sim	0	\mathcal{O}		10	Th
	4	4	Ч	3	3	5	Ч	\dot{o}	3	ら	Ч	34	10	
	5	0	0	2	9	8	7	9	7	7	8	62	10	h
	6	12	-10	13	10	11	12	10	13	12	11	114	10	Th
	7	-	-	-		_				_				-
	Total	16	14	23	22	24	bz	23	23	23	53	214	10	1

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



QA/QC No.: RT-120403

Start Date:04/03/2012

	D			Nu	mbe	r of Y	oung	Produ	ced			Total	No. Live	Analyst
Sample	Day	Α	В	С	D	E	F	G	H	I	J	Live Young	Live Adults	Initials
	1	\mathcal{O}	0	0	0	\mathcal{O}	C	\mathcal{C}	\circ	C	C	\mathcal{C}	10	h
	2	0	0	0	Ò	\mathcal{O}	V	\mathcal{O}	Ù	\mathcal{C}	\mathcal{C}	C	10	12
	3	0	\mathcal{O}	0	\mathcal{O}	3	∂	0	\mathcal{O}	0	\mathcal{O}	3	10	h
1.0 /1	4	3	4	Z	3	0	3	4	L	2	3	Z 8	IU	K
1.0 g/l	5	\mathcal{O}	0	0	7	7	U	8	7	7	6	43	NO	h
	6	12	13	6	10	13	12	0	Ц	0	10	87	V	n
	7		-	_	-	-	-	-	(-	-		-	
	Total	15	17	8	20	23	15	12	22	9	19	160	10	m
	1	\mathcal{O}	C	C	C	\mathcal{O}	C	C	С	C	6	\circ	10	R
	2	X	X	\mathcal{C}	C	C	\mathcal{O}	X	X	0	Ó	0	4	R
	3	-	<u> </u>	0	C		\mathcal{O}		-	0	\mathcal{C}	0	6	
2.0 //	4		-	0	Õ	C	C	-	-	C	\mathcal{O}	C	6	12
2.0 g/l	5		-	0	2	2	3		-	0	Z	9	6	h
	6	-	-	\mathcal{O}	0	Z	\mathcal{O}	1	1	0	3	5	6	. l
	7	\sim	1	(-	-	1	(-	(-		
	Total	\bigcirc		$ \mathcal{O} $	2	<u> </u>	3	\bigcirc	0	\mathcal{O}	5	14	6	2
	1	X	X	X	メ	\times	X		$\left \right\rangle$	X		Ò	0	p
	2		-	-	-	-	-	-	-	-	-	-	-	/
	3	-	-	-	-	-	-	-	-		-	-		
	4	_	-	-			-	-		-	-	~	_	
4.0 g/l	5	-	-	-	-	_	-	-	-	-	-	(—	
	6		- 1		-	-	-	~	-	-	-	_		
	7			-	-	-		-	-	-				
	Total	$\overline{\mathbf{O}}$		0	C	C	C	0	0	0	10	F C	0	M

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



QA/QC No.: RT-120403

Start Date:04/03/2012

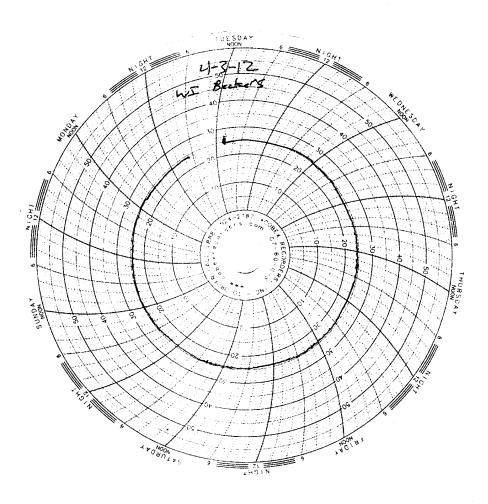
	1	·		r										r	
		DA	Y 1	DA	Y 2	DA	AY 3	DA	Y 4	DA	Y 5	DA	AY 6	DA	Y 7
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst I	nitials:	F	1	1	1	1	2	2	I	1	1	7	1/-	\square	ħ
Time of Re	eadings:	1400	14~	1400	1400	1400	140	1400	1400	140	1400	1400	11/2	~_	~
	DO	8.3	8,2	29	8.6	7.8	4.5	7.9	8.4	.8.5	8.7	8.3	8.6	_	
Control	pН	8-0	\$,2	8,1	8.1	8.2	8.2	8.1	8.2	8.	8.0	8.1	80	\frown	
	Temp	24.7	247	243	24,3	24.6	24.7	24 <u>.</u> 8	24.7	24.8	24.41	24.3	24.5		\frown
	DO	8.4	8.4	8.2	5:6	8,4	8,3	8.7	8.3	7.9	\$6	8.3	2.7		(
0.25 g/l	pН	8.0	8. (8.2	8.2	8.2	8.2	8,1	8,2	8.1	8.0	8.1	81		1
	Temp	24.5	24.7	24.5	24.5	24.7	24.8	24.6	24.7	24.8	24.4	૮५.૬	276		1
	DO	8.2	8,3	8.1	8,6	8,2	8,6	8.0	8.4	8.1	8.6	8.4	8.0	\frown	_
0.5 g/l	pН	8.0	8.1	8,2	8.1	8,2	8.2	51	8.1	8.1	8.0	8.1	8-0		
	Temp	24.6	2 <i>4.</i> 9	24,5	24.2	24.3	24.8	24. >	24.8	24.4	24.3	24.7	25.2		
	DO	8.2	8,3	8.1	8.4	8.3	8.5	7.9	8.1	810	8,4	8.3	8.1		
1.0 g/l	pН	8.0	8.2	8.2	8,2	8,2	81	8.1	8.1	8:1	8,1	8.1	8.0	1	-
	Temp	247	247	२५. ८	245	24.5	24.7	24.7	246	24.8	24.7	24.5	24.5		<u> </u>
	DO	8.4	8.2	7.9	512	8:1	8.3	7.9	8.2	8,1	8.3	8.1	8.2	<u> </u>	-
2.0 g/l	pН	8.0	8.1	8.2	81	8:2	·«.	810	8.1	8.1	8.0	8.0	8.0		-
	Temp	24.7	25,2	<i>८५५</i>	24.5	24, 3	24.5	24.7	24.8	24.8	243	24.6	24-6		
	DO	8.5	8.1	-	-	-	-	<u> </u>	<u> </u>	~	\	~	\ \	/	`
4.0 g/l	pН	80	8, 1	-	-	-	-	-	-	-	-	-	-	-	<u>`</u>
	Temp	24.7	24.5	-	-	-	<u> -</u>						-	-	
	Di	ssolved	l Oxyge	n (DO)	reading	gs are i	n mg/l (O ₂ ; Tem	perature	e (Temp) readin	gs are i	n ℃.		
	Additional	Parama	tare				Cont	rol				High C	oncentra	tion	
·					Day	1	Day	3	Day 5		Day 1		Day 3	D	ay 5
	Conduct	ivity (µS)		30	9	>19		316		,960	2	2520	37	\$10
	Alkalinity	(mg/l CaC	CO ₃)		69		67		67		68		68		¥
	Hardness (mg/l CaC	O ₃)		90		87		88		<i>q V</i>		89	8	8
							urce of l	Neonates							
Rep	licate:		A	В			D	Е	F		G	Н			i≠J
Bro	od ID:		B	20	. 30		<u>م 108 ر</u>	1 <u>E</u>	3E		F	19	<u>3</u> H	5/20/2	J

5/20/2012



Test Temperature Chart

Test No: RT-120403 Date Tested: 04/03/12 to 04/09/06 Acceptable Range: 25+/- 1°C



		ľ													/			-0-	ſ
Client Name/Address:		ا سلس	Project:		1					ŀ		A	ANALYSIS	S REQUIRED	RED				
MWVH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007	e 200		Boeing-SSFL NPDES Routine Outfall 018 COMPOSITEー 仏(ぬい)	11 018 11 018 · 任任(風山)	traiscitus	, Hg, Cd,			(-		-
tact: E	Test America Contact: Debby Wilson					detals: Cu, Pb			N, Perchlorate				otoluene, Bis(S) PCP (S)					Comments	··· ···
B ronw	Project Manager: Bronwyn Kelly Sampler: ぞさとん るか<i>i</i>がみじ		Phone Number: (626) 568-6691 Fax Number:			Fe, Mn	20 degrees C	(SA8M) sine	1- ² 0N+ ⁸ 0N ^{(†}	N, Nitrite-N	y, TDS, TSS	ila-N (350.2)	tinia 4,2,40						
Sample (Matrix	Container Type	# of Cont	Sampling Date/Time	Preservative	Bottle #	uZ 'əS			cı, so				T 9,4,S						
~ ~	1L Poly	-	4-13-2012	[©] ONH	6A														
3	1L Poly	-		FONH 3	68	×													-
N	1L Amber	N		None	7A, 7B		×												
N	1L Poly			None	80		×												
W 5(500 mL Poly	2	9.0 10-1 .	None	,9A, 9B			×											
W 5(500 mL Poly	2	**======	None	10A, 10B				×										
W 5(500 mL Poly	.		None	11					×									
W 50	500 mL Poly	2		None	12A, 12B						×							~	
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Login Sample Receipt Checklist

Client: MWH Americas Inc

Login Number: 8616 List Number: 1

Creator: Kim, Will

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

Job Number: 440-8616-1

List Source: TestAmerica Irvine

Login Sample Receipt Checklist

Client: MWH Americas Inc

Login Number: 8623 List Number: 1

Creator: Kim, Will

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

List Source: TestAmerica Irvine

APPENDIX G

Section 15

Outfall 019 – April 4 & 5, 2012 MECX Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-7559-1

Prepared by

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

I. INTRODUCTION

Task Order Title: Contract Task Order:	Boeing SSFL NPDES 1261.100D.00
Sample Delivery Group:	440-7559-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019 (Grab)	440-7559-1	N/A	Water	4/4/2012 9:30:00 AM	120.1, 1664A, 624, SM 2540F
Outfall 019 (Composite)	440-7684-1	G2D070420-001, S204034-01	Water	4/5/2012 9:45:00 AM	SM 2540D, SM 4500 CN E, SM 4500 F C, SM 4500 NH3 C, SM 5310B, SM 5540C, SM5210B, ASTM D-5174
Trip Blank	440-7559-2	N/A	Water	4/4/2012 9:30:00 AM	624

Table 1. Sample Identification

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine and TestAmerica-West Sacramento marginally below the temperature limits of $4^{\circ}C \pm 2^{\circ}C$, at 1.5 and $1.9^{\circ}C$, respectively; however, as the samples were not noted to be frozen or damaged, no qualifications were required. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were required. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact upon receipt at Eberline. As the samples were sent by courier to the remaining laboratories, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*11, *111	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin Date Reviewed: May 29, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613, and the National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had detects reported below the EDL for 1,2,3,4,6,7,8-HpCDF, OCDD, and totals for TCDD and HpCDF. The method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample results. The sample results for all of the method blank contaminants were qualified as nondetected, "U," at the level of contamination.

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

EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining individual isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Totals for HpCDD and HxCDF were qualified as estimated, "J," as additional peaks comprised the totals.

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

Reviewed By: P. Meeks Date Reviewed: May 29, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, 200.8, 245.1, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: Analytical holding times, six months for ICP and ICP-MS metals and 28 days for mercury, were met.
- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were ≤5%, and all masses of interest were calibrated to ≤ 0.1 amu and ≤0.9 amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP and ICP-MS metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Copper was detected in the total method blank at 0.639 µg/L; therefore, total copper detected in the sample was qualified as nondetected, "U." Method blanks and CCBs had no other applicable detects.
- Interference Check Samples: Recoveries were within 80-120%. Cadmium and copper were detected in the ICSA at concentrations between the MDL and the reporting limit; however, the reviewer was not able to determine if the detects were due to interference or low-level contamination of the ICSA solution.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the total and dissolved 200.7 and 200.8 analytes. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: All sample internal standard intensities were within 70-125% of the internal standard intensities measured in the initial calibration.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

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

C. EPA METHOD 608—Pesticides (alpha-BHC only)

Reviewed By: L. Calvin Date Reviewed: May 29, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Method 608, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- Calibration: The initial calibration had a %RSD of ≤10% on both analytical columns, and the ICV and CCVs had %Ds within the QC limit of ≤15% for alpha -BHC. The breakdown totals for endrin and 4,4'-DDT were ≤15%.
- Blanks: The method blank had no confirmed detect above the MDL for alpha-BHC.
- Blank Spikes and Laboratory Control Samples: Recoveries and the RPD for alpha-BHC were within the laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within the laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample from this SDG. Evaluation of method accuracy and precision was based on the LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: This SDG had no identified field duplicate samples.
- Compound Identification: Compound identification was verified. Review of the sample chromatograms and retention times indicated no problems with target compound identification. The laboratory analyzed for the pesticide alpha-BHC by Method 608.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limit was supported by the low point of the initial calibration and the laboratory MDL. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Any reported nondetect is valid to the reporting limit.

D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: May 29, 2012

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

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

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

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. All RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

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

Reviewed By: L. Calvin Date Reviewed: May 29, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0), EPA Method 625, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.
- Calibration: Calibration criteria were met. The initial calibration average RRFs and the ICV and continuing calibration RRFs wer ≥0.05 for all target compounds. The initial calibration %RSDs were ≤35%, or r² values ≥0.995. The ICV and CCV %Ds were ≤20% for all applicable target compounds.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs were within laboratory-established QC limits.

- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy and precision was evaluated based on LCS/LCSD results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: Compound identification was verified. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.
- System Performance: Review of the raw data indicated no problems with system performance.

F. EPA METHOD 624—Volatile Organic Compounds (VOCs)

Reviewed By: L. Calvin Date Reviewed: May 29, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0), EPA Method 624, and the National Functional Guidelines for Organic Data Review (10/99).

• Holding Times: The preserved water samples were analyzed within 14 days of collection.

- GC/MS Tuning: The BFB tunes met the method abundance criteria. The samples were analyzed within 12 hours of the BFB injection time.
- Calibration: Calibration criteria were met. The initial calibration average RRFs and the ICV and continuing calibration RRFs were ≥0.05 for all applicable target compounds. The initial calibration %RSDs were ≤35%, or r² values ≥0.995. The second source ICV and all applicable CCV recoveries were within the method control limits.
- Blanks: The method blanks had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the site sample in this SDG. Method accuracy was evaluated based on LCS results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Trip Blanks: Sample Trip Blank was the trip blank associated with the site sample in this SDG. The trip blank had no target compounds detected above the MDL.
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: Compound identification was verified. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.

• System Performance: Review of the raw data indicated no problems with system performance.

G. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks Date Reviewed: May 29, 2012

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

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration r² value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. IPC recoveries were within the method-established control limit of 80-120%. The ICCS recovery was within 75-125%.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the methodestablished QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

H. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: May 29, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC[×]* Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods 120.1, 180.1, 300.0, 1664A, SM 2540F, SM 4500F C, SM 4500CN E, SM 4500 NH3C, SM 5310B, SM 5540C, SM 5210B, SM 2540C, and SM 2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: MBAS was analyzed 10 hours beyond the 48 hour holding time; therefore, nondetected MBAS in the sample was qualified as estimated, "UJ." The remaining analytical holding times were met.
- Calibration: Calibration criteria were met. Initial calibration r² values were ≥0.995. the turbidity ICV was recovered at 80%; therefore, turbidity detected in the sample was qualified as estimated, "J." All remaining ICVs and all CCV recoveries were within 90-110%. Balance calibration logs were acceptable.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the 300.0 analytes, cyanide, fluoride, and MBAS. The TOC MSD recovery was above the control limit; therefore, TOC detected in the sample was qualified as estimated, "J." Recoveries and RPDs were within laboratory-established QC limits. Method accuracy for the remaining analyses were evaluated based on the LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

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

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

Validated Sample Result Forms 440-7559-1

Sample Name	Outfall 019 G	Water	Validation Level: IV					
Lab Sample Name:	440-7559-1	Sam	ple Date:	4/4/2012 9	:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Specific Conductance	STL00244	1100	1.0	1.0	umhos/c			
Analysis Method	d 1613E	}						
Sample Name	Outfall 019 Co	omposite	Matri	ix Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012 9	:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000050	0.0000014	ug/L	J Q	UJ	*Ш
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000014	ug/L	J Q B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000025	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000016	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000008	ug/L	1 Q	UJ	*III
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000015	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000008	ug/L	1 Q	UJ	*Ш
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000014	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000013	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000023	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000021	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000008	ug/L	1 Q	UJ	*Ш
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000026	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000023	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000014	ug/L		U	
2,3,7,8-TCDF	51207-31-9	0.000002	0.000010	0.0000014	ug/L	J	R	D
OCDD	3268-87-9	ND	0.00010	0.0000021	ug/L	1 Q B	U	В
OCDF	39001-02-0	0.000004	0.00010	0.0000025	ug/L	J	J	DNQ
Total HpCDD	37871-00-4	0.000005	0.000050	0.0000014	ug/L	1 Q	J	DNQ, *III
Fotal HpCDF	38998-75-3	ND	0.000050	0.0000019	ug/L	1 Q B	U	В
Fotal HxCDD	34465-46-8	ND	0.000050	0.0000014	ug/L		U	
Fotal HxCDF	55684-94-1	0.000005	0.000050	0.0000009	ug/L	1 Q	J	DNQ, *III
Fotal PeCDD	36088-22-9	ND	0.000050	0.0000023	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000050	0.0000021	ug/L		U	
Total TCDD	41903-57-5	ND	0.000010	0.0000012	ug/L	J B	U	В
Total TCDF	55722-27-5	0.000002	0.000010	0.0000011	ug/L	J	J	DNQ

Friday, June 01, 2012

Sample Name	Outfall 019 G	rab	Matri	x Type:	Water	Validation Level: IV			
Lab Sample Name:	440-7559-1	Sam	ple Date:	4/4/2012	9:30:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
HEM	STL00181	ND	4.7	1.3	mg/L		U		
Analysis Metho	od 180.1								
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Turbidity	STL00189	0.070	0.10	0.040	NTU	J,DX	J-	R, DNQ	
Analysis Metho	od 200.7	' Rev 4.	4						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۷	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Hardness, as CaCO3	STL00009	320	0.33	0.17	mg/L				
Hardness, as CaCO3, Disso	olved STL00009	300	0.33	0.17	mg/L				
Zinc	7440-66-6	ND	20	6.0	ug/L		U		
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U		
Analysis Metho	od 200.8								
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Cadmium	7440-43-9	ND	1.0	0.10	ug/L		U		
Cadmium, Dissolved	7440-43-9	ND	1.0	0.10	ug/L		U		
Copper	7440-50-8	ND	2.0	0.50	ug/L	J,DX MB	U	В	
Copper, Dissolved	7440-50-8	ND	2.0	0.50	ug/L		U		
Lead	7439-92-1	ND	1.0	0.20	ug/L		U		
Lead, Dissolved	7439-92-1	ND	1.0	0.20	ug/L		U		
Selenium	7782-49-2	ND	2.0	0.50	ug/L		U		

Analysis Method 1664A

Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	Validation Level: IV			
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Mercury	7439-97-6	ND	0.20	0.10	ug/L	IB	U		
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U		
Analysis Metho	od 300.0								
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۷	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Chloride	16887-00-6	31	10	8.0	mg/L				
Nitrate as N	14797-55-8	ND	0.11	0.080	mg/L		U		
Nitrate Nitrite as N	STL00217	ND	0.26	0.19	mg/L		U		
Nitrite as N	14797-65-0	ND	0.15	0.11	mg/L		U		
Sulfate	14808-79-8	150	10	8.0	mg/L				
Analysis Metho	od 314.0								
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۷	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Perchlorate	14797-73-0	ND	4.0	0.95	ug/L		U		
Analysis Metho	od 608 P	esticid	es						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	١	alidation Le	vel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
		ND	0.0047	0.0024			U		

Analysis Method 245.1

Sample Name	Outfall 019 Grab		Matri	x Type:	Water	Validation Level: IV		
Lab Sample Name:	440-7559-1	Sam	ple Date:	4/4/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1-Trichloroethane	71-55-6	ND	0.50	0.30	ug/L		U	
1,1,2-Trichloroethane	79-00-5	ND	0.50	0.30	ug/L		U	
1,1-Dichloroethane	75-34-3	ND	0.50	0.40	ug/L		U	
1,1-Dichloroethene	75-35-4	ND	0.50	0.42	ug/L		U	
1,2-Dichloroethane	107-06-2	ND	0.50	0.28	ug/L		U	
Benzene	71-43-2	ND	0.50	0.28	ug/L		U	
Carbon tetrachloride	56-23-5	ND	0.50	0.28	ug/L		U	
Chloroform	67-66-3	ND	0.50	0.33	ug/L		U	
cis-1,2-Dichloroethene	156-59-2	ND	0.50	0.32	ug/L		U	
Ethylbenzene	100-41-4	ND	0.50	0.25	ug/L		U	
Tetrachloroethene	127-18-4	ND	0.50	0.32	ug/L		U	
Toluene	108-88-3	ND	0.50	0.36	ug/L		U	
Trichloroethene	79-01-6	ND	0.50	0.26	ug/L		U	
Trichlorofluoromethane	75-69-4	ND	0.50	0.34	ug/L		U	
Trichlorotrifluoroethane(F-11	3) 76-13-1	ND	5.0	0.50	ug/L		U	
Vinyl chloride	75-01-4	ND	0.50	0.40	ug/L		U	
Xylenes, Total	1330-20-7	ND	1.5	0.90	ug/L		U	

Analysis Method 624

Sample Name	Trip Blank		Matri	ix Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-7559-2	Sam	ple Date:	4/4/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,1,1-Trichloroethane	71-55-6	ND	0.50	0.30	ug/L		U	
1,1,2-Trichloroethane	79-00-5	ND	0.50	0.30	ug/L		U	
1,1-Dichloroethane	75-34-3	ND	0.50	0.40	ug/L		U	
1,1-Dichloroethene	75-35-4	ND	0.50	0.42	ug/L		U	
1,2-Dichloroethane	107-06-2	ND	0.50	0.28	ug/L		U	
Benzene	71-43-2	ND	0.50	0.28	ug/L		U	
Carbon tetrachloride	56-23-5	ND	0.50	0.28	ug/L		U	
Chloroform	67-66-3	ND	0.50	0.33	ug/L		U	
cis-1,2-Dichloroethene	156-59-2	ND	0.50	0.32	ug/L		U	
Ethylbenzene	100-41-4	ND	0.50	0.25	ug/L		U	
Tetrachloroethene	127-18-4	ND	0.50	0.32	ug/L		U	
Toluene	108-88-3	ND	0.50	0.36	ug/L		U	
Trichloroethene	79-01-6	ND	0.50	0.26	ug/L		U	
Trichlorofluoromethane	75-69-4	ND	0.50	0.34	ug/L		U	
Trichlorotrifluoroethane(F-1	13) 76-13-1	ND	5.0	0.50	ug/L		U	
Vinyl chloride	75-01-4	ND	0.50	0.40	ug/L		U	
Xylenes, Total	1330-20-7	ND	1.5	0.90	ug/L		U	
Analysis Method	d 625							
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۷	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4,6-Trichlorophenol	88-06-2	ND	11.3	0.0943	ug/L		U	
2,4-Dinitrotoluene	121-14-2	ND	9.43	0.189	ug/L		U	
Bis(2-ethylhexyl) phthalate	117-81-7	ND	9.43	1.60	ug/L		U	
					-		U	
N-Nitrosodimethylamine	62-75-9	ND	9.43	0.0943	ug/L		U	
N-Nitrosodimethylamine Pentachlorophenol	62-75-9 87-86-5	ND ND	9.43 9.43	0.0943	ug/L ug/L		U	
Pentachlorophenol	87-86-5		9.43	0.377	ug/L		-	
Pentachlorophenol	87-86-5	ND na Spec	9.43 c K-40	0.377 CS-13	ug/L	V	-	vel: IV
Pentachlorophenol Analysis Method Sample Name	87-86-5 d Gamr	ND na Spector omposite	9.43 C K-40 Matri	0.377 <i>CS-13</i> ix Type:	ug/L 7	N	U	vel: IV
Pentachlorophenol Analysis Method	87-86-5 d Gamr Outfall 019 C	ND na Spector omposite	9.43 C K-40 Matri	0.377 <i>CS-13</i> ix Type:	ug/L 7 Water	V Lab Qualifier	U	vel: ^{IV} Validation Notes
Pentachlorophenol Analysis Method Sample Name Lab Sample Name:	87-86-5 d Gamr Outfall 019 C 440-7684-1	ND na Spector omposite Sam Result	9.43 C K-40 Matri aple Date:	0.377 <i>CS-13</i> ix Type: 4/5/2012	ug/L 7 Water 9:45:00 AM Result	Lab	U Validation Le Validation	Validation

Analysis Method 624

Analysis Meine		5 Агрпа		<i>:</i> 10				
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	-0.11	3	1.65	pCi/L	U	UJ	С
Gross Beta	12587472	1.44	4	2.03	pCi/L	U	U	
Analysis Metho	od Radiu	ım 226						
Sample Name	Outfall 019 C	utfall 019 Composite Matri			Water	۲	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.036	1	0.573	pCi/L	U	U	
Analysis Metho	od Radiu	ım 228						
Sample Name	Outfall 019 Composite Matr			x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	-0.044	1	0.393	pCi/L	U	U	
Analysis Metho	od SM 2.	540C						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۲	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Dissolved Solids	STL00242	520	10	10	mg/L			
Analysis Metho	od SM 2.	540D						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	۷	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result	RL	MDL	Result	Lab	Validation	Validation
Analyte		Value			Units	Qualifier	Qualifier	Notes

Analysis Method Gross Alpha and Beta

Analysis Meine	Ju SIVI 2.	J 401 '							
Sample Name	Outfall 019 G	rab	Matri	x Type:	Water	Validation Level: IV			
Lab Sample Name:	440-7559-1	Sam	ple Date:	4/4/2012	9:30:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Settleable Solids	STL00013	ND	0.10	0.10	mL/L/Hr		U		
Analysis Metho	od SM 43	500 CN	$^{\prime}E$						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	V	alidation Le	evel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Cyanide, Total	57-12-5	ND	5.0	3.0	ug/L		U		
Analysis Metho	od SM 43	500 F C	7						
Sample Name	Outfall 019 Composite Matrix Type: Water				Validation Level: IV				
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Fluoride	16984-48-8	0.19	0.10	0.020	mg/L				
Analysis Metho	od SM 43	500 NH	13 C						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	T.	Validation Le	evel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Ammonia (as N)	7664-41-7	0.560	0.400	0.157	mg/L				
Analysis Metho	od SM 5.	310B							
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	T.	Validation Le	evel: IV	
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM				
Analyte	CAS No	Result	RL	MDL	Result	Lab		Validation	
Analyte		Value			Units	Qualifier	Qualifier	Notes	

Analysis Method SM 2540F

Analysis Method	$\lambda = SWI J$.	540C						
Sample Name	Outfall 019 C	composite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Methylene Blue Active Substances	STL00077	ND	0.10	0.050	mg/L		UJ	Н
Analysis Method	d SM52	210B						
Sample Name	Outfall 019 C	composite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Biochemical Oxygen Deman	d STL00311	ND	2.0	0.50	mg/L		U	
Analysis Method	d Stron	tium 90)					
Sample Name	Outfall 019 C	composite	Matri	x Type:	Water	Validation Level: IV		
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.04	2	0.715	pCi/L	U	U	
Analysis Method	d Tritiu	ım						
Sample Name	Outfall 019 C	composite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	61.3	500	167	pCi/L	U	U	
Analysis Method	d Uran	ium, Co	ombine	d				
Sample Name	Outfall 019 C	composite	Matri	x Type:	Water	۲	alidation Le	vel: IV
Lab Sample Name:	440-7684-1	Sam	ple Date:	4/5/2012	9:45:00 AM			
	CAS No	Result	RL	MDL	Result	Lab	X7 - 11 - 1 - 41	Validation
Analyte	CAS NO	Value	KL	NIDL	Units	Qualifier	Validation Qualifier	Validation Notes

Analysis Method SM 5540C

APPENDIX G

Section 16

Outfall 019 – April 4 & 5, 2012 Test America Analytical Laboratory Report



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: 440-7559-1

Client Project/Site: Boeing SSFL outfalls Sampling Event: Quarterly Outfall 019

For:

MWH Americas Inc 618 Michillinda Avenue, Suite 200 Arcadia, California 91007

Attn: Bronwyn Kelly

Authorized for release by: 5/15/2012 4:49:34 PM

Debby Wilson Project Manager I debby.wilson@testamericainc.com

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

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

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



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

ebby Wilson

Debby Wilson Project Manager I 5/15/2012 4:49:34 PM

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Sample Summary

Client: MWH Americas Inc Project/Site: Boeing SSFL outfalls TestAmerica Job ID: 440-7559-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-7559-1	Outfall 019 Grab	Water	04/04/12 09:30	04/04/12 19:00
440-7559-2	Trip Blank	Water	04/04/12 09:30	04/04/12 19:00
440-7684-1	Outfall 019 Composite	Water	04/05/12 09:45	04/05/12 18:10
440-7684-3	Trip Blank Eberline	Water	04/06/12 14:00	04/05/12 18:10

Job ID: 440-7559-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-7559-1

Comments

No additional comments.

Receipt

The samples were received on 4/4/2012 7:00 PM and 4/5/2012 6:10 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.50 C and 3.50 C.

GC/MS VOA

No analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 625: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 18185. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

HPLC

No analytical or quality issues were noted.

GC Semi VOA

Method(s) 608: The continuing calibration verification (CCV) for analytical batch 18698 exceeded control criteria for DDD,2,4 DDT, DDT and Methoxychlor. The data have been qualified and reported.

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 18417. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

Metals

Method(s) 245.1: The continuing calibration verification (CCV) for mercury associated with batch 440-19570 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other analytical or quality issues were noted.

General Chemistry

Method(s) SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries associated with batch 18689 were outside control limits: (440-7354-2 MS), (440-7354-2 MSD). Matrix interference is suspected.

No other analytical or quality issues were noted.

WATER, 1613B, Dioxins/Furans with Totals

Sample: 1

This sample was originally extracted in Batch# 2103056. The associated laboratory control sample (LCS) has recoveries for some analytes above the established control limits indicating a potential high bias in the data. The sample is non-detect (ND) or has estimated low-level concentrations (J flag) for these analytes. It was decided to re-extract the sample. It was later discovered that the elevated recoveries in the LCS is due to the standard concentrating.

The sample was re-extracted in Batch# 2111082. The associated MB and LCS both had very low internal standard recoveries (<10%) and the MB contained several analytes with concentrations at or near the reporting limit, but not in a pattern suggesting LCS carryover. The sample results from this batch are not consistent with the initial analysis and it appears that the sample may have been impacted by carryover from previously extracted samples in the Hepta and Octa chlorination levels. Thus the sample was extracted again in Batch# 2117087.

Job ID: 440-7559-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

The MB for Batch# 2117087 has appears to contain carryover from the LCS, as most target analytes are present at or near the reporting limit. The sample does not appear to have been impacted by LCS carryover. Analytical results of this sample are comparable to the initial analysis with several estimated low-level concentrations (J flag).

After discussions with Elizabeth Wessling of MECX, it was agreed to report the data from the initial analysis (Batch# 2103056) with the raw data for the other 2 batches.

Sample: 1 (Batch# 2103056)

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

There are one or more analytes in the MB reported at a concentration below the estimated detection limit (EDL). The data is reported as a positive detection because the peaks elute at the correct retention time for both characteristic ions and have a signal to noise ratio greater than the method required 2.5:1.

Organic Prep

No analytical or quality issues were noted.

Client Sample ID: Outfall 019 Grab

Date Collected: 04/04/12 09:30 Date Received: 04/04/12 19:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/09/12 13:36	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/09/12 13:36	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/09/12 13:36	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			04/09/12 13:36	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/09/12 13:36	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/09/12 13:36	1
Benzene	ND		0.50	0.28	ug/L			04/09/12 13:36	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/09/12 13:36	1
Chloroform	ND		0.50	0.33	ug/L			04/09/12 13:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/09/12 13:36	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/09/12 13:36	1
Toluene	ND		0.50	0.36	ug/L			04/09/12 13:36	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/09/12 13:36	1
Trichloroethene	ND		0.50	0.26	ug/L			04/09/12 13:36	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/09/12 13:36	1
Xylenes, Total	ND		1.5	0.90	ug/L			04/09/12 13:36	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/09/12 13:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		80 - 120			-		04/09/12 13:36	1
Dibromofluoromethane (Surr)	99		80 - 120					04/09/12 13:36	1
Toluene-d8 (Surr)	101		80 - 120					04/09/12 13:36	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		04/12/12 09:08	04/12/12 09:24	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1100		1.0	1.0	umhos/cm			04/09/12 10:08	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			04/05/12 08:36	1

Client Sample ID: Trip Blank

Date Collected: 04/04/12 09:30

Date Received: 04/04/12 19:00

Method: 624 - Volatile Organic C Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	0.50	0.30	ug/L			04/09/12 14:03	1
1,1,2-Trichloroethane	ND	0.50	0.30	ug/L			04/09/12 14:03	1
1,1-Dichloroethane	ND	0.50	0.40	ug/L			04/09/12 14:03	1
Trichlorotrifluoroethane(F-113)	ND	5.0	0.50	ug/L			04/09/12 14:03	1
1,1-Dichloroethene	ND	0.50	0.42	ug/L			04/09/12 14:03	1
1,2-Dichloroethane	ND	0.50	0.28	ug/L			04/09/12 14:03	1
Benzene	ND	0.50	0.28	ug/L			04/09/12 14:03	1
Carbon tetrachloride	ND	0.50	0.28	ug/L			04/09/12 14:03	1
Chloroform	ND	0.50	0.33	ug/L			04/09/12 14:03	1
Ethylbenzene	ND	0.50	0.25	ug/L			04/09/12 14:03	1
Tetrachloroethene	ND	0.50	0.32	ug/L			04/09/12 14:03	1
Toluene	ND	0.50	0.36	ug/L			04/09/12 14:03	1
Trichlorofluoromethane	ND	0.50	0.34	ug/L			04/09/12 14:03	1
Trichloroethene	ND	0.50	0.26	ug/L			04/09/12 14:03	1
cis-1,2-Dichloroethene	ND	0.50	0.32	ug/L			04/09/12 14:03	1

Lab Sample ID: 440-7559-2

Matrix: Water

Matrix: Water

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5/15/2012

Client Sample ID: Trip Blank Date Collected: 04/04/12 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		1.5	0.90	ug/L			04/09/12 14:03	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/09/12 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			80 - 120			-		04/09/12 14:03	1
Dibromofluoromethane (Surr)	103		80 - 120					04/09/12 14:03	1
Toluene-d8 (Surr)	99		80 - 120					04/09/12 14:03	1

Client Sample ID: Outfall 019 Composite

Date Collected: 04/05/12 09:45

Date Received: 04/05/12 18:10

Method: 625 - Semivolatile Organic C	ompound	s (GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		11.3	0.0943	ug/L		04/07/12 10:33	04/10/12 09:31	1
Bis(2-ethylhexyl) phthalate	ND		9.43	1.60	ug/L		04/07/12 10:33	04/10/12 09:31	1
N-Nitrosodimethylamine	ND		9.43	0.0943	ug/L		04/07/12 10:33	04/10/12 09:31	1
Pentachlorophenol	ND		9.43	0.377	ug/L		04/07/12 10:33	04/10/12 09:31	1
2,4-Dinitrotoluene	ND		9.43	0.189	ug/L		04/07/12 10:33	04/10/12 09:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	100		40 - 120	04/07/12 10:33	04/10/12 09:31	1
2-Fluorobiphenyl	86		50 - 120	04/07/12 10:33	04/10/12 09:31	1
2-Fluorophenol	76		30 - 120	04/07/12 10:33	04/10/12 09:31	1
Nitrobenzene-d5	77		45 - 120	04/07/12 10:33	04/10/12 09:31	1
Phenol-d6	78		35 - 120	04/07/12 10:33	04/10/12 09:31	1
Terphenyl-d14	114		50 - 125	04/07/12 10:33	04/10/12 09:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0047	0.0024	ug/L		04/09/12 12:55	04/10/12 19:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	76		35 - 115				04/09/12 12:55	04/10/12 19:22	1
Method: 300.0 - Anions, Ion Chron	natography								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31		10	8.0	mg/L			04/06/12 14:27	20
Nitrate as N	ND		0.11	0.080	mg/L			04/06/12 13:40	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/06/12 13:40	1
Sulfate	150		10	8.0	mg/L			04/06/12 14:27	20
Nitrite as N	ND		0.15	0.11	mg/L			04/06/12 13:40	1
Method: 314.0 - Perchlorate (IC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/11/12 23:27	1

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000023	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total TCDD	0.0000027	JB	0.000010	0.0000012	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,7,8-PeCDD	ND		0.000050	0.0000023	ug/L		04/12/12 09:00	04/14/12 02:39	0.95

TestAmerica Job ID: 440-7559-1

Lab Sample ID: 440-7559-2

Lab Sample ID: 440-7684-1

Matrix: Water

Matrix: Water

2 3 4 5 6 7 8

Client Sample ID: Outfall 019 Composite Date Collected: 04/05/12 09:45 Date Received: 04/05/12 18:10

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDD	ND		0.000050	0.0000023	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000016	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000015	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total HxCDD	ND		0.000050	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,4,6,7,8-HpCDD	0.0000020	JQ	0.000050	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total HpCDD	0.000058	JQ	0.000050	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
OCDD	0.000088	JQB	0.00010	0.0000021	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
2,3,7,8-TCDF	0.0000023	J	0.000010	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
2,3,7,8-TCDF	ND		0.000010	0.0000014	ug/L		04/12/12 09:00	04/16/12 18:56	0.95
Total TCDF	0.000023	J	0.000010	0.0000011	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,7,8-PeCDF	ND		0.000050	0.0000021	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
2,3,4,7,8-PeCDF	ND		0.000050	0.0000026	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total PeCDF	ND		0.000050	0.0000021	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,4,7,8-HxCDF	0.0000018	JQ	0.000050	0.0000087	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,6,7,8-HxCDF	0.0000013	JQ	0.000050	0.0000085	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
2,3,4,6,7,8-HxCDF	0.0000096	JQ	0.000050	0.0000089	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000013	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total HxCDF	0.000052	JQ	0.000050	0.00000098	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,4,6,7,8-HpCDF	0.0000020		0.000050	0.0000014	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000025	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Total HpCDF	0.000020	JQB	0.000050	0.0000019	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
OCDF	0.0000042		0.00010	0.0000025	ug/L		04/12/12 09:00	04/14/12 02:39	0.95
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	86		35 _ 197				04/12/12 09:00	04/14/12 02:39	0.95
37Cl4-2,3,7,8-TCDD	87		35 - 197				04/12/12 09:00	04/16/12 18:56	0.95
Internal Standard	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	64		25 - 164				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,7,8-PeCDD	63		25 - 181				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,4,7,8-HxCDD	54		32 - 141				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,6,7,8-HxCDD	74		28 _ 130				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140				04/12/12 09:00	04/14/12 02:39	0.95
13C-OCDD	67		17 _ 157				04/12/12 09:00	04/14/12 02:39	0.95
13C-2,3,7,8-TCDF	64		24 _ 169				04/12/12 09:00	04/14/12 02:39	0.95
13C-2,3,7,8-TCDF	66		24 - 169				04/12/12 09:00	04/16/12 18:56	0.95
13C-1,2,3,7,8-PeCDF	59		24 - 185				04/12/12 09:00	04/14/12 02:39	0.95
13C-2,3,4,7,8-PeCDF	64		21 - 178				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,6,7,8-HxCDF	69		26 - 123				04/12/12 09:00	04/14/12 02:39	0.95
13C-2,3,4,6,7,8-HxCDF	67		28 - 136				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,7,8,9-HxCDF	68		29 - 147				04/12/12 09:00	04/14/12 02:39	0.95
	65		28 - 143				04/12/12 09:00	04/14/12 02:39	0.95
13C-1,2,3,4,6,7,8-HpCDF									
13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF	67		26 - 138				04/12/12 09:00	04/14/12 02:39	0.95

Analyte	·	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		04/07/12 07:54	04/07/12 13:35	1
Hardness, as CaCO3	320		0.33	0.17	mg/L		04/07/12 07:54	04/07/12 13:35	1

TestAmerica Job ID: 440-7559-1

Lab Sample ID: 440-7684-1 Matrix: Water

Date Collected: 04/05/12 09:45

Client Sample ID: Outfall 019 Composite

TestAmerica Job ID: 440-7559-1

Lab Sample ID: 440-7684-1 Matrix: Water

Method: 200.7 Rev 4.4 - Metals (IC Analyte		d Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Zinc	ND		20	6.0			·	04/07/12 15:34	
					ug/L		04/07/12 06:51		
Hardness, as CaCO3	300		0.33	0.17	mg/L		04/07/12 06:51	04/07/12 15:34	
Method: 200.8 - Metals (ICP/MS) -	Total Recove	rable							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Cadmium	ND		1.0	0.10	ug/L		04/07/12 07:59	04/07/12 15:46	
Copper	0.72	J,DX MB	2.0	0.50	ug/L		04/07/12 07:59	04/07/12 15:46	
Lead	ND		1.0	0.20	ug/L		04/07/12 07:59	04/07/12 15:46	
Selenium	ND		2.0	0.50	ug/L		04/07/12 07:59	04/07/12 15:46	
Method: 200.8 - Metals (ICP/MS) -	Dissolved								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Cadmium	ND		1.0	0.10	ug/L		04/07/12 06:49	04/07/12 15:39	
Copper	ND		2.0		ug/L		04/07/12 06:49	04/07/12 15:39	
Lead	ND		1.0	0.20	-		04/07/12 06:49	04/07/12 15:39	
Selenium	ND		2.0	0.50			04/07/12 06:49	04/07/12 15:39	
	ND		2.0	0.50	ug/L		04/01/12 00.43	04/07/12 10:09	
Method: 245.1 - Mercury (CVAA)	Decult	Qualifian	RL	MDL	11		Dremered	Analyzad	
Analyte Mercury	ND	Qualifier	0.20		ug/L	D	Prepared 04/11/12 19:11	Analyzed 04/13/12 02:52	Dil F
	ND		0.20	0.10	ug/L		04/11/12 10:11	04/10/12 02:02	
Method: 245.1 - Mercury (CVAA)	Dissolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Mercury	ND		0.20	0.10	ug/L		04/12/12 20:37	04/13/12 23:28	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Turbidity	0.070	J,DX	0.10	0.040	NTU			04/06/12 09:54	
Total Dissolved Solids	520		10	10	mg/L			04/06/12 09:13	
Total Suspended Solids	ND		10	10	mg/L			04/06/12 20:25	
Cyanide, Total	ND		5.0	3.0	ug/L		04/17/12 17:12	04/18/12 14:58	
Fluoride	0.19		0.10	0.020				04/20/12 05:22	
Ammonia (as N)	0.560		0.400	0.157	0		04/09/12 20:53	04/09/12 21:30	
Total Organic Carbon	1.3		1.0		mg/L			04/10/12 11:22	
Methylene Blue Active Substances	ND		0.10	0.050	-			04/06/12 19:58	
Biochemical Oxygen Demand	ND		2.0		mg/L			04/06/12 17:27	
Martha da Carrana Cara a K. 40.00.44	-								
Method: Gamma Spec K-40 CS-1:		UD Contract Qualifier	Method RL	MDL	Unit	D	Bronorod	Analyzed	
Analyte	0.346			MDL			Prepared 04/11/12 00:00	Analyzed	Dil Fa
Cesium-137					pCi/L			04/12/12 00:00	
Potassium-40	-2.13	0	25		pCi/L		04/11/12 00:00	04/12/12 00:00	
Method: Gross Alpha and Beta - (
Analyte		Qualifier	RL	MDL	-	D	Prepared	Analyzed	Dil Fa
Gross Alpha	-0.11	U	3		pCi/L		04/12/12 00:00	04/17/12 15:49	
Gross Beta	1.44	U	4		pCi/L		04/12/12 00:00	04/17/12 15:49	
Method: Radium 226 - RAD-226-2	28 combined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa

RL

MDL Unit

D

Prepared

Result Qualifier

0 U

Date Collected: 04/05/12 09:45

Date Received: 04/05/12 18:10

Analyte

Uranium, Total

Client Sample ID: Outfall 019 Composite

Method: Radium 228 - General Sub Contract Method

TestAmerica Job ID: 440-7559-1

Lab Sample ID: 440-7684-1

Analyzed

Matrix: Water

Dil Fac

5

	Analyzed	Dil Fac	
00	04/20/12 09:21	1	

Analyte	Result	Quanner			onne		ricparca	Analyzeu	Dirruc
Radium-228	-0.044	U	1		pCi/L		04/18/12 00:00	04/18/12 13:58	1
_ Method: Strontium 90 - G	eneral Sub Contract M	lethod							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.04	U	2		pCi/L		04/16/12 00:00	04/16/12 07:52	1
Method: Tritium - General	Sub Contract Metho	d							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	61.3	U	500		pCi/L		04/13/12 00:00	04/14/12 16:09	1
Method: Uranium, Combi	ned - General Sub Co	ntract Method							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.091	J	1		pCi/L		04/20/12 00:00	04/20/12 09:21	1
Client Sample ID: Trip	Blank Eberline						Lab Sar	nple ID: 440-	7684-3
Date Collected: 04/06/12 14									x: Water
Date Received: 04/05/12 18									
Method: Gamma Spec K-						_	_ .		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Cesium-137	0.246		20		pCi/L		04/11/12 00:00	04/12/12 00:00	1
Potassium-40	-9.66	U	25		pCi/L		04/11/12 00:00	04/12/12 00:00	1
Method: Gross Alpha and	l Beta - Gross Alpha/E	Beta							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.032	U	3		pCi/L		04/12/12 00:00	04/17/12 15:49	1
Gross Beta	-0.396	U	4		pCi/L		04/12/12 00:00	04/17/12 15:49	1
- Method: Radium 226 - Ge	neral Sub Contract M	ethod							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	-0.112	U	1		pCi/L		04/18/12 00:00	04/18/12 13:08	1
- Method: Radium 228 - RA	D-226-228 combined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.07	U	1		pCi/L		04/18/12 00:00	04/18/12 13:58	1
_ Method: Strontium 90 - G	eneral Sub Contract M	lethod							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	-0.234	U	2		pCi/L		04/16/12 00:00	04/16/12 07:52	1
_ Method: Uranium, Combi	ned - General Sub Co	ntract Method							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1

04/20/12 00:00 04/20/12 09:27

1

pCi/L

Lab Sample ID: 440-7559-1 Matrix: Water 5

Client Sample ID: Outfall 019 Grab Date Collected: 04/04/12 09:30 Date Received: 04/04/12 19:00

	Batch	Batch		Dil	Initi	al	Fin	al	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amo	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10	mL	10	mL	18330	04/09/12 13:36	KD	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000	mL	1000	mL	17635	04/05/12 08:36	RR	TAL IRV
Total/NA	Analysis	120.1		1					18376	04/09/12 10:08	XL	TAL IRV
Total/NA	Prep	1664A			1055	mL	1000	mL	19264	04/12/12 09:08	DA	TAL IRV
Total/NA	Analysis	1664A		1					19269	04/12/12 09:24	DA	TAL IRV

Client Sample ID: Trip Blank

Lab Sample ID: 440-7559-2

Matrix: Water

6

Date Collected: 04/04/12 09:30 Date Received: 04/04/12 19:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	18330	04/09/12 14:03	KD	TAL IRV

Client Sample ID: Outfall 019 Composite

Date Collected: 04/05/12 09:45

Date Received: 04/05/12 18:10

_	Batch	Batch		Dil	Init	ial	Fin	al	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amo	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	625			1060	mL	2	mL	18185	04/07/12 10:33	NF	TAL IRV
Total/NA	Analysis	625		1					18525	04/10/12 09:31	AI	TAL IRV
Total/NA	Prep	608			1060	mL	2	mL	18417	04/09/12 12:55	AB	TAL IRV
Total/NA	Analysis	608 Pesticides		1					18698	04/10/12 19:22	CN	TAL IRV
Total/NA	Analysis	300.0		1	1	mL	1.0	mL	17932	04/06/12 13:40	CC	TAL IRV
Total/NA	Analysis	300.0		20	1	mL	1.0	mL	17933	04/06/12 14:27	CC	TAL IRV
Total/NA	Analysis	314.0		1	5	mL	1.0	mL	18897	04/11/12 23:27	MN	TAL IRV
Total	Prep	3542			1049.08	mL	20	uL	2103056_P	04/12/12 09:00	TL	TAL WSC
Total	Analysis	1613B		0.95					2103056	04/14/12 02:39	GSV	TAL WSC
Total	Analysis	1613B		0.95					2103056	04/16/12 18:56	GSV	TAL WSC
Total Recoverable	Prep	200.2			50	mL	50	mL	18166	04/07/12 07:54	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1					18211	04/07/12 13:35	DP	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	18147	04/07/12 06:51	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1					18213	04/07/12 15:34	DP	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	18146	04/07/12 06:49	EN	TAL IRV
Dissolved	Analysis	200.8		1					18322	04/07/12 15:39	NH	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	18168	04/07/12 07:59	EN	TAL IRV
Total Recoverable	Analysis	200.8		1					18322	04/07/12 15:46	NH	TAL IRV
Total/NA	Prep	245.1			20	mL	20	mL	19154	04/11/12 19:11	SN	TAL IRV
Total/NA	Analysis	245.1		1					19570	04/13/12 02:52	DB	TAL IRV
Dissolved	Prep	245.1			20	mL	20	mL	19467	04/12/12 20:37	SN	TAL IRV
Dissolved	Analysis	245.1		1					19759	04/13/12 23:28	DB	TAL IRV
Total/NA	Analysis	SM 2540C		1	100	mL	100	mL	17950	04/06/12 09:13	XL	TAL IRV
Total/NA	Analysis	180.1		1					17960	04/06/12 09:54	RR	TAL IRV
Total/NA	Analysis	SM5210B		1					17982	04/06/12 17:27	QPD	TAL IRV

Lab Sample ID: 440-7684-1 Matrix: Water

Client Sample ID: Outfall 019 Composite

Date Collected: 04/05/12 09:45 Date Received: 04/05/12 18:10

	Batch	Batch		Dil	Initi	al	Fin	al	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amou	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5540C		1	100	mL	100	mL	18105	04/06/12 19:58	NEA	TAL IRV
Total/NA	Analysis	SM 2540D		1	100	mL	100	mL	18107	04/06/12 20:25	DK	TAL IRV
Total/NA	Analysis	SM 5310B		1					18689	04/10/12 11:22	FZ	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50	mL	50	mL	18541	04/09/12 20:53	NP	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1					19087	04/09/12 21:30	NP	TAL IRV
Total/NA	Prep	Distill/CN			50	mL	50	mL	20314	04/17/12 17:12	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1					20530	04/18/12 14:58	PQI	TAL IRV
Total/NA	Analysis	SM 4500 F C		1					20896	04/20/12 05:22	FZ	TAL IRV
Total/NA	Prep	General Prep		1					8605_P	04/11/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1					8605	04/12/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1					8605_P	04/12/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1					8605	04/17/12 15:49	DVP	Eber-Rich
Total/NA	Prep	General Prep		1					8605_P	04/18/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1					8605	04/18/12 13:08	ТМ	Eber-Rich
Total/NA	Analysis	Radium 228		1					8605	04/18/12 13:58	ASM	Eber-Rich
Total/NA	Prep	General Prep		1					8605_P	04/16/12 00:00		Eber-Rich
Total/NA	Analysis	Strontium 90		1					8605	04/16/12 07:52	SK	Eber-Rich
Total/NA	Prep	General Prep		1					8605_P	04/13/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1					8605	04/14/12 16:09	WL	Eber-Rich
Total/NA	Prep	General Prep		1					8605_P	04/20/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1					8605	04/20/12 09:21	LS	Eber-Rich

Client Sample ID: Trip Blank Eberline Date Collected: 04/06/12 14:00 Date Received: 04/05/12 18:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	General Prep		1			8605_P	04/11/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8605	04/12/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8605_P	04/12/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8605	04/17/12 15:49	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8605_P	04/18/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8605	04/18/12 13:08	ТМ	Eber-Rich
Total/NA	Analysis	Radium 228		1			8605	04/18/12 13:58	ASM	Eber-Rich
Total/NA	Prep	General Prep		1			8605_P	04/16/12 00:00		Eber-Rich
Total/NA	Analysis	Strontium 90		1			8605	04/16/12 07:52	SK	Eber-Rich
Total/NA	Prep	General Prep		1			8605_P	04/20/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8605	04/20/12 09:27	LS	Eber-Rich

Lab Sample ID: 440-7684-1

Matrix: Water

Lab Sample ID: 440-7684-3 Matrix: Water Client: MWH Americas Inc Project/Site: Boeing SSFL outfalls

Laboratory References:

Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804 SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003 TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022 TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Lab Sample ID: MB 440-18330/7

Matrix: Water

									•••••
Analysis Batch: 18330									
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/09/12 11:32	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/09/12 11:32	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/09/12 11:32	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			04/09/12 11:32	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/09/12 11:32	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/09/12 11:32	1
Benzene	ND		0.50	0.28	ug/L			04/09/12 11:32	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/09/12 11:32	1
Chloroform	ND		0.50	0.33	ug/L			04/09/12 11:32	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/09/12 11:32	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/09/12 11:32	1
Toluene	ND		0.50	0.36	ug/L			04/09/12 11:32	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/09/12 11:32	1
Trichloroethene	ND		0.50	0.26	ug/L			04/09/12 11:32	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/09/12 11:32	1
Xylenes, Total	ND		1.5	0.90	ug/L			04/09/12 11:32	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/09/12 11:32	1

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		80 - 120		04/09/12 11:32	1
Dibromofluoromethane (Surr)	100		80 - 120		04/09/12 11:32	1
Toluene-d8 (Surr)	101		80 - 120		04/09/12 11:32	1

Lab Sample ID: LCS 440-18330/5 Matrix: Water Analysis Batch: 18330

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

-	Spike	LCS	LCS		%Rec.
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits
1,1,1-Trichloroethane		26.6	ug/L	106	65 - 135
1,1,2-Trichloroethane	25.0	24.7	ug/L	99	70 - 125
1,1-Dichloroethane	25.0	25.0	ug/L	100	70 - 125
1,1-Dichloroethene	25.0	23.3	ug/L	93	70 _ 125
1,2-Dichloroethane	25.0	26.1	ug/L	104	60 - 140
Benzene	25.0	22.3	ug/L	89	70 - 120
Carbon tetrachloride	25.0	26.7	ug/L	107	65 - 140
Chloroform	25.0	25.4	ug/L	102	70 - 130
Ethylbenzene	25.0	24.0	ug/L	96	75 - 125
Tetrachloroethene	25.0	25.3	ug/L	101	70 _ 125
Toluene	25.0	21.9	ug/L	88	70 - 120
Trichlorofluoromethane	25.0	28.9	ug/L	116	65 ₋ 145
Trichloroethene	25.0	25.4	ug/L	102	70 - 125
cis-1,2-Dichloroethene	25.0	25.5	ug/L	102	70 - 125
m,p-Xylene	50.0	49.7	ug/L	99	75 ₋ 125
o-Xylene	25.0	24.8	ug/L	99	75 - 125
Xylenes, Total	75.0	74.5	ug/L	99	70 - 125
Vinyl chloride	25.0	23.6	ug/L	94	55 - 135
	LCS LCS				

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)			80 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

Limits

80 - 120

80 - 120

Lab Sample ID: LCS 440-18330/5

Lab Sample ID: 440-6724-A-3 MS

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

LCS LCS

%Recovery Qualifier

99

103

Client Sample ID: Lab Control Sample

5 7

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Type: Total/NA

Matrix: Water Analysis Batch: 18330

Matrix: Water

Toluene-d8 (Surr)

Surrogate

Analysis Batch: 18330

Dibromofluoromethane (Surr)

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	ND		25.0	25.7		ug/L		103	65 - 140
1,1,2-Trichloroethane	ND		25.0	23.4		ug/L		94	65 ₋ 130
1,1-Dichloroethane	ND		25.0	24.8		ug/L		99	65 ₋ 130
1,1-Dichloroethene	ND		25.0	23.9		ug/L		96	60 - 130
1,2-Dichloroethane	ND		25.0	26.5		ug/L		106	60 - 140
Benzene	ND		25.0	22.3		ug/L		89	65 ₋ 125
Carbon tetrachloride	ND		25.0	26.4		ug/L		106	65 - 140
Chloroform	ND		25.0	24.7		ug/L		99	65 ₋ 135
Ethylbenzene	ND		25.0	22.0		ug/L		88	65 ₋ 130
Tetrachloroethene	2.4		25.0	25.0		ug/L		91	65 - 130
Toluene	ND		25.0	21.7		ug/L		87	70 - 125
Trichlorofluoromethane	ND		25.0	29.6		ug/L		118	60 ₋ 145
Trichloroethene	28		25.0	50.2		ug/L		87	65 - 125
cis-1,2-Dichloroethene	1.4		25.0	26.8		ug/L		102	65 ₋ 130
m,p-Xylene	ND		50.0	44.4		ug/L		89	65 - 130
o-Xylene	ND		25.0	22.7		ug/L		91	65 - 125
Xylenes, Total	ND		75.0	67.1		ug/L		89	60 - 130
Vinyl chloride	ND		25.0	23.4		ug/L		94	45 - 140
	MS	MS							

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: 440-6724-A-3 MSD Matrix: Water Analysis Batch: 18330

Analysis Baton. 10000											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	ND		25.0	27.5		ug/L		110	65 _ 140	7	20
1,1,2-Trichloroethane	ND		25.0	24.8		ug/L		99	65 _ 130	6	25
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130	5	20
1,1-Dichloroethene	ND		25.0	24.5		ug/L		98	60 _ 130	2	20
1,2-Dichloroethane	ND		25.0	28.0		ug/L		112	60 - 140	6	20
Benzene	ND		25.0	23.5		ug/L		94	65 ₋ 125	5	20
Carbon tetrachloride	ND		25.0	27.7		ug/L		111	65 ₋ 140	5	25
Chloroform	ND		25.0	26.2		ug/L		105	65 - 135	6	20
Ethylbenzene	ND		25.0	24.7		ug/L		99	65 _ 130	12	20
Tetrachloroethene	2.4		25.0	28.0		ug/L		103	65 - 130	11	20
Toluene	ND		25.0	23.3		ug/L		93	70 _ 125	7	20
Trichlorofluoromethane	ND		25.0	29.9		ug/L		120	60 - 145	1	25

TestAmerica Irvine 5/15/2012

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 18185

Dil Fac

1

1

1

1

Client Sample ID: Matrix Spike Duplicate

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

Lab Sample ID: 440-6724-A-3 MSD

Matrix: Water

Analysis Batch: 18330 MSD MSD RPD Sample Sample Spike %Rec. Result Qualifier Added **Result Qualifier** %Rec Limits RPD Limit Analyte Unit D Trichloroethene 25.0 51.5 92 65 - 125 28 ug/L 3 20 cis-1,2-Dichloroethene 1.4 25.0 28.2 ug/L 107 65 - 130 5 20 ND 50.0 50.4 101 25 m,p-Xylene ug/L 65 - 130 13 o-Xylene ND 25.0 25.4 ug/L 102 65 - 125 11 20 Xylenes, Total ND 75.0 75.8 101 60 - 130 12 20 ug/L Vinyl chloride ND 25.0 25.0 ug/L 100 45 - 140 7 30 MSD MSD Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 112 80 - 120 Dibromofluoromethane (Surr) 99 80 - 120 Toluene-d8 (Surr) 102 80 - 120

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

Lab Sample ID: MB 440-18185/1-A **Client Sample ID: Method Blank** Matrix: Water Analysis Batch: 18525 MB MB Result Qualifier Analyte RL MDL Unit D Prepared 2,4,6-Trichlorophenol ND 12.0 0.100 ug/L 04/07/12 10:33 Bis(2-ethylhexyl) phthalate ND 10.0 1.70 ug/L 04/07/12 10:33 N-Nitrosodimethylamine ND 10.0 0.100 ug/L 04/07/12 10:33 Pentachlorophenol ND 10.0 04/07/12 10:33 0.400 ug/L

ND

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		40 - 120	04/07/12 10:33	04/09/12 22:11	1
2-Fluorobiphenyl	89		50 - 120	04/07/12 10:33	04/09/12 22:11	1
2-Fluorophenol	70		30 - 120	04/07/12 10:33	04/09/12 22:11	1
Nitrobenzene-d5	79		45 - 120	04/07/12 10:33	04/09/12 22:11	1
Phenol-d6	77		35 - 120	04/07/12 10:33	04/09/12 22:11	1
Terphenvl-d14	96		50 - 125	04/07/12 10:33	04/09/12 22:11	1

10.0

0.200 ug/L

Lab Sample ID: LCS 440-18185/2-A Matrix: Water

Analysis Batch: 18525

2,4-Dinitrotoluene

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,4,6-Trichlorophenol	10.0	8.460	J,DX	ug/L		85	55 - 120	
Bis(2-ethylhexyl) phthalate	10.0	10.02		ug/L		100	65 ₋ 130	
N-Nitrosodimethylamine	10.0	7.260	J,DX	ug/L		73	45 ₋ 120	
Pentachlorophenol	10.0	10.32		ug/L		103	24 _ 121	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol	92		40 - 120
2-Fluorobiphenyl	87		50 - 120
2-Fluorophenol	67		30 - 120
Nitrobenzene-d5	79		45 - 120

04/07/12 10:33 04/09/12 22:11 1

Analyzed

04/09/12 22:11

04/09/12 22:11

04/09/12 22:11

04/09/12 22:11

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 18185

Lab Sample ID: LCS 440-18185/2-A

Terphenyl-d14

Client Sample ID: Lab Control Sample

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

Matrix: Water							-	Prep T	ype: To	tal/NA		
Analysis Batch: 18525									Prep	Batch:	18185	
	LCS	LCS										
Surrogate	%Recovery	Qualifier	Limits									
Phenol-d6	78		35 - 120									
Terphenyl-d14	94		50 - 125									
Γ												
Lab Sample ID: LCSD 440-18	185/3-A				Cli	ient San	nple ID:	Lab Contro				
Matrix: Water										ype: To		
Analysis Batch: 18525										Batch:		
			Spike		LCSD				%Rec.		RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
2,4,6-Trichlorophenol			10.0	8.160	J,DX	ug/L		82	55 _ 120	4	30	
Bis(2-ethylhexyl) phthalate			10.0	9.480	J,DX	ug/L		95	65 _ 130	6	20	
N-Nitrosodimethylamine			10.0	6.960	J,DX	ug/L		70	45 _ 120	4	20	
Pentachlorophenol			10.0	10.08		ug/L		101	24 ₋ 121	2	25	
	LCSD	LCSD										
Surrogate	%Recovery		Limits									ŝ
2,4,6-Tribromophenol	93		40 - 120									
2-Fluorobiphenyl	78		50 - 120									
2-Fluorophenol	67		30 - 120									
Nitrobenzene-d5	76		45 _ 120									
Phenol-d6	75		35 - 120									

Method: 608 Pesticides - Organochlorine Pesticides Low level

90

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

Lab Sample ID: MB 440-18417/1-A	L									Client Sa	mple ID: Metho	d Blank
Matrix: Water											Prep Type: 1	otal/NA
Analysis Batch: 18698											Prep Batcl	n: 18417
-	Ν	IB MB									-	
Analyte	Res	ult Qualifie	r RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fac
alpha-BHC	1	ID	0.0050	0.0	0025	ug/L			04/0	9/12 12:55	04/10/12 13:43	1
	Л	1B MB										
Surrogate	%Recove	ry Qualifie	r Limits						P	repared	Analyzed	Dil Fac
Tetrachloro-m-xylene		72	35 - 115						04/0	9/12 12:55	04/10/12 13:43	1
- Lab Sample ID: LCS 440-18417/2-/	A							c	lient	Sample	ID: Lab Control	Sample
Matrix: Water											Prep Type: 1	otal/NA
Analysis Batch: 18698											Prep Batcl	n: 18417
				1.00	LCS						%Rec.	
			Spike	LCS	200							
Analyte			Spike Added	Result			Unit		D	%Rec	Limits	
Analyte			•				Unit ug/L		_ <u>D</u>	%Rec	Limits	
	LCS L		Added	Result					_ <u>D</u>			
alpha-BHC	LCS L %Recovery G		Added	Result					_ <u>D</u>			

50 - 125

Client Sample ID: Lab Control Sample

Client Sample ID: Outfall 019 Composite

Client Sample ID: Outfall 019 Composite

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

5

7

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

Lab Sample ID: LCSD 440-1	8417/3-A				Client Sample ID: Lab Control Sample E							
Matrix: Water								Prep T	ype: To	tal/NA		
Analysis Batch: 18698									Prep	Batch:	18417	
			Spike	LCSD	LCSD				%Rec.		RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
alpha-BHC			0.500	0.496		ug/L		99	45 _ 115	12	30	
	LCSD	LCSD										
Surrogate	%Recovery	Qualifier	Limits									
Tetrachloro-m-xylene	80		35 - 115									

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-17932/2 Matrix: Water Analysis Batch: 17932							Client Sa	ample ID: Metho Prep Type: T	
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			04/06/12 10:10	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/06/12 10:10	1
Nitrite as N	ND		0.15	0.11	mg/L			04/06/12 10:10	1

Lab Sample ID: LCS 440-17932/3

Matrix: Water Analysis Batch: 17932

T	Analysis Daton. 17352									
I		Spike	LCS	LCS				%Rec.		
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Nitrate as N	 1.13	1.12		mg/L		99	90 _ 110	 	-
	Nitrate Nitrite as N	2.65	2.60		mg/L		98	90 _ 110		
	Nitrite as N	1.52	1.48		mg/L		97	90 - 110		

Lab Sample ID: 440-7684-1 MS Matrix: Water

Analysis Batch: 17932

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Nitrate as N	ND		11.3	11.0		mg/L		98	80 - 120
Nitrate Nitrite as N	ND		26.5	26.1		mg/L		98	80 - 120
Nitrite as N	ND		15.2	15.1		mg/L		99	80 - 120

Lab Sample ID: 440-7684-1 MSD Matrix: Water Analysis Batch: 17932

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	ND		11.3	10.9		mg/L		96	80 - 120	2	20
Nitrate Nitrite as N	ND		26.5	25.8		mg/L		97	80 - 120	1	20
Nitrite as N	ND		15.2	14.9		mg/L		98	80 - 120	2	20

Lab Sample ID: MB 440-17933/2 **Client Sample ID: Method Blank** Matrix: Water Prep Type: Total/NA Analysis Batch: 17933 МВ МВ Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 0.50 0.40 mg/L 04/06/12 10:10 1 Sulfate ND 0.50 0.40 mg/L 04/06/12 10:10 1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 440-17933/3							Cli	ient	Sample	ID: Lab Co		
Matrix: Water										Prep Ty	pe: Ic	otal/NA
Analysis Batch: 17933			Calles		S LCS					%Rec.		
Australia			Spike					_	0/ D			
Analyte			Added		t Qualifie			D	%Rec	Limits		
Chloride			5.00	4.9		mg/L			98	90 - 110		
Sulfate			10.0	10.	1	mg/L			101	90 - 110		
Lab Sample ID: 440-7684-1 MS							Clier	nt Sa	ample ID	: Outfall 01	9 Com	posite
Matrix: Water										Prep Ty		
Analysis Batch: 17933												
	Sample	Sample	Spike	M	S MS					%Rec.		
Analyte		Qualifier	Added		t Qualifie	er Unit		D	%Rec	Limits		
Chloride	31		50.0	80.		mg/L		_	97	80 - 120		
Sulfate	150		100	24		mg/L			96	80 - 120		
Sunate	100		100	24	-	iiig/L			50	00 - 120		
Lab Sample ID: 440-7684-1 MSD							Clier	nt Sa	ample ID	: Outfall 01	9 Com	posite
Matrix: Water										Prep Ty		
Analysis Batch: 17933												
	Sample	Sample	Spike	MSI) MSD					%Rec.		RPD
Analyte	Result	Qualifier	Added	Resu	t Qualifie	er Unit		D	%Rec	Limits	RPD	Limi
Chloride	31		50.0	79.	2	mg/L		_	96	80 - 120	1	20
Sulfate	150		100	24)	mg/L			94	80 - 120	1	20
lethod: 314.0 - Perchlorate (I	<u>()</u>											
iethoù. 514.0 - Ferchiorate (i	0)											
Lab Sample ID: MB 440-18897/38									Client Sa	ample ID: N	lethod	Blank
Matrix: Water										Prep Ty	pe: To	otal/NA
Analysis Batch: 18897												
		MB MB										
Analyte	R	esult Qualifier		RL	MDL U	nit	D	Ρ	repared	Analyze	d	Dil Fac
Perchlorate		ND		4.0	0.95 u	g/L				04/11/12 2	1:06	1
Lab Sample ID: LCS 440-18897/37							Cli	ient	Sample	ID: Lab Co	ntrol S	ample
Matrix: Water									Campio	Prep Ty		
Analysis Batch: 18897										i icp i y	pc. rc	
			Spike	LC	S LCS					%Rec.		
Analyte			Added		t Qualifie	er Unit		D	%Rec	Limits		
Perchlorate			25.0	25.	9	ug/L		_	104	85 - 115		
Lab Comple ID: MDL 440 40007/0 5							0		Comula		-	
Lab Sample ID: MRL 440-18897/2 M Matrix: Water	NKL						CI	ient	Sample	ID: Lab Co Prep Ty		

Analysis Batch: 18897										
· · · · · · · · · · · · · · · · · · ·			Spike	MRL	MRL				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perchlorate			4.00	4.83		ug/L		121		
Lab Sample ID: 440-7958-I-2 M	S							Client	Sample ID	: Matrix Spike
Matrix: Water									Prep T	ype: Total/NA
Analysis Batch: 18897										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perchlorate	ND		25.0	26.0		ug/L		104	80 - 120	

Lab Sample ID: G2D120000056B

Client Sample ID: Method Blank

2 3 4 5 6 7 8 9

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 440-7958-I-2 MSD Matrix: Water Analysis Batch: 18897								Client Sample ID: M							
		Sample	Sample	Spike	MSD	MSD				%Rec.		RPD			
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
	Perchlorate	ND		25.0	25.3		ug/L		101	80 - 120	3	20			

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

Matrix: Water	_							Prep Typ	e: Total
Analysis Batch: 2103056								Prep Batch: 210)3056_P
	MB	MB							
Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000022	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total TCDD	0.0000021	JQ	0.000010	0.0000022	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000057	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total PeCDD	ND		0.000050	0.0000057	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000020	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000018	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000017	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total HxCDD	ND		0.000050	0.0000017	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,4,6,7,8-HpCDD	ND		0.000050	0.0000020	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total HpCDD	ND		0.000050	0.0000020	ug/L		04/12/12 09:00	04/14/12 01:10	1
OCDD	0.0000033	JQ	0.00010	0.0000037	ug/L		04/12/12 09:00	04/14/12 01:10	1
2,3,7,8-TCDF	ND		0.000010	0.0000024	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total TCDF	ND		0.000010	0.0000024	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000052	ug/L		04/12/12 09:00	04/14/12 01:10	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000059	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total PeCDF	ND		0.000050	0.0000052	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.0000011	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000010	ug/L		04/12/12 09:00	04/14/12 01:10	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000011	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000020	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total HxCDF	ND		0.000050	0.0000010	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,4,6,7,8-HpCDF	0.0000014	JQ	0.000050	0.0000022	ug/L		04/12/12 09:00	04/14/12 01:10	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000040	ug/L		04/12/12 09:00	04/14/12 01:10	1
Total HpCDF	0.0000014	JQ	0.000050	0.0000030	ug/L		04/12/12 09:00	04/14/12 01:10	1
OCDF	ND		0.00010	0.0000074	ug/L		04/12/12 09:00	04/14/12 01:10	1
	МВ	МВ							
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	83		35 - 197				04/12/12 09:00	04/14/12 01:10	1
	MB	МВ							
Internal Standard	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	47		25 - 164				04/12/12 09:00	04/14/12 01:10	1
13C-1,2,3,7,8-PeCDD	45		25 - 181				04/12/12 09:00	04/14/12 01:10	1
100 1 0 0 1 7 0 140000	47		20 111				04/40/40 00:00	04/44/40 04:40	

13C-2,3,7,8-TCDD	47	25 - 164	04/12/12 09:00 04/14/12 01:10 1
13C-1,2,3,7,8-PeCDD	45	25 - 181	04/12/12 09:00 04/14/12 01:10 1
13C-1,2,3,4,7,8-HxCDD	47	32 - 141	04/12/12 09:00 04/14/12 01:10 1
13C-1,2,3,6,7,8-HxCDD	62	28 - 130	04/12/12 09:00 04/14/12 01:10 1
13C-1,2,3,4,6,7,8-HpCDD	58	23 - 140	04/12/12 09:00 04/14/12 01:10 1
13C-OCDD	54	17 _ 157	04/12/12 09:00 04/14/12 01:10 1
13C-2,3,7,8-TCDF	46	24 - 169	04/12/12 09:00 04/14/12 01:10 1
13C-1,2,3,7,8-PeCDF	39	24 - 185	04/12/12 09:00 04/14/12 01:10 1
13C-2,3,4,7,8-PeCDF	45	21 - 178	04/12/12 09:00 04/14/12 01:10 1

Limits

26 - 123

28 - 136

29 - 147

28 - 143

26 - 138

26 - 152

Lab Sample ID: G2D120000056B

Analysis Batch: 2103056

Matrix: Water

Internal Standard

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

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

13C-1,2,3,4,6,7,8-HpCDF

13C-1,2,3,4,7,8,9-HpCDF

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

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

MB MB

56

57

51

55

55

54

%Recovery

Qualifier

Client Sample ID: Method Blank

Analyzed

04/14/12 01:10

04/14/12 01:10

04/14/12 01:10

04/14/12 01:10

Prepared

04/12/12 09:00

04/12/12 09:00

04/12/12 09:00

04/12/12 09:00

04/12/12 09:00 04/14/12 01:10 04/12/12 09:00 04/14/12 01:10 1 **Client Sample ID: Lab Control Sample**

Prep Type: Total Prep Batch: 2103056_P

Prep Type: Total Prep Batch: 2103056_P

Dil Fac

1

1

1

1

Lab Sample ID: G2D120000056C
Matrix: Water
Analysis Batch: 2103056

	Spike	1.05	LCS				%Rec.
Australia	•			11		0/ D	
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
2,3,7,8-TCDD	0.000200	0.000277		ug/L		139	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00128		ug/L		128	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.00121		ug/L		121	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00131		ug/L		131	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00135		ug/L		135	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.00132		ug/L		132	70 - 140
OCDD	0.00200	0.00269	В	ug/L		135	78 - 144
2,3,7,8-TCDF	0.000200	0.000296		ug/L		148	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.00136	а	ug/L		136	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00128		ug/L		128	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.00123		ug/L		123	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00129		ug/L		129	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00127		ug/L		127	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.00140	а	ug/L		140	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.00133	a B	ug/L		133	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00133		ug/L		133	78 - 138
OCDF	0.00200	0.00259		ug/L		130	63 - 170

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
37Cl4-2,3,7,8-TCDD	82		31 _ 191
	LCS	LCS	
Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	39		20 - 175
13C-1,2,3,7,8-PeCDD	46		21 _ 227
13C-1,2,3,4,7,8-HxCDD	51		21 _ 193
13C-1,2,3,6,7,8-HxCDD	69		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	62		26 - 166
13C-OCDD	60		13 - 199
13C-2,3,7,8-TCDF	37		22 - 152
13C-1,2,3,7,8-PeCDF	40		21 - 192
13C-2,3,4,7,8-PeCDF	46		13 - 328
13C-1,2,3,6,7,8-HxCDF	66		21 _ 159
13C-2,3,4,6,7,8-HxCDF	65		22 - 176
13C-1,2,3,7,8,9-HxCDF	54		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	60		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186

Lab Sample ID: G2D120000056C Matrix: Water Analysis Batch: 2103056 Internal Standard %/ 13C-1,2,3,4,7,8-HxCDF Iethod: 200.7 Rev 4.4 - Metals	LCS Recovery 56										ID: Lab Con Prep		: Tota
Analysis Batch: 2103056 Internal Standard %I 13C-1,2,3,4,7,8-HxCDF	Recovery											.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Internal Standard %I 13C-1,2,3,4,7,8-HxCDF	Recovery										Prep Batch:	: 2103	056 I
13C-1,2,3,4,7,8-HxCDF	Recovery												
13C-1,2,3,4,7,8-HxCDF	-	quanner	Limits										
			19 - 202	-									
lethod: 200.7 Rev 4.4 - Metals			10 - 202										
	(ICP)												
Lab Sample ID: MB 440-18166/1-A										Client Sa	mple ID: Mo	ethod	Blanl
Matrix: Water										Prep T	ype: Total F	Recov	erable
Analysis Batch: 18211											Prep B	atch:	1816
		MB MB											
Analyte	Re	esult Qualifier		RL		MDL Unit		D	P	repared	Analyzed	l	Dil Fa
Zinc		ND		20		6.0 ug/L			04/0	7/12 07:54	04/07/12 13	:30	,
Hardness, as CaCO3		ND		0.33		0.17 mg/L			04/0	7/12 07:54	04/07/12 13	:30	
Lab Sample ID: LCS 440-18166/2-A								CI	ient	Sample	ID: Lab Con	trol S	ample
Matrix: Water										Prep T	ype: Total F	Recov	erable
Analysis Batch: 18211											Prep B	atch:	18166
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		
Iron			0.500		0.538		mg/L		_	108	85 - 115		
Zinc			500		524		ug/L			105	85 - 115		
Lab Sample ID: 440-7684-1 MS								Clier	t Sa	ample ID:	Outfall 019	Com	nosite
Matrix: Water								oner			ype: Total F		
Analysis Batch: 18211										перт	Prep B		
Analysis Datch. 10211	Sample	Sample	Spike		MS	MS					%Rec.	aton.	10100
Analyte		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits		
Iron	ND		0.500		0.541		mg/L		_	108	70 - 130		
Zinc	ND		500		510		ug/L			102	70 ₋ 130		
Lak Camala ID: 440 7004 4 MOD								0110			0	•	
Lab Sample ID: 440-7684-1 MSD								Clier	11 58		Outfall 019		
Matrix: Water										Prep I	ype: Total F		
Analysis Batch: 18211	<u> </u>	. .									Prep B	atch:	
	Sample	-	Spike			MSD			_	~ -	%Rec.		RPD
Analyte		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits	RPD	Limi
Iron	ND		0.500		0.537		mg/L			107	70 ₋ 130	1	20
Zinc	ND		500		511		ug/L			102	70 - 130	0	20
Lab Sample ID: MB 440-18106/1-C										Client Sa	mple ID: Me	ethod	Blank
Matrix: Water											Prep Type	: Dis	solvec
Analysis Batch: 18213											Prep B	atch:	18147
		MB MB											
Analyte	Re	esult Qualifier		RL		MDL Unit		D	P	repared	Analyzed	I	Dil Fac
Zinc		ND		20		6.0 ug/L			04/0	7/12 06:51	04/07/12 15	:29	1
Hardness, as CaCO3		ND		0.33		0.17 mg/L			04/0	7/12 06:51	04/07/12 15	:29	1
Lab Sample ID: LCS 440-18106/2-C								CI	ient	Sample	ID: Lab Con	trol S	ample
Matrix: Water											Prep Type		
Analysis Batch: 18213											Prep B		
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		

LCS LCS

Result Qualifier

Unit

D

%Rec

Matrix: Water

Analyte

Analysis Batch: 18213

Lab Sample ID: LCS 440-18106/2-C

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

Prep Type: Dissolved

Prep Batch: 18147

Client Sample ID: Lab Control Sample

%Rec.

Limits

Client Sample ID: Lab Control Sample

Client Sample ID: Outfall 019 Composite

Prep Type: Total Recoverable

6 7

			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			•	-	,			
Zinc			500	510		ug/L		102	85 _ 115		
Lab Sample ID: 440-7684-1 MS							Client Sa	ample IC): Outfall 0	19 Comj	oosite
Matrix: Water									Prep Ty	pe: Diss	olved
Analysis Batch: 18213									Prep	Batch:	18147
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Iron	ND		0.500	0.519		mg/L		104	70 - 130		
Zinc	ND		500	499		ug/L		100	70 - 130		
Lab Sample ID: 440-7684-1 MSD							Client Sa	ample IC): Outfall 0	19 Comj	oosite
Matrix: Water									Prep Ty	pe: Diss	olved
Analysis Batch: 18213									Prep	Batch:	18147
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	ND		0.500	0.539		mg/L		108	70 - 130	4	20
Zinc	ND		500	509		ug/L		102	70 ₋ 130	2	20

Spike

Added

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: LCS 440-18168/2-A

Lab Sample ID: MB 440-18168/1-A Matrix: Water Analysis Batch: 18322	МВ	МВ						mple ID: Metho ype: Total Reco Prep Batch	verable
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/07/12 07:59	04/07/12 15:41	1
Copper	0.639	J,DX	2.0	0.50	ug/L		04/07/12 07:59	04/07/12 15:41	1
Lead	0.697	J,DX	1.0	0.20	ug/L		04/07/12 07:59	04/07/12 15:41	1
Selenium	ND		2.0	0.50	ug/L		04/07/12 07:59	04/07/12 15:41	1

Matrix: Water						Prep [·]	Type: Total R	
Analysis Batch: 18322							Prep Ba	atch: 18168
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	80.0	80.3		ug/L		100	85 - 115	
Copper	80.0	81.1		ug/L		101	85 - 115	
Lead	80.0	79.1		ug/L		99	85 - 115	
Selenium	80.0	80.3		ug/L		100	85 - 115	

Lab Sample ID: 440-7684-1 MS Matrix: Water

Analysis Batch: 18322

Analysis Batch: 18322									Prep	Batch: 18168
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	ND		80.0	79.6		ug/L		99	70 - 130	
Copper	0.72	J,DX MB	80.0	77.5		ug/L		96	70 - 130	
Lead	ND		80.0	75.4		ug/L		94	70 - 130	
Selenium	ND		80.0	79.6		ug/L		99	70 ₋ 130	

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

Lab Sample ID: 440-7684-1 MSD									Clie	nt Sa		: Outfall 0		
Matrix: Water											Prep I	'ype: Tota		
Analysis Batch: 18322	0	0	0										Batch:	
A web de	•	Sample	Spike			MSD		1114		_	0/ D	%Rec.		RPD
Analyte		Qualifier	Added		Result	Qua	lifier	Unit			%Rec	Limits	RPD	Limit
Cadmium	ND		80.0		81.5			ug/L			102	70 ₋ 130	2	20
Copper		J,DX MB	80.0		77.0			ug/L			95	70 - 130	1	20
Lead	ND		80.0		75.7			ug/L			95	70 _ 130	0	20
Selenium	ND		80.0		78.3			ug/L			98	70 - 130	2	20
Lab Sample ID: MB 440-18106/1-B											Client Sa	ample ID:	Method	Blank
Matrix: Water												Prep Ty	vpe: Diss	olved
Analysis Batch: 18322												Prep	Batch:	18146
		MB MB												
Analyte	R	esult Qualifier		RL		MDL	Unit		D	P	repared	Analyz	zed	Dil Fac
Cadmium		ND		1.0		0.10	ug/L			04/0	7/12 06:49	04/07/12	15:23	1
Copper		ND		2.0		0.50	ug/L			04/0	7/12 06:49	04/07/12	15:23	1
Lead		ND		1.0		0.20	ug/L			04/0	7/12 06:49	04/07/12	15:23	1
Selenium		ND		2.0		0.50	ug/L			04/0	7/12 06:49	04/07/12	15:23	1
ah Samala ID: 1 CS 440 49406/2 B									~	lient	Somela		ontrol C	omolo
Lab Sample ID: LCS 440-18106/2-B									U	nem	Sample	ID: Lab C		
Matrix: Water													pe: Diss	
Analysis Batch: 18322			Spike		1.00	LCS						%Rec.	Batch:	18140
Amaluda			-					11		~	0/ Dee			
Analyte			Added 80.0		Result 79.8	Qua	inter	Unit		_ <u>D</u>	%Rec	Limits		
Cadmium			80.0 80.0		79.8 83.0			ug/L			100	85 - 115 85 - 115		
Copper								ug/L						
Lead			80.0		77.4			ug/L			97	85 - 115		
Selenium			80.0		80.9			ug/L			101	85 - 115		
Lab Sample ID: 440-7663-A-2-D MS											Client S	Sample ID		
Matrix: Water												Prep Ty	/pe: Diss	olved
Analysis Batch: 18322												Prep	Batch:	1814 <mark>6</mark>
	Sample	Sample	Spike		MS	MS						%Rec.		
Analyte	Result	Qualifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Cadmium	ND		80.0		81.2			ug/L			101	70 - 130		
Copper	2.9		80.0		80.2			ug/L			97	70 - 130		
Lead	ND		80.0		78.6			ug/L			98	70 - 130		
Selenium	ND		80.0		81.2			ug/L			101	70 - 130		
Lab Sample ID: 440-7663-A-2-E MSI	n								Clio	nt Sa	mole ID:	: Matrix S	niko Dur	licate
Matrix: Water									one		imple ib.		pine Dup	
Analysis Batch: 18322													Batch:	
Analysis Daten. 10322	Sample	Sample	Spike		MSD	MSD)					%Rec.	Daturi.	RPD
Analyte	-	Qualifier	Added		Result			Unit		D	%Rec	Limits	RPD	Limi
Cadmium	ND		80.0		80.0	Qud					100	70 - 130	1	20
								ug/L						
Copper	2.9		80.0		79.8			ug/L			96	70 - 130	1	20
Lead	ND		80.0		78.0			ug/L			97	70 _ 130	1	20
Selenium	ND		80.0		79.3			ug/L			99	70 - 130	2	20

TestAmerica Job ID: 440-7559-1

Method: 245.1 - Mercury (CVAA)

Matrix: Water												Client Sa	ample ID: Prep T	Methoo ype: To	
Analysis Batch: 19570														Batch	
Analista		MB	MB Qualifier		RL		MDL U			D			Analu		Dil Fa
Analyte Mercury	ĸ		IB		0.20		0.10 ug	-		- <u> </u>		repared 1/12 19:11	Analyz 04/13/12		DIIFa
-		ND			0.20		0.10 4	/ L			0-1/1	1/12 10.11	04/10/12	02.10	
Lab Sample ID: LCS 440-19154/2-A										CI	lient	Sample	ID: Lab C	ontrol s	Sample
Matrix: Water													Prep T	ype: To	otal/N/
Analysis Batch: 19570													Prep	Batch	: 1915
				Spike			LCS						%Rec.		
Analyte				Added			Qualifie		Unit		<u>D</u>	%Rec	Limits		
Mercury				8.00		9.10	IB		ug/L			114	85 - 115		
Lab Sample ID: 440-7790-H-1-B MS Matrix: Water												Client	Sample ID	: Matrix ype: To	-
														Batch	
Analysis Batch: 19570	Sample	Samn	ole	Spike		MS	MS						%Rec.	Datti	. 13134
Analyte	Result	•		Added			Qualifie	r	Unit		D	%Rec	Limits		
Mercury	ND			8.00		9.43			ug/L		_	118	70 - 130		
-															
Lab Sample ID: 440-7790-H-1-C MS Matrix: Water	D									Clier	nt Sa	imple ID:	Matrix S <mark> </mark> Prep T	pike Du 'ype: To	
Analysis Batch: 19570													Prep	Batch	: 1915
	Sample			Spike			MSD						%Rec.		RPI
Analyte	Result		fier	Added			Qualifie		Unit		D	%Rec	Limits	RPD	Lim
	ND	IB										118	70 - 130	0	20
Mercury				8.00		9.45	IB		ug/L						-
				8.00		9.40	Ы		uy/L				ample ID:	Methor	_
Lab Sample ID: MB 440-19452/1-C				8.00		9.40	ID		ug/L				ample ID: Prep Tv		d Blani
Lab Sample ID: MB 440-19452/1-C Matrix: Water		.2		8.00		9.40			ug/L				Prep Ty	pe: Dis	d Blani solved
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759		MB	мв	0.00		9.43	U		ug/L				Prep Ty		d Blank solved
Lab Sample ID: MB 440-19452/1-C Matrix: Water	R	МВ	MB Qualifier	0.00	RL	9.43	MDL U		ug/L	D			Prep Ty	pe: Dis Batch	d Blani solved : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759	R	МВ			RL 0.20	<u>.</u>		nit	ug/L	<u>D</u>	Pi	Client Sa	Prep Ty Prep	pe: Dis Batch	d Blank solved : 19467 Dil Fac
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury	R	MB					MDL U	nit	ug/L		P 1 04/1	Client Sa repared 2/12 20:37	Prep Ty Prep Analyz 04/13/12	pe: Dis Batch zed 22:50	d Blani solved : 1946 Dil Fa
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C	R	MB				J.+J	MDL U	nit	ug/L		P 1 04/1	Client Sa repared 2/12 20:37	Prep Ty Prep - <u>Analyz</u> 04/13/12 ID: Lab Co	pe: Dis Batch 22:50	d Blani solved : 1946 Dil Fa
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water	R	MB					MDL U	nit	ug/L		P 1 04/1	Client Sa repared 2/12 20:37	Prep Ty Prep - Analyz 04/13/12 ID: Lab Co Prep Ty	pe: Dis Batch 22:50 ontrol S pe: Dis	d Blani solvec : 19467 Dil Fac Sample
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C	R	MB		5.00			MDL U	nit	uy/L		P 1 04/1	Client Sa repared 2/12 20:37	Prep Ty Prep - Analyz 04/13/12 ID: Lab Co Prep Ty	pe: Dis Batch 22:50	d Blani solved : 1946 Dil Fa Sample
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water	R	MB				LCS	MDL U	nit I/L	Ugit		P 1 04/1	Client Sa repared 2/12 20:37	Prep Ty Prep Analyz 04/13/12 ID: Lab Co Prep Ty Prep	pe: Dis Batch 22:50 ontrol S pe: Dis	d Blank solvec : 19467 Dil Fac Sample solvec
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759	R	MB				LCS	MDL U 0.10 ug	nit //L			Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample	Prep Ty Prep - <u>Analyz</u> 04/13/12 ID: Lab C Prep Ty Prep %Rec.	pe: Dis Batch 22:50 ontrol S pe: Dis	d Blank solvec : 19467 Dil Fac Sample solvec
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury		MB		Spike Added		LCS Result	MDL U 0.10 ug	nit //L	Unit		Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample %Rec 102	Prep Ty Prep Analyz 04/13/12 ID: Lab C Prep Ty Prep %Rec. Limits 85 - 115	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch	d Blank solvec : 19467 Dil Fac Sample : Solvec : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS		MB		Spike Added		LCS Result	MDL U 0.10 ug	nit //L	Unit		Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample %Rec 102	Prep Ty Prep - Analyz 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matriz	d Blani ssolved : 1946 Dil Fa Sample ssolved : 1946
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water		MB		Spike Added		LCS Result	MDL U 0.10 ug	nit //L	Unit		Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample %Rec 102	Prep Ty Prep 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis	d Blank ssolved : 19467 Dil Fad Sample ssolved : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS		MB desult ND	Qualifier	Spike Added 8.00		LCS Result 8.18	MDL U 0.10 ug	nit //L	Unit		Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample %Rec 102	Prep Ty Prep 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matriz	d Blank ssolved : 19467 Dil Fad Sample ssolved : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759	Sample	MB Result ND	Qualifier	Spike Added 8.00 Spike		LCS Result 8.18	MDL U 0.10 u Qualifie	nit I/L	Unit ug/L		Pr 04/11 lient	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S	Prep Ty Prep - Analyz 04/13/12 ID: Lab C Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec.	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis	d Blank ssolvec : 19467 Dil Fac Sample ssolvec : 19467 x Spike
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759 Analyte		MB Result ND	Qualifier	Spike Added 8.00		LCS Result 8.18	MDL U 0.10 ug	r ir	Unit		Pi 04/1: lient	Client Sa repared 2/12 20:37 Sample %Rec 102	Prep Ty Prep 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis	d Blank ssolved : 19467 Dil Fad Sample ssolved : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759 Analyte	Sample Result	MB Result ND	Qualifier	Spike Added 8.00 Spike Added		LCS Result 8.18 MS Result	MDL U 0.10 u Qualifie	r ir	Unit ug/L Unit		Pr 04/11 lient	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S %Rec	Prep Ty Prep - Analyz 04/13/12 ID: Lab C Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec. Limits	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis	d Blank ssolved : 19467 Dil Fad Sample ssolved : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-D MS	Sample Result ND	MB Result ND	Qualifier	Spike Added 8.00 Spike Added		LCS Result 8.18 MS Result	MDL U 0.10 u Qualifie	r ir	Unit ug/L Unit	CI	Pr 04/1: lient D 	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S %Rec 89	Prep Ty Prep - Analyz 04/13/12 ID: Lab C Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec. Limits 70 - 130	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis Batch Dike Du	d Blani ssolved : 1946 Dil Fa Sample ssolved : 1946 ssolved : 1946
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-D MS Matrix: Water	Sample Result ND	MB Result ND	Qualifier	Spike Added 8.00 Spike Added		LCS Result 8.18 MS Result	MDL U 0.10 u Qualifie	r ir	Unit ug/L Unit	CI	Pr 04/1: lient D 	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S %Rec 89	Prep Ty Prep - Analyz 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec. Limits 70 - 130	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matriz pe: Dis Batch oike Du pe: Dis	d Blank ssolvec : 19467 Dil Fac Sample ssolvec : 19467 (ssolvec : 19467 (ssolvec) : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759	Sample Result ND	MB desult ND	Qualifier	Spike Added 8.00 Spike Added 8.00		LCS Result 8.18 MS Result 7.13	MDL U 0.10 us Qualifie	r ir	Unit ug/L Unit	CI	Pr 04/1: lient D 	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S %Rec 89	Prep Ty Prep 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec. Limits 70 - 130	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matrix pe: Dis Batch Dike Du	d Blank ssolvec : 19467 Dil Fac Sample ssolvec : 19467 x Spike ssolvec : 19467
Lab Sample ID: MB 440-19452/1-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: LCS 440-19452/2-C Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-C MS Matrix: Water Analysis Batch: 19759 Analyte Mercury Lab Sample ID: 440-8277-M-1-D MS Matrix: Water	Sample Result ND	MB desult ND Quali Samp	Qualifier	Spike Added 8.00 Spike Added		LCS Result 8.18 MS Result 7.13	MDL U 0.10 u Qualifie	nit //L r	Unit ug/L Unit	CI	Pr 04/1: lient D 	Client Sa repared 2/12 20:37 Sample %Rec 102 Client S %Rec 89	Prep Ty Prep - Analyz 04/13/12 ID: Lab Co Prep Ty Prep %Rec. Limits 85 - 115 Sample ID Prep Ty Prep %Rec. Limits 70 - 130	pe: Dis Batch 22:50 ontrol \$ pe: Dis Batch : Matriz pe: Dis Batch oike Du pe: Dis	d Blank ssolvec : 19467 Dil Fac Sample ssolvec : 19467 (ssolvec : 19467 (ssolvec) : 19467

Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-18376/1 Matrix: Water											Client S	ample ID: Method Prep Type: To	
Analysis Batch: 18376													
		MB	MB										
Analyte	Re	esult	Qualifier		RL		RL	Unit		DF	Prepared	Analyzed	Dil Fac
Specific Conductance		ND			1.0		1.0	umho	s/cm			04/09/12 10:08	1
Lab Sample ID: LCS 440-18376/2										Clien	t Sample	ID: Lab Control	Sample
Matrix: Water												Prep Type: T	otal/NA
Analysis Batch: 18376													
-				Spike		LCS	LCS					%Rec.	
Analyte				Added		Result	Qual	ifier	Unit	D	%Rec	Limits	
Specific Conductance				501		543			umhos/cn	n	108	90 - 110	
Lab Sample ID: 440-7559-1 DU										С	lient San	nple ID: Outfall 01	9 Grab
Matrix: Water												Prep Type: T	otal/NA
Analysis Batch: 18376													
	Sample	Samp	le			DU	DU						RPD
Analyte	Result	Quali	fier			Result	Qual	ifier	Unit	D		RPD	Limit
Specific Conductance	1100					1080			umhos/cn	n		0.2	5

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-19264/1-A Matrix: Water												Client Sa	ample ID: Prep T	Method ype: To	
Analysis Batch: 19269													Prep	Batch:	19264
		MB	MB												
Analyte	Re	esult (Qualifier		RL		MDL	Unit		D	Pi	repared	Analyz	zed	Dil Fac
HEM		ND			5.0		1.4	mg/L			04/12	2/12 09:08	04/12/12	09:24	1
Lab Sample ID: LCS 440-19264/2-A	\									С	lient	Sample	ID: Lab C	ontrol S	ample
Matrix: Water													Prep T	ype: To	tal/NA
Analysis Batch: 19269													Prep	Batch:	19264
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
				20.0		18.7			mg/L			93	78 - 114		
HEM _				20.0		10.7			IIIg/L			00	70-114		
HEM 	-A			20.0		10.7			•	ient	Sam			ol Samp	le Dup
-	-A			20.0		10.7			•	ient	Sam		ab Contro		
_ Lab Sample ID: LCSD 440-19264/3-	-A			20.0		10.7			•	ient	Sam		ab Contro Prep T	ype: To	tal/NA
Lab Sample ID: LCSD 440-19264/3 Matrix: Water	- A			20.0 Spike		LCSD	LCSI	D	•	ient	Sam		ab Contro Prep T		tal/NA
Lab Sample ID: LCSD 440-19264/3 Matrix: Water	- A								•	ient	Sam D		ab Contro Prep T Prep	ype: To	tal/NA 19264
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269	-A			Spike		LCSD			CI	ient		ple ID: L	ab Contro Prep T Prep %Rec.	ype: To Batch:	tal/NA 19264 RPD
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269 Analyte HEM				Spike Added		LCSD Result			CI	ient		%Rec 92	ab Contro Prep T Prep %Rec. Limits	Sype: To Batch: RPD 2	tal/NA 19264 RPD Limit
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269 Analyte				Spike Added		LCSD Result			CI	ient		%Rec 92	ab Contro Prep T Prep %Rec. Limits 78 - 114 Sample ID	Sype: To Batch: RPD 2	tal/NA 19264 RPD Limit 11
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269 Analyte HEM Lab Sample ID: 440-7850-A-1-A MS Matrix: Water				Spike Added		LCSD Result			CI	ient		%Rec 92	ab Contro Prep T %Rec. Limits 78 - 114 Sample ID Prep T	Sype: To Batch: RPD 2 : Matrix	tal/NA 19264 RPD Limit 11 Spike
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269 Analyte HEM Lab Sample ID: 440-7850-A-1-A MS Matrix: Water		Samp		Spike Added		LCSD Result 18.3			CI	ient		%Rec 92	ab Contro Prep T %Rec. Limits 78 - 114 Sample ID Prep T	ype: To Batch: <u>RPD</u> 2 : Matrix ype: To	tal/NA 19264 RPD Limit 11 Spike
Lab Sample ID: LCSD 440-19264/3 Matrix: Water Analysis Batch: 19269 Analyte HEM Lab Sample ID: 440-7850-A-1-A MS				Spike Added 20.0		LCSD Result 18.3	Qual	ifier	CI	ient		%Rec 92	ab Contro Prep T %Rec. Limits 78 - 114 Sample ID Prep T Prep	ype: To Batch: <u>RPD</u> 2 : Matrix ype: To	tal/NA 19264 RPD Limit 11 Spike

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

Lab Sample ID: 440- Matrix: Water Analysis Batch: 192				Client Sa	ample IC		oike Dup ype: To Batch:	tal/NA			
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
HEM	ND		21.1	18.3		mg/L		87	78 ₋ 114	2	18

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-17960/6 Matrix: Water										(Client S	ample ID: Met Prep Type		
Analysis Batch: 17960														
		MB MB												
Analyte	R	esult Qualifie	r	RL		MDL	Unit		D	Pre	epared	Analyzed		Dil Fac
Turbidity		ND		0.10	(0.040	NTU					04/06/12 09:5	4	1
- Lab Sample ID: MRL 440-17960/4 M	RL								Clie	nt	Sample	ID: Lab Conti	ol S	ample
Matrix: Water												Prep Type	: To	tal/NA
Analysis Batch: 17960														
-			Spike		MRL	MRL						%Rec.		
Analyte			Added		Result	Qual	ifier	Unit	I	D	%Rec	Limits		
Turbidity			1.00		1.05			NTU			105			
Lab Sample ID: 440-7586-A-3 DU											Clie	ent Sample ID:	Dup	olicate
Matrix: Water												Prep Type	: To	tal/NA
Analysis Batch: 17960														
-	Sample	Sample			DU	DU								RPD
Analyte	Result	Qualifier			Result	Qual	ifier	Unit	I	D		I	RPD	Limit
Turbidity	ND				ND			NTU					NC	20

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

Lab Sample ID: MB 440-17950/1											Clie	nt S	ample ID: Metho	
Matrix: Water Analysis Batch: 17950													Prep Type: T	otal/NA
		MB N												
Analyte	R	esult C	ualifier		RL		MDL	Unit		D	Prepar	ed	Analyzed	Dil Fac
Total Dissolved Solids		ND			10		10	mg/L					04/06/12 09:13	1
Lab Sample ID: LCS 440-17950/2										Clie	nt San	nple	ID: Lab Control	Sample
Matrix: Water													Prep Type: T	otal/NA
Analysis Batch: 17950														
-				Spike		LCS	LCS						%Rec.	
Analyte				Added		Result	Qual	ifier	Unit	0	%R	ec	Limits	
Total Dissolved Solids				1000		1010			mg/L		1	01	90 - 110	
Lab Sample ID: 440-7547-C-1 DU												Clie	ent Sample ID: D	uplicate
Matrix: Water													Prep Type: T	otal/NA
Analysis Batch: 17950														
	Sample	Sample	e			DU	DU							RPD
Analyte	Result	Qualifi	er			Result	Qual	ifier	Unit	0)		RPE) Limit
Total Dissolved Solids	990					1010			mg/L					10

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

Lab Sample ID: MB 440-18107/1 Matrix: Water											•	Client	Sample ID: Met Prep Type		
Analysis Batch: 18107															
		MB	MB												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Pr	epared	Analyzed		Dil Fac
Total Suspended Solids		ND			10		10	mg/L					04/06/12 20:25	5	1
Lab Sample ID: LCS 440-18107/2										Clie	ent	Sampl	e ID: Lab Contr	ol Sa	ample
Matrix: Water													Prep Type	: Tot	tal/NA
Analysis Batch: 18107															
-				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit	I	D	%Rec	Limits		
Total Suspended Solids				1000		993			mg/L		_	99	85 - 115		
Lab Sample ID: 440-7532-A-2 DU												CI	ient Sample ID:	Dup	olicate
Matrix: Water													Prep Type	: Tot	tal/NA
Analysis Batch: 18107															
-	Sample	Sam	ole			DU	DU								RPD
Analyte	Result	Qual	ifier			Result	Qual	ifier	Unit	I	D		F	RPD	Limit
Total Suspended Solids	21					21.0			mg/L					0	10

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

Lab Sample ID: MB 440-20314/1-A Matrix: Water Analysis Batch: 20530											Client Sa		Method ype: To Batch:	tal/NA
Analyte	R	MB MB esult Qualifier		RL		MDL	Unit		D	Р	repared	Analyz	ed	Dil Fac
Cyanide, Total				5.0		3.0					7/12 17:12	04/18/12		1
Lab Sample ID: LCS 440-20314/2-A									С	lient	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water												Prep T	ype: To	tal/NA
Analysis Batch: 20530												Prep	Batch:	20314
			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Quali	fier	Unit		D	%Rec	Limits		
Cyanide, Total			100		98.0			ug/L			98	90 - 110		
Lab Sample ID: 440-7684-1 MS									Clie	nt S	ample ID:	: Outfall 0	19 Com	posite
Matrix: Water													ype: To	
Analysis Batch: 20530													Batch:	
-	Sample	Sample	Spike		MS	MS						%Rec.		
Analyte	Result	Qualifier	Added		Result	Quali	fier	Unit		D	%Rec	Limits		
Cyanide, Total	ND	· ·	100		99.3			ug/L			99	70 ₋ 115		
Lab Sample ID: 440-7684-1 MSD									Clie	nt S	ample ID:	: Outfall 0	19 Com	posite
Matrix: Water												Prep T	ype: To	tal/NA
Analysis Batch: 20530													Batch:	
-	Sample	Sample	Spike		MSD	MSD						%Rec.		RPD
Analyte	Result	Qualifier	Added		Result	Quali	fier	Unit		D	%Rec	Limits	RPD	Limit
Cyanide, Total	ND		100		95.3			ug/L			95	70 _ 115	4	15

TestAmerica Job ID: 440-7559-1

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-20896/10 Matrix: Water Analysis Batch: 20896											Client S	ample ID: Prep T	Method ype: To	
· ····· , ··· · ·····		МВ МВ												
Analyte	R	esult Qualifier		RL		MDL	Unit		D	Pr	epared	Analyz	ed	Dil Fac
Fluoride		ND		0.10	C	0.020	mg/L					04/20/12	05:27	1
Lab Sample ID: LCS 440-20896/9									Clie	nt	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water												Prep T	ype: To	tal/NA
Analysis Batch: 20896														
			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Qualif	lier	Unit	I	D	%Rec	Limits		
Fluoride			1.00		1.00			mg/L			100	90 - 110		
Lab Sample ID: 440-7684-1 MS									Client	Sa	mple ID): Outfall 0	19 Com	posite
Matrix: Water											- C	Prep T	ype: To	tal/NA
Analysis Batch: 20896														
	Sample	Sample	Spike		MS	MS						%Rec.		
Analyte	Result	Qualifier	Added		Result	Qualif	lier	Unit	I	D	%Rec	Limits		
Fluoride	0.19		1.00		1.15			mg/L			97	80 - 120		
Lab Sample ID: 440-7684-1 MSD									Client	Sa	mple IC): Outfall 0	19 Com	posite
Matrix: Water											-		ype: To	
Analysis Batch: 20896														
-	Sample	Sample	Spike		MSD	MSD						%Rec.		RPD
						0		11		_	0/ D = =			
Analyte	Result	Qualifier	Added		Result	Quain	ier	Unit	1	D	%Rec	Limits	RPD	Limit

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-18541/1-A											Client Sa	mple ID: Metho	d Blank
Matrix: Water												Prep Type: 1	otal/NA
Analysis Batch: 19087												Prep Batch	n: <mark>18541</mark>
-		MB MB											
Analyte	Re	esult Qualifier		RL		MDL	Unit		D	Pi	repared	Analyzed	Dil Fac
Ammonia (as N)		ND		0.400	(0.157	mg/L			04/09	9/12 20:53	04/09/12 21:30	1
									Cli	ient	Sample	ID: Lab Control	Sample
Matrix: Water												Prep Type: 1	otal/NA
Analysis Batch: 19087												Prep Batcl	n: 18541
-			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Qual	ifier	Unit		D	%Rec	Limits	
Ammonia (as N)			10.0		9.520			mg/L		_	95	85 - 115	
_ Lab Sample ID: 720-41221-G-1-B MS	5										Client S	Sample ID: Matr	ix Spike
Matrix: Water												Prep Type: 1	otal/NA
Analysis Batch: 19087												Prep Batcl	n: 18541
-	Sample	Sample	Spike		MS	MS						• %Rec.	
Analyte	Result	Qualifier	Added		Result	Qual	ifier	Unit		D	%Rec	Limits	
Ammonia (as N)	0.280	J,DX	10.0		10.08			mg/L		_	98	70 - 120	

Method: SM 4500 NH3 C - Ammonia (Continued)

Lab Sample ID: 720-41221-G-1 Matrix: Water Analysis Batch: 19087	-C MSD						Client S	ample II		pike Dup Гуре: Tot b Batch:	tal/NA
Analysis Datch. 19007	Sample	Sample	Spike	MSD	MSD				%Rec.	Datch.	RPD
Analyte Ammonia (as N)	0.280	Qualifier J,DX	Added 10.0	Result 10.08	Qualifier	Unit mg/L	<u>D</u>	%Rec 98	Limits 70 - 120	RPD 0	Limit 15

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

Lab Sample ID: MB 440-18689/4 Matrix: Water												Client S	ample ID: Prep T	Method ype: To	
Analysis Batch: 18689															
		MB	MB												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Р	repared	Analyz	ed	Dil Fac
Total Organic Carbon		ND			1.0		0.75	mg/L					04/10/12	06:53	1
Lab Sample ID: LCS 440-18689/5										Cli	ent	Sample	D: Lab Co	ontrol S	ample
Matrix: Water													Prep T	ype: To	tal/NA
Analysis Batch: 18689															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	ifier	Unit		D	%Rec	Limits		
Total Organic Carbon				10.0		10.0			mg/L		_	100	90 - 110		
Lab Sample ID: 440-7354-G-2 MS												Client	Sample ID	: Matrix	Spike
Matrix: Water													Prep T	ype: To	tal/NA
Analysis Batch: 18689															
	Sample	Sam	ple	Spike		MS	MS						%Rec.		
Analyte	Result	Qual	ifier	Added		Result	Qua	ifier	Unit		D	%Rec	Limits		
Total Organic Carbon	5.1			5.00		11.3	AY		mg/L		_	124	80 - 120		
Lab Sample ID: 440-7354-G-2 MSD										Clien	t Sa	ample IC): Matrix Sp	oike Dup	olicate
Matrix: Water													Prep T	ype: To	tal/NA
Analysis Batch: 18689															
	Sample	Sam	ple	Spike		MSD	MSD						%Rec.		RPD
Analyte	Result	Qual	ifier	Added		Result	Qua	ifier	Unit		D	%Rec	Limits	RPD	Limit
Total Organic Carbon	5.1			5.00		11.6	LM		mg/L		_	130	80 - 120	2	20

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

Lab Sample ID: MB 440-18105/3 Matrix: Water											ment o	ample ID: Metho Prep Type: 1	
Analysis Batch: 18105													
	MB	MB											
Analyte	Result	Qualifier		RL		MDL	Unit		D	Pre	pared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND			0.10	(0.050	mg/L					04/06/12 19:58	1
_ Lab Sample ID: LCS 440-18105/4									Cli	ent S	Sample	ID: Lab Control	Sample
Matrix: Water												Prep Type: 1	Total/NA
Analysis Batch: 18105													
			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Qual	ifier	Unit		D	%Rec	Limits	
Methylene Blue Active			0.250		0.238			mg/L			95	90 - 110	
Substances													

Substances

Spike

Added

0.250

Spike

Added

0.250

MS MS

MSD MSD

0.305

Result Qualifier

0.263

Result Qualifier

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

Sample Sample

Sample Sample

ND

Result Qualifier

ND

Result Qualifier

Lab Sample ID: 440-7684-1 MS

Lab Sample ID: 440-7684-1 MSD

Matrix: Water

Methylene Blue Active

Analyte

Analyte

Substances

Matrix: Water

Methylene Blue Active Substances

Analysis Batch: 18105

Analysis Batch: 18105

Prep Type: Total/NA

Prep Type: Total/NA

RPD

Client Sample ID: Outfall 019 Composite

%Rec.

Limits

50 - 125

Client Sample ID: Outfall 019 Composite

%Rec.

D

D

Unit

mg/L

Unit

mg/L

%Rec

105

2 3 4 5 6 7 8 9

 %Rec
 Limits
 RPD
 Limit

 122
 50 - 125
 15
 20

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-17982/1 USB Matrix: Water										(Client S	ample ID: I Prep T		
Analysis Batch: 17982														
	USB	USB												
Analyte	Result	Qualifier		RL		MDL	Unit		D	Pr	epared	Analyz	ed	Dil Fac
Biochemical Oxygen Demand	ND			2.0		0.50	mg/L					04/06/12	1:31	1
Lab Sample ID: LCS 440-17982/4									Clie	ent	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water												Prep T	ype: To	tal/NA
Analysis Batch: 17982														
			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Qua	lifier	Unit	I	D	%Rec	Limits		
Biochemical Oxygen Demand			199		186			mg/L			94	85 - 115		
Lab Sample ID: LCSD 440-17982/5								CI	ient Sa	am	ple ID:	Lab Contro	l Samp	le Dup
Matrix: Water												Prep T	vpe: To	tal/NA
Analysis Batch: 17982														
······,····			Spike		LCSD	LCS	D					%Rec.		RPD
Analyte			Added		Result	Qua	lifier	Unit	I	D	%Rec	Limits	RPD	Limit
Biochemical Oxygen Demand			199		194			mg/L			97	85 - 115	4	20

Method: Gross Alpha and Beta - Gross Alpha/Beta

Lab Sample ID: S204034-04 Matrix: WATER Analysis Batch: 8605	Plank	Blank					Client Sa	mple ID: Metho Prep Type: T Prep Batch:	otal/NA
Analyte		Qualifier	RL	мы	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-1.01		20		pCi/L		04/11/12 00:00	04/12/12 00:00	1
Potassium-40	-11.1	U	25		pCi/L		04/11/12 00:00	04/12/12 00:00	1
Lab Sample ID: S204034-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: T	otal/NA
Analysis Batch: 8605								Prep Batch:	8605_P
	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	-2.29	U	500		pCi/L		04/13/12 00:00	04/14/12 16:09	1

RL

RL

3

4

RL

1

2

MDL Unit

MDL Unit

MDL Unit

pCi/L

pCi/L

pCi/L

pCi/L

D

D

D

Prepared

04/16/12 00:00

Prepared

04/12/12 00:00

04/12/12 00:00

04/18/12 00:00

С

Lab Sample ID: S204034-04

Matrix: WATER

Matrix: WATER

Matrix: WATER Analysis Batch: 8605

Matrix: WATER Analysis Batch: 8605

Matrix: WATER

Analysis Batch: 8605

Analyte

Analyte

Analyte

Radium-226

Gross Alpha

Gross Beta

Strontium-90

Analysis Batch: 8605

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

Blank Blank Result Qualifier

0.04 U

Blank Blank

Blank Blank

0.127 U

Result Qualifier

0.021 U

-0.385 U

Result Qualifier

Analyzed

04/16/12 07:52

04/17/12 15:49 04/17/12 15:49

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 8605_P Dil Fac 1 **Client Sample ID: Method Blank**

Prep Type: 1 Prep Batch:		8
Analyzed	Dil Fac	9
04/17/12 15:49	1	
04/17/12 15:49	1	
ple ID: Metho		

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8605_F

	Prep Batch	: 8605_P
Prepared	Analyzed	Dil Fac

lient Sample ID: Method Blank	C
Prep Type: Total/NA	•
Pren Batch: 8605 P	,

04/18/12 13:08

	Blank	Blank							_
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.258	U	1		pCi/L		04/18/12 00:00	04/18/12 18:59	1

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

Analysis Batch: 8605								Prep Batch:	8605_P
	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/20/12 00:00	04/20/12 09:36	1

Lab Sample ID: S204034-03 Matrix: WATER					Client	Sample		ntrol Sample pe: Total/NA
Analysis Batch: 8605							Prep Ba	atch: 8605_P
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Tritium	367	348	J	pCi/L		95	80 - 120	

Lab Sample ID: S204034-03					Client Sample ID: Lab Control Sample			
Matrix: WATER							Prep 1	Type: Total/NA
Analysis Batch: 8605							Prep	Batch: 8605_P
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cesium-137	122	133		pCi/L		109	80 - 120	
Cobalt-60	108	110		pCi/L		102	80 - 120	

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

			•	,							
Lab Sample ID: S204034-03							Client	t Sample	e ID: Lab C	ontrol S	ample
Matrix: WATER								•		ype: To	
Analysis Batch: 8605										Batch: 8	
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Strontium-90			8.5	7.54		pCi/L		89	80 - 120		
Lab Sample ID: S204034-03							Client	t Sample	e ID: Lab C	ontrol S	ample
Matrix: WATER								•		ype: To	
Analysis Batch: 8605										Batch: 8	
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gross Alpha			33.7	39		pCi/L		116	70 - 130		
Gross Beta			28.3	26.5		pCi/L		94	70 - 130		
Lab Sample ID: S204034-03							Client	t Sample	e ID: Lab C	ontrol S	ample
Matrix: WATER							Glioth	Coumpi		Гуре: То	
Analysis Batch: 8605										Batch: 8	
Analysis Baten. 0000			Spike	LCS	LCS				%Rec.	Baten. e	
Analyte			Added		Qualifier	Unit	D	%Rec	Limits		
Radium-226			55.7	58.1		pCi/L		104	80 - 120		
							0				
Lab Sample ID: S204034-03							Clien	Sample	D: Lab C		
Matrix: WATER										Type: To	
Analysis Batch: 8605			0	1.00	1.00					Batch: 8	605_P
Awahata			Spike		LCS	11		0/ D	%Rec.		
Analyte Radium-228			Added	4.52	Qualifier	_ Unit pCi/L	D	%Rec 102	Limits 60 - 140		
			7.70	4.02		poi/L		102	00 - 140		
Lab Sample ID: S204034-03							Client	t Sample	e ID: Lab C	ontrol S	Sample
Matrix: WATER									Prep 1	Type: To	otal/NA
Analysis Batch: 8605									Prep	Batch: 8	8 <mark>605_</mark> P
			Spike	LCS	LCS				%Rec.		
Analyte			Added		Qualifier	Unit	D	%Rec	Limits		
Uranium, Total			56.5	57		pCi/L		101	80 - 120		
Lab Sample ID: S204034-05						Client Sa	ample II): OUTF	ALL 019 (4	40-7684	I-1) DU
Matrix: WATER									Prep 1	Type: To	otal/NA
Analysis Batch: 8605									Prep	Batch: 8	8605_P
	Sample	Sample		Duplicate	Duplicate						RPD
Analyte		Qualifier			Qualifier	Unit	D			RPD	Limit
Cesium-137	0.346	U		-1.64	U	pCi/L				0	
Potassium-40	-2.13	U		16.4	U	pCi/L				0	
Lab Sample ID: S204034-05 Matrix: WATER						Client Sa	ample II	D: OUTF	ALL 019 (4 Prep 1	40-7684 Гуре: То	
Analysis Batch: 8605										Batch: 8	
	Sample	Sample		Duplicate	Duplicate						RPD
Analyte	-	Sample Qualifier		-	Duplicate Qualifier	Unit	D			RPD	RPD Limit

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

Lab Sample ID: S204034-05					Client Sa	mple ID: OU1	FALL 019 (440-7684	-1) DU
Matrix: WATER						•	Prep Type: To	
Analysis Batch: 8605							Prep Batch: 8	
-	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Strontium-90	0.04	U	0.012	U	pCi/L		0	
Lab Sample ID: S204034-05					Client Sa	mple ID: OU1	FALL 019 (440-7684	-1) DU
Matrix: WATER							Prep Type: To	tal/NA
Analysis Batch: 8605							Prep Batch: 8	605_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Gross Alpha	-0.11	U	0.245	U	pCi/L		0	
Gross Beta	1.44	U	1.96	J	pCi/L		31	
Lab Sample ID: S204034-05					Client Sa	mple ID: OU1	FALL 019 (440-7684	-1) DU
Matrix: WATER							Prep Type: To	tal/NA
Analysis Batch: 8605							Prep Batch: 8	605_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Radium-226	0.036	U	-0.189	U	pCi/L		0	
Lab Sample ID: S204034-05					Client Sa	mple ID: OU1	FALL 019 (440-7684	-1) DU
Matrix: WATER							Prep Type: To	tal/NA
Analysis Batch: 8605							Prep Batch: 8	605_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Radium-228	-0.044	<u> </u>	-0.051	U	pCi/L		0	
Lab Sample ID: S204034-05					Client Sa	mple ID: OU1	FALL 019 (440-7684	-1) DU
Matrix: WATER							Prep Type: To	tal/NA
Analysis Batch: 8605							Prep Batch: 8	605_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Uranium, Total	0.091		0.093	J	pCi/L		2	

GC/MS VOA

Analysis Batch: 18330

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-6724-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-6724-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-7559-1	Outfall 019 Grab	Total/NA	Water	624	
440-7559-2	Trip Blank	Total/NA	Water	624	
LCS 440-18330/5	Lab Control Sample	Total/NA	Water	624	
MB 440-18330/7	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 18185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	625	
LCS 440-18185/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-18185/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-18185/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 18525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	625	18185
LCS 440-18185/2-A	Lab Control Sample	Total/NA	Water	625	18185
LCSD 440-18185/3-A	Lab Control Sample Dup	Total/NA	Water	625	18185
MB 440-18185/1-A	Method Blank	Total/NA	Water	625	18185

GC Semi VOA

Prep Batch: 18417

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	608	
LCS 440-18417/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-18417/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-18417/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 18698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	608 Pesticides	18417
LCS 440-18417/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	18417
LCSD 440-18417/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	18417
MB 440-18417/1-A	Method Blank	Total/NA	Water	608 Pesticides	18417

HPLC/IC

Analysis Batch: 17932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	300.0	
440-7684-1 MS	Outfall 019 Composite	Total/NA	Water	300.0	
440-7684-1 MSD	Outfall 019 Composite	Total/NA	Water	300.0	
LCS 440-17932/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-17932/2	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

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TestAmerica	.lob	١D·	440-7559-1
1030 (110100	000	ıю.	110 7000 1

	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Prep Batch: 18166					
MB 440-18106/1-C	Method Blank	Dissolved	Water	200.2	
LCS 440-18106/2-C	Lab Control Sample	Dissolved	Water	200.2	
440-7684-1 MSD	Outfall 019 Composite	Dissolved	Water	200.2	
440-7684-1 MS	Outfall 019 Composite	Dissolved	Water	200.2	
440-7684-1	Outfall 019 Composite	Dissolved	Water	200.2	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
rep Batch: 18147					
MB 440-18106/1-B	Method Blank	Dissolved	Water	200.2	
LCS 440-18106/2-B	Lab Control Sample	Dissolved	Water	200.2	
440-7684-1	Outfall 019 Composite	Dissolved	Water	200.2	
440-7663-A-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-7663-A-2-D MS	Matrix Spike	Dissolved	Water	200.2	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
rep Batch: 18146					
Metals					
G2D120000056C	Lab Control Sample	Total	Water	3542	
G2D120000056B	Method Blank	Total	Water	3542	
440-7684-1	Outfall 019 Composite	Total	Water	3542	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
rep Batch: 2103056_P					
G2D120000056C	Lab Control Sample	Total	Water	1613B	
G2D120000056B	Method Blank	Total	Water	1613B	
440-7684-1	Outfall 019 Composite	Total	Water	1613B	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
nalysis Batch: 210305					
specialty Organics					
-					
MRL 440-18897/2 MRL	Lab Control Sample	Total/NA	Water	314.0	
MB 440-18897/38	Method Blank	Total/NA	Water	314.0	
LCS 440-18897/37	Lab Control Sample	Total/NA	Water	314.0	
440-7958-I-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
440-7958-I-2 MS	Matrix Spike	Total/NA	Water	314.0	
Lab Sample ID 440-7684-1	Client Sample ID Outfall 019 Composite	Total/NA	Matrix Water	<u>Method</u> 314.0	Prep Bato
nalysis Batch: 18897		Dura Taura	Madain	Madaad	Dava Dete
MB 440-17933/2 -		Total/INA	Water	300.0	
MB 440-17933/2	Lab Control Sample Method Blank	Total/NA	Water Water	300.0 300.0	
440-7684-1 MSD LCS 440-17933/3	Outfall 019 Composite	Total/NA	Water	300.0	
440-7684-1 MS	Outfall 019 Composite	Total/NA Total/NA	Water	300.0	
440-7684-1	Outfall 019 Composite	Total/NA	Water	300.0	
	0.16.11.0.10.0	T (1010			

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7684-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7684-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.2	

Prep Type

Matrix

Prep Batch: 18166 (Continued)

Client Sample ID

Metals (Continued)

Lab Sample ID

Method

Prep Batch

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-18166/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-18166/1-A	Method Blank	Total Recoverable	Water	200.2	
Prep Batch: 18168					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7684-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7684-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.2	
LCS 440-18168/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-18168/1-A	Method Blank	Total Recoverable	Water	200.2	
Analysis Batch: 18211					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-7684-1	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	18166
440-7684-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	18166
440-7684-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	18166
LCS 440-18166/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	18166
MB 440-18166/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	18166
Analysis Batch: 18213	1				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Dissolved	Water	200.7 Rev 4.4	18147
440-7684-1 MS	Outfall 019 Composite	Dissolved	Water	200.7 Rev 4.4	1814
440-7684-1 MSD	Outfall 019 Composite	Dissolved	Water	200.7 Rev 4.4	18147
LCS 440-18106/2-C	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	1814
MB 440-18106/1-C	Method Blank	Dissolved	Water	200.7 Rev 4.4	18147
Analysis Batch: 18322	1				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-7663-A-2-D MS	Matrix Spike	Dissolved	Water	200.8	18146
440-7663-A-2-E MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	18146
440-7684-1	Outfall 019 Composite	Dissolved	Water	200.8	18146
440-7684-1	Outfall 019 Composite	Total Recoverable	Water	200.8	18168
440-7684-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.8	18168
440-7684-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.8	18168
LCS 440-18106/2-B	Lab Control Sample	Dissolved	Water	200.8	18146
LCS 440-18168/2-A	Lab Control Sample	Total Recoverable	Water	200.8	18168
MB 440-18106/1-B	Method Blank	Dissolved	Water	200.8	18146
MB 440-18168/1-A	Method Blank	Total Recoverable	Water	200.8	18168
Prep Batch: 19154					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	245.1	
440-7790-H-1-B MS	Matrix Spike	Total/NA	Water	245.1	
440-7790-H-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
LCS 440-19154/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-19154/1-A	Method Blank	Total/NA	Water	245.1	
Prep Batch: 19467					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Dissolved	Water	245.1	
440-8277-M-1-C MS	Matrix Spike	Dissolved	Water	245.1	

19467

Metals (Continued)

Prep Batch: 19467 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8277-M-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	
LCS 440-19452/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19452/1-C	Method Blank	Dissolved	Water	245.1	
nalysis Batch: 19570					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	245.1	19154
440-7790-H-1-B MS	Matrix Spike	Total/NA	Water	245.1	19154
440-7790-H-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	19154
LCS 440-19154/2-A	Lab Control Sample	Total/NA	Water	245.1	19154
MB 440-19154/1-A	Method Blank	Total/NA	Water	245.1	19154
nalysis Batch: 19759					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Dissolved	Water	245.1	19467
440-8277-M-1-C MS	Matrix Spike	Dissolved	Water	245.1	19467 1
440-8277-M-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	19467
LCS 440-19452/2-C	Lab Control Sample	Dissolved	Water	245.1	19467 1

Dissolved

Water

245.1

General Chemistry

Method Blank

MB 440-19452/1-C

Analysis Batch: 17635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7559-1	Outfall 019 Grab	Total/NA	Water	SM 2540F	
Analysis Batch: 1795	0				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7547-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 2540C	
LCS 440-17950/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-17950/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 17960

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-7586-A-3 DU	Duplicate	Total/NA	Water	180.1	
440-7684-1	Outfall 019 Composite	Total/NA	Water	180.1	
MB 440-17960/6	Method Blank	Total/NA	Water	180.1	
MRL 440-17960/4 MRL	Lab Control Sample	Total/NA	Water	180.1	

Analysis Batch: 17982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM5210B	
LCS 440-17982/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-17982/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-17982/1 U	SB Method Blank	Total/NA	Water	SM5210B	

Analysis Batch: 18105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 5540C	
440-7684-1 MS	Outfall 019 Composite	Total/NA	Water	SM 5540C	
440-7684-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 5540C	

General Chemistry (Continued)

Analysis Batch: 18105 (Continued)

ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
.CS 440-18105/4	Lab Control Sample	Total/NA	Water	SM 5540C	
1B 440-18105/3	Method Blank	Total/NA	Water	SM 5540C	
nalysis Batch: 18107					
_ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
40-7532-A-2 DU	Duplicate	Total/NA	Water	SM 2540D	
40-7684-1	Outfall 019 Composite	Total/NA	Water	SM 2540D	
_CS 440-18107/2	Lab Control Sample	Total/NA	Water	SM 2540D	
//B 440-18107/1	Method Blank	Total/NA	Water	SM 2540D	
nalysis Batch: 18376					
_ab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
440-7559-1	Outfall 019 Grab	Total/NA	Water	120.1	
440-7559-1 DU	Outfall 019 Grab	Total/NA	Water	120.1	
_CS 440-18376/2	Lab Control Sample	Total/NA	Water	120.1	
MB 440-18376/1	Method Blank	Total/NA	Water	120.1	
ep Batch: 18541					
_ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 B	
720-41221-G-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
720-41221-G-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
_CS 440-18541/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-18541/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
nalysis Batch: 18689					
_ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
440-7354-G-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-7354-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 5310B	
_CS 440-18689/5	Lab Control Sample	Total/NA	Water	SM 5310B	
		Total/NA	Water	SM 5310B	

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 C	18541
720-41221-G-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 C	18541
720-41221-G-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 C	18541
LCS 440-18541/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	18541
MB 440-18541/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	18541

Prep Batch: 19264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-7559-1	Outfall 019 Grab	Total/NA	Water	1664A	
440-7850-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	
440-7850-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	
LCS 440-19264/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-19264/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-19264/1-A	Method Blank	Total/NA	Water	1664A	

General Chemistry (Continued)

Analysis Batch: 19269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7559-1	Outfall 019 Grab	Total/NA	Water	1664A	19264
440-7850-A-1-A MS	Matrix Spike	Total/NA	Water	1664A	19264
440-7850-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	1664A	19264
LCS 440-19264/2-A	Lab Control Sample	Total/NA	Water	1664A	19264
LCSD 440-19264/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	19264
MB 440-19264/1-A	Method Blank	Total/NA	Water	1664A	19264
Prep Batch: 20314					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	Distill/CN	
440-7684-1 MS	Outfall 019 Composite	Total/NA	Water	Distill/CN	
440-7684-1 MSD	Outfall 019 Composite	Total/NA	Water	Distill/CN	
LCS 440-20314/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-20314/1-A	Method Blank	Total/NA	Water	Distill/CN	
Analysis Batch: 20530					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 4500 CN E	20314
440-7684-1 MS	Outfall 019 Composite	Total/NA	Water	SM 4500 CN E	20314
440-7684-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 4500 CN E	20314
LCS 440-20314/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	20314
MB 440-20314/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	20314
nalysis Batch: 20896	i -				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	SM 4500 F C	
440-7684-1 MS	Outfall 019 Composite	Total/NA	Water	SM 4500 F C	
440-7684-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 4500 F C	
LCS 440-20896/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-20896/10	Method Blank	Total/NA	Water	SM 4500 F C	

Subcontract

Analysis Batch: 8605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-1	Outfall 019 Composite	Total/NA	Water	Gamma Spec	8605_P
				K-40 CS-137	
440-7684-1	Outfall 019 Composite	Total/NA	Water	Gross Alpha	8605_P
				and Beta	
440-7684-1	Outfall 019 Composite	Total/NA	Water	Radium 226	8605_P
440-7684-1	Outfall 019 Composite	Total/NA	Water	Radium 228	8605_P
440-7684-1	Outfall 019 Composite	Total/NA	Water	Strontium 90	8605_P
440-7684-1	Outfall 019 Composite	Total/NA	Water	Tritium	8605_P
440-7684-1	Outfall 019 Composite	Total/NA	Water	Uranium,	8605_P
				Combined	
440-7684-3	Trip Blank Eberline	Total/NA	Water	Gamma Spec	8605_P
				K-40 CS-137	
440-7684-3	Trip Blank Eberline	Total/NA	Water	Gross Alpha	8605_P
				and Beta	
440-7684-3	Trip Blank Eberline	Total/NA	Water	Radium 226	8605_P
440-7684-3	Trip Blank Eberline	Total/NA	Water	Radium 228	8605_P
440-7684-3	Trip Blank Eberline	Total/NA	Water	Strontium 90	8605_P

TestAmerica Job ID: 440-7559-1

Subcontract (Continued)

Analysis Batch: 8605 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7684-3	Trip Blank Eberline	Total/NA	Water	Uranium,	8605_P
				Combined	
S204034-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8605_P
				and Beta	
S204034-04	Method Blank	Total/NA	WATER	Gross Alpha	8605_P
				and Beta	
S204034-05	OUTFALL 019 (440-7684-1) DU	Total/NA	WATER	Gross Alpha	8605_P
				and Beta	

Prep Batch: 8605_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bate
440-7684-1	Outfall 019 Composite	Total/NA	Water	General Prep	
440-7684-3	Trip Blank Eberline	Total/NA	Water	General Prep	
S204034-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204034-04	Method Blank	Total/NA	WATER	General Prep	
S204034-05	OUTFALL 019 (440-7684-1) DU	Total/NA	WATER	General Prep	

Qualifiers

GC/MS Semi VOA

GC/INS Sen			
Qualifier	Qualifier Description		
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL		5
DIOXIN			
Qualifier	Qualifier Description		6
J	Estimated result. Result is less than the reporting limit.		
Q	Estimated maximum possible concentration (EMPC).		
В	Method blank contamination. The associated method blank contains the target analyte at a reportable level.		
а	Spiked analyte recovery is outside stated control limits.		8
Metals		_	
Qualifier	Qualifier Description		9
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL		
MB	Analyte present in the method blank		
IB	CCV recovery above limit; analyte not detected		
General Ch	nemistry		
Qualifier	Qualifier Description		
AY	Matrix Interference suspected	1	
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)		
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL		3

Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¢	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc Project/Site: Boeing SSFL outfalls

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 12.002r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080
FestAmerica West Sacramento	A2LA	DoD ELAP		2928-01
TestAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
TestAmerica West Sacramento	Arizona	State Program	9	AZ0708
TestAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica West Sacramento	California	NELAC	9	1119CA
FestAmerica West Sacramento	Colorado	State Program	8	N/A
TestAmerica West Sacramento	Connecticut	State Program	1	PH-0691
estAmerica West Sacramento	Florida	NELAC	4	E87570
FestAmerica West Sacramento	Georgia	State Program	4	960
estAmerica West Sacramento	Guam	State Program	9	N/A
FestAmerica West Sacramento	Hawaii	State Program	9	N/A
estAmerica West Sacramento	Illinois	NELAC	5	200060
FestAmerica West Sacramento	Kansas	NELAC	7	E-10375
FestAmerica West Sacramento	Louisiana	NELAC	6	30612
FestAmerica West Sacramento	Michigan	State Program	5	9947
FestAmerica West Sacramento	Nevada	State Program	9	CA44
TestAmerica West Sacramento	New Jersey	NELAC	2	CA005
FestAmerica West Sacramento	New Mexico	State Program	6	N/A
FestAmerica West Sacramento	New York	NELAC	2	11666
FestAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
FestAmerica West Sacramento	Oregon	NELAC	10	CA200005
FestAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
FestAmerica West Sacramento	South Carolina	State Program	4	87014
FestAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
FestAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
estAmerica West Sacramento	USDA	Federal		P330-09-00055
FestAmerica West Sacramento	Utah	NELAC	8	QUAN1
FestAmerica West Sacramento	Virginia	State Program	3	178
FestAmerica West Sacramento	Washington	State Program	10	C581
TestAmerica West Sacramento	West Virginia	State Program	3	9930C
TestAmerica West Sacramento	West Virginia DEP	State Program	3	334
TestAmerica West Sacramento	Wisconsin	State Program	5	998204680
a continenta mest odulamento	**1900119111	State FlogidIII	5	330204000

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

LABORATORY REPORT



Date:	April 12, 2012	"dedicated to providing quality aquatic toxicity testing"
Client:	TestAmerica, Irvine	4350 Transport Street, Unit 107
	17461 Derian Ave., Suite 100	Ventura, CA 93003
	Irvine, CA 92614	(805) 650-0546 FAX (805) 650-0756
	Attn: Debby Wilson	CA DOHS ELAP Cert. No.: 1775
Laboratory N	No.: A-12040505-001	
Job No.:	440-7684-1	
Sample I.D.:	Outfall 019 (440-7684-1)	
		illed, within the recommended hold time and ned. Testing conducted on only one sample per

Date Sampled:	04/05/12
Date Received:	04/05/12
Temp. Received:	5.8°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	04/05/12 to 04/11/12

Sample Analysis: The following analyses were performed on your sample:

Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0). *Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Result Summary:

0.0 %	
$\frac{\text{DEC}}{1.0} \qquad \frac{\text{TUc}}{1.0}$	

Quality Control:

Reviewed and approved by:

Joseph A. Laboratory Director



Lab No.: A-12040505-001 Client/ID: TestAmerica Outfall 019

Start Date: 04/05/2012

TEST SUMMARY

TEST DATA

Species: Pimephales promelas. Age: $\int \oint (1-14)$ days. Regulations: NPDES. Test solution volume: 250 ml. Feeding: prior to renewal at 48 hrs. Number of replicates: 2. Control water: Moderately hard reconstituted water. Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture. Test type: Static-Renewal. Test Protocol: EPA-821-R-02-012. Endpoints: Percent Survival at 96 hrs. Test chamber: 600 ml beakers. Temperature: 20 +/- 1°C. Number of fish per chamber: 10. QA/QC No.: RT-120403.

TEST DATA							
		°C	DO		# D	ead	Analyst & Time
		C	DO	рН	А	В	of Readings
INITIAL	Control	19.6	8.5	8.2	\sim	0	n
	100%	19.7	7.2	7-4	0	\mathcal{O}	1500
24 Hr	Control	(4. 8	8.3	8 . U	0	0	2
24 П	100%	19.01	8,3	8.2	0	0	1470
48 Hr	Control	195	8.5	7.9	0	0	7
48 ПГ	100%	19.4	8.6	8.2	0	0	1430
Demouvel	Control	19.6	8.7	8.0	0	6	2
Renewal	100%	19.6	9.0	7.8	0	0	1430
72 Hr	Control	19.5	8.4	8.0	0	0	7
/2 Hr	100%	194	7.7	8. LJ	0	0	1430
06 11	Control	19.4	8.4	8.0	0	\mathcal{O}	2
96 Hr	100%	19.3	8.4	8.3	0	0	1500
Comments:							
Sample as received: Chlorine: 0.0 mg/l; pH: <u>2-</u> ⁴ ; Conductivity: <u>767</u> umho; Temp: 5.8°C;							
DO: 7. 2mg/l; Alkalinity: 2)/ mg/l; Hardness: 3/6 mg/l; NH ₃ -N: 0.2 mg/l Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No.							
Control: Alkalinity: <u>6</u> 7 mg/l; Hardness: <u>6</u> 7 mg/l; Conductivity: <u>>19</u> umho.							
Test solution aerated (not to exceed 100 bubbles/min) to maintain DO >4.0 mg/l? Yes / (N_0)							
Sample used for	or renewal is the original	ginal sample	e kept at 0-6	5°C with mi	nimal hea	dspace.	

Dissolved Oxygen (DO) readings in mg/l O₂.

RESULTS

Percent Survival In:

Control:

(00_% 100% Sample: _

[[][

%



CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- Test and Results Summary
- Data Summary and Statistical Analyses
- Raw Test Data: Water Quality & Test Organism Measurements

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-12040505-001 Client/ID: TestAmerica - Outfall 019 Date Tested: 04/05/12 to 04/11/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*. Age: < 24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: 25 +/- 1°C. Dilution water: Mod. hard reconstituted (MHRW). QA/QC Batch No.: RT-120403. Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 15 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 6 days. Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	23.8
100% Sample	100%	26.9
* Sample not s	tatistically significantly le	ess than Control.

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (23.8 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 16.2%)
Statistically significantly different concentrations relative difference $> 13\%$	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

	5/2012 14 11/2012			12040505	C		Sample ID	,	0.46-11.040	`
End Date: 4/1	11/2012	4 4 9 9					Sample ID		Outfall 019	,
		14:00	Lab ID:	CAATL-Aq	uatic Test	ing Labs	Sample Ty	pe:	SRW2-Ind	ustrial stormwater
Sample Date: 4/5	5/2012 0	9:45	Protocol:	FWCH-EP	A-821-R-0	02-013	Test Speci	es:	CD-Ceriod	laphnia dubia
Comments:										
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control ⁴	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

				Not			Fisher's	1-Tailed	lsot	onic
Conc-%	Mean	N-Mean	Resp	Resp	Total	Ν	Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis	Test (1-tail,	0.05)	NOEC	LOEC	ChV	TU			
Fisher's Exa	ct Test		100	>100		1			
Treatments	vs D-Control								
				Line	ar Interpo	lation (200) Resamples)		
Point	%	SD	95%	6 CL	Skew				
IC05	>100								
IC10	>100								
IC15	>100						1.0 	 	
IC20	>100						0.9		
IC25	>100						0.9		
IC40	>100						0.8 -		
IC50	>100						0.7		
							1		
							8 0.6		
							80.6 - 0.5 - 0.4 -		
							<u>م</u> ۲.4		

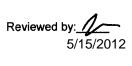
0.3 0.2 0.1 0.0

0

50

Dose %

100



150

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			Cerioda	aphnia Su	rvival and	Reprod	uction Tes	t-Reproc	luction	
Start Date:	4/5/2012 1	4:00	Test ID:	12040505	c		Sample ID	:	Outfall 019	Ð
End Date:	4/11/2012	14:00	Lab ID:	CAATL-Ad	uatic Test	ing Labs	Sample Ty	pe:	SRW2-Ind	lustrial stormwate
Sample Date:	4/5/2012 0	9:45	Protocol:	FWCH-EP	A-821-R-0)2-013	Test Spec	es:	CD-Ceriod	laphnia dubia
										•
Comments:										
Comments: Conc-%	1	2	3	4	5	6	7	8	9	10
	1 24.000	2 23.000	3 26.000	4 26.000	5 23.000	6 14.000	7 28.000	8 30.000	9 29.000	10 15.000

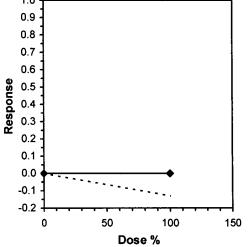
				Transform	n: Untran	sformed		Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.800	1.0000	23.800	14.000	30.000	22.911	10			25.350	1.0000
100	26.900	1.1303	26.900	15.000	30.000	16.481	10	127.00	82.00	25.350	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.83018	0.905	-1.426	1.48728
F-Test indicates equal variances (p = 0.55)	1.51272	6.54109		

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences Treatments vs D-Control

Linear Interpolation (200 Resamples) Point % SD 95% CL Skew IC05 >100 IC10 >100 >100 IC15 1.0 IC20 >100 0.9 IC25 >100 0.8 IC40 >100 0.7 IC50 >100 0.6



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			Cerioda	aphnia Su	rvival and	Reprodu	uction Tes	st-Repro	duction		
Start Date: End Date: Sample Date: Comments:	4/5/2012 1 4/11/2012 4/5/2012 (14:00	Test ID: 12040505c Lab ID: CAATL-Aquatic Testing I Protocol: FWCH-EPA-821-R-02-0				Sample IE Sample Ty Test Spec	ype:	Outfall 019 SRW2-Industrial stormwater CD-Ceriodaphnia dubia		
Conc-%	1	2	3	4	5	6	7	8	9	10	
D-Control	24.000	23.000 25.000		26.000 28.000	23.000 30.000	14.000	28.000	30.000 27.000	29.000 28.000	15.000 29.000	

				Transform	n: Untran	sformed			1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	
D-Control	23.800	1.0000	23.800	14.000	30.000	22.911	10				
100	26.900	1.1303	26.900	15.000	30.000	16.481	10	-1.395	1.730	3.845	

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution ((p <= 0.05)		0.83018		0.905	·	-1.426	1.48728
F-Test indicates equal variances	(p = 0.55)		. ,		1.51272		6.54109			1.10720
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	3.84468	0.16154	48.05	24,6944	0.18002	
Treatments vs D-Control									0.10002	1, 10

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CERIODAPHNIA DUBIA CHRONIC BIOASSAY EPA METHOD 1002.0 Raw Data Sheet



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Lab No.: A-12040505-001

Client ID: TestAmerica - Outfall 019

Start Date: 04/05/2012

ient ID: I	[estAmeri	ica - Ou	tfall 01	9								Start	Date: 04	/05/20	112
		DA	Y 1	DA	Y 2	 1	DAY 3	DA	.Y 4	DA	Y 5	DA	AY 6	D.	AY 7
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Ir	nitials:	P		7	\mathcal{V}	$\overline{\mathcal{V}}$	41	1	The	h.	Į	1	\mathbb{A}		-
Time of Re	eadings:	1400	1400	140	14W	144	1.900	1900	14n	144	14m	14m	IYW		
	DO	29	8.1	8:3	8-0	8.7	\$ 8.0	\$17	Ø. O	8.2	79	8,2	7.9		-
Control	pН	8.(8.2	7.8	8.2	7-8	8.1	8,0	8.0	50	¥. 3	8.2	8.1		· ~
	Temp	24.5	25,0	24.8	25-0	24	7 246	74.5	24.7	24.3	24.7	24.5	243		-
	DO	6.2	8,5	7.9	8.2	2.9	8.0	20	8.2	5.2	7.9	89	8-1		-
100%	pН	7.4	8.4	7.5	8-4	7.5		7.5	7.9	8-2	18.5	7.5	8.4	(-
	Temp	24.8	24.7	2 <i>4.</i> 7	250	24-	8 247	24.1	247	34.0	24.3	24.7	24.2		
	A	dditional	Paramete	ers				Co	ıtrol				100% Sam	ple	
	Co	onductivity	(umohm	s)				31	9				768		
	Al	lkalinity (n	ng/l CaCC	D ₃)				6	7		_	55			
	Н	ardness (n	ng/l CaCC	D ₃)				8					18		
	A	mmonia (r	ng/I NH ₃ -	N)				Lo	0.1			(0.2		
							Source of No								
	plicate:		∧ ≻A	в /D	<u>ر</u>		 フ <u>ク</u>	Е / С	۲ ۲		G Z	н 1 р	30	<u> </u>	<u>ا</u> کر
Bro	ood ID:														
Sample	e	Day		AB	С	D	er of Young E F	G	н	I		otal Live Young	No. Liv Adults		Analyst Initials
				<u> </u>					<u> " </u>						10
		1		00	VV		c	V/		$\boldsymbol{\Gamma}$ $\boldsymbol{\mathbf{K}}$		C/ 1	10		
		1				0	$\frac{0}{0}$	0	$\frac{C}{C}$	$\frac{C}{C}$		$\frac{c}{b}$	10		Å
					2	2 4		0	0		シシシ				R
Control		2		O O	073	10 4 0 4		000				C	10		R R
Control		2 3			7 7 7	10 70 70 9	20 57 79	, 0 4 1 9	5 0 12	0 0		C	10		A An
Control	1	2 3 4 5 6			3	9 13	60	, 0 4 1 9	5	0 0		C	10		A ANT
Control		2 3 4 5 6 7			7 3 9 14 -	13	2 7 7 12 7 	, 0 - 4 - 9 - 9 	5 0 12 13 -	0 4 10 15 1 -		C	10		R AND
Control		2 3 4 5 6 7 Total		000555	3	13	20 57 79	, 0 - 4 - 9 - 9 	5 0 12 13 -	0 4 10 15 1 29 1		C 12 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			R ANT
Control		2 3 4 5 6 7 Total 1			7 3 9 14 -	13	2 7 7 12 7 	, 0 9 9 15 -	5 0 12 13 -	0 4 10 15 1 29 1		C			R ANT
Control		2 3 4 5 6 7 Total		0 0 5 5 6 8 1 0 0 0	7 3 9 14 -	13	2 7 7 12 7 	, 0 9 9 15 -	5 0 12 13 - 30 0	0 4 10 15 1 29 1		000			A ANT ANT
		2 3 4 5 6 7 Total 1 2		0 0 5 5 6 8 1 0 0 0	7 3 9 14 -	13 - 20 0	2 7 7 12 7 	, 0 9 9 15 -	5012 13 - 30 003	0 4 10 15 1 29 1		C 12 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			A ANT ANT
Control		2 3 4 5 6 7 Total 1 2 3		0055000	7 3 9 14 -	13 - 20 0	2 7 7 12 7 		5012 13 - 30 003	0 4 10 15 1 29 1		0 12 22 9 29 5 34 0 0 10			A HAR AND NA
		2 3 4 5 6 7 Total 1 2 3 4		0055000	- - - - - - - - - - - - - - - - - - -	13 - 20 0	2 7 7 12 7 		5012 13 - 30 00 30	0 4 4	C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U 222 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			A HAN AND AND
		2 3 4 5 6 7 Total 1 2 3 4 5		005000000000000000000000000000000000000	- - - - - - - - - - - - - - - - - - -	13 20 00 3 0 11 14 	2 7 7 7 7 7 7 7 7 7 7 7 7 7		5012 13 - 30 03 00 30 12 12 12	0 4 9 10 15 1 15 1 29 1 0 0 0 5 9		U 222 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			A HAN AND AND AND AND AND AND AND AND AND A

Circled fourth brood not used in statistical analysis.

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



CHAIN OF CUSTODY

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MAN-MERGIA	Client Name/Address:	Address			Project	šć:									NAI VS						
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Burger (2: N March Mun 4-5-12 March Mar Mun 4-5-12 March Mar Mun 12: N Date Time: 4-5-12 Receivered by Martine: 12: N 13:05 Receivered by Martine: 12: N 13:05 Receivered by Martine: 12: N 13:05 13:05 13:05 13:05 13:05 13:05 13:05 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 13:05 14:11 14:12 1	ished By			Date/T				Beceived By	same /	ō Ž V	rder for COC	Page 1	of 3 fo	r Outfall	019 for	the sai	ne ever	ij			
HOMM 13:05 Received By Untime. 13:05 Received By Untime. 13:05 Received By Ultime. 13:05 HISTIZ 13:05 Detertime. 13:05 HISTIZ 13:05 Detertime. 13:05 HISTIZ 14:21	in l	51 4 81 4		4		1.1	2017	Ma	Æ	ĺ,	Mund /	\sim	J.	いて	\mathbf{x}	Tum-ar 24 Hou 48 Hou	ound time: 72 5 D	(Check) Hour: ay:	10 Day:	X	
Hold Hold Harring Received A Martine Date Time. HIS12 2:10 MM ATC 4-5-12 14:21	REAL	Þ	Mul	L			وياكير	Received By	N	FN	H			13:6	2	Sample	Integrity: ((Check) Ice:			
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CHAIN OF CUSTODY FORM

5/15/2012

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TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Phone (949) 261-1022 Fax (949) 260-3297		Chain of Custody Record			TestAmerico	
on (Sub Contract Lab)	Sampler:	Lab PM: Wilson, Debby	Carrier Tracking No(s)	king No(s):	COC No: 440-3563.1	
Client Contact: Shipping/Receiving	Phone:	E-Maii: debby.wilson@testamericainc.com	ainc.com		Page: Page 1 of 1	
Company: Aquatic Testing Laboratories			Analysis Requested	-	Job #: 440-7684-1	
Address: 4350 Transport #107,	Due Date Requested: 4/17/2012					
City: Ventura	TAT Requested (days):	13				22
State, Zp. CA, 93003		-0-20Y			D - Nitric Acid E - NaHSO4	33
Phone:	PO#	-F28\A			F - MeOH G - Amchlor H - Accortic Acid	R - Na2S2SO3 S - H2SO4 T TEB Podoobidate
Email:	:# OM	40' Eb			I - Ice J - DI Water	eecariy crate
ct Name ing SSFL outfalls	Project #: 44002624	e) olu	· · · · · · · · · · · · · · · · · · ·		K - EDTA L - EDA	specify)
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년 Sample Identification - Client ID (Lab ID)	G=grab)	ens See			Special Instructions/Note:	s/Note:
0 cn Outfall 019 (440-7684-1)		Water X X				
5 01	+					
115						
Possible Hazard Identification Unconfirmed		Sample Disposal	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) — Return To Client — Disposal Bv Lab — Archive For Mon	f samples are retair	stained longer than 1 month) Amhive For	
Deliverable Requested: I, III, IV, Other (specify)		Special Instruction	Special Instructions/QC Requirements:			
linquished by:	Date:	Time:	Method	Method of Shipment:		
- 77-50	Date/Time:		april -		CT 14:10 Company	ľ.
2 Relinquished by: 2/20			0	Date/Time:	Company	
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Custody Seals Intact: Custody Seal No.:		Cooler Temperatur	Cooler Temperature(s) °C and Other Remarks:	580		
		13	9 10 11 12	7 8	3 4 5 6	1



REFERENCE TOXICANT DATA



Fathead Minnow Acute Toxicity Test Reference Toxicant Data

FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-120403

Species: Pimephales promelas. Age: $\underline{14}$ days old. Regulations: NPDES. Test chamber volume: 250 ml. Feeding: Prior to renewal at 48 hrs. Temperature: 20 +/- 1°C. Number of replicates: 2. Dilution water: MHSF.

TEST SUMMARY

Source: In-lab culture. Test type: Static-Renewal. Test Protocol: EPA-821-R-02-012. Endpoints: LC50 at 96 hrs. Test chamber: 600 ml beakers. Aeration: None. Number of organisms per chamber: 10. Photoperiod: 16/8 hrs light/dark.

TEST DATA

		INITIAI	-			24 Hr					48 Hr		
Date/Time:	4-7-	レ	1170	4-4	-1,2		[[]	37	4-5-	12		1130	
Analyst:			~				1				7	7	
	°C	DO	pН	°C	DO	рН	# D	Dead	°C	DO	pН	# D	ead
			P			P.1	A	В			PIL	Α	В
Control	20.1	8.4	8.0	19.8	8.2	7.9	U	U	19.7	8.2	7.9	0	0
1.0 mg/l	19.9	8.5	7.9	19.8	8.2	7.9	U	6	14.6	8.1	7.7	\sim	0
2.0 mg/l	19.8	8.6	8.0	19.8	8.1	7.9	U	0	19.7	7.9	7.9	0	0
4.0 mg/l	(9.7	8.8	8.0	19.8	8.2	7.9	\mathcal{O}	0	19.7	7. 8	7.7	1	0
8.0 mg/l	(9.7	8.7	8.0	(4.8	8.1	7.8	(0	10	1	1	1	/	/
16.0 mg/I	(9.8	8.8	8.1	19.8	7.2	26	١٥	٥) (-	-	1	-	-
	I I	RENEWA	۱L			72 Hr					96 Hr		
Date/Time:	4-5	-12	1172	4-6-	12		טרון	,	4-7	-12		()	130
Analyst:		1	7				2				1	2	
	°C	DO	рН	°C	°C DO pH # Dead			Dead	°C	DO	рН	# D	Dead
			P11				A	В			рп	A	В
Control	19.2	6.5	8.2	19.6	7.5	8.0	\square	0	19.5	7.6	7.8	0	0
1.0 mg/l	19.6	6.8	8.1	19.6	28	7. 9	8	0	19.4	7.8	7.8	0	C
2.0 mg/l	19.7	6.9	8.0	14.5	8.0	8.0	0	0	19.4	7.7	7.8	U	0
4.0 mg/l	[9.7	6.9	8.0	146	8.1	7.9	Ũ	0	19.4	8.0	7.8	0	1
8.0 mg/l	-	~	~	~	-	-	~	~	~	-	-	~	-
16.0 mg/l	-	۰.	+	-	-	-	~	-		-	-		-
Comments:	Control: SDS:	Alkalini Alkalini	ty: <u>68</u> ty: <u>61</u>	mg/l; 1 mg/l; 1	Hardness Hardness	: q > : q 3	mg/l; Co mg/l; Co	onductiv onductiv	ity: 32 7 ity: <u>33</u> /	umho. umho.			
Concentra	tion_resp	onse rela	tionshin s	accentabl	e? (see a	attached c	omputer	analycic).				

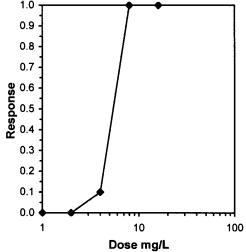
				Acute Fis	h Test-96 l	Hr Survival	
Start Date:	4/3/2012	11:30	Test ID:	RT120403		Sample ID:	REF-Ref Toxicant
End Date:	4/7/2012	11:30	Lab ID:	CAATL-Aquatic Te	esting Labs	Sample Type:	SDS-Sodium dodecyl sulfate
Sample Date:	4/3/2012		Protocol:	ACUTE-EPA-821-	R-02-012	Test Species:	PP-Pimephales promelas
Comments:							
Conc-mg/L	1	2					
D-Control	1.0000	1.0000					
1	1.0000	1.0000					
2	1.0000	1.0000					
4	0.9000	0.9000					
8	0.0000	0.0000					
16	0.0000	0.0000					

		_	Tra	ansform:	Arcsin Sc	uare Root	1	Number	Total
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp	Number
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20
4	0.9000	0.9000	1.2490	1.2490	1.2490	0.000	2	2	20
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20

Statistic

Auxiliary Tests Normality of the data set cannot be confirmed Equality of variance cannot be confirmed

			Trimmed Spearman-Karber			
EC50	95%	CL				
5.2780	4.8093	5.7924				
5.3968	4.8053	6.0611				
5.4432	5.1395	5.7648	1.0		• •	
5.4432	5.1395	5.7648				
5.2780	4.8093	5.7924	0.9 -		1	
			0.8 -		1	
			0.7 -			
	5.2780 5.3968 5.4432 5.4432	5.27804.80935.39684.80535.44325.13955.44325.1395	5.27804.80935.79245.39684.80536.06115.44325.13955.76485.44325.13955.7648	EC50 95% CL 5.2780 4.8093 5.7924 5.3968 4.8053 6.0611 5.4432 5.1395 5.7648 5.4432 5.1395 5.7648 5.2780 4.8093 5.7924 0.8 0.8	EC50 95% CL 5.2780 4.8093 5.7924 5.3968 4.8053 6.0611 5.4432 5.1395 5.7648 5.4432 5.1395 5.7648 5.2780 4.8093 5.7924 0.9 0.9 5.2780 4.8093 5.7924	EC50 95% CL 5.2780 4.8093 5.7924 5.3968 4.8053 6.0611 5.4432 5.1395 5.7648 5.4432 5.1395 5.7648 5.2780 4.8093 5.7924 0.9 0.9 0.8 0.8



Critical

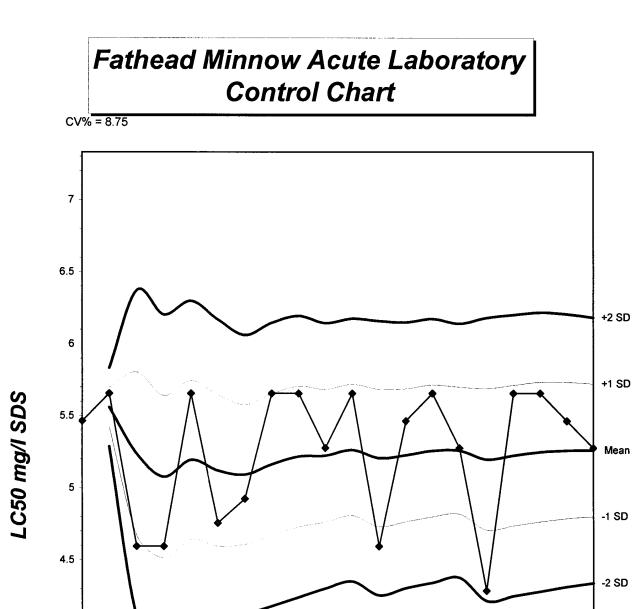
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Reviewed by 5/15/2012

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Reference Toxicant Tests

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TEST ORGANISM LOG



FATHEAD MINNOW - LARVAL (Pimephales promelas)

QA/QC BATCH NO.: RT 120463
SOURCE: In-Lab Culture
DATE HATCHED: 3-20-12_
APPROXIMATE QUANTITY: $\mathcal{Y} \mathcal{W}$
GENERAL APPEARANCE:
MORTALITIES 48 HOURS PRIOR TO TO USE IN TESTING:
DATE USED IN LAB: <u>413172</u>
AVERAGE FISH WEIGHT: gm

LOADING LIMITS: 0.65 gm/liter @ 20°C, 0.40 gm/liter @ 25°C

Approximately 1000 fish per 10 liters limit if held overnight for acclimation without filtration @ 20°C for fish with a mean weight of 0.006 gm.

Approximately 650 fish per 10 liters limit if held overnight for acclimation without filtration @ 25°C for fish with a mean weight of 0.006 gm.

200 ml test solution volume = 0.013 gm mean fish weight limit @ 20° C; 0.008 @ 25° C 250 ml test solution volume = 0.016 gm mean fish weight limit @ 20° C; 0.010 @ 25° C

ACCLIMATION WATER QUALITY:

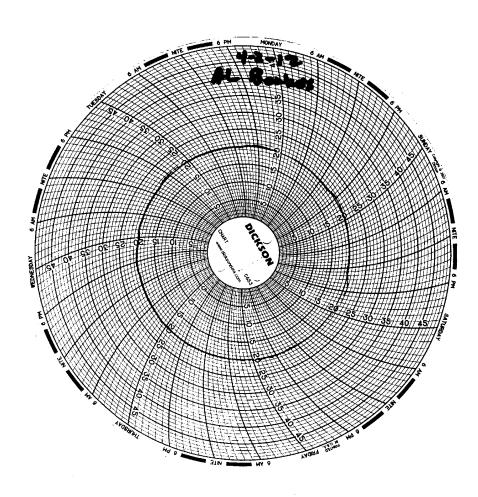
Temp.: <u>20/</u> °C	pH: <u>8-0</u> Am	monia: <u> </u>
DO: <u> </u>	Alkalinity: <u>68</u> mg/l	Hardness: <u>93</u> mg/l

READINGS RECORDED BY:	A	M	DATE:	4-4-12
		0		1



Test Temperature Chart

Test No: RT-120403 Date Tested: 04/03/12 to 04/07/06 Acceptable Range: 20+/- 1°C



CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- Test and Results Summary
- Data Summary and Statistical Analyses
- Raw Test Data: Water Quality & Test Organism Measurements

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*. Age: <24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: 25 +/- 1°C. Dilution water: Mod. hard reconstituted (MHRW). Reference Toxicant: Sodium chloride (NaCl). Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 20 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 6 days. Statistics: ToxCalc computer program.

Sample Concentration	Percent Surv	ival	Mean Num Young Per J	
Control	100%		23.5	
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
4.0 g/l	0%	*	0	**
* Statistically signif ** Reproduction data from exclude	•	reater tl	nan survival NC	

RESULTS SUMMARY

CHRONIC TOXICITY

Survival LC50	2.1 g/l
Reproduction IC25	0.82 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

			Cerioda	phnia Sur	vival and	Reprodu	uction Tes	t-Surviv	al Day 6	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	с		Sample ID);	REF-Ref 1	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Aq	uatic Test	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-(02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0 000	0.0000	0.0000	0.0000	0.0000	0.0000

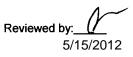
				Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	N	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000	0.6000	4	6	10	10	0.0433	0.0500	4	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	
Fisher's Exact Test	1	2	1.41421		
Treatments vs D-Control					

			Trimmed Spearman-Karber	
Trim Level	EC50	95% CL		
0.0%	2.1435	1.7293 2.6571		
5.0%	2.158 4	1.6984 2.7429		
10.0%	2.1732	1.6538 2.8556	1.0 —	······
20.0%	2.2021	1.5017 3.2291	0.9 -	
Auto-0.0%	2.1435	1.7293 2.6571	0.8	
			0.7	
			9 .0.6	/
			9.0.6 0.5 9.0.4 9.0.4	/ /
			8 0.4	<i>+</i>

0.3 0.2 0.1 0.0

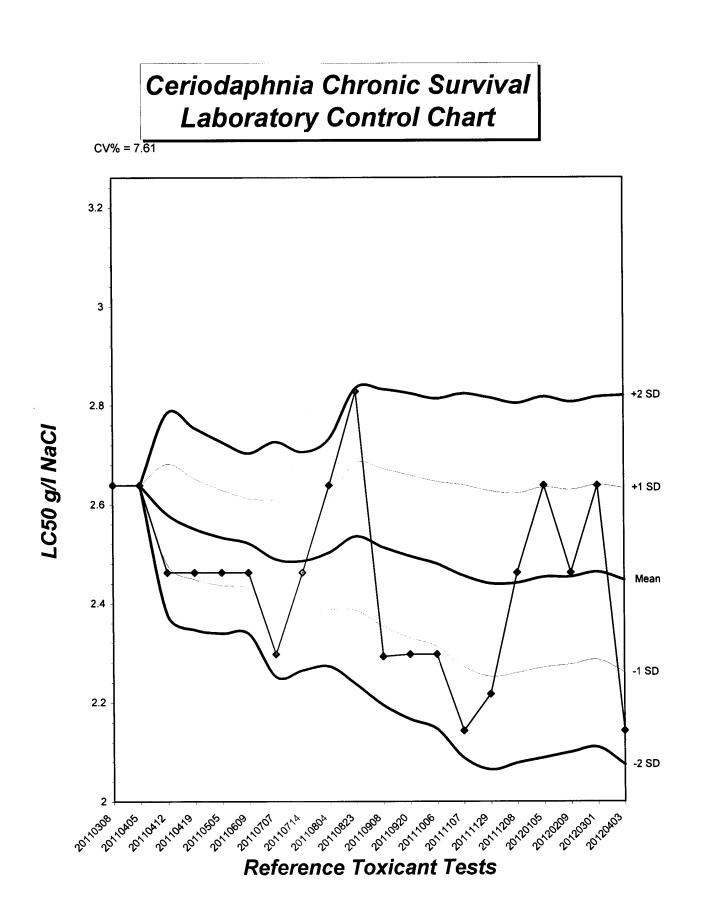
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1 Dose gm/L 1

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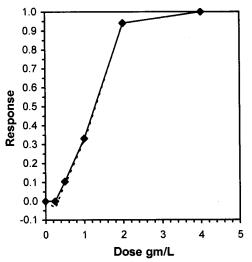


	·		Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	C		Sample ID);	REF-Ref 1	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Aq	uatic Tes	ting Labs	Sample Ty	/pe:		lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821- R-	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.00 0	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.00 0	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.00 0	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.0 00	15.0 00	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3 .0 00	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

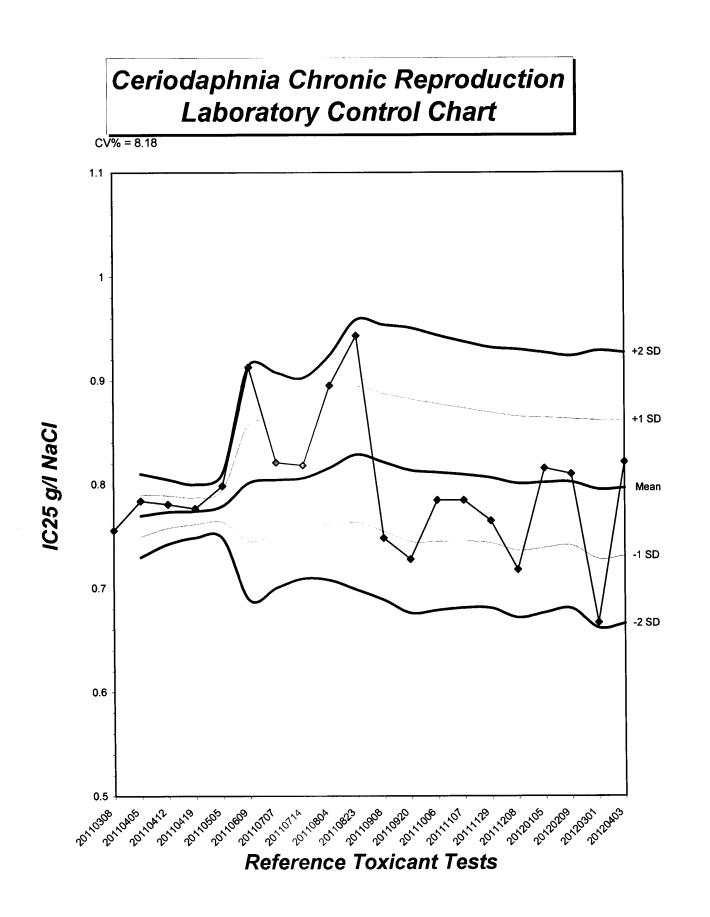
				Transform	n: Untran	sformed	Rank	1-Tailed	iled Isoto		
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			23.900	1.0000
0.25	24.300	1.0340	24.300	17.00 0	29.0 00	14.262	10	111.50	77.00	23.900	1.0000
0.5	21.400	0.9106	21.400	14.00 0	24.000	16.067	10	87.00	77.00	21.400	0.8954
*1	16.000	0.6809	16.000	8.000	23.00 0	32,409	10	66.00	77.00	16.000	0.6695
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			1.400	0.0586
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	(p <= 0.05)		0.93053	0.94	-0.5964	-0.342
Bartlett's Test indicates equal variances (p = 0.53)					2.22089	11.3449		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	0.5	1	0.70711					
Treatments vs D-Control								

	Linear Interpolation (200 Resamples)													
Point	gm/L	SD	D 95% CL		Skew									
IC05	0.3695	0.0911	0.1696	0.5686	0.2464									
IC10	0.4890	0.0910	0.3077	0.662 2	0.1815									
IC15	0.6005	0.1009	0.4034	0.7714	0.1407	1.0								
IC20	0.7111	0.1157	0.4592	0.9579	0.18 0 7	0.9	•							
IC25	0.8218	0.1195	0.5745	1.053 6	0.0455									
IC40	1.1137	0.1010	0.8928	1.260 9	-0.5191	0.8								
IC50	1.2774	0.0905	1.0680	1.40 19	-0.8577	0.7 -								
etime e						0.6								



f



			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	c		Sample ID):	REF-Ref 1	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	ype:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EF	A-821-R-	CD-Cerioo	laphnia dubia			
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

				Transform	n: Untran	sformed			1-Tailed	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor		0.93053		0.94		-0.5964	-0.342			
Bartlett's Test indicates equal var	iances (p =	: 0.53)			2.22089		11.3449			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control										

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



QA/QC No.: RT-120403

Start Date:04/03/2012

Sample	Dam			Nu	mber	of Yo	Total	No.	Analyst					
	Day	Α	B	С	D	E	F	G	Н	Ι	J	Live Young	Live Adults	Initials
	1	0	0	0	0	0	0	\mathcal{O}	C	C	С	\mathcal{O}	10	h
	2	0	0	\mathcal{O}	0	\mathcal{O}	\mathcal{O}	0	\mathcal{O}	${}^{\circ}$	0	0	10	A
	3	U	0	\mathcal{C}	C	3	\sim	14	3	\sim	0	10	10	h
Cantal	4	3	5	4	Ч	0	4	U	0	3	4	27	10	K
Control	5	0	\mathcal{O}	10	8	8	9	9	10	7	8	69	10	h
	6	17	12	11	13	13	14	کا	14	10	10	129	10	In
	7	`	(1	-	-	_	1	_	_	-	-	_	
	Total	20	17	25	25	24	27	28	27	20	22	235	10	
	1	0	0	0	0	0	0	0	0	\mathcal{O}	\mathcal{C}	0	10	M
	2	U	\mathcal{O}	\mathcal{O}	\mathcal{O}	0	Ó	0	0	0	0	0	10	p
	3	\bigcirc	0	\mathcal{O}	0	Ч	C	Ч	\mathcal{C}	c	C	S	10	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $
	4	5	Ч	5	5	\dot{o}	4	Ù	5	4	4	36	10	h
0.25 g/l	5	0	0	10	9	lV	9	7	9	9	8	71	10	h
	6	16	13	14	12	43	12	14	13	10	11	128	10	Th
	7	-	1		1			(-		_	(-
	Total	21	17	29	26	27	25	25	5	23	23	243	ل ر	N
	1	\mathcal{O}	0	O	\mathcal{O}	\mathcal{O}	C	0	0	\mathcal{O}	0	\mathcal{O}	10	M
0.5 g/l	2	0	Ò	0	\bigcirc	Ù	\mathcal{C}	Ò	C	С	\sim	\mathcal{O}	10	In
	3	\mathcal{O}	\mathcal{O}	\bigcirc	\bigcirc	\mathcal{O}	C	-4	\sim	0	\mathcal{O}		10	h
	4	4	Ч	3	3	5	Ч	\dot{o}	3	5	Ч	34	10	
	5	0	0	7	9	8	7	9	2	7	8	62	10	h
	6	12	-10	13	10	11	12	10	13	12	11	114	IU	Th
	7	_	_	_			-		-	-	_			-
	Total	16	14	23	22	.24	63	23	23	23	53	214	10	

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



QA/QC No.: RT-120403

Start Date:04/03/2012

				Nu	ımbe	r of Y	Total	No.	Analyst					
Sample	Day	A	В	С	D	E	F	G	H	I	J	Live Young	Live Adults	Initials
	1	\mathcal{O}	0	0	0	\mathcal{C}	C	\mathcal{C}	${\mathcal{O}}$	С	\mathcal{C}	\mathcal{C}	10	h
	2	\mathcal{O}	\mathcal{O}	0	\bigcirc	\mathcal{O}	\sim	${\mathcal O}$	\mathcal{C}	\mathcal{C}	C	C	10	n
	3	0	\mathcal{O}	0	0	3	\mathcal{O}	0	\mathcal{O}	0	\mathcal{O}	3	10	h
1.0 -/1	4	3	4	Z	3	0	3	4	니	2	3	ZØ	IV	15
1.0 g/l	5	\mathcal{O}	0	0	7	7	U	8	7	7	6	43	NO	h
	6	12	13	6	10	13	12	0	ų	0	10	87	V	n
	7		(-	-		(1	1	-	~		~	
	Total	15	71	8	20	23	15	12	22	9	19	160	ιU	n
	1	\mathcal{O}	C	C	C	\mathcal{O}	C	C	Û	C	C	\circ	10	R
	2	X	X	0	C	C	\mathcal{O}	X	X	0	Ô	0	4	R
	3	-	-	0	C	C	0		ſ	0	\mathcal{O}	0	6	
0 0 //	4		-	0	C	C	C		. (0	0	C	6	1/2
2.0 g/l	5		-	0	2	2	3		(0	Z	9	6	1 the
	6	-	-	0	0	Z	\mathcal{O}	1	ſ	0	ζ	5	b	
	7		-	_		-	-		-	-)	(
	Total	\bigcirc	0	\mathcal{O}	2	<u> </u>	3	\mathcal{O}	\mathcal{O}	\mathcal{O}	5	14	6	2
	1	$\left \right.$	X	X	メ	\times	X	$\left \right\rangle$	$ \mathcal{X} $	X	$\left \times \right $	Ó	0	p
	2		_	-	-	-	-	-	-	-	-	-	(/
	3	-	-	-	-	_	-	-	-	-		~		
	4	-	-	-	-		_		-	-	-	/	_	
4.0 g/l	5				-	-	-	- 1	-	-		_	_	
	6		- 1		-		-	~	_	~	-	_		
	7		-	1_	_	-	-	-	-			<u> </u>		
	Total	0	\overline{c}	0	\overline{C}	C	C	$\overline{\bigcirc}$	\bigcirc	0	0	t C	0	n

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

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



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QA/QC No.: RT-120403

Start Date:04/03/2012

	ſ		Y 1	DA	AY 2 DAY 3			DA	Y 4	DA	Y 5	DA	Y 6	DA	Y 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initíal	Final	
Analyst Initials:		F	1	1	1	1	2	7	P	1	1	7	7-	A	ħ	
Time of Readings:		1400	1400	1400	1400	1400	144	140	1400	140	1400	1400	1 the			
	DO	8.3	8,2	29	8.6	7.8	4.5	7.9	8.4	.4.5	8.7	8.3	8.6	((
Control	рН	8-0	\$,2	8,1	8,1	8.2	8.2	8.1	8.2	8.	8.0	8.1	80		(
	Temp	24.7	247	247	243	24.6	24.7	24.8	24.7	24.8	24.4	24.3	24.5			
	DO	8.4	8.4	8.2	5:6	8,4	8,3	8.3	8.3	7.9	\$.6	8.3	2.7		(
0.25 g/l	pН	8.0	8, 1	8.2	8.2	8.2	8.2	8,1	8,2	8.1	8.0	8.1	8.0			
	Temp	24.S	24.7	24.5	24.5	24.7	24.8	24.6	24.7	24.8	24.4	24.5	276		1	
	DO	8.2	8,3	8.1	8,6	8,2	8,6	8.0	8.4	8.1	8.6	8.4	8.0		_	
0.5 g/l	рН	8.0	8.1	8,2	8.1	8,2	8.2	51	8.1	8.1	8.0	8.1	8-0			
	Temp	24.6	2 <i>4.</i> 9	ર્યુક	24.2	24.3	24.8	24. >	ટપ, ૪	24.4	24.3	24.7	25.Z			
	DO	8.2	8.3	8.1	8.4	8.3	8.5	7.9	8.1	810	8,4	8.3	8.1		_	
1.0 g/l	pН	8.0	8.2	8.2	8,2	8,2	81	8.1	8.1	8:1	8,1	8.1	8.0		-	
	Temp	247	24 7	24.5	245	24.5	24.7	24.7	246	24.8	24.7	24.5	24.5		<u> </u>	
	DO	8.4	8.2	7.9	812	B : 1	8.3	7.9	8.2	8,1	8.3	8.1	8.2		-	
2.0 g/l	pН	8.0	8,1	8.2	8.1	8:2	·«.1	810	8.1	8.1	8.0	8.0	8.0		-	
	Temp	24.7	25,2	८५५	24,5	24, 3	24.5	24.7	24.8	24.8	243	24.6	24.6			
	DO	8.5	8.1	-	-	-	-	<u> </u>	<u> </u>	<u> </u>	<u> </u>	~		~	`	
4.0 g/l	pН	80	8, 1		-	-	-	<u> </u>	-	-	-		-	-	`	
	Temp	24.7	२५.इ	-												
	Di	ssolved	l Oxyge	n (DO)	reading	gs are in	n mg/l (O ₂ ; Tem	perature	e (Temp) readin	gs are i	n ℃.			
	Additional Parameters						Cont	rol				High Co	High Concentrati		ion	
		Day	1	Day	Day 5			Day 1		Day 3		Day 5				
		309 319			316		6	6960		2520						
		69 67			67			68		68		68				
		90		87		88		90 89				8				
	1		<u> </u>					Neonates					1			
	licate:		A	<u>В</u>	<u> </u>			E	F		G F	H			₩J <i>T</i>	
Bro	od ID:		ß	20	. 30			<u>1</u> E	3Ē		r	19	<u>3</u> H	5/15/2	5Z	

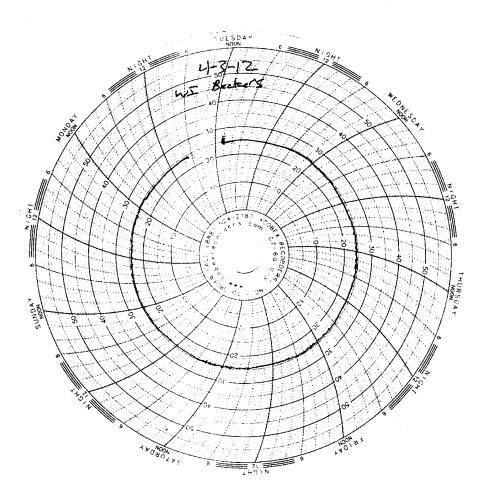
5/15/2012



Test Temperature Chart

Test No: RT-120403 Date Tested: 04/03/12 to 04/09/06

Acceptable Range: 25+/- 1°C





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April 24, 2012

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

Reference: Test America-Irvine 44002624 Eberline Analytical Report S204034-8605 Sample Delivery Group 8605

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Project No. 44002624. The samples were received on April 7, 2012.

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

Sincerely,

Joseph Verville Client Services Manager

NJV/mw

Enclosure: Level IV CLP-like Data Package CD

Case Narrative, page 1

April 24, 2012

1.0 General Comments

Sample delivery group 8605 consists of the analytical results and supporting documentation for two water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The samples were received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

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

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

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

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

Case Narrative, page 2

April 24, 2012

4.0 Analysis Notes

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

5.0 Case Narrative Certification Statement

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

hull

Joseph Verville Client Services Manager

4/24/12

Date

SUMMARY DA	T A	S I	EC:	ΓΙΟ	N
TABLE OF	сo	N T	EN	T S	
About this section		4		•	1
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Work Summary	æ	÷	÷	÷.	6
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Reviewed	by
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Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/24/12

	ΕВ	ΒЕ	RЬ	II	ΝE	А	Ν	Α	Г	Y	т	Ι	С	Α	1
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SDG 8605

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

SDG <u>8605</u> Contact <u>Joseph Verville</u>

REPORT GUIDE

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

DUPLICATES

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 1 Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 04/24/12

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc</u> Contract <u>44002624</u>

> 5 6

ABOUT THE DATA SUMMARY SECTION

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	04/24/12

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

11 12 13

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
5204034-01	OUTFALL 019 (440-7684-1)	BOEING-SSFL	WATER		<u> </u>	440-3590.1	04/05/12 09:45
S204034-02	TRIP-BLANK (440-7684-3)	BOEING-SSFL	WATER			440-3590.1	04/06/12 14:00
\$204034-03	Lab Control Sample		WATER				
S204034-04	Method Blank		WATER				
\$204034-05	Duplicate (S204034-01)	BOEING-SSFL	WATER				04/05/12 09:45

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LS
Version	3.06
Report date	04/24/12

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

	G <u>8605</u>		0.0	SDG 860)5				Clie	nt <u>Test Amer</u>	ica, Inc.
Contact	<u>Joseph Vervi</u>	<u>le</u>	QC	SUMI	MARI				ontra	.ct <u>44002624</u>	
	CHAIN OF				ate	SAMPLE	BASIS	DAYS :	SINCE	LAB	DEPARTMENT
QC BATCH	CUSTODY	CLIENT SAMPLE ID		MATRIX	MOIST	AMOUNT	AMOUNT	RECEIVED	COLL	SAMPLE ID	SAMPLE ID
9605	440-3590.1	OUTFALL 019 (440-7684-1)		WATER		10.0 L		04/07/12	2	S204034-01	8605-001
		TRIP-BLANK (440-7684-3)		WATER		10.0 L		04/07/12	1	S204034-02	8605-002
		Method Blank		WATER						S204034-04	8605-004
		Lab Control Sample		WATER						S204034-03	8605-003
		Duplicate (S204034-01)		WATER		10.0 L		04/07/12	2	S204034-05	8605-005

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-QS
Version	3,06
Report date	04/24/12

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

			PREPARATION	PLANCHETS ANALYZED						QUALI-	
TEST	MATRIX	METHOD	BATCH	20 ቼ	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7271-134	10.4	2			1	1	1/1	
SR.	WATER	Strontium-90 in Water	7271-134	10.4	2			Ĺ	1	1/1	
Gas I	Proportiona (al Counting									
80A	WATER	Gross Alpha in Water	7271-134	20.6	2			1	1	1/1	
80B	WATER	Gross Beta in Water	7271-134	11.0	2			1	1	1/1	
Gamma	a Spectros	сору									
GAM	WATER	Gamma Emitters in Water	7271-134	7.0	2			1	1	1/1	
Kinet	ic Phosph	orimetry									
U_T	WATER	Uranium, Total	7271-134		2			1	1	1/1	
Liqu	id Scintil	lation Counting									
н	WATER	Tritium in Water	7271-134	10.0	1			1	1	1/1	
Rador	n Counting										
RA	WATER	Radium-226 in Water	7271-134	16.4	2			1	l	1/1	

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-PBS</u> Version <u>3.06</u> Report date <u>04/24/12</u>

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

COLLECTED LOCATION

CLIENT SAMPLE ID

MATRIX

LAB SAMPLE

LAB WORK SUMMARY

SUF-

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RECEIVED	CUSTODY	SAS no	PERINE	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
S204034-01	OUTFALL 019	(440-7684-1)		8605-001	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
04/05/12	BOEING-SSFL		WATER	8605-001	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/07/12	440-3590.1			8605-001	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8605-001	GAM		04/12/12	04/18/12	MWT	Gamma Emitters in Water
				8605-001	н		04/14/12	04/17/12	BM	Tritium in Water
				8605-001	RA		04/18/12	04/19/12	BW	Radium-226 in Water
				8605-001	SR		04/16/12	04/23/12	BW	Strontium-90 in Water
				8605-001	U_T		04/20/12	04/20/12	AK	Uranium, Total
S204034-02	TRIP-BLANK	(440-7684-3)		8605-002	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
04/06/12	BOEING-SSFL		WATER	8605-002	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/07/12	440-3590.1			8605-002	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8605-002	GAM		04/12/12	04/18/12	MWT	Gamma Emitters in Water
				8605-002	RA		04/18/12	04/19/12	BW	Radium-226 in Water
				8605-002	SR		04/16/12	04/23/12	BW	Strontium-90 in Water
				8605-002	U_T		04/20/12	04/20/12	AK	Uranium, Total
S204034-03	Lab Control	Sample	·	8605-003	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
			WATER	8605-003	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
				8605-003	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8605-003	GAM		04/16/12	04/18/12	MWT	Gamma Emitters in Water
				8605-003	н		04/14/12	04/17/12	BW	Tritium in Water
				8605-003	RA		04/18/12	04/19/12	BW	Radium-226 in Water
				8605-003	SR		04/16/12	04/23/12	ВW	Strontium-90 in Water
				8605-003	T_U		04/20/12	04/20/12	AK	Uranium, Total
S204034-04	Method Blan	k		8605-004	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
			WATER	8605-004	80B/80		04/17/12	04/18/12	BM	Gross Beta in Water
				8605-004	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8605-004	GAM		04/12/12	04/18/12	MWT	Gamma Emitters in Water
				8605-004	Н		04/14/12	04/17/12	BW	Tritium in Water
				8605-004	RA		04/18/12	04/19/12	BW	Radium-226 in Water
				8605-004	SR		04/16/12	04/23/12	BW	Strontium-90 in Water
				8605-004	U_T		04/20/12	04/20/12	AK	Uranium, Total

EAS
TA
<u>Ver 1.0</u>
DVD-LWS
3,06
04/24/12

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

5/15/2012

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

11 12

13

LAB SAMPLE	CLIENT SAMPLE	ID								
COLLECTED	LOCATION		MATRIX			SUF-				
RECEIVED	CUSTODY	SAS no		PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
S204034-05	Duplicate (S2	:04034-01)		8605-005	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
04/05/12	BOEING-SSFL		WATER	8605-005	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/07/12				8605-005	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8605-005	GAM		04/13/12	04/18/12	MWT	Gamma Emitters in Water
				8605-005	н		04/14/12	04/17/12	BW	Tritium in Water
				8605-005	RA		04/18/12	04/19/12	BW	Radium-226 in Water
				8605-005	SR		04/16/12	04/23/12	BW	Strontium-90 in Water
				8605-005	U_T		04/20/12	04/20/12	AK	Uranium, Total

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

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-LWS
Version	3.06
Report date	04/24/12

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

8605-004

2

METHOD BLANK

 SDG 8605
 Client Test America, Inc.

 Contact Joseph Verville
 Contract 44002624

 Lab sample id S204034-04
 Client sample id Method Blank

 Dept sample id 8605-004
 Material/Matrix
 WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.021	0.26	0.474	3.00	U	80A
Gross Beta	12587472	-0.385	0.48	0.822	4.00	U	80B
Tritium	10028178	-2.29	16	27.3	500	U	Н
Radium-226	13982633	0.127	0.33	0.576	1.00	U	RA
Radium-228	15262201	-0.258	0.32	0.630	1.00	U	AC
Strontium-90	10098972	0.040	0.21	0.471	2.00	U	SR
Uranium, Total		0	0.008	0.020	1.00	U	U_T
Potassium-40	13966002	-11.1	23	40.9	25.0	U	GAM
Cesium-137	10045973	-1.01	1.4	1.49	20.0	U	GAM

QC-BLANK #81518

Lab id Protocol	
Version	
Form	DVD-DS
Version	3.06
Report date	04/24/12

Method Blank

SDG 8605

8605-003

Lab sample id <u>S204034-03</u>

Dept sample id <u>8605-003</u>

LAB CONTROL SAMPLE

SDG <u>8605</u> Contact Joseph Verville

Client Test America, Inc. Contract <u>44002624</u>

Lab Control Sample

Client sample id Lab Control Sample Material/Matrix WATER

ANALYTE Gross Alpha	pCi/L 39.0	(COUNT)	pCi/L	pCi/L	FIERS	TEST	pCi/L	pCi/L	8	(TOTAL)	LIMITS
-	39.0	7 0						<u> </u>		(10190)	LIMITS
6		2,0	0.687	3.00		80A	33,7	1,3	116	75-125	70-130
Gross Beta	26.5	1.1	0.807	4.00		80B	28.3	1.1	94	88-112	70-130
Tritium	348	26	27.6	500	J	н	367	15	95	87-113	80-120
Radium-226	58.1	2.3	0.731	1.00		RA	55.7	2.2	104	82-118	80-120
Radium-228	4.52	0.29	0.427	1.00		AC	4.43	0.18	102	87-113	60-140
Strontium-90	7.54	0.46	0.229	2.00		SR	8.50	0.34	89	89-111	80-120
Uranium, Total	57.0	6.5	0.197	1.00		U_T	56.5	2.3	101	88-112	80-120
Cobalt-60	110	4.7	3.34	10.0		GAM	108	4.3	102	91-109	80-120
Cesium-137	133	6.8	2.72	20.0		GAM	122	4.9	109	90-110	80-120

QC-LCS #81517

i		
	Lab id	EAS
	Protocol	TA
	Version	<u>Ver 1.0</u>
	Form	DVD-LCS
	Version	3.06
	Report date	04/24/12

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8605

8605-005

DUPLICATE

OUTFALL 019 (440-7684-1)

SDG <u>8605</u> Client Test America, Inc. Contact Joseph Verville Contract <u>44002624</u> DUPLICATE ORIGINAL Lab sample id <u>5204034-01</u> Client sample id OUTFALL 019 (440-7684-1) Lab sample id S204034-05 Dept sample id <u>8605-001</u> Location/Matrix BOEING-SSFL WATER Dept sample id 8605-005 Collected/Volume 04/05/12 09:45 10.0 L Received 04/07/12 Chain of custody id 440-3590.1

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER Ø
Gross Alpha	0.245	0.59	1.05	3.00	U	80A	-0.110	0.87	1.65	U	-		0.7
Gross Beta	1.96	1.2	1,84	4.00	J	80B	1.44	1.3	2.03	U	31	158	0.6
Tritium	57.5	100	166	500	U	н	61.3	100	167	U	-		0,1
Radium-226	-0.189	0,34	0,656	1.00	Ŭ	RA	0,036	0.32	0.573	U	-		1.0
Radium-228	-0.051	0.13	0.358	1.00	U	AC	-0.044	0.14	0.393	Ü	-		0.1
Strontium-90	0.012	0,29	0.671	2.00	Ŭ	SR	0.040	0.32	0.715	U	-		0.1
Uranium, Total	0.093	0.013	0.020	1.00	J	U_T	0.091	0.013	0.020	J	2	30	0.2
Potassium-40	16.4	34	57.8	25.0	υ	GAM	-2.13	15	27.1	U	-		1.0
Cesium-137	-1.64	3.5	6.22	20.0	υ	GAM	0.346	1.7	2.93	U	-		1.0

QC-DUP#1 81519

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DUP</u> Version <u>3.06</u> Report date <u>04/24/12</u>

SDG 8605

8605-001

DATA SHEET

	8605 Joseph Verville		Test America, Inc. 44002624	
Lab sample id Dept sample id Received		Client sample id Location/Matrix Collected/Volume Chain of custody id	04/05/12 09:45 10.0 L	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.110	0.87	1.65	3.00	U	80A
Gross Beta	12587472	1.44	1.3	2.03	4.00	U	80B
Tritium	10028178	61.3	100	167	500	U	H
Radium-226	13982633	0.036	0.32	0.573	1.00	U	RA
Radium-228	15262201	-0.044	0.14	0.393	1.00	U	AC
Strontium-90	1 0098972	0.040	0.32	0.715	2.00	U	SR
Uranium, Total		0.091	0.013	0.020	1.00	J	υт
Potassium-40	13966002	-2.13	15	27.1	25.0	U	GAM
Cesium-137	10045973	0.346	1.7	2.93	20.0	U	GAM

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11 Lab id EAS Protocol TA Version Ver 1.0 Form DVD-DS Version 3.06 Report date 04/24/12

8605-002

DATA SHEET

	8605 Joseph Verville		<u>Test America, Inc.</u> 44002624	
 Lab sample id Dept sample id Received		Location/Matrix	04/06/12 14:00 10.0 L	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.032	0.15	0.278	3.00	υ	80A
Gross Beta	12587472	-0.396	0.55	0.933	4.00	U	80B
Radium-226	13982633	-0.112	0.32	0.611	1.00	U	RA
Radium-228	15262201	-0.070	0.12	0.341	1.00	U	AC
Strontium-90	10098972	-0.234	0.33	0.907	2.00	U	SR
Uranium, Total		0	0.008	0.020	1.00	U	υт
Potassium-40	13966002	-9.66	21	_37.8	25.0	U	GAM
Cesium~137	10045973	0.246	0.81	1.35	20.0	υ	GAM

20.0

TRIP-BLANK (440-7684-3)

Lab id	EAS
Protocol	
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	04/24/12

DATA SHEETS Page 2 SUMMARY DATA SECTION Page 12

SDG 8605

Test <u>AC</u> Matrix <u>WATER</u> SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client	Test America,	Inc.
Contract	44002624	

RESULTS

LAB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation	n batch 727	1-134			
S204034-01		8605-001	OUTFALL 019 (440-7684-1)	U	
S204034-02		8605-002	TRIP-BLANK (440-7684-3)	U	
S204034-03		8605-003	Lab Control Sample	ok	
S204034-04		8605-004	Method Blank	υ	
S204034-05		8605-005	Duplicate (S204034-01)	- U	

METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	alo	oto	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
				<i>c</i>											
Preparation	batch 727	1-134 2σ prep error 10	.4 % Rei	terence	Lab N	otebool	C NO.	/271	pg.024	Ł					
S204034-01		OUTFALL 019 (440-7684-1)	0.393	1.80			88		150			13	04/18/12	04/18	GRB-201
S204034-02		TRIP-BLANK (440-7684-3)	0.341	1.80			89		150			12	04/18/12	04/18	GRB-202
S204034-03		Lab Control Sample	0.427	1.80			85		150				04/18/12	04/18	GRB-207
S204034-04		Method Blank	0.630	1,80			86		150				04/18/12	04/18	GRB-203
S204034-05		Duplicate (S204034-01)	0.358	1.80			87		150			13	04/18/12	04/18	GRB-204
Nominal val	ues and li	mits from method	1.00	1.80			30-10	5	50			180			

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

AVERAGES ± 2 SD	MDA	0.430 ±	0.233
FOR 5 SAMPLES	YIELD _	<u>87</u> ±	3

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	04/24/12

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 13

			SDG 8605	
Test	<u>SR</u> Matrix <u>WATER</u>			Client Test America, Inc.
SDG	8605	LAB	METHOD SUMMARY	Contract <u>44002624</u>
Contact	Joseph Verville		STRONTIUM-90 IN WATER	
			BETA COUNTING	
RESUL	TS			
	RAW SUF-			
AB				

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LAB RAW	SUF-	MDA.	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID TEST	FIX CLIENT SAMPLE ID	pCi/L	г	FAC	TION	a\0	oto	min	keV	KeV	HEPD	PREPARED	YZED	DETECTO
Preparation batch	n 7271-134 20 prep error l	0.4 % Re	eference	Lab N	otebool	k No. 1	7271	pg.024	:					
S204034-01	OUTFALL 019 (440-7684-1)	0.715	0,500			85		50			11	04/16/12	04/16	GRB-225
S204034-02	TRIP-BLANK (440-7684-3)	0.907	0.500			82		50			10	04/16/12	04/16	GRB-228
S204034-03	Lab Control Sample	0,229	1.00			83		100				04/16/12	04/16	GRB-225
S204034-04	Method Blank	0.471	1.00			80		50				04/16/12	04/16	GRB-202

PROCEDURES	REFERENCE	905.0	AVERAGES ± 2 SD	MDA <u>0.599</u> ± <u>0.517</u>
	CP-380	Strontium in Water Samples, rev 5	FOR 5 SAMPLES	YIELD <u>84</u> ± <u>7</u>

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/24/12

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 14

S204034-01

S204034-02

S204034-03

S204034-04

S204034-05

8605-001

8605-002

8605-003

8605-004

8605-005

Nominal values and limits from method

OUTFALL 019 (440-7684-1)

TRIP-BLANK (440-7684-3)

Duplicate (\$204034-01)

RDLs (pCi/L)

Lab Control Sample

Method Blank

SDG 8605

Test <u>BOA</u> Matrix <u>WATER</u> SDG <u>B605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY

GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client	Test America,	Inc.
Contract	44002624	

RESULTS

LAB RAW SUF-

5204034-02 30 3003 002 INTI BANK (440 7004 37 0
S204034-03 80 8605-003 Lab Control Sample ok
S204034-04 80 8605-004 Method Blank U
\$204034-05 80 8605-005 Duplicate (\$204034-01) - U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %			 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-134 2σ prep error 20	.6 % Re	ference	Lab N	loteboo	k No. "	7271	pg.024	L				
S204034~01	80	OUTFALL 019 (440-7684-1)	1.65	0.140			84		400		12	04/12/12	04/17	GRB-101
S204034-02	80	TRIP-BLANK (440-7684-3)	0:278	0.300			0		400		11	04/12/12	04/17	GRB-103
5204034-03	80	Lab Control Sample	0.687	0.300			60		400			04/12/12	04/17	GRB-104
S204034-04	80	Method Blank	0.474	0.300			60		400			04/12/12	04/17	GRB-109
S204034-05	80	Duplicate (S204034-01)	1.05	0.140			86		400		12	04/12/12	04/17	GRB-111
Nominal val	ues and li	mits from method	3.00	0.300			0-250	5	100		 180			

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

AVERAGES ± 2 SD	MDA.	<u>0,828</u>	±	1.08
FOR 5 SAMPLES	RESIDUE	58	±	

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	04/24/12

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5/15/2012

SDG 8605

Test <u>80B</u> Matrix <u>WATER</u> SDG <u>8605</u> Contact Joseph Verville

LAB METHOD SUMMARY GROSS BETA IN WATER

Client Test America, Inc. Contract 44002624

GAS PROPORTIONAL COUNTING

RESULTS

RAW SUF-LAB

LAB		RAW	SOF-	
SAMPLE	ID	TEST	FIX	PLANCHET

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation	batch 727	1-134		
S204034-01	80	8605-001	OUTFALL 019 (440-7684-1)	υ
5204034-02	80	8605-002	TRIP-BLANK (440-7684-3)	υ
S204034-03	80	8605-003	Lab Control Sample	ok
S204034-04	80	8605-004	Method Blank	υ
S204034-05	80	8605-005	Duplicate (S204034-01)	ok J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID Mg	EFF %				PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-134 20 prep error 1:	1.0 % Re	eference	Lab N	loteboo	k No.	7271	pg.024	1				
S204034-01	80	OUTFALL 019 (440-7684-1)	2.03	0,140			84		400		12	04/12/12	04/17	GRB-101
\$204034-02	80	TRIP-BLANK (440-7684-3)	0.933	0.300			0		400		11	04/12/12	04/17	GRB-103
\$204034-03	80	Lab Control Sample	0.807	0.300			60		400			04/12/12	04/17	GRB-104
\$204034-04	80	Method Blank	0.822	0.300			60		400			04/12/12	04/17	GRB-109
S204034-05	80	Duplicate (S204034-01)	1.84	0.140			86		400		12	04/12/12	04/17	GRB-111
Nominal val	ues and li	mits from method	4.00	0.300			0-25	0	100		 180			

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

AVERAGES ± 2 SD	MDA	1.29	±	1.20
FOR 5 SAMPLES	RESIDUE	58	±	70

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	04/24/12

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SDG 8605

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY GAMMA EMITTERS IN WATER GAMMA SPECTROSCOPY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

1

LAB RAW SUF-

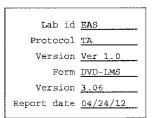
SAMPLE ID TEST	FIX PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation bate	h 7271-134				
S204034-01	8605-001	OUTFALL 019 (440-7684-1)		υ	
5204034-02	8605-002	TRIP-BLANK (440-7684-3)		σ	
5204034-03	8605-003	Lab Control Sample	ok	ok.	
5204034-04	8605-004	Method Blank		U	
S204034-05	8605-005	Duplicate (S204034-01)		- U	

METHOD PERFORMANCE

	RAW SUF- TEST FIX	CLIENT	SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		\$ AIETD		COUNT min		DRIFI KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727:	1-134	2σ prep error 7.	0 %)	Reference	Lab 1	Notebool	c No.	7271	pg.024	<u>1</u>					
S204034-01		OUTFALI	L 019 (440-7684-1)		2.00					400			7	04/11/12	04/12	MB,G1,0
S204034-02		TRIP-BI	LANK (440-7684-3)		2,00					400			6	04/11/12	04/12	MB,G2,0
S204034-03		Lab Cor	ntrol Sample		2.00					400				04/11/12	04/16	MB,G2,0
S204034-04		Method	Blank		2.00					400				04/11/12	04/12	MB,G4,0
S204034-05		Duplica	ate (S204034-01)		2.00					400			8	04/11/12	04/13	MB,G5,0
	les and lin	Duplica	ate (S204034-01)	6.00	2.00								8 180		•	

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

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SDG 8605

Test <u>U.T.</u> Matrix <u>WATER</u> SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY URANIUM, TOTAL KINETIC PHOSPHORIMETRY

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

LAB	RAW SUF-			Dranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
Preparation	1 batch 7271	-134		
S204034-01	1	8605-001	OUTFALL 019 (440-7684-1)	0.091 J
S204034-02	1	8605-002	TRIP-BLANK (440-7684-3)	U
S204034-03	ł	8605-003	Lab Control Sample	ok
S204034-04		8605-004	Method Blank	U
\$204034-05	1	8605-005	Duplicate (S204034-01)	ok J
Nominal val	lues and lim	its from m	ethod RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		YIELD %	EFF %	COUNT min	FWHM keV	 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-134 2σ prep error	Re	ference	Lab N	loteboo	k No.	7271	pg.024	1				
S204034-01	OUTFALL 019 (440-7684-1)	0.020	0.0200							15	04/20/12	04/20	KPA-001
S204034-02	TRIP-BLANK (440-7684-3)	0.020	0.0200							14	04/20/12	04/20	KPA-001
S204034-03	Lab Control Sample	0.197	0.0200								04/20/12	04/20	KPA-001
S204034-04	Method Blank	0.020	0.0200								04/20/12	04/20	KPA-001
S204034-05	Duplicate (S204034-01)	0.020	0.0200							15	04/20/12	04/20	KPA-001
Nominal val	ues and limits from method	1.00	0.0200							 180			

PRIME	REFERENCE	D5174	
	DURES	DURES REFERENCE	DURES REFERENCE D5174

FOR 5 SAMPLES	YIELD		±		
AVERAGES + 2 SD	MDA	0.055	+	0.158	

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	04/24/12

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SDG 8605

Test <u>H</u>Matrix <u>WATER</u> SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY TRITIUM IN WATER LIQUID SCINTILLATION COUNTING Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

LAB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Trit	ium	
Preparation	batch 727	1-134				
S204034~01		8605-001	OUTFALL 019 (440-7684-1)	U		
S204034-03		8605-003	Lab Control Sample	ok	J	
S204034-04		8605-004	Method Blank	υ		
S204034-05		8605-005	Duplicate (S204034-01)	-	υ	

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pCi/L	L	FAC	TION	alo	ale a	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 7271-134 2σ prep error 1	በሰይ ወ	oference	Lah N	lotebool	r No	101 1	DG 024						
\$204034-01	OUTFALL 019 (440-7684-1)		0.0100		io Leboor	100	1211	150			9	04/13/12	04/14	LSC-006
S204034-03	Lab Control Sample	27,6	0.605			10		150				04/13/12	04/14	LSC-006
S204034-04	Method Blank	27.3	0.605			10		150				04/13/12	04/14	LSC-006
S204034-05	Duplicate (S204034-01)	166	0.0100			100		150			9	04/13/12	04/14	LSC-006
Nominal val	ues and limits from method	500	0.605					100			180			

PROCEDURE	S REFERENCE	906.0	AVERAGES ± 2 SD	MDA <u>97.0</u> ± <u>161</u>
	DWP-212	Tritium in Drinking Water by Distillation, rev 8	FOR 4 SAMPLES	YIELD <u>55</u> ± <u>104</u>

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Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/24/12

SDG 8605

Test <u>RA</u> Matrix <u>WATER</u> SDG <u>8605</u> Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY RADIUM-226 IN WATER RADON COUNTING

Client	Test America,	Inc.
Contract	44002624	

RESULTS

LAB RAW SUF-

Preparation batch	7271-134		
5204034-01	8605-001	OUTFALL 019 (440-7684-1)	υ
S204034-02	8605-002	TRIP-BLANK (440-7684-3)	U
S204034-03	8605-003	Lab Control Sample	ok
S204034-04	8605-004	Method Blank	υ
S204034-05	8605-005	Duplicate (S204034-01)	- U

METHOD PERFORMANCE

LAB	RAW SUF-		MDA		PREP	DILU-								ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	Ľ	FAC	TION	010	ało	min	keV	KeV	нецр	PREPARED	YZED	DETECTOR
Preparation	batch 727	1-134 2 <i>o</i> prep error 16	.4 % Re	eference	Lab N	lotebool	k No.	7271	pg.024	ł					
S204034-01		OUTFALL 019 (440-7684-1)	0.573	0.100			100		136			13	04/18/12	04/18	RN-012
\$204034-02		TRIP-BLANK (440-7684-3)	0.611	0.100			100		136			12	04/18/12	04/18	RN-011
S204034-03		Lab Control Sample	0.731	0.100			100		136				04/18/12	04/18	RN-009
\$204034-04		Method Blank	0.576	0.100			100		136				04/18/12	04/18	RN-010
S204034-05		Duplicate (S204034-01)	0.656	0.100			100		136			13	04/18/12	04/18	RN-015
													•••••••		
Nominal val	ues and li	mits from method	1.00	0.100					100			180			

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

AVERAGES ± 2 SD	MDA <u>0,629</u> ± <u>0,132</u>	
FOR 5 SAMPLES	YIELD <u>100</u> ± <u>0</u>	

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/24/12

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SDG 8605

GUIDE

Client Test America, Inc. Contract 44002624

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	04/24/12

SDG 8605 Contact Joseph Verville

REPORT

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

PREPARATION BATCH SUMMARY

	e Sample Delivery Group (SDG) with information necessary to check the mpleteness and consistency of the SDG.
The	e following notes apply to this report:
*	The preparation batches are shown in the same order as the Method Summary Reports are printed.
*	Only analyses of planchets relevant to the SDG are included.
*	Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
*	The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.
	These qualifiers should be reviewed as follows:
	X Some data has been manually entered or modified. Transcription errors are possible.
	P One or more results are 'preliminary'. The data is not ready for final reporting.
	2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may
	not be the same as on the raw data sheets.

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Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>04/24/12</u>

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

WORK SUMMARY

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

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Lab id Protocol	
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	04/24/12

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
в	A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
	Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
	For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
L	Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
н	Similar to 'L' except the recovery was high.
P	The RESULT is 'preliminary'.
х	Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
2	There were two or more results available for this analyte. The reported result may not be the same as in the raw data.
	Other qualifiers are lab defined. Definitions should be in the SDG narrative.
Th	e following values are underlined to indicate possible problems:
*	An MDA is underlined if it is bigger than its RDL.
*	An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

REPORT GUIDES Page 5 SUMMARY DATA SECTION Page 25 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>04/24/12</u>

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

DATA SHEET

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

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

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>04/24/12</u>

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SDG <u>8605</u> Contact <u>Joseph Verville</u>

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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

LAB CONTROL SAMPLE

	e Lab Control Sample Report shows all results, recoveries and primary pporting information for one Lab Control Sample.
Th	e following notes apply to this report:
*	All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
*	An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.
	An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.
¥	REC (Recovery) is RESULT divided by ADDED expressed as a percent.
*	The first, computed limits for the recovery reflect:
	 The error of RESULT, including that introduced by rounding the result prior to printing.
	If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
	2. The error of ADDED.
	3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
*	The second limits are protocol defined upper and lower QC limits for the recovery.
*	The recovery is underlined if it is outside either of these ranges.

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EAS
TA
<u>Ver 1.0</u>
DVD-RG
3.06
04/24/12

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DUPLICATE

Th	e following notes apply to this report:
*	All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.
	If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.
*	The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.
	If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.
	For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.
×	The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.
	If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.
	This value reported for this limit is at most 999.
*	The second limit for the RPD is the larger of:
	1. A fixed percentage specified in the protocol.

5/15/2012

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GUIDE, cont. Contract

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

> 5 6 7

DUPLICATE

- A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

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

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

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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

MATRIX SPIKE

	pporting information for one Matrix Spike and associated Original mple.
Th	e following notes apply to this report:
*	All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.
	If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.
*	An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.
	An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.
*	REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
*	The first, computed limits for the recovery reflect:
	1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.
	If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
	2. The error of ADDED.
	3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
*	The second limits are protocol defined upper and lower QC limits for the recovery.

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-RG</u> Version <u>3.06</u> Report date <u>04/24/12</u>

REPORT GUIDES Page 10 SUMMARY DATA SECTION Page 30

SDG 8605

SDG <u>8605</u> Contact <u>Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

> **5** 6

MATRIX SPIKE

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

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

EAS
TA
<u>Ver 1.0</u>
DVD-RG
3.06
04/24/12

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

REPORT GUIDES Page 12 SUMMARY DATA SECTION Page 32

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	04/24/12

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

> 5 6

METHOD SUMMARY

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

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

MDAs are underlined if greater than the printed RDL.

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

REPORT GUIDES Page 13 SUMMARY DATA SECTION Page 33

EBERLINE ANALYTICAL

SDG 8605 Client Test America, Inc. SDG 8605 Contact Joseph Verville GUIDE, cont. Contract <u>44002624</u> SUMMARY METHOD specified for the method. * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit. Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are. * Days Held are underlined if greater than the holding time specified in the protocol. * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it. For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column. Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'. The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets. The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done. For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. Lab id EAS

REPORT GUIDES Page 14 SUMMARY DATA SECTION Page 34

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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

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METHOD SUMMARY

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

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

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

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

REPORT GUIDES Page 15 SUMMARY DATA SECTION Page 35

Custody Seals Intact: Custody Seal No.: Δ. Yes Δ. No	Relinquished by:	Relinquished by Cauld	Empty Kit Relinquished by:	Deliverable Requested: I, II, III, IV, Other (specify)	Possible Hazard Identification Unconfirmed					Trip Blank (440-7684-3)	Outfall 019 (440-7684-1)		Sample Identification - Client ID (Lab ID)	Site Boeing SSFL	Project Name: Boeing SSFL outfalls	Email:	Phone:	State, Zip: CA, 94804	City: Richmond	Address: 2030 Wright Avenue,	Eberline Services	Chient Contact: Shipping/Receiving	Client Information (Sub Contract Lab)	Invine, CA 92614-5817 Phone (949) 261-1022 Fax (949) 260-3297	TestAmerica Irvine	2 3 4 5 6 7 8 9
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Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

Test America version 7/19/2010

CHAIN OF CUSTODY FORM

440-7559 Page 1 of 3

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Client Name/Address:	MVH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007	Test America Contact: Debby Wilson	Project Manager: Bronwyn Kelly	Sampler: Rick Banach	Sample Description	Outfall 019	Outfall 019	Outfall 019	Outfall 019	Trip Blanks							Relinquished By	Ar R	Relinquished By	1 au	Relinguished By	

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CHAIN OF CUSTODY FORM

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Project:	Boeing-SSFL NPDES Quarterly Outfall 019 COMPOSITE		Phone Number: (626) 568-6691 Fax Number:	Sampling Date/Time	37:60 18:7 7		an a that a share a sh	and a state of the		the way and the second s	1010-00-400-mm	TOT LOCAL TOTAL	William Barrow	Ą	4-4-242	COCP		distriction of the second	H.C. 18,10	
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Client Name/Address:	MWH-Arcadia 618 Michillinda Ave, Arcadia, CA 91007	Test America Contact: Debby Wilson	Project Manager: Bronwyn Kelly Sampler: べいてん ひみょゆらり	Sample Description	Outfall 019	Outfall 019 Dup	Outfall 019	Outfall 019	Outfall 019	Outfall 019	Outfall 019	Outfall 019	Outfali 019	Outfali 019	Outfall 019			Relinquished By	Relinquished By	Relinquished By

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CHAIN OF CUSTODY FORM

				Comments					Filter w/in 24hrs of receipt at lab			Untiltered and unpreserved analysis			Only test if first or second rain events of the year											ei Iv:
GUIRED									; ;											Time avent	same event.	Turn-around time: (Check)	24 Hour: 72 Hour: 10 Day: 48 Hour: 5 Day: Normal:		Sample Integrity: (Check) Intact On Ice:	Data Requirements: (Check) No Level IV:All Level IV:NPDES Level IV:
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Project:	Boaing-SSEI NDDES		Quarterly Outfall 019 COMPOSITE		Phone Number:	(626) 568-6691	Fax Number: (626) 568-6515	Sampling Date/Time	-56:60 TINT-5-17	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	·	ALL DATES	No. Concernant	Þ	102-2-1					000	These m		N.U	112	11:10	
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Client Name/Address:	MNNH Arcodio	ואו אנוד-רושטווא-	618 Michillinda Ave, Arcadia, CA 91007	Test America Contact: Debby Wilson	Project Manager: Bronwyn Keily		Sampler, Rick BANAGO	Sample Description		Outfall 019	010 1-31-0		Outfall 019	Outfall 019	Outfall 019		-		<u> </u>			Relinquished By	Kut 13 mgs	Relinguished By	New	Relffquished By

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Login Sample Receipt Checklist

Client: MWH Americas Inc

Login Number: 7559 List Number: 1

Creator: Robb, Kathleen

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

Job Number: 440-7559-1

List Source: TestAmerica Irvine

Login Sample Receipt Checklist

Client: MWH Americas Inc

Login Number: 7684 List Number: 1

Creator: Perez, Angel

Answer	Comment
N/A	
N/A	
N/A	
True	
N/A	
True	
True	
True	
True	
N/A	
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Job Number: 440-7559-1

List Source: TestAmerica Irvine

APPENDIX G

Section 17

Outfall 019 – May 3, 2012 MECX Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-10462-1

Prepared by

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

I. INTRODUCTION

Task Order Title: Contract Task Order: Sample Delivery Group:	Boeing SSFL NPDES 1261.100D.00 440-10462-1
Project Manager:	B. Kelly
, Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019 Composite	440-10651-1	H2E180407-001, S205027-01	Water	5/3/2012 9:30:00 AM	1613B, 180.1, 200.7 total/dissolved, 245.1 total/dissolved, 314.0, 900, 901.1, 903.1, 904, 905, 906, SM 5310B, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine and TestAmerica-West Sacramento nominally below the control limit; however, the sample containers were not noted to be frozen or damaged. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to TestAmerica-Irvine, custody seals were not necessary. Custody seals were present on the coolers upon arrival at TestAmerica-West Sacramento. Custody seals were not present on the sample result summary by the reviewer.

0	0	
Qualifie	r Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*11, *111	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin Date Reviewed: June 15, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC[×] Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613,* and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. The case narrative for this SDG noted that due to a computer error, an end static mass resolution check was not generated within the 12-hour window. As the sample was analyzed following an acceptable resolution check, and the resolution check analyzed following discovery of the computer error was acceptable, the sample data was not considered to be adversely impacted, and no qualifications were assigned.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had a detect above the EDL for OCDD. The sample result for OCDD detected between the EDL and the reporting limit was qualified as nondetected, "U," at the level of contamination.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects reported between the estimated detection limit (EDL) and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks Date Reviewed: June 13, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, 200.8, 245.1, and the National Functional Guidelines for Inorganic Data Review (7/02).

• Holding Times: Analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Recoveries were within 80-120%. Zinc was not detected in the ICSA solution.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MSD/MSD analyses were performed on total zinc and total and dissolved mercury. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: No serial dilution analyses were performed.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks Date Reviewed: June 13, 2012

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

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration r² value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. IPC recovery was within the method-established control limits of 80-120% and the ICCS recovery was within method-established control limits of 75-125%.
- Blanks: The method blank and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the methodestablished QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: June 13, 2012

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

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

The gross alpha detector efficiency was <20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%. The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were determed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. All results were within the laboratory-established control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted by the laboratory to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

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

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

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: June 13, 2012

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X* Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Method 180.1, SM5310B, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, 48 hours for turbidity, was met.
- Calibration: The ICVs and CCVs were recovered within 90-110%.
- Blanks: TOC in the method blank was reported at 0.8 mg/L; therefore, TOC detected in the sample was qualified as estimated, "J." The turbidity method blank and all CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG for turbidity. The RPD was within the laboratory control limit.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples.

Following are findings associated with field QC samples:

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

Validated Sample Result Forms 440-10462-1

Analysis Method 1613B

Sample Name	Outfall 019 Composite		Matrix Type: Water			Validation Level: IV		
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012 9	:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000047	0.0000026	ug/L		U	
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000047	0.0000019	ug/L		U	
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000047	0.0000030	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000047	0.0000021	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000047	0.0000013	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000047	0.0000022	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000047	0.0000013	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000047	0.0000020	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000047	0.0000019	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000047	0.0000022	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000047	0.0000018	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000047	0.0000013	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000047	0.0000017	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.0000094	0.0000045	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.0000094	0.0000031	ug/L		U	
OCDD	3268-87-9	ND	0.000094	0.0000040	ug/L	B J	U	В
OCDF	39001-02-0	ND	0.000094	0.0000032	ug/L		U	
Fotal HpCDD	37871-00-4	ND	0.000047	0.0000026	ug/L		U	
Fotal HpCDF	38998-75-3	ND	0.000047	0.0000023	ug/L		U	
Fotal HxCDD	34465-46-8	ND	0.000047	0.0000021	ug/L		U	
Fotal HxCDF	55684-94-1	ND	0.000047	0.0000014	ug/L		U	
Fotal PeCDD	36088-22-9	ND	0.000047	0.0000022	ug/L		U	
Fotal PeCDF	30402-15-4	ND	0.000047	0.0000017	ug/L		U	
Total TCDD	41903-57-5	ND	0.0000094	0.0000045	ug/L		U	
Total TCDF	55722-27-5	ND	0.0000094	0.0000031	ug/L		U	
Analysis Method	d 180.1							
Sample Name	Outfall 019 Co	omposite	Matri	x Type: V	Water	۲	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012 9	:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

Turbidity STL00189 0.22 0.10 0.040 NTU

Monday, June 18, 2012

Analysis Meine								
Sample Name	Outfall 019 Co	omposite	Matri	ix Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	
Analysis Metho	od 245.1							
Sample Name	Outfall 019 Co	omposite	Matri	ix Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		U	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	
Analysis Metho	od 314.0							
Sample Name	Outfall 019 Co	omposite	Matri	ix Type:	Water	۲	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	0.96	4.0	0.95	ug/L	J,DX	J	DNQ
Analysis Metho	od Gamn	na Spec	c K-40	<i>CS-13</i>	7			
Sample Name								
	Outfall 019 Co	omposite		ix Type:		V	alidation Le	vel: IV
Lab Sample Name:	Outfall 019 Co 440-10651-1	-	Matri	ix Type:		N	alidation Le	wel: IV
-		-	Matri	ix Type:	Water	Lab Qualifier		vel: IV Validation Notes
Analyte	440-10651-1	Sam Result	Matri ple Date:	x Type: 5/3/2012	Water 9:30:00 AM Result	Lab	Validation	Validation
Analyte Cesium-137	440-10651-1 CAS No	Sam Result Value	Matri ple Date: RL	ix Type: 5/3/2012 MDL	Water 9:30:00 AM Result Units	Lab Qualifier	Validation Qualifier	Validation
Analyte Cesium-137	440-10651-1 CAS No 10045973 13966002	Sam Result Value -0.662	Matri ple Date: RL 20 25	ix Type: 5/3/2012 MDL 1.85 23.4	Water 9:30:00 AM Result Units pCi/L	Lab Qualifier U	Validation Qualifier U	Validation
Analyte Cesium-137 Potassium-40	440-10651-1 CAS No 10045973 13966002	Sam Result Value -0.662 9.67 5 Alpha	Matri ple Date: RL 20 25 and Be	ix Type: 5/3/2012 MDL 1.85 23.4	Water 9:30:00 AM Result Units pCi/L	Lab Qualifier U U	Validation Qualifier U	Validation Notes
Analyte Cesium-137 Potassium-40 Analysis Metho	440-10651-1 CAS No 10045973 13966002 od Gross	Sam Result Value -0.662 9.67 S Alpha omposite	Matri ple Date: RL 20 25 and Be Matri	x Type: 5/3/2012 MDL 1.85 23.4 eta ix Type:	Water 9:30:00 AM Result Units pCi/L pCi/L	Lab Qualifier U U	Validation Qualifier U U	Validation Notes
Analyte Cesium-137 Potassium-40 Analysis Metho Sample Name Lab Sample Name:	440-10651-1 CAS No 10045973 13966002 od Gross Outfall 019 Co	Sam Result Value -0.662 9.67 S Alpha omposite	Matri ple Date: RL 20 25 and Be Matri	x Type: 5/3/2012 MDL 1.85 23.4 eta ix Type:	Water 9:30:00 AM Result Units pCi/L pCi/L Water	Lab Qualifier U U	Validation Qualifier U U	Validation Notes
Analyte Cesium-137 Potassium-40 Analysis Metho Sample Name	440-10651-1 CAS No 10045973 13966002 od Gross Outfall 019 Co 440-10651-1	Sam Result Value -0.662 9.67 SAlpha omposite Sam Result	Matri ple Date: RL 20 25 and Be Matri ple Date:	x Type: 5/3/2012 MDL 1.85 23.4 eta x Type: 5/3/2012	Water 9:30:00 AM Result Units pCi/L pCi/L Water 9:30:00 AM Result	Lab Qualifier U U	Validation Qualifier U U Validation Le	Validation Notes wel: IV Validation

Analysis Method 200.7 Rev 4.4

Analysis Meine	να Λααιι	im 220						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	-0.032	1	0.622	pCi/L	U	U	
Analysis Metho	od Radii	ım 228						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.026	1	0.374	pCi/L	U	U	
Analysis Metho	od SM 5.	310B						
Sample Name	mple NameOutfall 019 Composite			trix Type: Water Validation Leve			vel: IV	
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Organic Carbon	7440-44-0	ND	3.3	0.75	mg/L		UJ	В
Analysis Metho	od Stron	tium 90)					
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.018	2	0.957	pCi/L	U	U	
Analysis Metho	od Tritiu	m						
Sample Name	Outfall 019 C	omposite	Matri	x Type:	Water	١	alidation Le	vel: IV
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM			
Analyte	CAS No	Result	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
		Value			Units	Quanner	Quanner	notes

Analysis Method Radium 226

Sample Name	Outfall 019 Composite		Matri	Matrix Type: Water			Validation Level: IV		
Lab Sample Name:	440-10651-1	Sam	ple Date:	5/3/2012	9:30:00 AM				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Uranium, Total	NA	0.018	1	0.007	pCi/L	J	J	DNQ	

Analysis Method	Uranium,	Combined
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