### **APPENDIX G**

### Section 16

Outfall 008 – December 19, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

#### THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 008 2010 Routine Outfall 008

Sampled: 12/19/10 Received: 12/20/10 Issued: 02/01/11 17:01

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

*This entire report was reviewed and approved for release.* 

#### CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 3°C, on ice and with chain of custody documentation.	
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Sample Acceptance Policy unless otherwise noted in the report.	e TestAmerica
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.	
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.	
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.	
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this repo	ort.
ADDITIONAL INFORMATION:	Some analytes in these samples and the associated method blank have an ion abundance i of criteria. The analytes are considered as an "estimated maximum possible concentration the quantitation is based on the theoretical ion abundance ratio. Analytical results are rep flag.	n" (EMPC) because
	Revised report to correct the dissolved zinc result. During data package review, it was di wrong sample was reported for the dissolved zinc analysis. It was confirmed by reanalys	
LABORATORY	ID CLIENT ID	MATRIX
ITL1889-01	Outfall 008 (Grab)	Water

Outfall 008 (Composite)

ITL1889-02

Water



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

LABORATORY ID

CLIENT ID

MATRIX

Reviewed By:

leather Clark

TestAmerica Irvine Heather Clark For Debby Wilson Project Manager



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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

HEXANE EXTRACTABLE MATERIAL									
Reporting Sample Dilution Date Data									
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-01 (Outfall 008 (Grab) - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10L2313	4.7	1.3	ND	1	12/20/2010	12/20/2010	

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THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

#### METALS

Analyte	Method	Batch	Reportin Limit	g MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Com	oosite) - Water)								
Reporting Units: ug/l									
Mercury	EPA 245.1	10L2694	0.20	0.10	ND	1	12/22/2010	12/22/2010	
Antimony	EPA 200.8	10L2490	2.0	0.30	ND	1	12/21/2010	12/21/2010	
Cadmium	EPA 200.8	10L2490	1.0	0.10	0.12	1	12/21/2010	12/21/2010	Ja
Zinc	EPA 200.7	10L2484	20.0	6.00	43.5	1	12/21/2010	12/23/2010	
Copper	EPA 200.8	10L2490	2.00	0.500	9.07	1	12/21/2010	12/21/2010	
Lead	EPA 200.8	10L2490	1.0	0.20	6.7	1	12/21/2010	12/21/2010	
Selenium	EPA 200.8	10L2490	2.0	0.50	ND	1	12/21/2010	12/21/2010	
Thallium	EPA 200.8	10L2490	1.0	0.20	ND	1	12/21/2010	12/21/2010	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

#### **DISSOLVED METALS**

			Reportin	g	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Co	omposite) - Water)								
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10L2695	0.20	0.10	ND	1	12/22/2010	12/22/2010	
Antimony	EPA 200.8-Diss	10L2494	2.0	0.30	ND	1	12/21/2010	12/21/2010	
Cadmium	EPA 200.8-Diss	10L2494	1.0	0.10	ND	1	12/21/2010	12/21/2010	
Zinc	EPA 200.7-Diss	10L2487	20.0	6.00	7.88	1	12/21/2010	12/30/2010	Ja
Copper	EPA 200.8-Diss	10L2494	2.00	0.500	2.60	1	12/21/2010	12/21/2010	
Lead	EPA 200.8-Diss	10L2494	1.0	0.20	0.32	1	12/21/2010	12/21/2010	Ja
Selenium	EPA 200.8-Diss	10L2494	2.0	0.50	0.50	1	12/21/2010	12/21/2010	Ja
Thallium	EPA 200.8-Diss	10L2494	1.0	0.20	ND	1	12/21/2010	12/21/2010	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

		INO	RGANI	CS					
			Reporting	g	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Con	nposite) - Water)								
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	10L2540	0.500	0.500	ND	1	12/21/2010	12/21/2010	
Chloride	EPA 300.0	10L2301	0.50	0.25	17	1	12/20/2010	12/20/2010	
Total Cyanide	SM4500CN-E	10L2544	0.0050		ND	1	12/21/2010	12/21/2010	
Nitrate-N	EPA 300.0	10L2301	0.11	0.060	0.52	1	12/20/2010	12/20/2010	
Nitrite-N	EPA 300.0	10L2301	0.15	0.090	ND	1	12/20/2010	12/20/2010	
Nitrate/Nitrite-N	EPA 300.0	10L2301	0.26	0.15	0.52	1	12/20/2010	12/20/2010	
Sulfate	EPA 300.0	10L2499	0.50	0.20	8.0	1	12/21/2010	12/21/2010	
Total Dissolved Solids	SM2540C	10L2410	10	1.0	220	1	12/21/2010	12/21/2010	
Total Suspended Solids	SM 2540D	10L2549	10		150	1	12/21/2010	12/21/2010	
Sample ID: ITL1889-02 (Outfall 008 (Con	nposite) - Water)								
Reporting Units: ug/l									
Perchlorate	EPA 314.0	10L2485	4.0	0.90	1.9	1	12/21/2010	12/21/2010	Ja



**Reporting Units:** pCi/L

Uranium, Total

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project II Report Number	<ul> <li>Routine Outfall 008 2010</li> <li>Routine Outfall 008</li> <li>ITL1889</li> </ul>	)		1	led: 12/19/10 red: 12/20/10	
Analyte	Method Ba	1 8	ample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Comp	osite) - Water)						

1

1.24

1

1/18/2011 1/18/2011

8644

THE LEADER IN ENVIRONMENTAL TESTING

**Gross Alpha** 

**Gross Beta** 

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Outfall 008 2 Routine Outfall 008 ITL1889	010			led: 12/19/10 ved: 12/20/10	
			900					
Analyte	Method	Batcl	Reporting h Limit		Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Co Reporting Units: pCi/L	mposite) - Water)						J	-

3

4

10.4

12.8

1

1

12/31/2010 1/4/2011

12/31/2010 1/4/2011

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8644

900

THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 2 Routine Outfall 008 ITL1889	010			12/19/10 12/20/10	
		901.1 Reporting	Sample 1	Dilution	Date	Date	Data

Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Comp	oosite) - Water)							
Reporting Units: pCi/L								
Cesium-137	901.1	8644	20	ND	1	12/22/2010	12/31/2010	U
Potassium-40	901.1	8644	25	21	1	12/22/2010	12/31/2010	Jb

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Rep Attention: Bronwyn Kelly	Project ID: port Number:	Routine Outfall 008 2010 Routine Outfall 008 ITL1889	Sampled: Received:	
		903.1		

			Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composi	te) - Water)							
Reporting Units: pCi/L								
Radium-226	903.1	8644	1	1.41	1	1/24/2011	1/24/2011	

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Radium-228

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Outfall 008 2 Routine Outfall 008 ITL1889	010		1	led: 12/19/10 ved: 12/20/10	
Analyte	Method	Batcl	904 Reporting h Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Co Reporting Units: pCi/L	mposite) - Water)						·	

1

0.615

1

1/21/2011 1/21/2011

Jb

8644

THE LEADER IN ENVIRONMENTAL TESTING

Reporting Units: pCi/L

Strontium-90

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID Report Number	R	outine Outfall 008 201 outine Outfall 008 FL1889		Sampl Receiv			
Analyte	Method Bat	ch	1 8	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composi	te) - Water)							

2

-0.007

1

1/6/2011

1/6/2011

U

8644



Reporting Units: pCi/L

Tritium

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

	MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 20 Routine Outfall 008 ITL1889	010		1	led: 12/19/10 red: 12/20/10	
	Analyte	Method Bate	906 Reporting h Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
5	Sample ID: ITL1889-02 (Outfall 008 (Composit	te) - Water)						

500

-216

1

1/10/2011 1/13/2011

U

8644

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

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

EPA-5 1613Bx

Sampled: 12/19/10 Received: 12/20/10

		-	Reportin	-	-	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Com	posite) - Water)								
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	357431	0.000000	D000001	2 <b>5.7e-006</b>	0.97	12/23/2010	12/28/2010	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	357431	0.000000	80000003	12.4e-006	0.97	12/23/2010	12/28/2010	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	357431	).000000 <b>0</b>	@000003	7 ND	0.97	12/23/2010	12/28/2010	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	357431	).0000006	.0000005	1 ND	0.97	12/23/2010	12/28/2010	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	357431	).0000000	4000002	5 ND	0.97	12/23/2010	12/28/2010	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	357431	0.0000010	<b>1</b> .0000012	2 ND	0.97	12/23/2010	12/28/2010	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	357431	0.000000	2000007	3 ND	0.97	12/23/2010	12/28/2010	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	357431	).0000009	9.000001	ND	0.97	12/23/2010	12/28/2010	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	357431	).0000004	40000004	4 ND	0.97	12/23/2010	12/28/2010	
1,2,3,7,8-PeCDD	EPA-5 1613B	357431	).0000006	0000006	8 ND	0.97	12/23/2010	12/28/2010	
1,2,3,7,8-PeCDF	EPA-5 1613B	357431	).000000 <b>7</b>	£0000008	S ND	0.97	12/23/2010	12/28/2010	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	357431	0.0000005	0000005	5 ND	0.97	12/23/2010	12/28/2010	
2,3,4,7,8-PeCDF	EPA-5 1613B	357431	).0000005	0000005	4 ND	0.97	12/23/2010	12/28/2010	
2,3,7,8-TCDD	EPA-5 1613B	357431	).000000 <b>0</b>	.0000003	7 ND	0.97	12/23/2010	12/28/2010	
2,3,7,8-TCDF	EPA-5 1613B	357431	).0000005	40000005	4 ND	0.97	12/23/2010	12/28/2010	
OCDD	EPA-5 1613B	357431	).0000006	4000006	5 <b>6.5e-005</b>	0.97	12/23/2010	12/28/2010	J, B
OCDF	EPA-5 1613B	357431	).000000 <b>0</b>	.0000003	24.7e-006	0.97	12/23/2010	12/28/2010	В
Total HpCDD	EPA-5 1613B	357431	0.000000	D000001	21.6e-005	0.97	12/23/2010	12/28/2010	J, B
Total HpCDF	EPA-5 1613B	357431	).000000 <b>0</b>	000003	34.2e-006	0.97	12/23/2010	12/28/2010	J, Q, B
Total HxCDD	EPA-5 1613B	357431	).0000005	.0000005	1 ND	0.97	12/23/2010	12/28/2010	
Total HxCDF	EPA-5 1613B	357431	).000000 <b>Q</b>	4000002	5 ND	0.97	12/23/2010	12/28/2010	
Total PeCDD	EPA-5 1613B	357431	).0000006	0000006	8 ND	0.97	12/23/2010	12/28/2010	
Total PeCDF	EPA-5 1613B	357431	).0000005	2000005	4 ND	0.97	12/23/2010	12/28/2010	
Total TCDD	EPA-5 1613B	357431	).000000 <b>0</b>	.0000003	7 ND	0.97	12/23/2010	12/28/2010	
Total TCDF	EPA-5 1613B	357431	0.000000	40000005	4 ND	0.97	12/23/2010	12/28/2010	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-1-					93 %				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-14					82 %				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-1					89 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141					76 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152					73 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130					84 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123					73 %				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147					69 %				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					75 %				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					77 %				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136					73 %				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	)				75 %				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					68 %				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					63 %				
Surrogate: 13C-OCDD (17-157%)					79 %				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					99 %				

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

#### SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 008 (Composite) (ITL18	Hold Time (in days) 89-02) - Water	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	12/19/2010 14:09	12/20/2010 05:00	12/20/2010 19:00	12/20/2010 22:15
Filtration	1	12/19/2010 14:09	12/20/2010 05:00	12/21/2010 00:30	12/21/2010 00:30



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Sampled: 12/19/10 Received: 12/20/10

#### **METHOD BLANK/QC DATA**

#### HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2313 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2313-H	BLK1)									
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 12/20/2010 (10L2313-BS	51)									MNR1
Hexane Extractable Material (Oil & Grease)	19.5	5.0	mg/l	20.0		98	78-114			
LCS Dup Analyzed: 12/20/2010 (10L23)	13-BSD1)									
Hexane Extractable Material (Oil & Grease)	19.1	5.0	mg/l	20.0		96	78-114	2	11	



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2484 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2484-B	LK1)									
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2484-BS	1)									
Zinc	509	20.0	ug/l	500		102	85-115			
Matrix Spike Analyzed: 12/21/2010 (10L	2484-MS1)				Source: I	TL1829-0	1			
Zinc	527	20.0	ug/l	500	21.9	101	70-130			
Matrix Spike Analyzed: 12/21/2010 (10L	2484-MS2)				Source: I	TL1829-0	2			
Zinc	545	20.0	ug/l	500	62.3	96	70-130			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2484-M	ISD1)			Source: I	TL1829-0	1			
Zinc	499	20.0	ug/l	500	21.9	95	70-130	6	20	
Batch: 10L2490 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2490-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2490-BS	1)									
Antimony	82.1	2.0	ug/l	80.0		103	85-115			
Cadmium	81.5	1.0	ug/l	80.0		102	85-115			
Copper	82.8	2.00	ug/l	80.0		103	85-115			
Lead	83.1	1.0	ug/l	80.0		104	85-115			
Selenium	82.9	2.0	ug/l	80.0		104	85-115			
Thallium	85.1	1.0	ug/l	80.0		106	85-115			

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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
U C	Kesun	Linnt	Units	Level	Kesuit	/0KEC	Linnts	ΠD	Linnt	Quaimers
Batch: 10L2490 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (101	2490-MS1)				Source: I	TL1829-0	3			
Antimony	83.7	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	77.1	1.0	ug/l	80.0	0.125	96	70-130			
Copper	78.7	2.00	ug/l	80.0	5.15	92	70-130			
Lead	80.1	1.0	ug/l	80.0	4.26	95	70-130			
Selenium	82.5	2.0	ug/l	80.0	4.20	98	70-130			
Thallium	76.0	1.0	ug/l	80.0	ND	95	70-130			
Matrix Spike Analyzed: 12/21/2010 (10I	2490-MS2)				Source: I	TL1829-0	4			
Antimony	84.7	2.0	ug/l	80.0	ND	106	70-130			
Cadmium	78.3	1.0	ug/l	80.0	ND	98	70-130			
Copper	76.3	2.00	ug/l	80.0	ND	95	70-130			
Lead	77.4	1.0	ug/l	80.0	0.729	96	70-130			
Selenium	84.1	2.0	ug/l	80.0	3.40	101	70-130			
Thallium	77.4	1.0	ug/l	80.0	ND	97	70-130			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2490-MS	5D1)			Source: I	TL1829-0	3			
Antimony	84.4	2.0	ug/l	80.0	ND	105	70-130	0.8	20	
Cadmium	77.6	1.0	ug/l	80.0	0.125	97	70-130	0.7	20	
Copper	79.4	2.00	ug/l	80.0	5.15	93	70-130	0.8	20	
Lead	81.4	1.0	ug/l	80.0	4.26	96	70-130	2	20	
Selenium	81.6	2.0	ug/l	80.0	4.20	97	70-130	1	20	
Thallium	78.5	1.0	ug/l	80.0	ND	98	70-130	3	20	
Batch: 10L2694 Extracted: 12/22/10										
Blank Analyzed: 12/22/2010 (10L2694-B	LK1)									
Mercury	ND	0.20	ug/l							



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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte Batch: 10L2694 Extracted: 12/22/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/22/2010 (10L2694-BS Mercury	<b>1)</b> 7.73	0.20	ug/l	8.00		97	85-115			
<b>Matrix Spike Analyzed: 12/22/2010 (10L</b> Mercury	2 <b>694-MS1)</b> 7.48	0.20	ug/l	8.00	Source: IT ND	<b>FL1894-0</b> 93	<b>1</b> 70-130			
Matrix Spike Dup Analyzed: 12/22/2010 Mercury	(10L2694-MS 7.47	<b>D1)</b> 0.20	ug/l	8.00	Source: I'l ND	<b>ГL1894-0</b> 93	<b>1</b> 70-130	0.04	20	



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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2487 Extracted: 12/21/10	ittouit		emis	Lever	nesun	, und e	Linits	ICI D		Quanners
Datth. 1012407 Extraction. 12/21/10										
Blank Analyzed: 12/23/2010 (10L2487-B	LK1)									
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/23/2010 (10L2487-BS	1)									
Zinc	510	20.0	ug/l	500		102	85-115			
Matrix Spike Analyzed: 12/23/2010 (10L	2487-MS1)				Source: I	TL1891-0	3			
Zinc	521	20.0	ug/l	500	18.1	101	70-130			
Matrix Spike Analyzed: 12/23/2010 (10L	2487-MS2)				Source: I	TL1877-0	1			
Zinc	502	20.0	ug/l	500	ND	100	70-130			
Matrix Spike Dup Analyzed: 12/23/2010	(10L2487-N	ISD1)			Source: I	TL1891-0	3			
Zinc	505	20.0	ug/l	500	18.1	97	70-130	3	20	
Batch: 10L2494 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2494-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2494-BS	1)									
Antimony	79.1	2.0	ug/l	80.0		99	85-115			
Cadmium	81.6	1.0	ug/l	80.0		102	85-115			
Copper	85.6	2.00	ug/l	80.0		107	85-115			
Lead	79.1	1.0	ug/l	80.0		99	85-115			
Selenium	80.4	2.0	ug/l	80.0		101	85-115			
Thallium	75.2	1.0	ug/l	80.0		94	85-115			

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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L2494 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L	.2494-MS1)				Source: I	TL1890-0	3			
Antimony	75.8	2.0	ug/l	80.0	0.316	94	70-130			
Cadmium	76.0	1.0	ug/l	80.0	ND	95	70-130			
Copper	79.5	2.00	ug/l	80.0	2.91	96	70-130			
Lead	80.8	1.0	ug/l	80.0	0.391	100	70-130			
Selenium	72.5	2.0	ug/l	80.0	ND	91	70-130			
Thallium	76.4	1.0	ug/l	80.0	ND	96	70-130			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2494-M	SD1)			Source: I	TL1890-0	3			
Antimony	77.9	2.0	ug/l	80.0	0.316	97	70-130	3	20	
Cadmium	77.5	1.0	ug/l	80.0	ND	97	70-130	2	20	
Copper	80.8	2.00	ug/l	80.0	2.91	97	70-130	2	20	
Lead	74.6	1.0	ug/l	80.0	0.391	93	70-130	8	20	
Selenium	71.9	2.0	ug/l	80.0	ND	90	70-130	0.9	20	
Thallium	70.9	1.0	ug/l	80.0	ND	89	70-130	8	20	
Batch: 10L2695 Extracted: 12/22/10										
Blank Analyzed: 12/22/2010 (10L2695-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/22/2010 (10L2695-BS	1)									
Mercury	8.15	0.20	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 12/22/2010 (10L	.2695-MS1)				Source: I	TL1889-0	2			
Mercury	7.89	0.20	ug/l	8.00	ND	99	70-130			
Matrix Spike Dup Analyzed: 12/22/2010	(10L2695-M	SD1)			Source: I'	TL1889-0	2			
Mercury	7.80	0.20	ug/l	8.00	ND	97	70-130	1	20	

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2301 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2301-B	LK1)									
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
LCS Analyzed: 12/20/2010 (10L2301-BS	1)									
Chloride	4.77	0.50	mg/l	5.00		95	90-110			
Nitrate-N	1.02	0.11	mg/l	1.13		90	90-110			
Nitrite-N	1.45	0.15	mg/l	1.52		95	90-110			
Matrix Spike Analyzed: 12/20/2010 (10L	2301-MS1)				Source: I	TL2007-0	1			
Chloride	65.5	2.5	mg/l	50.0	16.6	98	80-120			
Nitrate-N	18.9	0.55	mg/l	11.3	8.19	95	80-120			
Nitrite-N	14.5	0.75	mg/l	15.2	ND	95	80-120			
Matrix Spike Dup Analyzed: 12/20/2010	(10L2301-M	ISD1)			Source: I	TL2007-0	1			
Chloride	65.5	2.5	mg/l	50.0	16.6	98	80-120	0.03	20	
Nitrate-N	19.8	0.55	mg/l	11.3	8.19	103	80-120	5	20	
Nitrite-N	15.0	0.75	mg/l	15.2	ND	99	80-120	3	20	
Batch: 10L2410 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2410-B Total Dissolved Solids	LK1) ND	10	mg/l							
LCS Analyzed: 12/21/2010 (10L2410-BS Total Dissolved Solids	<b>1)</b> 1010	10	mg/l	1000		101	90-110			

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#### METHOD BLANK/QC DATA

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2410 Extracted: 12/21/10										
Duplicate Analyzed: 12/21/2010 (10L241 Total Dissolved Solids Batch: 10L2485 Extracted: 12/21/10	1 <b>0-DUP1)</b> 226	10	mg/l		Source: I 224	TL1889-0	2	0.9	10	
Blank Analyzed: 12/21/2010 (10L2485-B Perchlorate	BLK1) ND	4.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2485-BS Perchlorate	51) 23.3	4.0	ug/l	25.0		93	85-115			
<b>Matrix Spike Analyzed: 12/21/2010 (10L</b> Perchlorate	2485-MS1) 24.4	4.0	ug/l	25.0	<b>Source: I</b> 1.92	<b>TL1889-0</b> 90	<b>2</b> 80-120			
<b>Matrix Spike Dup Analyzed: 12/21/2010</b> Perchlorate	<b>(10L2485-MS</b> 23.9	<b>5D1)</b> 4.0	ug/l	25.0	<b>Source: I</b> 1.92	<b>TL1889-0</b> 88	<b>2</b> 80-120	2	20	
Batch: 10L2499 Extracted: 12/21/10	NT T21\									
Blank Analyzed: 12/21/2010 (10L2499-B Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/21/2010 (10L2499-BS Sulfate	9.51	0.50	mg/l	10.0		95	90-110			
<b>Matrix Spike Analyzed: 12/21/2010 (10L</b> Sulfate	2 <b>499-MS1)</b> 167	25	mg/l	100	<b>Source: I</b> 72.9	<b>TL1794-0</b> 94	<b>2</b> 80-120			

TestAmerica Irvine Heather Clark For Debby Wilson Project Manager



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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2499 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L	.2499-MS2)				Source: I	TL2139-0	1			
Sulfate	11.8	0.50	mg/l	10.0	1.98	98	80-120			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2499-M	ISD1)			Source: I	TL1794-0	2			
Sulfate	163	25	mg/l	100	72.9	90	80-120	2	20	
Batch: 10L2540 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2540-B	LK1)									
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 12/21/2010 (10L2540-BS	1)									
Ammonia-N (Distilled)	10.1	0.500	mg/l	10.0		101	80-115			
Matrix Spike Analyzed: 12/21/2010 (10I	.2540-MS1)				Source: I	TL1699-0	1			
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 12/21/2010	(10L2540-M	ISD1)			Source: I	TL1699-0	1			
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 10L2544 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2544-B	LK1)									
Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 12/21/2010 (10L2544-BS	1)									
Total Cyanide	0.192	0.0050	mg/l	0.200		96	90-110			



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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2544 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L		Source: I								
Total Cyanide Matrix Spike Dup Analyzed: 12/21/2010	0.192	0.0050 D1)	mg/l	0.200	ND	96 TL1802-0	70-115			
Total Cyanide	0.187	0.0050	mg/l	0.200	ND	94	70-115	2	15	
Batch: 10L2549 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2549-B	,	10	/1							
Total Suspended Solids LCS Analyzed: 12/21/2010 (10L2549-BS	ND	10	mg/l							
Total Suspended Solids	991	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 12/21/2010 (10L254	,		_			TL1881-0	2			
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	



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#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 357431 Extracted: 12/23/10										
Blank Analyzed: 12/28/2010 (G0L2.				Source:						
1,2,3,4,6,7,8-HpCDD	1.5e-006	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	9.5e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	5.9e-006	0.0001	ug/L				-			J
OCDF	2e-006	0.0001	ug/L				-			J
Total HpCDD	2.5e-006	0.00005	ug/L				-			J
Total HpCDF	1.9e-006	0.00005	ug/L				-			J, Q
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0021		ug/L	0.002		107	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0018		ug/L	0.002		92	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.002		ug/L	0.002		100	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0017		ug/L	0.002		86	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0016		ug/L	0.002		81	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.002		ug/L	0.002		98	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0016		ug/L	0.002		83	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		81	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0018		ug/L	0.002		91	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0018		ug/L	0.002		92	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0017		ug/L	0.002		85	28-136			

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#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
·	Result	Linit	Omes	Level	itesuit	JURLE	Linnts	ΝD	Linnt	Quanners
Batch: 357431 Extracted: 12/23/10										
Blank Analyzed: 12/28/2010 (G0L2300	000431B)				Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0018		ug/L	0.002		89	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0017		ug/L	0.002		83	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0015		ug/L	0.002		77	24-169			
Surrogate: 13C-OCDD	0.0036		ug/L	0.004		90	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.0008		ug/L	0.0008		99	35-197			
LCS Analyzed: 12/28/2010 (G0L23000	)0431C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00102	0.00005	ug/L	0.001		102	70-140			В
1,2,3,4,6,7,8-HpCDF	0.00109	0.00005	ug/L	0.001		109	82-122			В
1,2,3,4,7,8,9-HpCDF	0.00108	0.00005	ug/L	0.001		108	78-138			В
1,2,3,4,7,8-HxCDD	0.00118	0.00005	ug/L	0.001		118	70-164			
1,2,3,4,7,8-HxCDF	0.00102	0.00005	ug/L	0.001		102	72-134			
1,2,3,6,7,8-HxCDD	0.000981	0.00005	ug/L	0.001		98	76-134			
1,2,3,6,7,8-HxCDF	0.00105	0.00005	ug/L	0.001		105	84-130			
1,2,3,7,8,9-HxCDD	0.00108	0.00005	ug/L	0.001		108	64-162			
1,2,3,7,8,9-HxCDF	0.00108	0.00005	ug/L	0.001		108	78-130			
1,2,3,7,8-PeCDD	0.00109	0.00005	ug/L	0.001		109	70-142			
1,2,3,7,8-PeCDF	0.000975	0.00005	ug/L	0.001		98	80-134			
2,3,4,6,7,8-HxCDF	0.00103	0.00005	ug/L	0.001		103	70-156			
2,3,4,7,8-PeCDF	0.000976	0.00005	ug/L	0.001		98	68-160			
2,3,7,8-TCDD	0.000214	0.00001	ug/L	0.0002		107	67-158			
2,3,7,8-TCDF	0.000186	0.00001	ug/L	0.0002		93	75-158			
OCDD	0.00191	0.0001	ug/L	0.002		96	78-144			В
OCDF	0.00182	0.0001	ug/L	0.002		91	63-170			В
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00221		ug/L	0.002		111	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00194		ug/L	0.002		97	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00207		ug/L	0.002		104	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00166		ug/L	0.002		83	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00162		ug/L	0.002		81	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00201		ug/L	0.002		100	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00168		ug/L	0.002		84	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		80	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00181		ug/L	0.002		91	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00187		ug/L	0.002		93	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00169		ug/L	0.002		85	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00177		ug/L	0.002		89	13-328			

#### **TestAmerica** Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 357431 Extracted: 12/23/10										
LCS Analyzed: 12/28/2010 (G0L23000	0431C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	0.00171		ug/L	0.002		85	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00157		ug/L	0.002		79	22-152			
Surrogate: 13C-OCDD	0.00374		ug/L	0.004		94	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000784		ug/L	0.0008		98	31-191			



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Sampled: 12/19/10 Received: 12/20/10

### **Compliance Check**

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

						Compliance
<u>LabNumber</u>	Analysis	Analyte	Units	Result	MRL	Limit
ITL1889-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

#### **Compliance Check**

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

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL1889-02	Ammonia-N, Titr 4500NH3-C (w	//di:Ammonia-N (Distilled)	mg/l	0	0.500	10.1
ITL1889-02	Antimony-200.8	Antimony	ug/l	0.15	2.0	6
ITL1889-02	Cadmium-200.8	Cadmium	ug/l	0.12	1.0	3.1
ITL1889-02	Chloride - 300.0	Chloride	mg/l	17	0.50	150
ITL1889-02	Copper-200.8	Copper	ug/l	9.07	2.00	14
ITL1889-02	Lead-200.8	Lead	ug/l	6.71	1.0	5.2
ITL1889-02	Mercury - 245.1	Mercury	ug/l	0	0.20	0.13
ITL1889-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.52	0.11	8
ITL1889-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL1889-02	Nitrogen, NO3+NO2 -N EPA 30	0.0 Nitrate/Nitrite-N	mg/l	0.52	0.26	8
ITL1889-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	1.92	4.0	6
ITL1889-02	Selenium-200.8	Selenium	ug/l	0.49	2.0	5
ITL1889-02	Sulfate-300.0	Sulfate	mg/l	8.01	0.50	300
ITL1889-02	TDS - SM2540C	Total Dissolved Solids	mg/l	224	10	950
ITL1889-02	Thallium-200.8	Thallium	ug/l	0.099	1.0	2
ITL1889-02	Zinc-200.7	Zinc	ug/l	43	20.0	159



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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

#### DATA QUALIFIERS AND DEFINITIONS

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



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Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

#### **Certification Summary**

#### **TestAmerica** Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water	Х	Х
EPA 200.7-Diss	Water	Х	Х
EPA 200.7	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 314.0	Water	Х	Х
Filtration	Water	N/A	N/A
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х
SM4500NH3-C	Water	Х	Х

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

#### **Subcontracted Laboratories**

#### Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnic Samples: ITL1889-02

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### **Eberline Services - SUB**

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITL1889-02

- Analysis Performed: Gross Alpha Samples: ITL1889-02
- Analysis Performed: Gross Beta Samples: ITL1889-02
- Analysis Performed: Radium, Combined Samples: ITL1889-02
- Analysis Performed: Strontium 90 Samples: ITL1889-02
- Analysis Performed: Tritium Samples: ITL1889-02
- Analysis Performed: Uranium, Combined Samples: ITL1889-02

#### **TestAmerica Buffalo**

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

- Method Performed: 8644 Samples: ITL1889-02
- Method Performed: 900 Samples: ITL1889-02
- Method Performed: 901.1 Samples: ITL1889-02
- Method Performed: 903.1 Samples: ITL1889-02
- Method Performed: 904 Samples: ITL1889-02
- Method Performed: 905 Samples: ITL1889-02
- Method Performed: 906 Samples: ITL1889-02

**TestAmerica** Irvine



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL1889

Sampled: 12/19/10 Received: 12/20/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

**TestAmerica West Sacramento** *NELAC Cert #1119CA, Nevada Cert #CA44* 880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITL1889-02

**TestAmerica Irvine** Heather Clark For Debby Wilson Project Manager

#### 7-19-2010 Test America Version-6/20/00-

### CHAIN OF CUSTODY FORM

2721889 Page 1 of 2

Client Name//	Address:			Project:										ANA	LYSIS	REQU				
MWH-Arca 618 Michillind Arcadia, CA	a Ave, Si	uite 200		Boeing-SSFL I Routine Outfa GRAB Stormwater at	II 008	≥y														Field readings:
Test America	Contact:	Joseph Do	ak														x			Temp °F = 5 3 0 pH = 7, 3
Project Mana Sampler:	-			Phone Number (626) 568-669 Fax Number: (626) 568-6515	1		Grease (1664-HEM)													Time of readings = つぞこの5
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil & (													Comments
Outfall 008	w	1L Amber	2	12/19/10 0805	нсі	1A, 1B	x													
																	 $\leq$			
		- n ·															0	,		
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Relinq <u>u</u> ished By	Th	ese Sampl	es ar	e the Grab Por <sup>me:</sup> 12 - 19-	tion of Out	fall 008 for Received By	this s	form	event		posite	samp	les wil	ll follo		are to		this v	work o	rder.
Pina	Say					Mut	H	1 M	#//			14	-10 :25	~	24 Hour:	<u> </u>	 72 Hour:	X	-	10 Day: Normal:
	f O M	w//	Date/Ti	14:2 12-19-10 17:4	25	Received By		0	Y 	Date/Ti	me:					Integrity: (	On ice:	<u>×</u>		
Relinquished By	Ţ	$\mathcal{U}^{\Box}$	Date/Ti	me:		Received By From EC Pricige	: (	Q		Date/Ti	ime: 1201	10	060	Ď		quiremeni I IV:		IV:		
L		```				V	4	Ľ			<u> </u>	,			1		 			

19M03

## Test America Version 4/19/10

## CHAIN OF CUSTODY FORM

Client Name/		ANALYSIS REQUIRED																				
MWH-Arca	dia			Proje Boein	ng-SSFL N	NPDES						ő							1			
618 Michillind	a Ave S	uite 200		Routi	ine Outfa	il 008		Pb,				Ξ.	, <u>n</u> ∞, ×								1	
Arcadia, CA				COM	POSITE	HIGH		Ċſ				a d										
	0.007					Happy Vall		ĥ		e e		l ਤ	6 6 8									
Test America	Contact	Debby Wil	son				-,	Sb, Cd,		chlorat		Cq, O	Beta() (905. 3.0 or um (9									
								Recoverable Metals: l, Se, Zn	TCDD (and all congeners)	SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, Perchlorate		Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg. TI, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K- 40, CS-137 (901.0 or 901.1)									Comments
Project Mana	aor: Pro	nuwn Kelly		Dhon	e Numbe	r.		Ž	ge	2-N		eta	0 0 5 0 0		_	ିଲ						
	yei. Diu	Invyii Keny						able	ซิ	2		Σ	00.0 906 904 907.0	2	Nitrate-N, Nitrite-N	Ammonia-N (350.2)						
Sampler:	1	20.000	,	1. 1	568-669	1		Z ver	ai	÷		ve (	(6)(3)(6)(6)(6)(6)(6)(6)(6)(6)(6)(6)(6)(6)(6)	cicit	itui	<u></u>						
Sampler: 🙇	ic R L	SANAG	~	Fax N	Number:			Se, S	P L	ž	S	los L	37 228 H 79	Ê	z	- N N		1				
				(626)	568-651	5		, Se	(e)	ð	12	Dis Di	S-1 a A	<u>e</u>		, Billion	e e					
Sample	Sample	Container	# of	Sa	ampling	Description	Bottle #	Total Hg, TI	١ <u></u>	S.	TDS, TSS	δ <u>a</u>		Chronic Toxicity	trat	Ĕ	Cyanide					
Description	Matrix	Туре	Cont.		ite/Time	Preservative	Bottle #	우운	12	ธ์		ΡĘ	<u>95388</u>	5	ž	Ā	े				ļ	
Outfall 008	w	1L Poly	1	14:	9-2010 09	HNO <sub>3</sub>	2A 🖌	X			ļ											
Outfall 008 Dup	w	1L Poly	1			HNO <sub>3</sub>	2B 🗸	Х											ļ			
Outfall 008	w	1L Amber	2			None	3ANB	ł	X													
Outfall 008	w	500 mL Poly	2			None	4A, 4B	1		X												
Outfall 008	w	500 mL Poly	1			None	5 M			Ì	X											
Outfail 008	w	1L Poly	1	1	[	None	6 🗸					x										Filter w/in 24hrs of receipt at lab
		2.5 Gal Cube	1		1	None	7A 🖍				1											Unfiltered and unpreserved
Outfall 008	w	500 mL Amber	1	1		None	7B 🗸	ł					×			-						analysis
Outfall 008	w	1 Gal Poly	1		1	None	8 √			1				x								Only test if first or second rain events of the year
Outfall 008	w	500 mL Poly	1		1	None	9√				1				х					1		
Outfall 008	w	500 mL Poly	1		6	H <sub>2</sub> SO <sub>4</sub>	10 V									х						
Outfall 008	w	500 mL Poly	1	12-	19-200	NaOH	11 /										x				T	
															1							
											Γ											
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						coc	Page 2 c	f 2 list	the C	Comp	osite	Samp	$\frac{1}{2} \sum_{i=1}^{2} \frac{1}{2} \sum_{i=1}^{2} \frac{1}$	008 f	or thi	s sto	rm eve	nt.				
					The	se must be	added to	the sa	ame v	vork	orde	r for C	DC Page 1 of 2	for C	Dutfal	1 008	for the	same e	vent.			
Relinquished By		0	ate/Tir	me:			Received B	у			Đa	ate/Time:	. ).			Turn-a	round time	(Check)				
Relinquished By	my							-	1	$ \mathbf{)} 1 $	۸	,>	170/10			24 Hou	ır:	-	72 Hour: _			10 Day:
per la	-						1/1	e	10	: L	U.	12	$1^{-1}$	b'i	3	48 HoL	17:		5 Day:	*		Normal:
Deline debad De							UM	<u></u>	02	~~			[	90		-		-	/			
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	e ,	$\nu$ ,	Y.		12/2											Sampl	e Integrity	(Check)				
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L																	· · · · ·					NPDES Level IV:
																						\-\ <i>C</i>

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## LABORATORY REPORT



**Date:** December 28, 2010

Client: TestAmerica, Irvine 17461 Derian Ave., Suite 100 Irvine, CA 92614 Attn: Debby Wilson "dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107 Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756 CA DOHS ELAP Cert. No.: 1775

Laboratory No.:	A-10122006-001
Sample I.D.:	ITL1889-02 (Outfall 008)

**Sample Control:** The sample was received by ATL within the recommended hold time, chilled and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample).

12/19/10 - composite
12/20/10
5.7°C
0.0 mg/l
12/20/10 to 12/27/10

Sample Analysis:The following analyses were performed on your sample:Ceriodaphnia dubiaSurvival and Reproduction Test (EPA Method 1002).Attached are the test data generated from the analysis of your sample.

**Result Summary:** 

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

**Quality Control:** 

Reviewed and approved by:

Joseph A. Lel

Laboratory Director

## CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-10122006-001 Client/ID: Test America – ITL1889-02 (Outfall 008) Date Tested: 12/20/10 to 12/27/10

## **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-101207. Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 15 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 7 days. Statistics: ToxCalc computer program.

## **RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female								
Control	100%	24.0								
100% Sample	100%	26.7								
* Sample not statistically significantly less than Control.										

## **CHRONIC TOXICITY**

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

## **QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (24.0 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD $<47\%$ for reproduction; if $>47\%$ and no toxicity at IWC, the test must be repeated	Pass (PMSD = $8.2\%$ )
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival													
Start Date:	12/20/201		Test ID:		-		Sample ID		Outfall 008 EFF2-Indu				
End Date: Sample Date:	12/27/201					-	Test Spec	-		laphnia dubia			
•	12,10,201	0 1 1.00	1 1010001						00 00000				
Comments:													
Comments: Conc-%	1	2	3	4	5	6	7	8	9	10			
	<b>1</b> 1.0000	<b>2</b> 1.0000	<b>3</b> 1.0000	<b>4</b> 1.0000	<b>5</b> 1.0000	<b>6</b> 1.0000	<b>7</b> 1.0000	<b>8</b> 1.0000	<b>9</b> 1.0000	<b>10</b> 1.0000			

				Not			Fisher's	Isotonic		
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 Resamples	)	 
Point	%	SD	95%	CL	Skew		-		
IC05	>100								 
IC10	>100								
IC15	>100						1.0		 
IC20	>100						4		
IC25	>100						0.9		
IC40	>100						0.8 -		
IC50	>100						0.7		
							<b>%</b> 0.6 -		
							5 <sub>05</sub> ]		
							9.0.6 0.5 0.4		
							₽ <sup>0.4</sup>		

0.3 0.2 0.1 0.0 ◆

50

Dose %

100

Reviewed by:

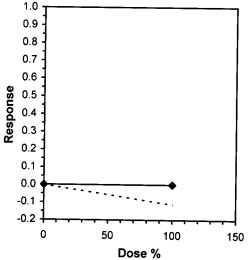
150

Ceriodaphnia Survival and Reproduction Test-Reproduction												
	12/20/201 12/27/201 12/19/201	0 17:30	Test ID: Lab ID:	10122006 CAATL-Ac	c quatic Tes	ting Labs	Sample ID	): ype:	Outfall 008 EFF2-Indu			
Conc-%	1	2	3	4	5	6	7	8	9	10		
D-Control	23.000	25.000	24.000	25.000	25.000	21.000	23.000	22.000	26.000	26.000		

		_		Transform	n: Untran	sformed			1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	- t-Stat	Critical	MSD	Mean	N-Mean
D-Control	24.000	1.0000	24.000	21.000	26.000	7.082	10				25.350	
100	26.700	1.1125	26.700	20.000	31.000	11.850	10	-2.377	1.734	1.970	25.350	

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.95163		0.905		-0.8349	1.68277
F-Test indicates equal variances (p = 0.08)	3.46538		6.54109		0.0040	1.00277
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	1.96952	0.08206		6.45	0.02874	1, 18

Point	%	SD	059/ 01	near Interpolation (200 Resamples)	
		30	95% CL	Skew	
IC05	>100				
IC10	>100				
IC15	>100			1.0	
IC20	>100			4	
IC25	>100			0.9	
IC40	>100			0.8 -	
IC50	>100			0.7 -	
				0.6 -	
				9 0 5	



## CERIODAPHNIA DUBIA CHRONIC BIOASSAY EPA METHOD 1002.0 Raw Data Sheet



#### Lab No.: A-10122006-001 Client ID: TestAmerica - Outfall 008

	TestAmer	i <u>ca - Outfa</u>	11 008									Start	Date: 12	2/20/2010	
		DAY 1		DA	Y 2		DAY 3	D/	AY 4	DAY	5	DA	AY 6	DAY 7	
			24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr 24hr	
Analyst I	Initials:	1-1	~~ L	R-	har	B	$- h_{n} $	-R-			$\square$			VN	
Time of R	eadings:	1830 1	1 005	7W	1730	172		<u>1700 -</u>	172	1730	700	1800	1800	18a 173	
	DO	8.28	5	5.8	8.5	7.9		8.0	8.4	8.1	8.2	8.4	80	8.4 81	
Control	pН	8.28	2	8.2	8.2	8.2	2 8.2	8.2	8.Z	8.Z	8-1	B.Z	8.0	8.2 8.0	
	Temp	25- 2	4. I	24.3	24.0	25.	124.7	24.2	24.4	24.Z	243	24.2	24.5	242 24.4	
	DO	90-8	,3 0	7.7	8.4	8.	7 8,2	9.7	8.1	9.7	8-1	9.9	8.0	9-1 8.1	
100%	рН	7.08	.U	7.8	8.1	7.	8 8.1	2.5	8-1	25	8.D	7.6	8.0	7-7 80	
Temp 24.0 24.2 24.6 24-8 25.								25.1	244	242	74.3	244	24.5	24.2 24.6	
	A	ditional Para	meters					Co	ntrol		<u> </u>		100% San	nple	
	Co	nductivity (un	nohms)					2	87		<u> </u>		181		
		kalinity (mg/l ardness (mg/l						7	2		<b>_</b>		64		
				-				62							
Ammonia (mg/l NH <sub>3</sub> -N)								7	0-1			0.2			
			·····				Source of N	leonates							
Rep	olicate:	A		В			D	E	F	G	/	H	1	J	
Bro	od ID:	<u> </u>	<u>\$  </u>	50	5	D	SE.	41=	61	= 50	5 0	6 H	41	= 55	
Sample	e	Day					g Produced	1			al Live oung	No. Live Adults			
			A	B	С	D	EI	G	н			oung	Auuns		
		2	$\frac{\nu}{\nu}$	$\left  \begin{array}{c} \mathcal{O} \end{array} \right $	$\left  \begin{array}{c} 0 \\ 0 \end{array} \right $	$\mathcal{O}$	00		0	00		$\mathcal{O}$	10	- Kn	
		3	0 0	0	$\frac{0}{0}$	0	00		0	$\frac{0}{0}$		$\frac{0}{2}$	<u>)</u> U		
		4	И	$\overline{\mathcal{O}}$	3	5	$\frac{1}{0}$	-	3	4		24		The	
Control		5	17	7	6	6	0 7		6	U	_	3	$\frac{10}{10}$	Th.	
		6	تي ا	0	ιs	M	50		13	8 1	7 8	1	10	K	
		7	0	15	Ø	0	161	2 13	(6)	14 (		70	D	h	
		Total	23	25	24	25	252	1 23	z2	26 26	00	W	10	K	
		1	0	0	0	U	00	$\frac{1}{2}$	0	00		2	10	R	
		2	U	0	$ \mathcal{O} $	U	$\frac{0}{2}$	0	0	00		2	10	1 hours	
	┣	3		0	5	2	44	10	$ \mathcal{Q} $	45		X	10	hr	
100%		4	<del>ا</del> ج	4	<del>Q</del>	4		$\left( \left  \right  \right)$	1-5(1	$\frac{O C}{C}$	12		10		
		5	$\mathbb{P}^{\mathcal{V}}$	10		$\frac{9}{0}$	$\frac{0}{7}$	$\frac{1}{a}$	/	$\frac{0}{4}$	3		10	- th	
		6 7		17	1. J	쓹	$\frac{5}{1}$ $\frac{9}{1}$	8	16	P / /			$\frac{10}{10}$	- Th	
			1//	$\frac{1}{2}$	27	$\frac{1}{30}$	202	0 0		$\frac{171}{2}$	$\frac{1}{2}$		$\frac{1}{1}$		
		Total		122	يل حصي		TV d	1131	101	7) J		67	10		

Circled fourth brood not used in statistical analysis.

7<sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.



## CHAIN OF CUSTODY

#### DEC. 20. 2010 9:12PM TESTAMERICA

.

SUBCONTRACT ORDER **TestAmerica** Irvine

## ITL1889

SENDING LABOR	ATORY:		RECEIVING L	ABORATORY:
TestAmerica Irvin	e		Aquatic Test	ting Laboratories-SUB
17461 Derian Ave	enue. Suite 100		4350 Transp	port Street, Unit 107
Irvine, CA 92614			Ventura, CA	93003
Phone: (949) 261	-1022		Phone :(805	) 650-0546
Fax: (949) 260-32			Fax: (805) 6	50-0756
Project Manager:	Debby Wilson		-	tion: California perature: <u>5-7</u> °C Ice: (Y) N
	Units	Due	Expires	Comments

Bioassay-7 dy Chrnic	N/A	12/23/10	12/21/10 02:09	Cerio, EPA/821-R02-013, Sub to Aquatic testing
Containers Supplied:				
1 gal Poly (K)				

Released By Date/Time

12-20-10 1815 Received By Date/Time

Received By

Page 1 of 1

Released By

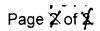
Date/Time

P. 1 NO. 966

## Test America Version #2000-

## CHAIN OF CUSTODY FORM

Client Name/A	ddress			Projec	ot:		1								A	NALY	SIS RE	QUIRED				
MWH-Arcac				,	g-SSFL N	IPDES	1			T		ġ	-	1	1	-					Ī	
618 Michillinda		uite 200			ne Outfa			á d				Т С	× 0° al									
Arcadia, CA 9						HIGH		'n				, dq	0.0 0.3			1						I
nicaula, UA 3				Storm	water at	Happy Valle	ey	Cd. C		e		Sb, Cd, Cu,	6) 6 6 8									
Test America	Contact	Debby Wils					-			ora		, d	n (5									
r cot Fancilea -	Somuol.	2000 / 1110						Sb		ç		6	a 3). (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)									
								als:	srs)	Per		S	9. 9. 03.									Comments
								Met	ene	z		tals	0, C 0, S									Comments
Project Manag	ger: Bro	nwyn Kelly		Phone	e Numbe	r:		Recoverable Metals: Sb, 1, Se, Zn	congeners)	CI, SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, Perchlorate		Total Dissolved Metals TI, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Trittum (H-3) (906.0), Sr-90 (905.0). Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K- 40, CS-137 (901.0 or 901.1)		Z	0.2)						
				(626)	568-669	1		erab n	1	2 <b>-</b>		ed ed	(90( 901) 901) 901)	city	trite	(35						
Sampler:	CEL	BANA6.	2	Fax N	lumber:			NOX S	(and all	0 N	6	Nos -	37 (13)	Chronic Toxicity	Nitrate-N, Nitrite-N	Ammonia-N (350.						
				1	568-651	5		Sec	ar)	04.	TDS, TSS	Dis	Alt Alt	lic l	Z	Duia	de					
Sample	Sample	Container	# of	· ,	Impling			Hal F	TCDD	S.	S	Se	C C C	Lon	trate	Ш	Cyanide					
Description	Matrix	Туре	Cort	Dar	te/Time	Preservative	Bottle #	Total Hg. Ti	10	ō	9	βF	9 2 C 1 C	5	ž	An A	<u>ð</u>					
Outfail 008	w	1L Poly	1	13-1	9-2010 09	HNO <sub>3</sub>	2A 🗤	×														
Outfall 008 Dup	w	1L Poly	1	1 T	*	HNO <sub>3</sub>	2B 🗸	X														
Outfall 008	w	1L Amber	2	1		None	3A, 3B	ł	х													
Outfall 008	w	500 mL Poly	2			None	4A, 48	1		х									ļ	ļ		
Outfall 008	w	500 mL Poly	1			None	5 ~	1			X							ļ		<u> </u>		
Outfall 008	w	1L Poly	1			None	6 🗸					x										Filter w/in 24hrs of receipt at lab
		2 5 Gal Cube	1	1	1	None	7A 🖍					1					l					Unfiltered and unpreserved
Outfall 008	W	500 mL Amber	1	1	1	None	78 🗸	1		1		1	×									analysis
Outfall 008	w	1 Gal Poly	1	-	1	None	8 √	1	t		1	†		x	1				1	1		Only test if first or second rain events of the year
Outfall 008	w	500 mL Poly	1		1	None	91	+		-	<u> </u>			<u> </u>	x	1				1		
Outfail 008	w	500 mL Poly	1	-	6	H₂SO₄	10		<u> </u>	+				1	1	x						
Outfall 008	w	500 mL Poly	1	12-	19-200		11	,		1	1						x					
	, ·	<u> </u>		+	1.07	+		+	<b> </b>	+	†	1	+	†		+	<b>†</b>	1	1			
	+		$\vdash$	+		1	<u> </u>	<u> </u>	<u> </u>			1	1	$\square$		1						
	<u> </u>	<u> </u>		1				1		1			1									
<u> </u>				+		1	1	1	1	1	1	1	T		I			1				
	-L	<u> </u>	<b>L</b>	J		0.00	Page 2	of 2 list	the	Comr	osite	Samr	ies for Outfall	008	for thi	is sto	rm eve	nt.				
					Tho	eo muet he	added t	o the e	ame .	work	orde	r for C	OC Page 1 of 2	for	Dutfal	1 008	for the	same e	vent.			
Relinguished By		r	Date/Ti	me																		
Relinguished By	and.	L							1	1	1		170110			24 Ho	ur:		72 Hour: _			10 Day
yn 12							111		1	: {	li.	12	1-1-1-1	12	12	48 Ho	ur:		5 Day:	×		Normal.
							UN	<u>u</u>	3 4	ما <del>و</del> ر		ato/Time	1	6 (	$\overline{()}$	-	·					
Relinquished By	$\sim$	ر د	)ate/Ti	me: 2	7/2	0/10	Received	<sup>3</sup> ///	2	,	D	ale/ I Ime				Same	le Inteority	(Check)				
./ _	_ \	/	1	- 1	4-	1	//	]/	N/L	1		12.	-70-111	18	i	Samp	ie integrity	(Check)	~			
1 Um	- T	ced 1	~		1	0/10 8/5	10	W	<u> </u>		/	10	20 /10	10	5	Intact		_ On Ice: _	<u>~</u>			
Relinquished By	<b>-</b>	(	Date/T	ime:			Received I	Зу		Γ	D	ate/Time	:									
																		nts: (Check)				
							1									No Le	vel IV:		All Level i	V <sup>.</sup>		NPDES Level IV





# REFERENCE TOXICANT DATA

## CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-101207

Date Tested: 12/07/10 to 12/13/10

## 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 Sur	vival	Mean Num Young Per	
Control	100%		23.3	
0.25 g/l	100%		25.2	
0.5 g/l	100%		23.7	
1.0 g/l	100%		16.0	*
2.0 g/l	100%		2.9	*
4.0 g/l	0%	*	0	**
* Statistically signif ** Reproduction data from exclue	-	greater th	an survival NC	

## **RESULTS SUMMARY**

## CHRONIC TOXICITY

Survival LC50	2.8 g/l
Reproduction IC25	0.86 mg/l

## QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 18.9%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.3%)
Concentration response relationship acceptable	Pass (Response curve normal)

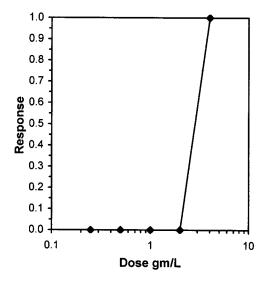
			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Surviv	al Day 6		
Start Date:	12/7/2010	14:00	Test ID:	RT101207			Sample ID		REF-Ref	Foxicant	_
End Date:	12/13/201	0 14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	/pe:	NACL-Soc	dium chloride	
Sample Date:	12/6/2010		Protocol:	FWCH EP	A	•	Test Spec	ies:	CD-Cerioo	laphnia dubia	
Comments:							•			•	
Conc-gm/L	1	2	3	4	5	6	7	8	9	10	
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

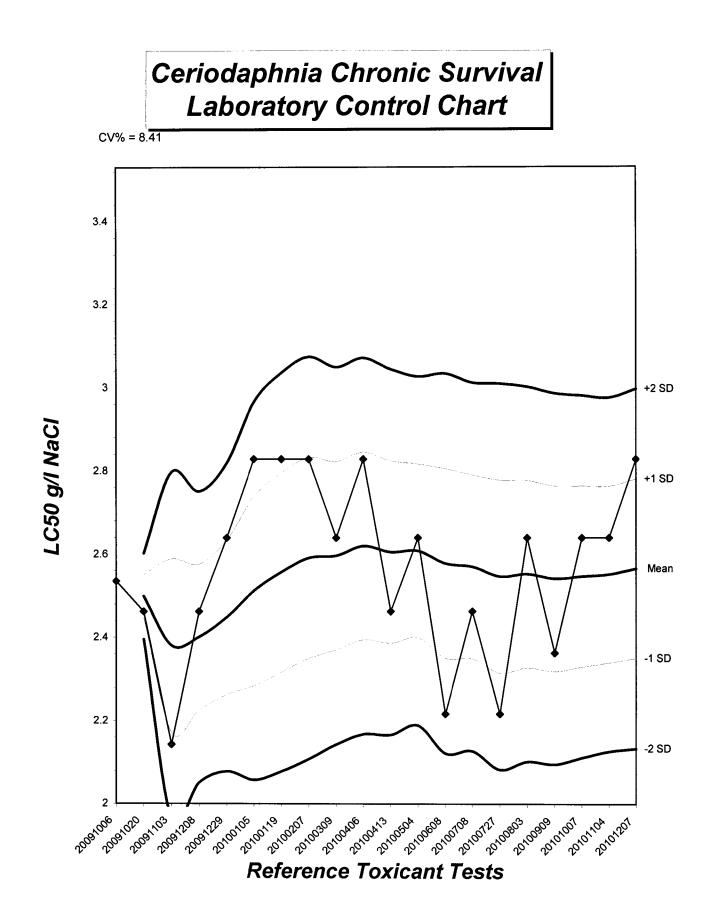
				Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	Ν	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	1.0000	1.0000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

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	
Fisher's Exact Test Treatments vs D-Control	2	4	2.82843		
			Grap	hical Method	

Trim Level 0.0% EC50 2.8284

2.8284



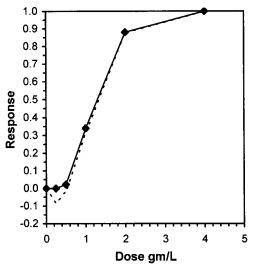


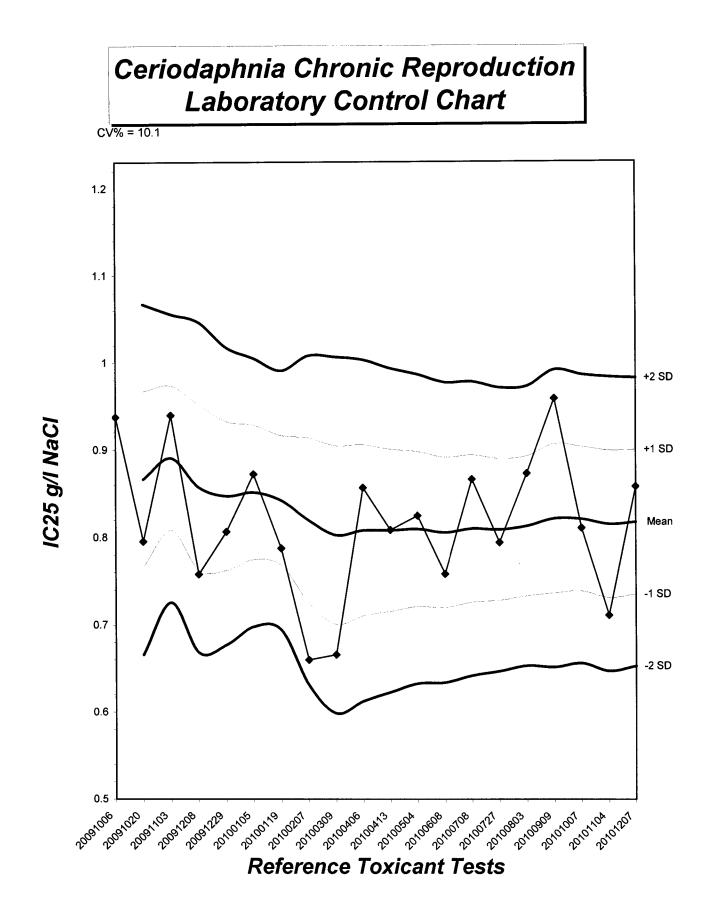
	· · · · · · · · · · · · · · · · · · ·		Ceriod	aphnia Su	rvival and	Reprod	uction Tes	st-Repro				
Start Date:	12/7/2010	14:00	Test ID:	RT101207	'c		Sample ID:			REF-Ref Toxicant		
End Date:	12/13/201	0 14:00	Lab ID:	ab ID: CAATL-Aquatic Testin			Sample Ty	/pe:	NACL-Soc	lium chloride		
Sample Date:	12/6/2010		Protocol:	FWCH EP	A		Test Spec	ies:	CD-Cerioo	laphnia dubia		
Comments:												
Conc-gm/L	1	2	3	4	5	6	7	8	9	10		
D-Control	22.000	11.000	28.000	27.000	26.000	28.000	21.000	28.000	27.000	15.000		
0.25	28.000	29.000	21.000	21.000	28.000	28.000	28.000	25.000	25.000	19.000		
0.5	25.000	17.000	20.000	26.000	24.000	29.000	29.000	23.000	25.000	19.000		
1	10.000	10.000	20.000	22.000	20.000	11.000	15.000	12.000	24.000	16.000		
2	0.000	2.000	7.000	4.000	2.000	4.000	0.000	5.000	2.000	3.000		
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			Isotonic		
Conc-qm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean	
D-Control	23.300	1.0000	23.300	11.000	28.000	25.913	10				24.250	1.0000	
0.25	25.200	1.0815	25.200	19.000	29.000	14.466	10	-0.959	2.223	4.404	24.250	1.0000	
0.5	23,700	1.0172	23.700	17.000	29.000	17.000	10	-0.202	2.223	4.404	23.700	0.9773	
*1	16.000	0.6867	16.000	10.000	24.000	32.676	10	3.686	2.223	4.404	16.000	0.6598	
*2	2.900	0.1245	2.900	0.000	7.000	75.285	10	10.299	2.223	4.404	2.900	0.1196	
- 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		0.96459		0.947		-0.5938	0.09413			
Bartlett's Test indicates equal var					8.97697		13.2767			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		4.40372	0.189	860.47	19.6156	5.6E-15	4, 45
Treatments vs D-Control										

				Linea	ar Interpolation	n (200 Resamples)	
Point	gm/L	SD	95%	CL	Skew		
IC05	0.5430	0.1060	0.2194	0.6041	-1.2164		
IC10	0.6218	0.0833	0.4101	0.7081	-1.1699		
IC15	0.7005	0.0819	0.5141	0.8292	-0.4850	1.0	
IC20	0.7792	0.0859	0.5998	0.9452	0.1951	0.9	
IC25	0.8580	0.0903	0.6963	1.0439	0.3636	0.8	7
IC40	1.1107	0.1011	0.9055	1.2772	-0.0498	· · · •	
IC50	1.2958	0.0936	1.0659	1.4429	-0.4534	0.7	
						0.6 -	1
						<b>%</b> 0.5	1





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



QA/QC No.: RT-101207

Start Date: 12/07/2010

				Nu	mber	• of Y	oung	Produ	ıced			Total	No.	Analyst
Sample	Day	Α	В	С	D	E	F	G	Н	I	J	Live Young	Live Adults	Initials
	1	$\mathcal{O}$	0	0	0	$\mathcal{O}$	0	0	0	0	0	<i>O</i>	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	Ru
	3	0	0	4	0	$\mathcal{O}$	Ú	0	0	0	$\mathcal{O}$	4	10	6-
Control	4	3	3	0	ک	И	Z	3	4	4	3	31	10	n
Control	5	9	8	6	7	8	9	6	9	7	0	69	10	1
	6	10	0	18	15	14	$\square$	12	۱۶	16	12	129	10	$\square$
	7	-		1				~				<u> </u>		
	Total	22	11	28	27	26	28	21	28	27	15	733	10	
	1	0	$\mathcal{O}$	0	0	0	0	0	0	$\mathcal{O}$	U	$\mathcal{O}$	10	L
	2	D	0	0	0	0	0	0	0	0	0	0	U	h
	3	0	0	4	0	0	0	0	0	0	0	Ч	1U	h.
0.25 - /1	4	प	3	U	ч	5	4	4	ゝ	4	4	35	υ	n/
0.25 g/l	5	6	9	2	0	8	10	9	7	7	$\mathcal{O}$	63	$^{\prime}_{l}U$	m
	6	18	17	10	17	15	14	15	13	14	15	150	U,	.h
	7			<b>~</b>	-	$\frown$		-			-	$\sim$	$\frown$	
	Total	28	79	21	21	To	28	28	25	25	19	252	JU	
	1	0	0	0	0	0	0	0	0	0	0	0	10	Ru
	2	0	0	0	0	0	0	0	0	0	0	0	U	h
	3	0	0	0	4	0	0	0	0	0	0	4	10	R
0.5 ~/1	4	Ч	3	4	${}^{\circ}$	5	4	4	3	3	4	34	ίÛ	h
0.5 g/l	5	6	0	6	8	2	9	2	6	7	O	55	10	
	6	15	14	10	14	12	16	18	H	15	21	143	ίυ	n
	7	$\sim$	-	<b>_</b>		-	-	-		_	_	<u> </u>	-	
	Total	25	17	20	26	24	29	29	ふろ	25	19	237	10	$\square$
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.														

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



QA/QC No.: RT-101207

Start Date: 12/07/2010

				Nu	mbe	r of Y	oung l	Produ	ced			Total Live	No. Live	Analyst
Sample	Day	Α	В	С	D	Е	F	G	H	Ι	J	Young	Adults	Initials
	1	0	0	0	0	0	0	0	$\mathcal{O}$	0	$\mathcal{O}$	$\mathcal{O}$	JU	h
	2	0	D	0	0	0	0	0	0	$\mathcal{O}$	0	0	10	h
	3	0	0	0	0	0	0	Ò	$\mathcal{O}$	0	0	$\mathcal{O}$	10	R
1.0 -/1	4	4	3	5	Ч	5	5	3	Ц	ч	3	30	10	R
1.0 g/l	5	0	7	6	6	7	$\mathcal{O}$	0	Û	6	6	38	10	n
	6	6	0	10	12	8	7	12	8	14	7	84	10	1/
	7	_	-	-	-	-		•	-	-		_		
	Total	10	U	20	22	20	11	15	12	24	16	160	V	V
	1	0	0	U	0	0	0	0	0	0	0	$\mathcal{O}$	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	h
	3	0	0	0	0	0	0	0	0	0	0	0	10	Br
2.0 g/l	4	0	0	0	C	2	C	C	2	C	$\mathcal{O}$	U	JU	m
2.0 g/1	5	U	2	3	0	0	4	U	C	2	0	. []	10	
	6	0	0	4	4	$\mathcal{O}$	0	Ø	3	$\mathcal{O}$	3	14	IU	1V
	7			<u> </u>			<u></u>	-	$\widehat{}$					
	Total	U	2	2	4	2	Ч	U	Ş	2	3	24	<u>IV</u>	2
	1	X	X	X	$\times$	X	X	$\swarrow$	X	X	X	0	$\mathcal{O}$	R
	2	<u> </u>	-	-			-	$\sim$	-		_	<u> </u>	<u> </u>	
	3	_	-	-	-				-					<u> </u>
4.0 ~/1	4	^	-	-	_	-	-	<u> </u>	-			$\frown$	-	
4.0 g/l	5	_	-	-		-	- 1	-	-	-	-	-		
	6	<b>^</b>	-		-		-	-	-	_				
	7	-	-	-		-	~	-	-		- 1			
	Total	$\mathcal{O}$	$\mathcal{O}$	$\circ$		c	C	C	c	0	C	C	C	R
Circled fourth brood not used in statistical analysis. 7 <sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.														

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



QA/QC No.: RT-101207

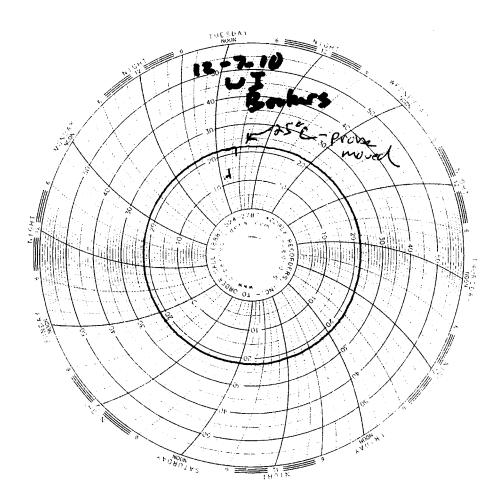
Start Date:12/07/2010

		r	Y 1		Y 2		Y 3	D	XY 4	DA	Y 5	DA	Y 6	DA	Y 7
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst I	nitials			- Ann	ص		L.		- The second			Th	2	B	$\overline{\mathcal{M}}$
		$\frac{2}{14\omega}$		Isa	~~ 140	$\sim$	1400	1400	1300	13a)	1370	1370	144		
Time of Ro			<u>/SW</u>			<u>1400</u>	r i				76		26		
	DO	8.4	8.7	8.4	8.6	8.7	8.3	8.2	8.4	8.1	$\frac{1}{5}$	8,2			<u> </u>
Control	рН	8.2	8.3	8.4	79	8.2	8.0	8.2	8.0	8.1	1-1	8,2	8.Z 25.Z	-	-
L	Temp	25.0	24.3	25.0	29.5	25.0	246	24.8	24.7	25.1	74	75.3	C72		
	DO	8.4	8.8	8.4	8.6	8.6	8.3	8.2	8.4	8.2	24	82	27		-
0.25 g/l	pН	8.2	8.3	8.3	7.9	8.2	8.0	8.2	8.0	8.1	8.1	8.2	8-Z		~
	Temp	<u>25.0</u>	24.6	25.0	24.8	25.0	<u>25.0</u>	24.8	14.8	25,1	2JU	<u>220</u>	2\$2		
	DO	8.5	8.8	8.4	8.7	8.6	8.4	8.2	8.3	8,2	7.4	8.3	7.6	_	-
0.5 g/l	pН	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.1	74	8.2	8.	-	( )
	Temp	<u>25.0</u>	24.7	25.1	24.8	25.0	25.1	24.9	24.9	25.0	24	24-6	<u>zí</u>	$ \  \  \  \  \  \  \  \  \  \  \  \  \ $	
	DO	8.5	8.7	8.4	8.7	8.5	8.4	8.2	8.3	8.2	ちょ	83	7.7	~	-
1.0 g/l	pН	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.2	74	8.2	8.1	-	-
	Temp	24.9	24.6	25.1	24.9	25.1	25.0	24.9	24.9	25.U	240	245	24.9	(	1
	DO	8.1,	8.6	8.5	8.8	8.3	8.4	8.2	8.5	8.2	8.2	8.Z	74	1	1
2.0 g/l	pН	8.2	8.2	8.3	7.9	8.1	8.0	8.2	8.0	8.2	7.4	8.2	8-1	~	-
	Temp	24.8	24.8	25.2	24.8	25.2		25.0	24.8	24.9	244	245	25.2		-
	DO	8.7	8.8		_	<b></b>	-		_	_		-	-		-
4.0 g/l	pН	8.1	8.2		-			-		_	<u> </u>		(		1
	Temp	24.6		-		_	-				_	1	-		-
	Di	ssolved	l Oxyge	n (DO)	reading	gs are in	n mg/l (	O₂; Tem	perature	e (Temp)	) readin	gs are i	n ℃.		
							Conti	rol				High Co	oncentrat	ion	
	Additional Parameters				Day	1	Day (	3	Day 5		Day 1		Day 3	D	ay 5
	Conductivity (µS) 3.				325 329		,	322		2470	3	690	34	130	
	Alkalinity (	(mg/l CaC	O <sub>3</sub> )		74 73		73		73		24			74	
	Hardness (	mg/l CaC	O <sub>3</sub> )		87	)	88		89	90 89				89	
						Soi	irce of N	leonates							
Rep	Replicate: A B			С		D	E	F		G	Н	I		J	
Broo	Brood ID: 1A 2A			2A	3,	<u> </u>	3B	1G	14	12	Z	/J	2J		$\mathcal{T}$



## **Test Temperature Chart**

## Test No: RT-101207 Date Tested: 12/07/10 to 12/13/10 Acceptable Range: 25+/- 1°C





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

January 28, 2011

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

## Reference: Test America-Irvine ITL1889 Eberline Analytical Report S012306-8644 Sample Delivery Group 8644

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL1889. The sample was received on December 22, 2010.

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

Sincerely,

N. Joseph Verville Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

#### Case Narrative, page 1

#### January 28, 2011

#### 1.0 General Comments

Sample delivery group 8644 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

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

#### 2.0 Quality Control

For efficiency of analysis, sample ITL1889-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8643 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

#### 3.0 Method Errors

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

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

#### Case Narrative, page 2

#### January 28, 2011

#### 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 other quality control sample results were within required control limits.

#### 5.0 Case Narrative Certification Statement

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

N. Joseph Verville Client Services Manager

1/28/11 Date

SDG	864	44	
Contact	<u>N.</u>	Joseph	Verville

Client	<u>Test America,</u>	Inc.
Contract	<u>ITL1889</u>	

SUMMARY DATA SECTION

TABLE OF	CON	TI	EN '	гs	
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Method Blanks	•	•	•	•	8
Lab Control Samples	•	•	•	•	9
Duplicates	•	•	•	•	10
Data Sheets	•	•	•	•	11
Method Summaries	•	•	•	•	12
Report Guides	•	•	•	•	20
End of Section	•	•	•	•	34

Prepared by

nfill Reviewed by

Lab id	EAS
Protocol	ТА
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	01/28/11

SDG 8644

SDG	<u>864</u>	14	
Contact	<u>N.</u>	Joseph	Verville

#### REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</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 EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 01/28/11

SDG 8644

SDG	8644	_
Contact	N. Joseph Verville	-

#### GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</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.

EAS
ГА
Ver 1.0
DVD-RG
3.06
01/28/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8644

SDG <u>8644</u>

#### Contact N. Joseph Verville

#### LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012300-03	Lab Control Sample		WATER				
S012300-04	Method Blank		WATER				
S012300-05	Duplicate (S012300-01)		WATER				12/18/10 17:10
S012306-01	ITL1889-02	Boeing-SSFL	WATER			ITL1889	12/19/10 14:09

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

## Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LS</u> Version <u>3.06</u> Report date <u>01/28/11</u>

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

#### SDG 8644

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	१ MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SI RECEIVED (		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8643		Method Blank Lab Control Sample Duplicate (S012300-01)	WATER WATER WATER						S012300-04 S012300-03 S012300-05	8643-004 8643-003 8643-005
8644	ITL1889	ITL1889-02	WATER		9.5 L		12/22/10	3	S012306-01	8644-001

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-QS
Version	3.06
Report date	01/28/11

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8644

SDG <u>8644</u>

Contact N. Joseph Verville

#### PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

			PREPARATION ERROR				- PLANCHETS ANALYZE			ED	QUALI-	
TEST	MATRIX	METHOD	BATCH	2 <i>0</i> %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS	
Beta	Counting											
AC	WATER	Radium-228 in Water	7258-155	10.4	1			1	1	1/0/1		
SR	WATER	Strontium-90 in Water	7258-155	10.4	1			1	1	1/0/1		
Gas I	roportiona	l Counting										
80A	WATER	Gross Alpha in Water	7258-155	20.6	1			1	1	1/0/1		
80B	WATER	Gross Beta in Water	7258-155	11.0	1			1	1	1/0/1		
Gamma	Spectroso	сору				·						
GAM	WATER	Gamma Emitters in Water	7258-155	7.0	1			1	1	1/0/1		
Kinet	ic Phospho	primetry, ug										
U_T	WATER	Uranium, Total	7258-155		1			1	1	1/0/1		
Liqui	d Scintill	lation Counting										
Н	WATER	Tritium in Water	7258-155	10.0	1			1	1	1/0/1		
Rador	Counting											
RA	WATER	Radium-226 in Water	7258-155	16.4	1			1	1	1/0/1		

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

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-PBS
Version	3.06
Report date	01/28/11

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

## LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

LAB SAMPLE	CLIENT SAMPLE ID								
COLLECTED RECEIVED	LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
<b>S</b> 012300-03	Lab Control Sample		8643-003	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
0012000 00		WATER	8643-003	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
			8643-003	AC		01/21/11	01/27/11	BW	Radium-228 in Water
		×	8643-003	GAM		12/29/10	01/14/11	MWT	Gamma Emitters in Water
			8643-003	н		01/13/11	01/18/11	BW	Tritium in Water
			8643-003	RA		01/06/11	01/24/11	BW	Radium-226 in Water
			8643-003	SR		01/06/11	01/26/11		Strontium-90 in Water
			8643-003	U_T		01/18/11	01/21/11		Uranium, Total
<u></u>									
S012300-04	Method Blank		8643-004	80A/80			01/17/11		Gross Alpha in Water
		WATER	8643-004	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
			8643-004	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-004	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water
			8643-004	н			01/18/11	BW	Tritium in Water
			8643-004	RA			01/24/11	BW	Radium-226 in Water
			8643-004	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
	· · ·		8643-004	U_T		01/18/11	01/21/11	BW	Uranium, Total
S012300-05	Duplicate (S012300-01)		8643-005	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
12/18/10		WATER	8643-005	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
			8643-005	AC		01/21/11	01/27/11	BW	Radium-228 in Water
			8643-005	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water
		·	8643-005	Н		01/13/11	01/18/11	BW	Tritium in Water
			8643-005	RA		01/06/11	01/24/11	BW	Radium-226 in Water
			8643-005	SR		01/06/11	01/26/11	BW	Strontium-90 in Water
			8643-005	U_T		01/18/11	01/21/11	BW	Uranium, Total
5012306-01	ITL1889-02		8644-001	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water
12/19/10	Boeing-SSFL	WATER	8644-001	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water
12/22/10	ITL1889		8644-001	AC		01/21/11	01/27/11	BW	Radium-228 in Water
	4		8644-001	GAM		12/31/10	01/14/11	MWT	Gamma Emitters in Water
			8644-001	н		01/13/11	01/18/11	BW	Tritium in Water
			8644-001	RA		01/24/11	01/24/11	BW	Radium-226 in Water
			8644-001	SR		01/06/11	01/26/11	BW	Strontium-90 in Water

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-LWS Version 3.06 Report date 01/28/11

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8644

SDG <u>8644</u>

#### Contact N. Joseph Verville

#### WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	BY	SAMPLE TYPE CLIENT MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0		1		1	1	1	4
80B/80		Gross Beta in Water	900.0		1		1	1	1	4
AC		Radium-228 in Water	904.0		1		1	1	1	4
GAM		Gamma Emitters in Water	901.1		1		1	1	1	4
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
T_U		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>01/28/11</u>

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

8643-004

Method Blank

#### METHOD BLANK

1	8644 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITL1889	
Lab sample id Dept sample id		Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	$2\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.006	0.27	0.617	3.00	U	80A
Gross Beta	12587472	0.047	0.56	0.950	4.00	U	80B
Tritium	10028178	-94.9	170	294	500	U	H
Radium-226	13982633	0.052	0.48	0.888	1.00	U	RA
Radium-228	15262201	0.032	0.17	0.396	1.00	U	AC
Strontium-90	10098972	-0.110	0.53	1.27	2.00	U	SR
Uranium, Total		0	0.008	0.019	1.00	U	U_T
Potassium-40	13966002	U		24.4	25.0	U	GAM
Cesium-137	10045973	U		2.00	20.0	U	GAM

QC-BLANK #76649

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DS</u> Version <u>3.06</u> Report date <u>01/28/11</u>

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8644

LAB CONTROL SAMPLE

8643-003

Lab Control Sample

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

Client sample id Lab Control Sample

Material/Matrix \_\_\_\_\_

WATER

Lab sample id <u>S012300-03</u> Dept sample id <u>8643-003</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	43.6	2.4	0.575	3.00		80A	40.4	1.6	108	77-123	70-130
Gross Beta	33.7	1.5	1.23	4.00		80B	35.0	1.4	96	88-112	70-130
Tritium	2330	270	297	500		н	2550	100	91	85-115	80-120
Radium-226	46.2	1.9	0.686	1.00		RA	55.7	2.2	83	85-115	80-120
Radium-228	3.81	0.83	0.391	1.00		AC	4.63	0.19	82	80-120	60-140
Strontium-90	17.1	1.5	0.850	2.00		SR	17.5	0.70	98	86-114	80-120
Uranium, Total	58.7	6.6	0.188	1.00		U_T	56.5	2.3	104	88-112	80-120
Cobalt-60	98.6	4.6	2.03	10.0		GAM	102	4.1	97	91-109	80-120
Cesium-137	113	4.3	2.86	20.0		GAM	110	4.4	103	91-109	80-120

QC-LCS #76648

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-LCS Version 3.06 Report date 01/28/11

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8644

8643-005

...

ITL1881-02

### DUPLICATE

3644			Client	Test America, Inc.	
N. Joseph Verville			Contract	ITL1889	
DUPLICATE		ORIGINAL			
5012300-05	Lab sample id	<u>S012300-01</u>	Client sample id	ITL1881-02	
3643-005	Dept sample id	8643-001	Location/Matrix	·	WATER
	Received		Collected	12/18/10 17:10	
			Chain of custody id		
	I. Joseph Verville DUPLICATE 2012300-05	Joseph Verville       DUPLICATE       012300-05     Lab sample id       643-005     Dept sample id	Joseph Verville         ORIGINAL           OUPLICATE         ORIGINAL           0012300-05         Lab sample id S012300-01	I. Joseph Verville     Contract       OUPLICATE     ORIGINAL       012300-05     Lab sample id <u>S012300-01</u> Client sample id       6643-005     Dept sample id <u>8643-001</u> Location/Matrix       Received     Collected	I. Joseph Verville         Contract         ITL1889           OUPLICATE         ORIGINAL         Client sample id         ITL1881-02           2012300-05         Lab sample id         S012300-01         Client sample id         ITL1881-02           643-005         Dept sample id         8643-001         Location/Matrix

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 ø
Gross Alpha	1.05	0.34	0.322	3.00	J	80A	1.22	0.35	0.326	J	15	78	0.6
Gross Beta	1.72	0.54	0.800	4.00	J	80B	1.61	0.57	0.853	J	7	74	0.3
Tritium	-140	160	295	500	υ	н	-81.5	170	294	U	-		0.5
Radium-226	0.840	0.40	0.558	1.00	J	RA	0.332	0.37	0.604	υ	87	144	1.8
Radium-228	0.187	0.20	0.435	1.00	U	AC	0.118	0.21	0.459	U	-		0.5
Strontium-90	-0.065	0.41	0.986	2.00	U	SR	0.012	0.48	1.12	U	-		0.2
Uranium, Total	0.102	0.014	0.019	1.00	J	U_T	0.103	0.014	0.019	J	1	29	0.1
Potassium-40	υ		20.3	25.0	υ	GAM	υ		17.8	U	-		0.2
Cesium-137	υ		1.86	20.0	υ	GAM	υ		1.28	U	-		0.5

QC-DUP#1 76650

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DUP
Version	3.06
Report date	01/28/11

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10

SDG 8644

8644-001

ITL1889-02

## DATA SHEET

1	8644 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITL1889	
Lab sample id Dept sample id Received	8644-001 12/22/10	Client sample id Location/Matrix Collected/Volume ain of custody id	Boeing-SSFL 12/19/10 14:09 9.5	WATER

ANALYTE	CAS NO	RESULT pCi/L	$2\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	10.4	1.3	0.643	3.00		80A
Gross Beta	12587472	12.8	0.86	0.852	4.00		80B
Tritium	10028178	-216	160	293	500	U	H
Radium-226	13982633	1.41	0.39	0.448	1.00		RA
Radium-228	15262201	0.615	0.71	0.436	1.00	J	AC
Strontium-90	10098972	-0.007	0.48	1.11	2.00	U.	SR
Uranium, Total		1.24	0.13	0.019	1.00		U_T
Potassium-40	13966002	21.0	19	14.7	25.0	J	GAM
Cesium-137	10045973	U		1.33	20.0	U	GAM

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DS</u> Version <u>3.06</u> Report date <u>01/28/11</u>

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11

SDG 8644

Test <u>AC</u> Matrix <u>WATER</u> SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### RESULTS

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	·
Preparation	batch 725	8-155			
S012300-03		8643-003	Lab Control Sample	ok	
5012300-04		8643-004	Method Blank	υ	
012300-05		8643-005	Duplicate (S012300-01)	- U	
5012306-01		8644-001	ITL1889-02	0.615 J	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF TEST FIX		MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 72	58-155 2σ prep error 1	10.4 % Ref	ference	Lab I	Notebool	c No. 7	7258	pg. 15	5				
S012300-03		Lab Control Sample	0.391	1.80			88		150			01/21/11	01/21	GRB-202
S012300-04		Method Blank	0.396	1.80			85		150			01/21/11	01/21	GRB-203
S012300-05		Duplicate (S012300-01)	0.435	1.80			78		150		34	01/21/11	01/21	GRB-204
S012306-01		ITL1889-02	0.436	1.80			90		150		33	01/21/11	01/21	GRB-229
Nominal val	ues and 1	imits from method	1.00	1.80			30-10	5	50		180	-		

				1
PROCEDURES	REFERENCE	904.0		AVERA
	DWP-894	Sequential Separation of Actinium-228 and		FOR 4
		Radium-226 in Drinking Water (>1 Liter Aliquot),		
		rev 5		
			i i	

AVERAGES ± 2 SD	MDA	0.414	±	0.049
FOR 4 SAMPLES	YIELD	85	±	

Lab id	EAS			
Protocol	<u>TA</u>			
Version	<u>Ver 1.0</u>			
Form	DVD-LMS			
Version	3.06			
Report date	01/28/11			

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8644

Test	<u>SR</u> Matrix <u>WATER</u>
SDG	8644
Contact	N. Joseph Verville

#### LAB METHOD SUMMARY

Client Test America, Inc. Contract ITL1889

STRONTIUM-90 IN WATER BETA COUNTING

#### RESULTS

LAB	RAW SUF-		CLIENT SAMPLE ID	Strontium-90		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Scroncium-90	· · · · ·	
Preparation	batch 725	8-155				
S012300-03		8643-003	Lab Control Sample	ok		
S012300-04		8643-004	Method Blank	υ		
S012300-05		8643-005	Duplicate (S012300-01)	- U		
S012306-01		8644-001	ITL1889-02	U U		
<u></u>					 	
Nominal val	ues and li	mits from m	nethod RDLs (pCi/L)	2.00		

#### 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 725	8-155 2σ prep e	rror 10.4 % F	Reference	Lab I	Noteboo	k No. '	7258	pg. 1	55				
S012300-03		Lab Control Sample	0.850	0.500			86		50			01/06/11	01/06	GRB-206
S012300-04		Method Blank	1.27	0.500			69		50			01/06/11	01/06	GRB-221
S012300-05		Duplicate (S012300	-01) 0.986	5 0.500			85		50		19	01/06/11	01/06	GRB-222
S012306-01		ITL1889-02	1.11	0.500			79		50		18	01/06/11	01/06	GRB-221
Nominal val	ues and li	mits from method	2.00	0.500			30-10	5	50		 180			

PROCEDURES	REFERENCE	905.0	AVERAGES ± 2 SD	MDA <u>1.05</u> ± <u>0.358</u>
	DWP-380	Strontium in Drinking Water, rev 8	FOR 4 SAMPLES	YIELD 80 ± 16

EAS
<u>TA</u>
<u>Ver 1.0</u>
DVD-LMS
3.06
01/28/11

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8644

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation	batch 725	58-155	- · · · · · · · · · · · · · · · · · · ·		
S012300-03	80	8643-003	Lab Control Sample	ok	
S012300-04	80	8643-004	Method Blank	U	
S012300-05	80	8643-005	Duplicate (S012300-01)	ok J	
S012306-01	80	8644-001	ITL1889-02	10.4	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	n batch 725	8-155 2σ prep error 2	0.6 % Re:	ference	Lab N	otebool	c No. '	7258	pg. 15	5				
S012300-03	80	Lab Control Sample	0.575	0.250			54		400			12/31/10	01/04	GRB-103
S012300-04	80	Method Blank	0.617	0.250			56		400			12/31/10	01/04	GRB-104
S012300-05	80	Duplicate (S012300-01)	0.322	0.300			14		400		17	12/31/10	01/04	GRB-109
S012306-01	80	ITL1889-02	0.643	0.300			80		400		16	12/31/10	01/04	GRB-111
Nominal val	lues and li	mits from method	3.00	0.250			0-20	0	100		 180			

PROCEDURES	REFERENCE	900.0	AVERAGES ± 2 SD	MDA <u>0.539</u> ± <u>0.295</u>
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,	FOR 4 SAMPLES	RESIDUE <u>51</u> ± <u>55</u>
		rev 10		

Lab id	EAS					
Protocol	TA					
Version	<u>Ver 1.0</u>					
Form	DVD-LMS					
Version	3.06					
Report date	01/28/11					

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8644

Test	80B Matrix WATER
SDG	8644
Contact	N. Joseph Verville

#### LAB METHOD SUMMARY

GROSS BETA IN WATER GAS PROPORTIONAL COUNTING

Client Test America, Inc. Contract ITL1889

#### RESULTS

LAB SAMPLE ID	RAW SUF		CLIENT SAMPLE ID	Gross Beta	
Preparation	batch 72	58-155			
S012300-03	80	8643-003	Lab Control Sample	ok	
5012300-04	80	8643-004	Method Blank	υ	
3012300-05	80	8643-005	Duplicate (S012300-01)	ok J	
3012306-01	80	8644-001	ITL1889-02	12.8	

#### 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	DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155 2σ prep error 1	1.0 % Rei	ference	Lab N	iotebool	k No. 7	7258	pg. 19	55					
S012300-03	80	Lab Control Sample	1.23	0.250			54		400				12/31/10	01/04	GRB-103
S012300-04	80	Method Blank	0.950	0.250			56		400				12/31/10	01/04	GRB-104
S012300-05	80	Duplicate (S012300-01)	0.800	0.300			14	÷	400			17	12/31/10	01/04	GRB-109
S012306-01	80	ITL1889-02	0.852	0.300			80		400			16	12/31/10	01/04	GRB-111
Nominal val	ues and li	mits from method	4.00	0.250			0-200	5	100		10 15 g	180			

PROCEDURES	REFERENCE DWP-121	900.0 Gross Alpha and Gross Beta in Drinking Water,	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>0.958</u> ± <u>0.383</u> RESIDUE 51 + 55
	DWP-121	•	FOR 4 DAMEEND	
		rev 10		

EAS					
<u>TA</u>					
<u>Ver 1.0</u>					
DVD-LMS					
3.06					
01/28/11					

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8644

Test GAM Matrix WATER SDG <u>8644</u> Contact N. Joseph Verville

#### LAB METHOD SUMMARY GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client Test America, Inc. Contract <u>ITL1889</u>

#### RESULTS

LAB SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium	-137		
Preparation	n batch 72	58-155						
5012300-03		8643-003	Lab Control Sample	ok	ok			
5012300-04		8643-004	Method Blank		U			
S012300-05		8643-005	Duplicate (S012300-01)	•	-	U	I	
S012306-01		8644-001	ITL1889-02		U			

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX		SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 725	8-155	2σ prep error 7	7.0 % R	eference	Lab 1	Notebool	k No.	7258	pg. 1	55				
S012300-03		Lab Cor	ntrol Sample		2.00					630			12/22/10	12/29	01,04,00
S012300-04		Method	Blank		2.00					406			12/22/10	12/30	01,01,00
S012300-05		Duplica	ate (S012300-01)		2.00					406		12	12/22/10	12/30	01,02,00
S012306-01		ITL188	9-02		2.00					729		12	12/22/10	12/31	01,04,00
Nominal val	ues and li	mits fro	om method	6.00	2.00					400		180			<u>.</u>

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

Lab id	EAS						
Protocol	<u>TA</u>						
Version	Ver 1.0						
Form	DVD-LMS						
Version	3.06						
Report date	01/28/11						

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 16

SDG 8644

Test <u>U T</u> Matrix <u>WATER</u> SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### RESULTS

LAB	RAW SUF-			Uranium, Total	
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		
Preparation	batch 725	8-155			
S012300-03		8643-003	Lab Control Sample	ok	
S012300-04		8643-004	Method Blank	U	
S012300-05		8643-005	Duplicate (S012300-01)	ok J	
S012306-01		8644-001	ITL1889-02	1.24	
Nominal val	ues and li	imits 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	DILU- TION	YIELD %	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	h batch 7258-155 2σ prep error	Re	ference	Lab N	loteboo	k No.	7258	pg. 1	55				
S012300-03	Lab Control Sample	0.188	0.0200					/			01/18/11	01/18	KPA-001
S012300-04	Method Blank	0.019	0.0200								01/18/11	01/18	KPA-001
S012300-05	Duplicate (S012300-01)	0.019	0.0200							31	01/18/11	01/18	KPA-001
S012306-01	ITL1889-02	0.019	0.0200							30	01/18/11	01/18	KPA-001
Nominal val	lues and limits from method	1.00	0.0200							 180		v	

PROCEDURES REFERENCE	D5174	AVERAGES ± 2 SD	MDA <u>0.061</u> ± <u>0.169</u>	
		FOR 4 SAMPLES	YIELD ±	

Lab id	EAS					
Protocol	<u>TA</u>					
Version	<u>Ver 1.0</u>					
Form	DVD-LMS					
Version	3.06					
Report date	01/28/11					

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8644

Test	<u>H</u> Matrix <u>WATER</u>
SDG	8644
Contact	N. Joseph Verville

LAB METHOD SUMMARY TRITIUM IN WATER LIQUID SCINTILLATION COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Trit	itium
Preparation	batch 725	8-155	na na na syntae alaminin inin da alamini 2000.		
S012300-03		8643-003	Lab Control Sample	ok	
5012300-04		8643-004	Method Blank	υ	
5012300-05		8643-005	Duplicate (S012300-01)	-	υ
5012306-01		8644-001	ITL1889-02	U	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L		PREP FAC		YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
			pc1/1											
Preparation	batch 725	8-155 2σ prep error	10.0 %	Reference	Lab	Notebool	ĸ No.	7258	pg. 1	55				
S012300-03		Lab Control Sample	297	0.100			10		50			01/10/11	01/13	LSC-004
S012300-04		Method Blank	294	0.100			10		50			01/10/11	01/13	LSC-004
S012300-05		Duplicate (S012300-01)	295	0.0100			100		50		26	01/10/11	01/13	LSC-004
S012306-01		ITL1889-02	293	0.0100			100		50		25	01/10/11	01/13	LSC-004
<del></del>		· · · · · · · · · · · · · · · · · · ·												
Nominal val	ues and li	mits from method	500	0.0100					100		180			

DWP-212 Tritium in Drinking Water by Distillation, rev 8 FOR 4 SAMPLES YIELD <u>55</u> ± <u>104</u>	PROCEDURES		906.0 Tritium in Drinking Water by Distillation, rev 8		AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>295</u> ± <u>3.42</u> YIELD <u>55</u> ± <u>104</u>
-----------------------------------------------------------------------------------------------------	------------	--	-----------------------------------------------------------	--	----------------------------------	--------------------------------------------------------------

Lab id	EAS				
Protocol	TA				
Version	<u>Ver 1.0</u>				
Form	DVD-LMS				
Version	3.06				
Report date	01/28/11				

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 18

SDG 8644

Test	RA Matrix WATER
SDG	8644
Contact	N. Joseph Verville

#### LAB METHOD SUMMARY RADIUM-226 IN WATER

RADON COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### RESULTS

IAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation	batch 725	8-155			
S012300-03		8643-003	Lab Control Sample	ok	
3012300-04		8643-004	Method Blank	υ	
3012300-05		8643-005	Duplicate (S012300-01)	ok J	
5012306-01		8644-001	ITL1889-02	1.41	

#### METHOD PERFORMANCE

<b>LAB</b> SAMPLE ID	RAW TEST	SUF- FIX	CLIENT	SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batc	h 725	8-155	2σ prep error	16.4 % R	eference	Lab 1	Noteboo	k No.	7258	pg. 1	55				
S012300-03			Lab Cor	ntrol Sample	0.686	0.100			100		132			01/06/11	01/06	RN-009
S012300-04			Method	Blank	0.888	0.100			100		70			01/06/11	01/06	RN-011
S012300-05			Duplica	ate (S012300-01)	0.558	0.100			100		132		19	01/06/11	01/06	RN-013
S012306-01			ITL1889	9-02	0.448	0.100			100		150		36	01/24/11	01/24	RN-013
Nominal val	ues a	nd li	mits fro	om method	1.00	0.100					100		 180			

PROCEDURES	REFERENCE	903.1	AVERAGES ± 2 SD	MDA <u>0.645</u> ± <u>0.378</u>
	DWP-881A	Ra-226 Screening in Drinking Water, rev 6	FOR 4 SAMPLES	YIELD <u>100</u> ± <u>0</u>

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/28/11

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 19

SDG 8644

SDG	8644		
Contact	<u>N.</u>	Joseph	Verville

#### REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</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.

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/28/11

REPORT GUIDES Page 1 SUMMARY DATA SECTION Page 20

SDG 8644

SDG	864	44	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/28/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 21

SDG 8644

SDG	864	14	
Contact	N.	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

WORK SUMMARY

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

The following notes apply to this report:

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

REPORT GUIDES Page 3 SUMMARY DATA SECTION Page 22

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date <u>01/28/11</u>

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</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.

REPORT GUIDES Page 4 SUMMARY DATA SECTION Page 23

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date <u>01/28/11</u>

SDG 8644

SDG	<u>864</u>	14	
Contact	<u>N.</u>	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### DATA SHEET

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

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

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

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

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

The following values are underlined to indicate possible problems:

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

REPORT GUIDES Page 5 SUMMARY DATA SECTION Page 24

Labid	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/28/11
-	

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</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	EAS
Protocol	
Version	
	DVD-RG
Version	3.06
Report date	01/28/11

REPORT GUIDES Page 6 SUMMARY DATA SECTION Page 25

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### LAB CONTROL SAMPLE

	The Lab Control Sample Report shows all results, recoveries and primary supporting 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:				
	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.				

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>01/28/11</u>

REPORT GUIDES Page 7 SUMMARY DATA SECTION Page 26

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### DUPLICATE

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

> 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>01/28/11</u>

REPORT GUIDES Page 8 SUMMARY DATA SECTION Page 27

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### DUPLICATE

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

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

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

Lab id	EAS
Protocol	
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/28/11

REPORT GUIDES Page 9 SUMMARY DATA SECTION Page 28

SDG 8644

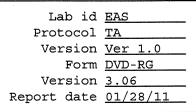
SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

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. Lab id EAS Protocol TA REPORT GUIDES



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SDG 8644

SDG	8644	
Contact	N. Joseph Verville	

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### 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.

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>01/28/11</u>

REPORT GUIDES Page 11 SUMMARY DATA SECTION Page 30

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### 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'

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>01/28/11</u>

REPORT GUIDES Page 12 SUMMARY DATA SECTION Page 31

SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### METHOD SUMMARY

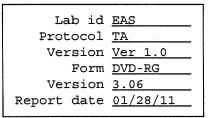
correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* 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 32



SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### METHOD SUMMARY

specified for the method.

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

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

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

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

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

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

> 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>01/28/11</u>

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SDG 8644

SDG <u>8644</u> Contact <u>N. Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL1889</u>

#### 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.

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>01/28/11</u>

REPORT GUIDES Page 15 SUMMARY DATA SECTION Page 34

#### SUBCONTRACT ORDER **TestAmerica** Irvine

## ITL1889

8614

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Irvine	Eberline Services
17461 Derian Avenue. Suite 100	2030 Wright Avenue
Irvine, CA 92614	Richmond, CA 94804
Phone: (949) 261-1022	Phone :(510) 235-2633
Fax: (949) 260-3297	Fax: (510) 235-0438
Project Manager: Debby Wilson	Project Location: California
	Receipt Temperature: $\underline{\gamma}$ °C Ice: $(Y)/N$

Analysis	Units	Due	Expires	Comments
Sample ID: ITL1889-02 (Ou	tfall 008 (Cor	nposite) - Wat	er) Sampled: 12/19/10 1	14:09
Gamma Spec-O	mg/kg	12/23/10	12/19/11 14:09	Out St Louis, k-40 and cs-137 only, DC NOT FILTER!
Gross Alpha-O	pCi/L	12/23/10	06/17/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/23/10	06/17/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Ou	t N/A	12/23/10	01/16/11 14:09	
Radium, Combined-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Containers Supplied:				
2.5 gal Poly (I)	500 mL Aml	per (J)		

Released Βv FODEK

Reieased By

Date/Time

Date/Time

Received By

12/21/10 17:00 Date/Time  $\frac{|\gamma_1 \gamma_1 \rangle}{|\text{Date/Time}| \gamma_1 \gamma_2}$ 

**Received By** 

Page 1 of 1

EBERL	NE			ABORATO			
í)	RVIGE	SAWIFLE					
TEST	Aut Re	CA c	;ity	RUINE 889, 1890	State	CA	
	12/22/10	12 2 2 0 C NO.	ITLI	889, 1890	1891		
ate/ i me receivi	ICE CHEST	S Dequested 1	TAT (Davs)	P.O. Rec	eived Yes [ ]	No[]	
ontainer I.D. No	•	_ Requested i	INSPECT		Ħ		
Custody Custody Packing Number Number Samples Paperwo 10. Samples 11. Sample	seals on sampl material is: of samples in s of containers p s are in correct ork agrees with s have: Tape	container samples? []]Hazard li od condition [7] ed []]Not pr	abels [ ] R	? Sample Matrix (Or see CoC	No[] No[] No[] No[] Container[]	pie labels [X]	] ∠] ✓]
	TT.	any anomalies?	Yes Date /	1[] No[ 1/22/10 Tim	1150		
		ion Chamber		Customer	Beta/Gamma		
15. Inspec	Doto/Gamma					ion Chamber	win
Customer Sample No.	Beta/Gamma cpm	mR/hr	Wipe	Sample No.	cpm	mR/hr	wip
Customer	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip
Customer Sample No.	cpm		Wipe			1	wip

1. **.** . . . .

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

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## **APPENDIX G**

## Section 17

Outfall 008 – December 26, 2010 MECX Data Validation Report THIS PAGE LEFT INTENTIONALLY BLANK



# DATA VALIDATION REPORT

# Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL2485

Prepared by

MEC<sup>x</sup>, 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:	ITL2485
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 008 (Composite)	ITL2485-02	G0L290490-001, S012365-01	Water	12/26/2010 10:01:00 AM	314.0, 1613B, 900, 901.1, 903.1, 904, 905, 906, 245.1, 245.1-Diss, SM 2540D, D5174

### II. Sample Management

No anomalies were observed regarding sample management. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The remaining samples in this SDG were received at the laboratories within the temperature limits of  $4^{\circ}C \pm 2^{\circ}C$ . According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples in this SDG were delivered by courier, custody seals were not required.

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

## Data Qualifier Reference Table

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

## **Qualification Code Reference Table**

## **Qualification Code Reference Table Cont.**

D	The analysis with this flag should not be used because another more technically sound analysis is available.	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: January 19, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the  $MEC^{\times}$  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 between the EDL and the RL for several isomers and totals. Most method blank detects were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. All individual isomers detected in both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of

contamination in the sample. The sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J," with the exception of total HpCDF, qualified as nondetected, U."

- Blank Spikes and Laboratory Control Samples: OCDD and 1,2,3,4,6,7,8-HpCDF were recovered above the control limits in the LCS; however, neither isomer was reportable in the associated sample. The remaining LCS recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Any totals including EMPC peaks 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 METHOD 245.1—Mercury

Reviewed By: P. Meeks Date Reviewed: January 14, 2011

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

• Holding Times: The analytical holding time, 28 days for mercury, was met.

- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Initial calibration r<sup>2</sup> values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Not applicable to this analysis.
- 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 not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: Not applicable to this analysis..
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- 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: January 21, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the  $MEC^{\times}$  Data Validation Procedure for Metals (DVP-20, Rev. 0), EPA Method 314.0, and the National Functional Guidelines for Inorganic Data Review (10/04).

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration r<sup>2</sup> value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within the method-established control limit of 80-120%.
- Blanks: The method blank and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was 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 result reported on the sample result summary was verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit. Perchlorate detected between the method detection limit and the reporting limit was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit.

Due to a rhythmic noise present in the sample baseline, the perchlorate detect did not have a signal-to-noise ration of 3:1; therefore, the reviewer further estimated the sample result, "J."

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

## D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: February 8, 2011

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

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

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

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

- Blanks: There were no analytes detected in the method blanks.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished control limits.
- Laboratory Duplicates: There were no laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- A notation in the sample preparation logbook indicated that the aliquots for radium-226, radium-228, and strontium were filtered and that the filter was digested and added to the aliquot.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

### E. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: January 14, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the  $MEC^{X}$  Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Standard Method SM2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- 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 ITL2485

#### Analysis Method 8650 Sample Name Outfall 008 (Composite) Matrix Type: WATER Validation Level: IV ITL2485-02 Sample Date: 12/26/2010 10:01:00 AM Lab Sample Name: Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier **Oualifier** Notes Uranium. Total 0.677 0.017 pCi/L DNQ 1 Jb J Analysis Method 900 Sample Name Outfall 008 (Composite) Matrix Type: WATER Validation Level: IV Sample Date: 12/26/2010 10:01:00 AM ITL2485-02 Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Gross Alpha 12587461 1.66 3 0.646 pCi/L Jb T C, DNQ Gross Beta 4.16 12587472 4 0.923 pCi/L Analysis Method 901.1 Matrix Type: WATER Sample Name Outfall 008 (Composite) Validation Level: IV ITL2485-02 Sample Date: 12/26/2010 10:01:00 AM Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Cesium-137 10045973 ND 20 1.64 pCi/L U U Potassium-40 13966002 ND 25 18.9 pCi/L U U Analysis Method 903.1 Matrix Type: WATER Validation Level: IV Sample Name Outfall 008 (Composite) Sample Date: 12/26/2010 10:01:00 AM ITL2485-02 Lab Sample Name: CAS No Analyte Result RL MDL Result Lab Validation Validation Qualifier Value Units Notes Qualifier Radium-226 13982633 0.303 1 0.701 pCi/L U U Analysis Method 904 Matrix Type: WATER Validation Level: IV Sample Name Outfall 008 (Composite) Sample Date: 12/26/2010 10:01:00 AM Lab Sample Name: ITL2485-02

Sample Name	Outfall 008 (C	Composite	) Matri	х Туре:	WATER	V	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/20	10 10:01:00 A	AM		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.112	2	0.752	pCi/L	U	U	
Analysis Metho	od 906							
Sample Name	Outfall 008 (C	Composite	) Matri	x Type:	WATER	V	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/20	10 10:01:00 A	AM		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	18.3	500	275	pCi/L	U	U	
Analysis Metho	od EPA 2	245.1						
Sample Name	Outfall 008 (C	Composite	) Matri	x Type:	Water	۷	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/20	10 10:01:00 A	AM		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	
Analysis Metho	od EPA 2	245.1-L	Diss					
Sample Name	Outfall 008 (C	Composite	) Matri	x Type:	Water	٧	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/20	10 10:01:00 A	AM		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	
Analysis Metho	od EPA.	314.0						
Sample Name	Outfall 008 (O	Composite	) Matri	x Type:	Water	۷	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/20	10 10:01:00 A	AM		
			DI	MDI	Result	Lab	<b>T7 11 1</b> 41	
Analyte	CAS No	Result Value	RL	MDL	Units	Qualifier	Validation Qualifier	Validation Notes

### Analysis Method 905

Sample Name	Outfall 008 (C	omposite	) Matri	x Type: V	WATER	۷	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	ple Date:	12/26/2010	0 10:01:00	AM		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000004	ug/L	J, Q, B	U	В
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000000	ug/L	J, Q, B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000001	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000004	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000007	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000005	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000001	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000005	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000002	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000008	ug/L		U	
,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000005	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000001	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000006	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000006	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000004	ug/L		U	
OCDD	3268-87-9	ND	0.0001	0.0000002	ug/L	J, B	U	В
OCDF	39001-02-0	ND	0.0001	0.0000007	ug/L	J, Q, B	U	В
Fotal HpCDD	37871-00-4	4.8e-006	0.00005	0.0000004	ug/L	J, Q, B	J	B, DNQ, *II
Fotal HpCDF	38998-75-3	ND	0.00005	0.0000001	ug/L	J, Q, B	U	В
Fotal HxCDD	34465-46-8	ND	0.00005	0.0000004	ug/L		U	
Fotal HxCDF	55684-94-1	ND	0.00005	0.0000001	ug/L		U	
Fotal PeCDD	36088-22-9	ND	0.00005	0.0000008	ug/L		U	
Fotal PeCDF	30402-15-4	ND	0.00005	0.0000005	ug/L		U	
Fotal TCDD	41903-57-5	ND	0.00001	0.0000007	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000004	ug/L		U	
Analysis Method	d SM 25	540D						
Sample Name	Outfall 008 (C	omposite	) Matri	x Type: V	Water	V	alidation Le	vel: IV
Lab Sample Name:	ITL2485-02	Sam	nle Date:	12/26/2010	) 10:01:00	AM		

### Analysis Method EPA-5 1613B

Tuesday, February 08, 2011

Analyte

Total Suspended Solids

CAS No

TSS

Result

14

Value

RL

10

MDL

1.0

Result

Units

mg/l

Lab

Qualifier

Validation Validation

Notes

Qualifier

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### **APPENDIX G**

### Section 18

Outfall 008 – December 26, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

#### THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 008 2010 Routine Outfall 008

Sampled: 12/26/10 Received: 12/27/10 Issued: 02/02/11 16:59

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

#### CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 2°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

ADDITIONAL INFORMATION:

WATER, 1613B, Dioxins/Furans with Totals

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

The method blank associated with this extraction batch has a detected concentration of OCDD above the reporting limit (RL) indicating a potential high bias in the data. After discussion with the client, the data is reported with a "B" flag and no further action is required for this sample.

The laboratory control sample (LCS) associated with this extraction batch has percent recoveries for 1,2,3,4,6,7,8-HpCDF and OCDD above the established control limits indicating a potential high bias in the data. It was determined that the cause of the elevated recoveries is due the spiking solution used for the LCS had concentrated. The QC Check data is included in the sample extraction section of the raw data. After discussion with the client, the data is reported and no further action is required for this sample.

LABORATORY ID	CLIENT ID	MATRIX
ITL2485-01	Outfall 008 (Grab)	Water
ITL2485-02	Outfall 008 (Composite)	Water

Reviewed By:

the Clark

TestAmerica Irvine Heather Clark For Debby Wilson Project Manager



17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

	HEXAN	E EXTRA	АСТАВІ	LE MA	<b>TERI</b> A	AL			
			Reporting	g	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-01 (Outfall 008 (Grab)	- Water)								
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11A0059	4.7	1.3	ND	1	1/3/2011	1/3/2011	

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17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

#### METALS

Analyte	Method	Batch	Reportin Limit	g MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Comp	osite) - Water)								
Reporting Units: ug/l									
Mercury	EPA 245.1	10L3468	0.20	0.10	ND	1	12/30/2010	12/30/2010	
Antimony	EPA 200.8	10L3064	2.0	0.30	ND	1	12/28/2010	12/29/2010	
Cadmium	EPA 200.8	10L3064	1.0	0.10	ND	1	12/28/2010	12/29/2010	
Zinc	EPA 200.7	10L3131	20.0	6.00	15.7	1	12/28/2010	12/30/2010	Ja
Copper	EPA 200.8	10L3064	2.00	0.500	3.48	1	12/28/2010	12/29/2010	
Lead	EPA 200.8	10L3064	1.0	0.20	1.0	1	12/28/2010	12/29/2010	
Selenium	EPA 200.8	10L3064	2.0	0.50	ND	1	12/28/2010	12/29/2010	
Thallium	EPA 200.8	10L3064	1.0	0.20	ND	1	12/28/2010	12/29/2010	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

#### **DISSOLVED METALS**

			Reportin	g	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (C	omposite) - Water)								
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10L3474	0.20	0.10	ND	1	12/30/2010	12/30/2010	
Antimony	EPA 200.8-Diss	10L3120	2.0	0.30	ND	1	12/28/2010	12/29/2010	
Cadmium	EPA 200.8-Diss	10L3120	1.0	0.10	ND	1	12/28/2010	12/29/2010	
Zinc	EPA 200.7-Diss	10L3118	20.0	6.00	7.03	1	12/28/2010	12/28/2010	Ja
Copper	EPA 200.8-Diss	10L3120	2.00	0.500	1.82	1	12/28/2010	12/28/2010	Ja
Lead	EPA 200.8-Diss	10L3120	1.0	0.20	ND	1	12/28/2010	12/29/2010	
Selenium	EPA 200.8-Diss	10L3120	2.0	0.50	ND	1	12/28/2010	12/29/2010	
Thallium	EPA 200.8-Diss	10L3120	1.0	0.20	ND	1	12/28/2010	12/29/2010	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

		INO	RGANI	CS					
			Reporting	g	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Con	nposite) - Water)								
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	10L3337	0.500	0.500	ND	1	12/29/2010	12/29/2010	
Chloride	EPA 300.0	10L3000	0.50	0.25	13	1	12/27/2010	12/27/2010	
Total Cyanide	SM4500CN-E	10L3114	0.0050		ND	1	12/28/2010	12/28/2010	
Nitrate-N	EPA 300.0	10L3000	0.11	0.060	0.73	1	12/27/2010	12/27/2010	
Nitrite-N	EPA 300.0	10L3000	0.15	0.090	ND	1	12/27/2010	12/27/2010	
Nitrate/Nitrite-N	EPA 300.0	10L3000	0.26	0.15	0.73	1	12/27/2010	12/27/2010	
Sulfate	EPA 300.0	10L3000	0.50	0.20	11	1	12/27/2010	12/27/2010	
Total Dissolved Solids	SM2540C	10L3089	10	1.0	180	1	12/28/2010	12/28/2010	
Total Suspended Solids	SM 2540D	10L3361	10		14	1	12/29/2010	12/29/2010	
Sample ID: ITL2485-02 (Outfall 008 (Con	posite) - Water)								
Reporting Units: ug/l									
Perchlorate	EPA 314.0	10L3015	4.0	0.90	0.90	1	12/28/2010	12/28/2010	Ja



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618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Report Number	Routine Outfall 008 1TL2485 8650		1	ed: 12/26/10 ed: 12/27/10	
Analyte	Method Bat	Reporting	Sample Result	Date Extracted	Date Analyzed	Data Qualifiers

Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composi	te) - Water)							
Reporting Units: pCi/L								
Uranium, Total	8650	8650	1	0.677	1	1/20/2011	1/20/2011	Jb

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THE LEADER IN ENVIRONMENTAL TESTING

Reporting Units: pCi/L

**Gross Alpha** 

**Gross Beta** 

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61 A:	WH-Pasadena/Boeing 8 Michillinda Avenue, Suite 200 rcadia, CA 91007 ttention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 2 Routine Outfall 008 ITL2485	2010	1	led: 12/26/10 red: 12/27/10	
A	nalyte	Method Bate	900 Reporting ch Limit	Sample I Result	Date Extracted	Date Analyzed	Data Qualifiers
San	nple ID: ITL2485-02 (Outfall 008 (Composi	te) - Water)				-	

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1.66

4.16

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1/6/2011

1/6/2011

1/6/2011

1/6/2011

Jb

8650

8650

900

900

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 20 Routine Outfall 008 ITL2485	010			12/26/10 12/27/10	
		901.1 Reporting	Sample	Dilution	Date	Date	Data

			Reporting	Sampie	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Com	posite) - Water)							
Reporting Units: pCi/L								
Cesium-137	901.1	8650	20	ND	1	1/5/2011	1/5/2011	U
Potassium-40	901.1	8650	25	ND	1	1/5/2011	1/5/2011	U

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Arcad	903.1									
MWF	MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 2010 Routine Outfall 008 ITL2485	Sampled: Received:						

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: pCi/L Radium-226	903.1	8650	1	0.303	1	1/22/2011	1/22/2011	U	

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Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)

904

Reporting Units: pCi/L

Radium-228

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project I Report Numbe	D: Routine Outfall 008 2 Routine Outfall 008 er: ITL2485	010	d: 12/26/10 d: 12/27/10	
Analyte	Method Ba	904 Reporting atch Limit	Sample Dilution Result Factor	Date Analyzed	Data Qualifiers

1

0.03

1

1/24/2011 1/24/2011

U

8650

THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 20 Routine Outfall 008 ITL2485	)10				
Analyte	Method Batc	905 Reporting th Limit	Sample Dil Result F		Date Extracted	Date Analyzed	Data Qualifiers

1 that yee	Methou	Daten	Linnt	Result	I actor	LAHattu	maryzeu	Quanners
Sample ID: ITL2485-02 (Outfall 008 (Com	posite) - Water)							
Reporting Units: pCi/L								
Strontium-90	905	8650	2	-0.112	1	1/8/2011	1/13/2011	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 20 Routine Outfall 008 ITL2485	)10	1	l: 12/26/10 l: 12/27/10	
Analyte	Method Batc	906 Reporting th Limit	Sample Dilution Result Factor	Date Extracted A	Date Data Analyzed Qualifier	°S

Sample ID: ITL2485-02 (Outfall 008 (Compos	ite) - Water)							
Reporting Units: pCi/L								
Tritium	906	8650	500	18.3	1	1/12/2011	1/12/2011	U

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

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

EPA-5 1613Bx

Sampled: 12/26/10 Received: 12/27/10

			1 5 1010	DЛ					
			Reportin	0	-	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	MDL	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Co	omposite) - Water)								
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	363256	0.0000£0	.0000004	91.8e-006	0.98	12/29/2010	12/30/2010	J, Q, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	363256	0.0000£0	.0000000	81.1e-006	0.98	12/29/2010	12/30/2010	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	363256	0.0000£0	.0000001	1 ND	0.98	12/29/2010	12/30/2010	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	363256	0.0000£0	.0000004	5 ND	0.98	12/29/2010	12/30/2010	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	363256	0.000050	.0000007	1 ND	0.98	12/29/2010	12/30/2010	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	363256	0.0000£	.00000054	4 ND	0.98	12/29/2010	12/30/2010	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	363256	0.0000£	.00000012	2 ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	363256	0.0000£	.0000005	6 ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	363256	0.000050	0.0000002	ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8-PeCDD	EPA-5 1613B	363256	0.000050	.00000082	2 ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8-PeCDF	EPA-5 1613B	363256	0.000050	.0000005	3 ND	0.98	12/29/2010	12/30/2010	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	363256	0.0000£0	.0000001	1 ND	0.98	12/29/2010	12/30/2010	
2,3,4,7,8-PeCDF	EPA-5 1613B	363256	0.000050	0.0000006	5 ND	0.98	12/29/2010	12/30/2010	
2,3,7,8-TCDD	EPA-5 1613B	363256	0.0000D	.0000006	9 ND	0.98	12/29/2010	12/30/2010	
2,3,7,8-TCDF	EPA-5 1613B	363256	0.0000D	.00000042	2 ND	0.98	12/29/2010	12/30/2010	
OCDD	EPA-5 1613B	363256	0.00010	.00000024	41.5e-005	0.98	12/29/2010	12/30/2010	J, B
OCDF	EPA-5 1613B	363256	0.00010	.0000007	11.6e-006	0.98	12/29/2010	12/30/2010	J, Q, B
Total HpCDD	EPA-5 1613B	363256	0.0000 <b>5</b> 0	.0000004	9 <b>4.8e-006</b>	0.98	12/29/2010	12/30/2010	J, Q, B
Total HpCDF	EPA-5 1613B	363256	0.000050	0.0000001	1.1e-006	0.98	12/29/2010	12/30/2010	J, Q, B
Total HxCDD	EPA-5 1613B	363256	0.000050	.0000004	5 ND	0.98	12/29/2010	12/30/2010	
Total HxCDF	EPA-5 1613B	363256	0.000050	.0000001	1 ND	0.98	12/29/2010	12/30/2010	
Total PeCDD	EPA-5 1613B	363256	0.0000£0	.00000082	2 ND	0.98	12/29/2010	12/30/2010	
Total PeCDF	EPA-5 1613B	363256	0.0000£0	.0000005	3 ND	0.98	12/29/2010	12/30/2010	
Total TCDD	EPA-5 1613B	363256	0.0000D	.0000007	3 ND	0.98	12/29/2010	12/30/2010	
Total TCDF	EPA-5 1613B	363256	0.0000D	.00000042	2 ND	0.98	12/29/2010	12/30/2010	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23	-140%)				93 %				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-	-143%)				80 %				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-	-138%)				80 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-1	41%)				74 %				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-1)	52%)				69 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-1	30%)				83 %				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-1)	23%)				67 %				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-1	47%)				67 %				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-18)	1%)				77 %				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185	%)				77 %				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-1)	36%)				70 %				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178	2%)				73 %				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					73 %				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					66 %				
Surrogate: 13C-OCDD (17-157%)					74 %				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-1979	%)				90 %				

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

#### SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 008 (Composite) (ITL24	Hold Time (in days) 85-02) - Water	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	12/26/2010 10:01	12/27/2010 08:15	12/27/2010 18:00	12/27/2010 19:08
Filtration	1	12/26/2010 10:01	12/27/2010 08:15	12/27/2010 20:50	12/27/2010 20:50



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

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#### **METHOD BLANK/QC DATA**

#### HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0059 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0059-	BLK1)									
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 01/03/2011 (11A0059-B	S1)									MNR1
Hexane Extractable Material (Oil & Grease)	20.8	5.0	mg/l	20.0		104	78-114			
LCS Dup Analyzed: 01/03/2011 (11A00	59-BSD1)									
Hexane Extractable Material (Oil & Grease)	21.2	5.0	mg/l	20.0		106	78-114	2	11	



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010

Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

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#### **METHOD BLANK/QC DATA**

#### METALS

Amalysta	Decult	Reporting Limit	Um:4a	Spike Level	Source Result	%REC	%REC	חחח	RPD Limit	Data Qualifiers
Analyte	Result	Limit	Units	Level	Kesuit	70KEU	Limits	KPD	Limit	Quaimers
Batch: 10L3064 Extracted: 12/28/10										
Blank Analyzed: 12/29/2010 (10L3064-B	BLK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/29/2010 (10L3064-BS	51)									
Antimony	84.8	2.0	ug/l	80.0		106	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	83.9	2.00	ug/l	80.0		105	85-115			
Lead	83.4	1.0	ug/l	80.0		104	85-115			
Selenium	80.1	2.0	ug/l	80.0		100	85-115			
Thallium	85.9	1.0	ug/l	80.0		107	85-115			
Matrix Spike Analyzed: 12/29/2010 (10I	L3064-MS1)				Source: I	TL2444-0	1			
Antimony	84.1	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	78.9	1.0	ug/l	80.0	ND	99	70-130			
Copper	69.9	2.00	ug/l	80.0	0.843	86	70-130			
Lead	73.2	1.0	ug/l	80.0	ND	91	70-130			
Selenium	79.1	2.0	ug/l	80.0	1.25	97	70-130			
Thallium	68.9	1.0	ug/l	80.0	ND	86	70-130			
Matrix Spike Analyzed: 12/29/2010 (10I	L3064-MS2)				Source: I	TL2444-0	2			
Antimony	85.3	2.0	ug/l	80.0	ND	107	70-130			
Cadmium	81.7	1.0	ug/l	80.0	ND	102	70-130			
Copper	73.4	2.00	ug/l	80.0	0.584	91	70-130			
Lead	77.7	1.0	ug/l	80.0	ND	97	70-130			
Selenium	72.3	2.0	ug/l	80.0	ND	90	70-130			
Thallium	71.0	1.0	ug/l	80.0	ND	89	70-130			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
•	Kesun	Linnt	Units	Level	Kesuit	/0KEC	Linns	KI D	Linnt	Quanners
Batch: 10L3064 Extracted: 12/28/10										
Matrix Spike Dup Analyzed: 12/29/2010	(10L3064-N	ISD1)			Source: I	TL2444-0	1			
Antimony	84.4	2.0	ug/l	80.0	ND	105	70-130	0.3	20	
Cadmium	80.6	1.0	ug/l	80.0	ND	101	70-130	2	20	
Copper	69.9	2.00	ug/l	80.0	0.843	86	70-130	0.05	20	
Lead	75.3	1.0	ug/l	80.0	ND	94	70-130	3	20	
Selenium	80.8	2.0	ug/l	80.0	1.25	99	70-130	2	20	
Thallium	70.6	1.0	ug/l	80.0	ND	88	70-130	3	20	
Batch: 10L3131 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3131-B	LK1)									
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/28/2010 (10L3131-BS	1)									
Zinc	497	20.0	ug/l	500		99	85-115			
Matrix Spike Analyzed: 12/28/2010 (10I	.3131-MS1)				Source: I	<b>ГL2185-0</b>	1			
Zinc	498	20.0	ug/l	500	ND	100	70-130			
Matrix Spike Analyzed: 12/28/2010 (10I	.3131-MS2)				Source: I	TL2185-0	2			
Zinc	535	20.0	ug/l	500	ND	107	70-130			
Matrix Spike Dup Analyzed: 12/28/2010	(10L3131-M	ISD1)			Source: I	TL2185-0	1			
Zinc	509	20.0	ug/l	500	ND	102	70-130	2	20	
Batch: 10L3468 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3468-B	LK1)									
Mercury	ND	0.20	ug/l							



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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte Batch: 10L3468 Extracted: 12/30/10	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 12/30/2010 (10L3468-BS Mercury	<b>1)</b> 8.62	0.20	ug/l	8.00		108	85-115			
<b>Matrix Spike Analyzed: 12/30/2010 (10L</b> Mercury	<b>3468-MS1)</b> 7.80	0.20	ug/l	8.00	Source: I'	<b>FL2438-0</b> 98	<b>1</b> 70-130			
<b>Matrix Spike Dup Analyzed: 12/30/2010</b> Mercury	(10L3468-MS 7.94	<b>D1)</b> 0.20	ug/l	8.00	Source: I'	<b>FL2438-0</b> 99	<b>1</b> 70-130	2	20	



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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3118 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3118-B Zinc	<b>LK1)</b> ND	20.0	ug/l							
LCS Analyzed: 12/28/2010 (10L3118-BS Zinc	<b>1)</b> 498	20.0	ug/l	500		100	85-115			
Matrix Spike Analyzed: 12/28/2010 (10L	.3118-MS1)				Source: I	TL2272-0	3			
Zinc	510	20.0	ug/l	500	ND	102	70-130			
Matrix Spike Dup Analyzed: 12/28/2010	(10L3118-M	SD1)			Source: I	TL2272-0	3			
Zinc	511	20.0	ug/l	500	ND	102	70-130	0.1	20	
Batch: 10L3120 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3120-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/28/2010 (10L3120-BS	1)									
Antimony	84.9	2.0	ug/l	80.0		106	85-115			
Cadmium	82.5	1.0	ug/l	80.0		103	85-115			
Copper	81.0	2.00	ug/l	80.0		101	85-115			
Lead	84.2	1.0	ug/l	80.0		105	85-115			
Selenium	80.5	2.0	ug/l	80.0		101	85-115			
Thallium	83.0	1.0	ug/l	80.0		104	85-115			

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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 10L3120 Extracted: 12/28/10										
Matrix Spike Analyzed: 12/28/2010 (10L	.3120-MS1)				Source: I	TL2486-02	2			
Antimony	83.9	2.0	ug/l	80.0	1.55	103	70-130			
Cadmium	80.1	1.0	ug/l	80.0	ND	100	70-130			
Copper	79.5	2.00	ug/l	80.0	3.50	95	70-130			
Lead	81.7	1.0	ug/l	80.0	0.379	102	70-130			
Selenium	81.3	2.0	ug/l	80.0	ND	102	70-130			
Thallium	82.3	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Dup Analyzed: 12/28/2010	(10L3120-M	SD1)			Source: I	TL2486-02	2			
Antimony	84.5	2.0	ug/l	80.0	1.55	104	70-130	0.7	20	
Cadmium	81.2	1.0	ug/l	80.0	ND	102	70-130	1	20	
Copper	79.6	2.00	ug/l	80.0	3.50	95	70-130	0.2	20	
Lead	82.9	1.0	ug/l	80.0	0.379	103	70-130	1	20	
Selenium	81.0	2.0	ug/l	80.0	ND	101	70-130	0.4	20	
Thallium	83.9	1.0	ug/l	80.0	ND	105	70-130	2	20	
Batch: 10L3474 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3474-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/30/2010 (10L3474-BS	1)									
Mercury	8.08	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 12/30/2010 (10L	.3474-MS1)				Source: I	TL2299-0'	7			
Mercury	8.16	0.20	ug/l	8.00	ND	102	70-130			
Matrix Spike Dup Analyzed: 12/30/2010	(10L3474-M	SD1)			Source: I	TL2299-0'	7			
Mercury	8.23	0.20	ug/l	8.00	ND	103	70-130	0.9	20	

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
	itesuit	Linit	emis	Level	Result	/JILLC	Linits	ΝD	Linut	Quanners
Batch: 10L3000 Extracted: 12/27/10										
Blank Analyzed: 12/27/2010 (10L3000-B	LK1)									
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/27/2010 (10L3000-BS)	1)									
Chloride	4.51	0.50	mg/l	5.00		90	90-110			
Nitrate-N	1.04	0.11	mg/l	1.13		92	90-110			
Nitrite-N	1.41	0.15	mg/l	1.52		93	90-110			
Sulfate	9.05	0.50	mg/l	10.0		90	90-110			
Matrix Spike Analyzed: 12/27/2010 (10L	3000-MS1)				Source: I	TL2459-0	1			
Chloride	6.01	0.50	mg/l	5.00	1.62	88	80-120			
Nitrate-N	1.31	0.11	mg/l	1.13	0.309	89	80-120			
Nitrite-N	1.45	0.15	mg/l	1.52	ND	96	80-120			
Sulfate	13.5	0.50	mg/l	10.0	4.49	90	80-120			
Matrix Spike Dup Analyzed: 12/27/2010	(10L3000-MS	D1)			Source: I	<b>ГL2459-0</b>	1			
Chloride	6.15	0.50	mg/l	5.00	1.62	90	80-120	2	20	
Nitrate-N	1.40	0.11	mg/l	1.13	0.309	96	80-120	6	20	
Nitrite-N	1.51	0.15	mg/l	1.52	ND	99	80-120	4	20	
Sulfate	14.1	0.50	mg/l	10.0	4.49	97	80-120	5	20	
Batch: 10L3015 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3015-B	[ <b>K</b> 1)									
Perchlorate	ND	4.0	ug/l							



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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Batch: 10L3015 Extracted: 12/28/2010 (10L3015-BS1)         Perchlorate       22.7       4.0       ug/l       25.0       91       85-115         Matrix Spike Analyzed: 12/28/2010 (10L3015-MS1)       Source: ITL2014-03         Perchlorate       23.1       4.0       ug/l       25.0       ND       92       80-120         Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSU)       Source: ITL2014-03         Perchlorate       23.7       4.0       ug/l       25.0       ND       95       80-120       3       20         Batch: 10L3089 Extracted: 12/28/10L       U       U       25.0       ND       95       80-120       3       20	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Perchlorate       22.7       4.0       ug/l       25.0       91       85-115         Matrix Spike Analyzed: 12/28/2010 (10L3015-MS1)       Source: ITL2014-03       Source: ITL2014-03         Perchlorate       23.1       4.0       ug/l       25.0       ND       92       80-120         Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSD1)       Source: ITL2014-03       20         Perchlorate       23.7       4.0       ug/l       25.0       ND       95       80-120       3       20	Batch: 10L3015 Extracted: 12/28/10										
Matrix Spike Analyzed: 12/28/2010 (10L3015-MS1)       Source: ITL2014-03         Perchlorate       23.1       4.0       ug/l       25.0       ND       92       80-120         Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSD1)       Source: ITL2014-03         Perchlorate       23.7       4.0       ug/l       25.0       ND       95       80-120       3       20	LCS Analyzed: 12/28/2010 (10L3015-BS1)	)									
Perchlorate     23.1     4.0     ug/l     25.0     ND     92     80-120       Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSD1)     Source: ITL2014-03       Perchlorate     23.7     4.0     ug/l     25.0     ND     95     80-120     3     20	Perchlorate	22.7	4.0	ug/l	25.0		91	85-115			
Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSD1)         Source: ITL2014-03           Perchlorate         23.7         4.0         ug/l         25.0         ND         95         80-120         3         20	Matrix Spike Analyzed: 12/28/2010 (10L3)	015-MS1)				Source: I	ГL2014-0	3			
Perchlorate 23.7 4.0 ug/l 25.0 ND 95 80-120 3 20	Perchlorate	23.1	4.0	ug/l	25.0	ND	92	80-120			
č	Matrix Spike Dup Analyzed: 12/28/2010 (1	10L3015-MS	SD1)			Source: I	ГL2014-0	3			
Batch: 10L3089 Extracted: 12/28/10	Perchlorate	23.7	4.0	ug/l	25.0	ND	95	80-120	3	20	
	Batch: 10L3089 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3089-BLK1)	Blank Analyzed: 12/28/2010 (10L3089-BL)	K1)									
Total Dissolved Solids ND 10 mg/l	Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 12/28/2010 (10L3089-BS1)	LCS Analyzed: 12/28/2010 (10L3089-BS1)										
Total Dissolved Solids         992         10         mg/l         1000         99         90-110	Total Dissolved Solids	992	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 12/28/2010 (10L3089-DUP1) Source: ITL2438-01	Duplicate Analyzed: 12/28/2010 (10L3089-	-DUP1)				Source: I	ГL2438-0	1			
Total Dissolved Solids         1650         10         mg/l         1630         2         10	Total Dissolved Solids	1650	10	mg/l		1630			2	10	
Batch: 10L3114 Extracted: 12/28/10	Batch: 10L3114 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3114-BLK1)	Blank Analyzed: 12/28/2010 (10L3114-BL)	K1)									
Total Cyanide ND 0.0050 mg/l	Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 12/28/2010 (10L3114-BS1)	LCS Analyzed: 12/28/2010 (10L3114-BS1)	)									
Total Cyanide         0.190         0.0050         mg/l         0.200         95         90-110	Total Cyanide	0.190	0.0050	mg/l	0.200		95	90-110			

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3114 Extracted: 12/28/10										
Matrix Spike Analyzed: 12/28/2010 (10L	.3114-MS1)				Source: I	TL2487-0	2			
Total Cyanide	0.188	0.0050	mg/l	0.200	ND	94	70-115			
Matrix Spike Dup Analyzed: 12/28/2010	(10L3114-M	ISD1)			Source: I	TL2487-0	2			
Total Cyanide	0.188	0.0050	mg/l	0.200	ND	94	70-115	0.3	15	
Batch: 10L3337 Extracted: 12/29/10										
Blank Analyzed: 12/29/2010 (10L3337-B	LK1)									
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 12/29/2010 (10L3337-BS	1)									
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0		98	80-115			
Matrix Spike Analyzed: 12/29/2010 (10L	.3337-MS1)				Source: I	TL2485-0	2			
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 12/29/2010	(10L3337-M	ISD1)			Source: I	TL2485-0	2			
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 10L3361 Extracted: 12/29/10										
Blank Analyzed: 12/29/2010 (10L3361-B	LK1)									
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 12/29/2010 (10L3361-BS	1)									
Total Suspended Solids	1000	10	mg/l	1000		100	85-115			

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte <u>Batch: 10L3361 Extracted: 12/29/10</u>	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Duplicate Analyzed: 12/29/2010 (10L33) Total Suspended Solids	<b>61-DUP1)</b> 26.0	10	mg/l		<b>Source: I</b> 27.0	TL2502-01	l	4	10	



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#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

	<b>D</b>	Reporting	<b>T</b> T <b>T</b>	Spike	Source	A/DEC	%REC	DDD	RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 363256 Extracted: 12/29/10										
Blank Analyzed: 12/30/2010 (G0L290	000256B)				Source:					
1,2,3,4,6,7,8-HpCDD	1.7e-005	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	4.2e-006	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	9.5e-007	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	1.3e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	0.00044	0.0001	ug/L				-			
OCDF	2.1e-005	0.0001	ug/L				-			J, Q
Total HpCDD	3.6e-005	0.00005	ug/L				-			J
Total HpCDF	1.4e-005	0.00005	ug/L				-			J, Q
Total HxCDD	1.3e-006	0.00005	ug/L				-			J, Q
Total HxCDF	2e-006	0.00005	ug/L				-			J, Q
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0019		ug/L	0.002		96	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0016		ug/L	0.002		80	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0017		ug/L	0.002		87	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0015		ug/L	0.002		74	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0014		ug/L	0.002		70	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018		ug/L	0.002		89	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0014		ug/L	0.002		71	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0014		ug/L	0.002		68	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016		ug/L	0.002		79	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0016		ug/L	0.002		80	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0015		ug/L	0.002		73	28-136			

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Heather Clark For Debby Wilson Project Manager



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#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 363256 Extracted: 12/29/10										C C
Battin. 303230 Extracted. 12/23/10										
Blank Analyzed: 12/30/2010 (G0L290	000256B)				Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0015		ug/L	0.002		75	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0015		ug/L	0.002		73	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0013		ug/L	0.002		64	24-169			
Surrogate: 13C-OCDD	0.0031		ug/L	0.004		78	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00077		ug/L	0.0008		96	35-197			
LCS Analyzed: 12/30/2010 (G0L2900	00256C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00116	0.00005	ug/L	0.001		116	70-140			
1,2,3,4,6,7,8-HpCDF	0.00125	0.00005	ug/L	0.001		125	82-122			а
1,2,3,4,7,8,9-HpCDF	0.0012	0.00005	ug/L	0.001		120	78-138			
1,2,3,4,7,8-HxCDD	0.00126	0.00005	ug/L	0.001		126	70-164			
1,2,3,4,7,8-HxCDF	0.00113	0.00005	ug/L	0.001		113	72-134			
1,2,3,6,7,8-HxCDD	0.00108	0.00005	ug/L	0.001		108	76-134			
1,2,3,6,7,8-HxCDF	0.00118	0.00005	ug/L	0.001		118	84-130			
1,2,3,7,8,9-HxCDD	0.0012	0.00005	ug/L	0.001		120	64-162			
1,2,3,7,8,9-HxCDF	0.00121	0.00005	ug/L	0.001		121	78-130			
1,2,3,7,8-PeCDD	0.00118	0.00005	ug/L	0.001		118	70-142			
1,2,3,7,8-PeCDF	0.00113	0.00005	ug/L	0.001		113	80-134			
2,3,4,6,7,8-HxCDF	0.00117	0.00005	ug/L	0.001		117	70-156			
2,3,4,7,8-PeCDF	0.00112	0.00005	ug/L	0.001		112	68-160			
2,3,7,8-TCDD	0.000227	0.00001	ug/L	0.0002		114	67-158			
2,3,7,8-TCDF	0.000218	0.00001	ug/L	0.0002		109	75-158			
OCDD	0.00297	0.0001	ug/L	0.002		149	78-144			а
OCDF	0.00208	0.0001	ug/L	0.002		104	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.002		ug/L	0.002		100	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00166		ug/L	0.002		83	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00183		ug/L	0.002		92	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00144		ug/L	0.002		72	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00134		ug/L	0.002		67	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00168		ug/L	0.002		84	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00135		ug/L	0.002		67	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00139		ug/L	0.002		70	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00165		ug/L	0.002		82	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00162		ug/L	0.002		81	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00139		ug/L	0.002		70	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00154		ug/L	0.002		77	13-328			

#### **TestAmerica** Irvine

Heather Clark For Debby Wilson Project Manager



MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### **METHOD BLANK/QC DATA**

#### EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 363256 Extracted: 12/29/10										
					~					
LCS Analyzed: 12/30/2010 (G0L29000	0256C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	0.00144		ug/L	0.002		72	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00125		ug/L	0.002		63	22-152			
Surrogate: 13C-OCDD	0.00348		ug/L	0.004		87	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000761		ug/L	0.0008		95	31-191			



THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

# **Compliance Check**

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

						Compliance
<u>LabNumber</u>	Analysis	Analyte	Units	Result	MRL	Limit
ITL2485-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

## **Compliance Check**

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

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL2485-02	Ammonia-N, Titr 4500NH3-C (v	v/di:Ammonia-N (Distilled)	mg/l	0	0.500	10.1
ITL2485-02	Antimony-200.8	Antimony	ug/l	0.28	2.0	6
ITL2485-02	Cadmium-200.8	Cadmium	ug/l	0.043	1.0	3.1
ITL2485-02	Chloride - 300.0	Chloride	mg/l	13	0.50	150
ITL2485-02	Copper-200.8	Copper	ug/l	3.48	2.00	14
ITL2485-02	Lead-200.8	Lead	ug/l	1.04	1.0	5.2
ITL2485-02	Mercury - 245.1	Mercury	ug/l	0.041	0.20	0.13
ITL2485-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.73	0.11	8
ITL2485-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL2485-02	Nitrogen, NO3+NO2 -N EPA 30	0.0 Nitrate/Nitrite-N	mg/l	0.73	0.26	8
ITL2485-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	0.90	4.0	6
ITL2485-02	Selenium-200.8	Selenium	ug/l	0.43	2.0	5
ITL2485-02	Sulfate-300.0	Sulfate	mg/l	11	0.50	300
ITL2485-02	TDS - SM2540C	Total Dissolved Solids	mg/l	185	10	950
ITL2485-02	Thallium-200.8	Thallium	ug/l	0	1.0	2
ITL2485-02	Zinc-200.7	Zinc	ug/l	16	20.0	159

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

## DATA QUALIFIERS AND DEFINITIONS

- **a** Spiked analyte recovery is outside stated control limits.
- **B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J Estimated result. Result is less than the reporting limit.
- Ja Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
   Jb The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- MNR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- **Q** Estimated maximum possible concentration (EMPC).
- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- **RPD** Relative Percent Difference



THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

#### **Certification Summary**

#### **TestAmerica** Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	Х	Х
EPA 200.7-Diss	Water	Х	Х
EPA 200.7	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 314.0	Water	Х	Х
Filtration	Water	N/A	N/A
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х
SM4500NH3-C	Water	Х	Х

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

#### **Subcontracted Laboratories**

#### Aquatic Testing Laboratories-SUB California Cert #1775

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnic Samples: ITL2485-02

TestAmerica Irvine Heather Clark For Debby Wilson Project Manager

# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### **Eberline Services - SUB**

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITL2485-02

- Analysis Performed: Gross Alpha Samples: ITL2485-02
- Analysis Performed: Gross Beta Samples: ITL2485-02
- Analysis Performed: Level 4 Data Package Samples: ITL2485-02
- Analysis Performed: Radium, Combined Samples: ITL2485-02
- Analysis Performed: Strontium 90 Samples: ITL2485-02
- Analysis Performed: Tritium Samples: ITL2485-02
- Analysis Performed: Uranium, Combined Samples: ITL2485-02

# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2485

Sampled: 12/26/10 Received: 12/27/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8650 Samples: ITL2485-02

Method Performed: 900 Samples: ITL2485-02

- Method Performed: 901.1 Samples: ITL2485-02
- Method Performed: 903.1 Samples: ITL2485-02
- Method Performed: 904 Samples: ITL2485-02
- Method Performed: 905 Samples: ITL2485-02
- Method Performed: 906 Samples: ITL2485-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITL2485-02

Test America version enteresting of the	neric	a Version			÷	ΰ	HAIN	OF (	CHAIN OF CUSTODY FORM	JY FOF	ž	777	27.2485	$\sim$	Page 1 of 2	
Client Name/Address:	Iress:			Project:								ANALYSIS REQUIRED	IIRED			Г
				Roeino-SSFL	VPDFS	_	-				$\left  \right $					Т
18 Michillinda A	Ve. Su	Suite 200		Routine Outfall 008	11 008										Eiold roodinge:	
Arcadia, CA 91007	202			GRAB								-			(Log in and include in	
Test America Contact: Debby Wilson	ontact:	Debby Wi	log	Stormwater at Happy Valley	Happy Valle	Ś									report Temp and pH)	
			2				(1)		•	. <u> </u>					Temp "F = <b>48</b>	
				_			I3H-								H= <b>۲</b> ؟	
Project Manager: Bronwyn Kelly	: Bron	wyn Kelly		Phone Number:	с.		<del>7</del> 991			<u></u>						
Sampler: Rick BANAGA	F B	ANAG	Ð	(020) 200-0091 Fax Number:	— U		) อระอา	<u>.</u>	<u> </u>						Time of readings =	
Sample Si Description	Sample	Container	10 to # (	_	Preservative	Bottle #	5 <b>%</b> !!(			-					Comments	
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	F	hese Sam	ples	are the Grab P(	ortion of Ou	utfall 008 fo	or this s	torm ev	ent. Compo	site sampl	es will	These Samples are the Grab Portion of Outfall 008 for this storm event. Composite samples will follow and are to be added to this work order.	o be added to th	iis work c	rder.	
Relinquished By	2	,	Date/	Date/Time: ノよよ	12-26-2010 Received By	Received By			Date/Time:		Tur	Turn-around time: (Check)		1		· -
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thik .	I)	riter		12-2610 1		F			12/2#	4/0 81		Sample Integrity: (Check) Intact:	On Ice:		230	-
Rainquished By			Date/	Date/Time:		Received By			Bath Time	-	Dat	Data Requirements: (Check)				
											No	No Level IV:	All Level IV:	1	NPDES Level IV:	
																1

Test America Versionment

		Comments					/			Filter w/in 24hrs of receipt at lab	Unfiltered and unpreserved	analysis	Only test if first or second rain events of the year				\$    C					10 Day:	0 (P	し、
																2	<u>N</u>					LC D		
																	_				ent.	72 Hour: 5 Day:	R	
ANALYSIS REQUIRED																				vent.	008 for the same ev Turn-around time: (Check)		Sample Integrity: (Check) Intect: On Ice:	
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				,98 ,IT	1					×										sample	Date/Time	$\sum$	Date/Time:	Date/Time:
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		บรเร)	(and all conge		+		×						•				_			st the	Same		<b>د</b>	`
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	」 Salley			e Bottle #	- ZA	2B	3A, 3B	4A, 4B	5	9	7A	78	8	6	10	7				COC Page 2 of 2	be added to Received By		Received By	Received By
	all 008		er: 31	Preservative	<sup>©</sup> NH	HNO <sub>3</sub>	None	None	None	None	None	None	None	None	<b>3</b> H <sub>2</sub> SO <sub>4</sub>	NaOH				ö	These must be added to th	) 1261 (	01/12/10	
Project:	Boeing-SSFL NPDES Routine Outfall 008 COMPOSITE - H/C Stormwater at Happy Valley		Phone Number. (626) 568-6691 Fax Number: (626) 568-6515	Sampling Date/Time	12-25-21	10:01								A	12-26-20	10:01	-				-	<b>`(</b>		
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	te 200		wyn Kelly S <i>ffranse e</i> 1/ 55	Container Type	1L Poly	1L Poly	1L Amber	500 mL Poly	500 mL Poly	1L Poly	2.5 Gal Cube	500 mL Amber	1 Gal Poly	500 mL Poly	500 mL. Poly	500 mL Poly					Ċ			
dress:	a Ave, Su 007		S E	Sampte Matrix	3	3	N	3	3	3		3	3	3	×	w		1		$\left  \right $		15	Y	
Client Name/Address:	MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project Manager: Bronwyn Kelly $R_t \subset I \subset C M M$ Sampler: $R_{ab} \leq E/1 \prec S$	Sample S Description	1	Outfall 008 Dup	Outfall 008	Outfall 008	Outfall 008	Outfall 008			Outfall 008	Outfall 008	Outfall 008	Outfall 008					olinaniahad Dv		Relinquit bed By	Relinquished By

CHAIN OF CUSTODY FORM

Test America version 6/29/09

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Page 2 of 2

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# LABORATORY REPORT



Date: January 3, 2011

Client: TestAmerica, Irvine 17461 Derian Ave., Suite 100 Irvine, CA 92614 Attn: Debby Wilson "dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107 Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756 CA DOHS ELAP Cert. No.: 1775

Laboratory No.:	A-10122704-001
Sample I.D.:	ITL2485-02 (Outfall 008)

**Sample Control:** The sample was received by ATL within the recommended hold time, chilled and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample).

Date Sampled:	12/26/10 - composite
Date Received:	12/27/10
Temp. Received:	5.7°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	12/27/10 to 01/03/11

Sample Analysis:The following analyses were performed on your sample:Ceriodaphnia dubiaSurvival and Reproduction Test (EPA Method 1002).Attached are the test data generated from the analysis of your sample.

#### **Result Summary:**

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

## **Quality Control:**

Reviewed and approved by:

Joseph À.

Laboratory Director

# CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-10122704-001 Client/ID: Test America – ITL2485-02 (Outfall 008) Date Tested: 12/27/10 to 01/03/11

## **TEST SUMMARY**

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*. Age: < 24 hrs; all released within 8 hrs. Test vessel size: 30 ml. Number of test organisms per vessel: 1. Temperature: 25 +/- 1°C. Dilution water: Mod. hard reconstituted (MHRW). QA/QC Batch No.: RT-101207. Endpoints: Survival and Reproduction. Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 15 ml. Number of replicates: 10. Photoperiod: 16/8 hrs. light/dark cycle. Test duration: 7 days. Statistics: ToxCalc computer program.

## **RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	23.3
100% Sample	100%	25.9
* Sample not s	tatistically significantly les	ss than Control.

# **CHRONIC TOXICITY**

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

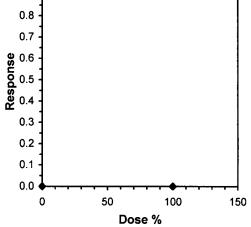
## **QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = $7.4\%$ )
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

			Cerioda	phnia Su	vival and	Reprod	uction Tes	t-7 Day S	Survival	
Start Date:	12/27/201	0 15:00	Test ID:	10122704	С		Sample ID	):	Outfall 000	6
End Date:	1/3/2011 1	14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	/pe:	SRW2-Inc	lustrial stormwater
Sample Date:	12/26/201	0 10:01	Protocol:	FWCH EP	A		<b>Test Spec</b>	ies:	<b>CD-Cerio</b>	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

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

Hypothesis	; Test (1-tail, (	0.05)	NOEC	LOEC	ChV	TU		
Fisher's Exact Test			100	>100		1		
Treatments	vs D-Control							
				Line	ar Interpo	lation (20	0 Resamples)	
Point	%	SD	95%	6 CL	Skew			
IC05	>100							
IC10	>100							
IC15	>100						1.0	
IC20	>100							
IC25	>100						0.9	
IC40	>100						0.8 -	
IC50	>100						<u>,</u>	
							0.7	
							<b>9</b> , 0.6 -	

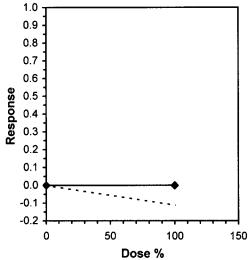


			Cerioda	phnia Su	rvival and	Reprodu	uction Tes	st-Repro	duction	
Start Date: End Date: Sample Date:	12/27/2010 1/3/2011 1 12/26/2010	4:00	Lab ID:		uatic Test	ting Labs	Sample ID Sample Ty Test Spec	/pe:		5 Iustrial stormwater Iaphnia dubia
Comments:										
Comments: Conc-%		2	3	4	5	6	7	8	9	10

			•	Transform	n: Untran	sformed			1-Tailed	Isotonic		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	23.300	1.0000	23.300	20.000	26.000	8.596	10				24.600	1.0000
100	25.900	1.1116	25.900	22.000	30.000	9.361	10	-2.615	1.734	1.724	24.600	1.0000

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97321		0.905		0.05261	-0.4309
F-Test indicates equal variances (p = 0.58)	1.46537		6.54109			
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	1.7244	0.07401	33.8	4.94444	0.01755	1, 18
Treatments vs D-Control						

Linear Interpolation (200 Resamples)										
Point	%	SD	95% CL	Skew						
IC05	>100									
IC10	>100									
IC15	>100				1.0					
IC20	>100				0.9					
IC25	>100				0.8					
C40	>100									
IC50	>100				0.7					
					0.6 -					
					5 1					



# **CERIODAPHNIA DUBIA CHRONIC BIOASSAY** EPA METHOD 1002.0 Raw Data Sheet

# Lab No.: A-10122704-001 Client ID: TestAmerica - Outfall 008

Start Date: 12/27/2010

Ö

Aquatic Testing Laboratories

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	lient ID: TestAmerica - Outra					<u> </u>				1		Start	Date: 12	2/2//20	10
		DAY	1	D/	AY 2	┨	DAY 3	_	DAY 4	DA	Y 5	D/	AY 6	DA	AY 7
<u> </u>		0 hr	24hr	0 hr	24hr	0 hr	24	ur Ohr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst I	nitials:		King	حظ	Rom	<u>I</u> E-	$- \mathcal{L} $	R	-for	Km		<u>+</u> /~	12	$\mathcal{V}$	2
Time of R	eadings:	Bar	140	140	1400	140	) /m	2/44	) [sai	'Isa	14a	149	la	Ka	140
	DO	5.3	88	9.0	8.7	8.8	- 8.	8.3	5,1	9.3	8.2	8.3	7.9	83	8.Z
Control	рН	8.2	8.2	8.2	8.1	8.2	8.	2 83	8-2	8.2	8.2	8.3	8.2	8.2	8.2
	Temp	24.4	24.2	25.4	24.3	24.3	3 24.	5 250	)24.2	24.5	24,2	24.2	24.7	24.2	24.Z
	DO	10.2	8.7	10.3	8.6	10.5			1 7	10.4	8.1	9.5	8.0	9-9	8.2
100%	pН	7-98	F.3	7.9	8.3	7.9	8.	3 8.2	8.2	8.0	8.3	8.1	8.2	8.1	83
	Temp	24.4 2	40	24.5	24.8	24.4			243	25.7	243	24.3	24.6	24-2	24.3
	Ad	ditional Pa	rameter	rs				C	ontrol				100% Sam	ple	
	Con	ductivity (u	(mohms)	)				3	10				23	3	
	Alk	alinity (mg/	1 CaCO	3)				7					82	-	
	На	rdness (mg/l	l CaCO3	)				- 8	-8				111		
	Am	monia (mg/	1 NH3-N	l)				L	0.1				0.4		
	Source of Neonates														
	licate:			B	C		D	E	F			н	1		J
Bro	od ID:	2/-	<u> </u>	ZD	ZA	- /	36	15	7/7	4 5	<u>B</u>	6F	61	16	$,\mathcal{J}$
Sample		Day				Numbe	r of You	ng Produce	ed	<u> </u>		tal Live	No. Live		nalyst
				B	C	D	E	F G	н		1 Y	oung	Adults	I	nitials
		1	$ \mathcal{O} $		$\frac{2}{3}$	$\mathcal{O}$	$\frac{O}{O}$	O O		00		2	10		2
		2		$\frac{1}{4}$	$\left  \begin{array}{c} 0 \\ 0 \end{array} \right $	0	$\frac{0}{2}$	0 0	10	$\frac{0}{2}$	2	$\frac{2}{2}$	10		-
		4	0			$\frac{\mathcal{O}}{\mathcal{O}}$	<u>0</u> 4	<u>ン</u> 1 3		$\frac{3}{6}$	$\frac{2}{1}$	/			$\widetilde{\mathbf{y}}$
Control		5	╟Ѯ	0	6	$\frac{2}{0}$	8	$\frac{1}{0}$	17	$\frac{2}{2}$	ガラ		<u></u> (1)	+	he-
		6			0	8		1 7		$\frac{0}{4}$	05	╤╢		+ +	F
		7		Siz	10	131	Ч,	010	12		312	-3	iv	1-1	
		Total	6	521	20	2612	26	23 24	23	222		33	ÍV		
		1	U	0	0	0	$\rho$	UU	0	OL	2	0.	IU.		2
		2	$\mathcal{D}$	U	$\mathcal{O}$	0	Ũ	00	V U	00	2	0	ΊV		
		3		$2 \mathcal{O}$	2	$\mathcal{O}$	2	03	0	03	? [	$\mathcal{U}$	10		0
100%		4	<u> </u>	3	<u>ر</u>	$\leq <$		$\leq O$	4	40		2.5	10	/	$\nabla$
	┣	5		10	9	Z	8	2 2	$ \mathcal{O} $	UC	) 3	8	[V		h
	┣	6	17		16	17	121	016	9	100	┶║──┶	15	$\underline{(\mathcal{Q})}$		4
		7	115	519	KO I	OV	[6]	0 1/17	117	121	3 5	7 (	10		$\mathbb{V}$
		Total			27	A 1 1	25 7	220	30		5 7	╧╤╡╘	$\rightarrow$		

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



# CHAIN OF CUSTODY

# Test America Version 6/29/09

# CHAIN OF CUSTODY FORM

Client Name/A		·····		Project											A	NALY	SIS RE	QUIRE	5			
MWH-Arcad 618 Michillinda Arcadia, CA 9 Test America (	a Ave, S 1007		son	Boeing- Routin COMP( Stormw	e Outfa OSITE	NPDES <b>II 008</b> ∽ /-∱/ ( Happy Vall	GH <sub>ey</sub>	etals: Sb, Cd, Cu, Pb,	ners)	I, Perchlorate		Total Dissolved Metals <sup>.</sup> Sb, Cd, Cu, Pb. Hg, Tl, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K- 40, CS-137 (901.0 or 901.1)									Comments
Project Manag Sampler: R Sample	ger: Bro こだ ふた Sample	nwyn Kelly BAMA 1115 Container		Phone (626) 5 Fax Nu (626) 5 Sam	68-669 mber: 68-651	1		al Recoverable Metals: TI, Se, Zn	TCDD (and all congeners)	CI, SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, Perchlorate	TDS, TSS	al Dissolved Meta Se, Zn	ss Alpha(900.0), um (H-3) (906.0), nbined Radium 22 lium 228 (904.0), CS-137 (901.0 or	Chronic Toxicity	Nitrate-N, Nitrite-N	Ammonia-N (350.2)	Cyanide					
Description	Matrix	Туре	# of Cont	Date/	Time	Preservative	Bottle #	Total I Hg. TI	1 C	c.	Ĩ	1 10 11	40, Frac	Ğ	Nitr	Ā	Суа					
Outfall 008	w	1L Poly	1		6-2010		2A	x				ļ										
Outfall 008 Dup	w	1L Poly	1	10.	01	HNO <sub>3</sub>	28	X			<b>-</b>									ļ		
Outfall 008	W	1L Amber	2			None	3A, 3B		X				ļ		ļ	<b> </b>				ļ		<u>`````</u>
Outfall 008	W	500 mL Poly	2	{		None	4A, 4B			X					ļ					ļ		
Outfall 008	w	500 mL Poly	1			None	5				x				<u> </u>				<u> </u>	<u> </u>		
Outfall 008	w	1L Poly	1			None	6	ļ	<u> </u>			×										Filter w/in 24hrs of receipt
Outfall 008	w	2.5 Gal Cube 500 mL Amber	1			None None	7A 7B						x									Unfiltered and unpreserv analysis
Outfail 008	w	1 Gal Poly	1			None	8		<u> </u>					x						+		Only test if first or secon events of the year
Outfall 008	w	500 mL Poly	1	6	-	None	9								x						+	events of the year
Outfall 008	w	500 mL Poly		122	6 2010	H <sub>2</sub> SO <sub>4</sub>	10	<u> </u>		<b></b>			f		<b>†</b>	x			1		+	
Outfall 008	w	500 mL Poly	1	10.	01	NaOH	11										x					
	ļ		ļ	<u> </u>	_ <del></del>			ļ	ļ			<b> </b>			<b> </b>							
		L	1				Dans	40.11-1		ļ	L	L			<u> </u>			l			<u> </u>	l
					The								les for Outfall DC Page 1 of 2						vont			
Relinquished By	Ju-	>	Date/Ti	<sup>me:</sup> 10	1-27	-2010 50 (	Received	× (				ite/Time:	1.1	13		Turn-a	ound time	(Check)	72 Hour: _	$\overline{x}$		10 Day:
Retinquished By	×,		Date/Tin		27	······	Received E	Ho	2	h		tte/Time	12/27/10 IL 12 14			7		(Check) On Ice:		~~		wuman.
	1		- 4107 1 11					,		V	Je					1		ts. (Check		v <sup>.</sup>	-	

#### SUBCONTRACT ORDER

**TestAmerica** Irvine

#### ITL2485

# SENDING LABORATORY:RECEIVING LABORATORY:TestAmerica IrvineAquatic Testing Laboratories-SUB17461 Derian Avenue. Suite 1004350 Transport Street, Unit 107Irvine, CA 92614Ventura, CA 93003Phone: (949) 261-1022Phone :(805) 650-0546Fax: (949) 260-3297Fax: (805) 650-0756Project Manager:Debby Wilson

Analysis	Due	Expires	Laboratory ID	Comments	
Sample ID: ITL2485-02	Water	Sampled:12/26/10 10:01		outfall	603
Bioassay-7 dy Chrnic	01/03/11 15	:00 12/27/10 22:01			-013, Sub to Aquatic tes
Containers Supplied:					
1 gal Poly (K)					

		AAM	12-27-10 14245
Released By	Date	Received By	Date
Released By	Date	Received By	Date



# REFERENCE TOXICANT DATA

# CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



#### QA/QC Batch No.: RT-101207

Date Tested: 12/07/10 to 12/13/10

#### 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 Sur	vival	Mean Number of Young Per Female							
Control	100%		23.3							
0.25 g/l	100%		25.2							
0.5 g/l	100%		23.7							
1.0 g/l	100%		16.0	*						
2.0 g/l	100%		2.9	*						
4.0 g/l	4.0 g/l 0% * 0 **									
* Statistically significantly less than control at P = 0.05 level ** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.										

#### **RESULTS SUMMARY**

#### **CHRONIC TOXICITY**

Survival LC50	2.8 g/l
Reproduction IC25	0.86 mg/l

#### QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 18.9%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.3%)
Concentration response relationship acceptable	Pass (Response curve normal)

			Cerioda	aphnia Su	rvival and	Reprod	uction Tes	st-Surviv	al Day 6	
Start Date:	12/7/2010	14:00	Test ID:	RT101207	′c		Sample ID	);	REF-Ref	Toxicant
End Date:	12/13/201	0 14:00	Lab ID:	CAATL-Ad	quatic Tes	ting Labs	Sample T	vpe:		dium chloride
Sample Date:	12/6/2010			FWCH EF	-	•	Test Spec		CD-Cerioo	laphnia dubia
Comments:										•
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

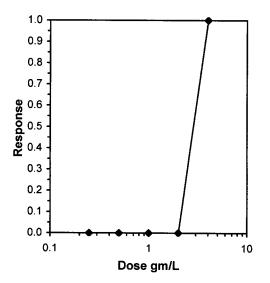
				Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	Ν	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	1.0000	1.0000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

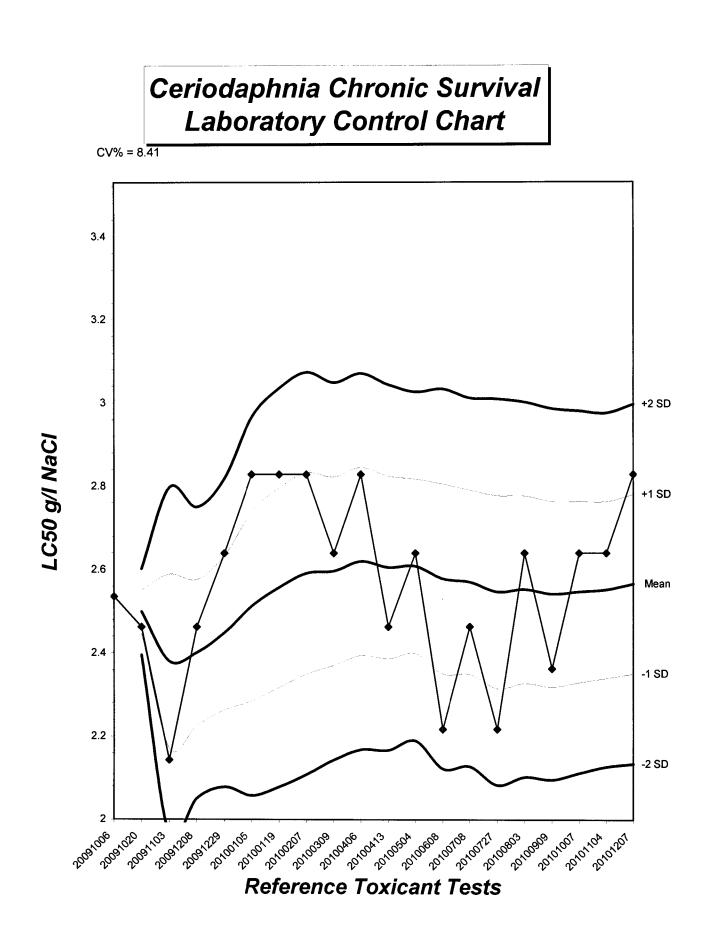
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	Т	
Fisher's Exact Test	2	4	2.82843		
Treatments vs D-Control					
Trim hand 5050			Grap	hical Method	

 Trim Level
 EC50

 0.0%
 2.8284

2.8284



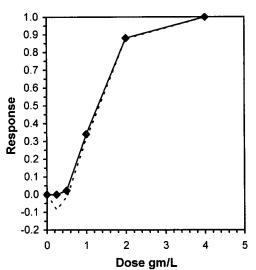


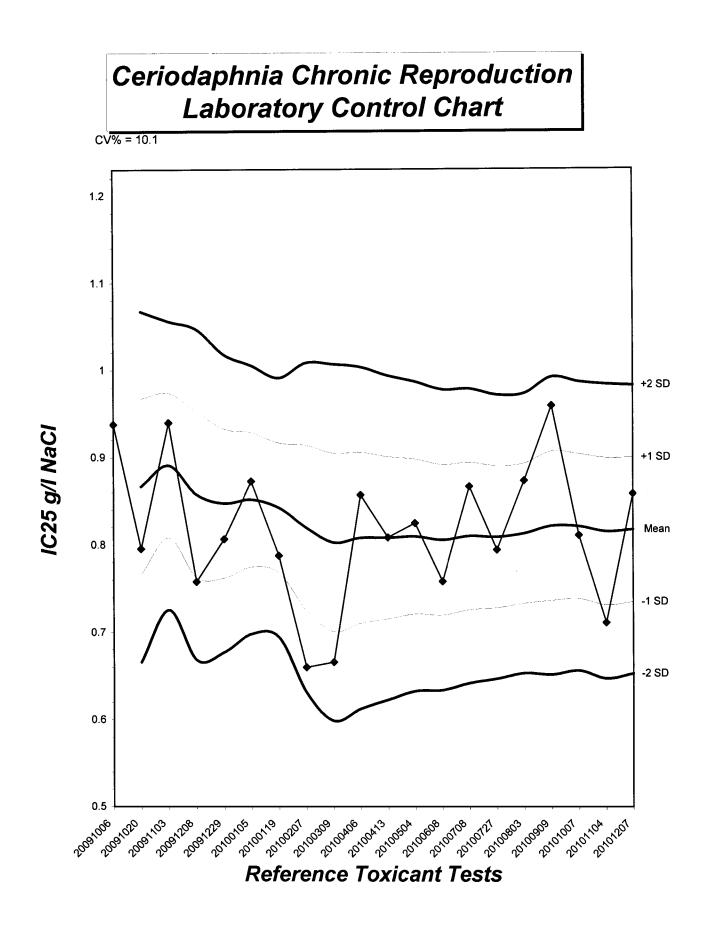
			Ceriod	aphnia Su	rvival and	l Reprod	uction Tes	st-Repro				
Start Date:	12/7/2010	14:00	Test ID:	RT101207			Sample ID		REF-Ref Toxicant			
End Date:	12/13/2010	0 14:00	Lab ID:						NACL-Sodium chloride			
Sample Date:	12/6/2010		Protocol:	FWCH EP	A		Test Spec	ies:	CD-Cerioc	laphnia dubia		
Comments:												
Conc-gm/L	1	2	3	4	5	6	7	8	9	10		
D-Control	22.000	11.000	28.000	27.000	26.000	28.000	21.000	28.000	27.000	15.000		
0.25	28.000	29.000	21.000	21.000	28.000	28.000	28.000	25.000	25.000	19.000		
0.5	25.000	17.000	20.000	26.000	24.000	29.000	29.000	23.000	25.000	19.000		
1	10.000	10.000	20.000	22.000	20.000	11.000	15.000	12.000	24.000	16.000		
2	0.000	2.000	7.000	4.000	2.000	4.000	0.000	5.000	2.000	3.000		
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		Isotonic		
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean	
D-Control	23.300	1.0000	23.300	11.000	28.000	25.913	10				24.250	1.0000	
0.25	25.200	1.0815	25.200	19.000	29.000	14.466	10	-0.959	2.223	4.404	24.250	1.0000	
0.5	23,700	1.0172	23,700	17.000	29.000	17.000	10	-0.202	2.223	4.404	23.700	0.9773	
*1	16.000	0.6867	16.000	10.000	24.000	32.676	10	3.686	2.223	4.404	16.000	0.6598	
*2	2.900	0.1245	2.900	0.000	7.000	75.285	10	10.299	2.223	4.404	2.900	0.1196	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000	

Auxiliary Tests	······································				Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor	mal distribu	ition (p >	0.05)		0.96459		0.947		-0.5938	0.09413
Bartlett's Test indicates equal var					8.97697		13.2767			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		4.40372	0.189	860.47	19.6156	5.6E-15	4, 45
Treatments vs D-Control										

				Linea	ar Interpolation	n (200 Resamples	\$)
Point	gm/L	SD	95%	CL	Skew		
IC05	0.5430	0.1060	0.2194	0.6041	-1.2164		
IC10	0.6218	0.0833	0.4101	0.7081	-1.1699		
IC15	0.7005	0.0819	0.5141	0.8292	-0.4850	1.0 <del></del>	
IC20	0.7792	0.0859	0.5998	0.9452	0.1951	0.9	
IC25	0.8580	0.0903	0.6963	1.0439	0.3636	0.8 -	7
IC40	1.1107	0.1011	0.9055	1.2772	-0.0498	4	
IC50	1.2958	0.0936	1.0659	1.4429	-0.4534	0.7	
						0.6 -	
						<b>9</b> 0.5	<i>k</i>
						5 04	t





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



QA/QC No.: RT-101207

Start Date:12/07/2010

				Nu	mbei	of Y	oung	Produ	uced			Total	No.	Analyst
Sample	Day	Α	В	С	D	E	F	G	н	Ι	J	Live Young	Live Adults	Initials
	1	D	0	0	0	$\mathcal{O}$	$\mathcal{O}$	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	Ru
	3	0	0	4	0	$\mathcal{O}$	$\cup$	0	0	0	$\mathcal{O}$	4	10	h
Control	4	3	3	0	ک	Ц	Z	3	4	4	3	31	10	n
Control	5	9	8	6	7	8	9	6	9	7	0	69	10	1º
	6	10	0	18	15	14	D	12	۱۶	16	12	129	10	M
	7	1		-		<b>`</b>		<b>^</b>	<u> </u>	-	<u> </u>	~	(	
	Total	22	11	28	57	26	28	21	28	27	2 ا	733	10	
	1	0	$\mathcal{O}$	0	0	0	0	0	0	0	$\mathcal{O}$	$\mathcal{O}$	10	L
	2	D	0	0	0	0	0	0	0	0	0	$\mathcal{O}$	JU	h
	3	0	$\cup$	4	0	0	0	0	0	0	0	Ч	U V	h.
0.25 ~/1	4	Ц	3	U	4	5	4	4	3	4	4	35	ίŪ	p_
0.25 g/l	5	6	9	7	0	8	10	9	7	7	$\mathcal{O}$	63	10	m
	6	18	17	10	17	15	14	15	15	14	15	150	υ	.h
	7		-	<u> </u>		$\frown$	-	-	<b>^</b>		-	~	$\square \frown$	
	Total	28	79	21	21	-Zb	28	28	25	25	19	252	JU	
	1	$\mathcal{O}$	0	$\mathcal{O}$	0	O	0	0	0	U	0	0	10	R
	2	0	0	0	0	0	0	0	0	o	0	0	ען	h
	3	0	0	0	4	0	0	0	0	0	0	4	10	R
$0.5 \alpha / 1$	4	4	3	4	$\mathcal{O}$	5	4	4	3	3	4	34	ίŨ	h
0.5 g/l	5	6	0	6	8	7	9	2	6	7	O	55	10	
	6	15	14	10	14	12	16	18	M	15	15	143	ίU	
	7		-	-		-	-	(	-	_	1		-	
	Total	25	17	20	26	24	29	29	ふろ	25	19	237	10	$\square$
Circled fourth 7 <sup>th</sup> day only us							les ha	ve pro	oduced	their	third b	prood.		-

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



QA/QC No.: RT-101207

Start Date: 12/07/2010

		[		Nu	mber	r of Y	oung I	Produ	ced			Total	No. Live	Analyst
Sample	Day	A	B	С	D	E	F	G	Н	Ι	J	Live Young	Adults	Initials
	1	0	0	Ũ	0	0	0	$\mathcal{O}$	$\mathcal{O}$	0	$\mathcal{O}$	0	U	m
	2	0	0	0	0	0	0	0	0	$\mathcal{O}$	0	0	ίJ	h
	3	0	0	0	0	0	0	Ò	0	$\mathcal{O}$	0	0	10	R
1.0 ~/l	4	ч	3	ら	Ч	5	5	3	Ч	ч	3	30	10	R
1.0 g/l	5	0	7	6	6	7	$\mathcal{O}$	0	$\hat{\mathcal{O}}$	6	6	38	10	n
	6	6	0	10	12	8	7	12	8	14	2	84	lU	N
	7	_	•	-	-	1	4	-	-	-	-	_		
	Total	10	V	20	22	20	11	15	12	24	16	160	$\Box V$	$\mathbb{V}$
	1	D	0	0	0	0	0	0	0	0	0	0	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	B
	3	0	0	0	0	$\rho$	0	0	0	0	0	0	ju	Br
2.0 - /1	4	Ο	0	0	C	2	$\mathcal{O}$	C	Ζ	C	$\mathcal{O}$	U	U	m
2.0 g/l	5	U	2	3	$\mathcal{C}$	0	4	$\mathcal{O}$	C	2	0	. []	ήU	
	6	Ô	0	4	4	$\mathcal{O}$	$\mathcal{O}$	0	3	0	3	14	10	1V
	7	-	1	1		_	<b>^</b>	-	-		-			
	Total	U	2	2	4	2	Ч	U	Ş	2	3	24	UJ	2
	1	X	X	$\times$	X	X	X	×	X	X	X	0	0	R
	2	-	-	(		-	-	~	-	-	_	-	-	
	3	_	(	-	-	-	(	(	-	-		~		
4.0 - /1	4	~	-	-	-	_	-	<b>~</b>	-	-			-	
4.0 g/l	5		-	-	-	-	$\sim$	•	-	-	_	-	-	
	6	<b>^</b>	-		-		-	-	-	_	-			
	7	<b>_</b>	_	-	_		~	-	-	_	-	-	-	
	Total	$\mathcal{O}$	$\mathcal{O}$	$ \mathcal{O} $		C	C	c	c	0	C	C	C	n
	h brood not us used if <60%						les hav	ve proo	luced	their t	hird b	rood.		

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



QA/QC No.: RT-101207

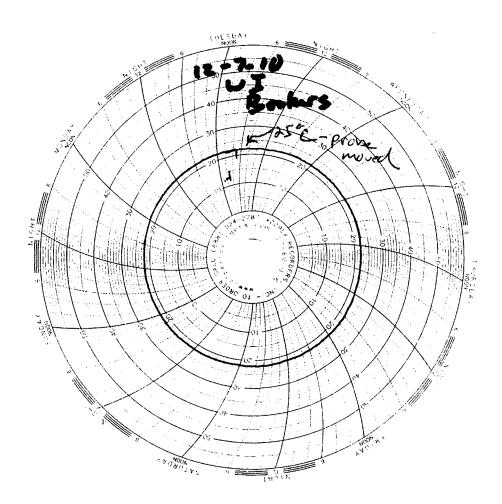
Start Date:12/07/2010

				,											
		DA	Y 1	DA	Y 2	DA	AY 3	D	AY 4	DA	Y 5	DA	Y 6	DA	Y 7
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Ir	nitials:	L~~	R-	hr	śm	L-	tim	b	án	h	p	m	ん	R	2
Time of Re	adings:	<u>14</u> w	<u>/sw</u>	ISW	140	1400	1400	1400	1300	1300	1330	1370	14/2	<u> </u>	
	DO	8.4	8.7	8.4	8.6	8.7	8.3	8.2	8.4	8.1	7.4	8.2	26		-
Control	pН	8.2	8.3	8.4	7.9	8.2	8.0	8.2	8.0	8.1	7.9	8.2	8.Z		<u> </u>
	Temp	25.0	24.3	25.0	24.5	25.0	246	24.8	24.7	25.1	740	X.3	25-2		-
	DO	8.4	85	8.4	8.6	8.6	8.3	8.2	8.4	8.2	24	82	7.7	-	-
0.25 g/l	pН	8.2	8.3	8.3	7.9	8.2		8,2	8.0	8.1	8.1	8.2	8.2		1
	Temp	25.0	24.6	25.0	24.8	25.0	25.U	24.8	24.8	25,1	24N	<i>75</i> 2	252		
	DO	8.5	8.8	8.4	8.7	8.6	8.4	8.2	8.3	8,2	7.4	8.3	7.6	(	-
0.5 g/l	pН	8.2	8.2	8.3	7.9	8.2	.8.0	8.2	8.0	8.1	74	8.2	8.	(	=
	Temp	25.0	24.7	25.1	24.8	25.0	25.1	24.0	24.9	25.0	241	24-6	51	$\square$	
	DO	8.5	8.7	8.4	8.7	8.5	8.4	8.2	8.3	8.2	83	83	7.7	~	-
1.0 g/l	pH	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.2	74	8.2	8.1		
	Temp	24.9	24.6	25.1	24.9	25.1	25.0	24.0	24.9	<u>25.0</u>	240	245	24.9	<u> </u>	-
	DO	8.6	8.6	8.5	8.8	8.3	8.4	8.2	- 8.5	8.2	8.2	8.Z	24	<u>^</u>	-
2.0 g/l	pН	8.2	8.2	8.3	7.9	8.1	8.0	8.2	8.0	8.2	74	82	8-1		
	Temp	24.8	24.8	25.2	24.8	<u>25.2</u>	24.9	<u>25.c</u>	24.8	24.9	244	245	25.2		
	DO	8.7	8.8		-		-		_	-		1	-		-
4.0 g/l	pН	8.1	8.2	_	_					_		-	_		-
	Temp	24.6	24.8		-			<u> </u>			-	-	_		
	Di	ssolved	Oxyge	n (DO)	reading	gs are i	n mg/l (	O <sub>2</sub> ; Ten	perature	e (Temp	) readin	gs are i	n ⁰C.		
	Additional	Paramot	ars				Conti	rol				High Co	oncentrat	tion	
					Day		Day	3	Day 5		Day 1		Day 3		ay 5
	Conducti	vity (µS)	)		32	5	329		322		2470	3	690	39	130
	Alkalinity (				_74		73		73	73			24		74
	Hardness (1	ng/l CaC(	D <sub>3</sub> )		87		88				70		89	8	°9
			. 1				ī	leonates E					<u> </u>		
	icate:		A	B 70	C D $3A$ $3B$				F	i i	G				J
Broo	d ID:		A	2A	<u>رد  </u>	7 -	3B	<u> </u>	/ <i>h</i>	12	I	<u>/J</u>	2J		$S\mathcal{J}$



# **Test Temperature Chart**

# Test No: RT-101207 Date Tested: 12/07/10 to 12/13/10 Acceptable Range: 25+/- 1°C





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

February 1, 2011

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

Reference: Test America-Irvine ITL2485 Eberline Analytical Report S012365-8650 Sample Delivery Group 8650

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL2485. The sample was received on December 29, 2010.

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

Sincerely,

N. Joseph Verville Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

#### Case Narrative, page 1

#### 1.0 General Comments

Sample delivery group 8650 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

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

#### 2.0 Quality Control

For efficiency of analysis, sample ITL2485-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8654 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

#### 3.0 Method Errors

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

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

#### Case Narrative, page 2

#### 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** The K-40 MDA for sample ITL2489-03 (53.7 pCi/L) and the duplicate of sample ITL2489-03 (53.7 pCi/L) were greater than the required detection limit of 25 pCi/L, due to an elevated K40 background in the ROI for K40 on the detector used for analysis. No other problems were encountered during the processing of the samples. All other quality control sample results were within required control limits.

#### 5.0 Case Narrative Certification Statement

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

N. Joseph Verville Client Services Manager

2/1/1

Date

SDG	8650
Contact	<u>N. Joseph Verville</u>

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

SUMMARY DATA SECTION

TABLE OF	со	N T	EN	T S	······
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Work Summary	•	•	•	•	6
Method Blanks	•	•	•	•	8
Lab Control Samples	•	•	•	•	9
Duplicates	•	•	•	•	10
Data Sheets	•	•	•	•	11
Method Summaries	•	•	•	•	12
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End of Section	•	•	•	•	34

B

Prepared by

Juila Reviewed by

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-TOC
Version	3.06
Report date	01/31/11

SDG 8650

SDG	8650
Contact	N. Joseph Verville

#### REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL2485</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

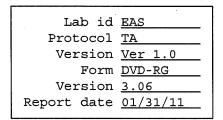
The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

#### 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



SDG 8650

SDG	86	50	
Contact	N.	Joseph	Verville

#### GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL2485</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.

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/31/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8650

SDG <u>8650</u>

Contact N. Joseph Verville

#### LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012365-01	ITL2485-02	Boeing - SSFL	WATER			ITL2485	12/23/10 00:00
\$012369-03	Lab Control Sample		WATER			***	
5012369-04	Method Blank		WATER				
S012369-05	Duplicate (S012369-01)	Boeing - SSFL	WATER				12/26/10 08:58

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LS</u> Version <u>3.06</u> Report date <u>01/31/11</u>

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

#### SDG 8650

#### QC SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE	BASIS AMOUNT	DAYS SI		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8650	ITL2485	ITL2485-02	WATER		10.0 L	•	12/29/10	6	S012365-01	8650-001
8654		Method Blank Lab Control Sample Duplicate (S012369-01)	WATER WATER WATER		10.0 L		12/29/10		S012369-04 S012369-03 S012369-05	8654-004 8654-003 8654-005

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-QS</u> Version <u>3.06</u> Report date <u>01/31/11</u>

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8650

SDG <u>8650</u>

Contact N. Joseph Verville

#### PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

			PREPARATION ERROR			·····			PLANCHETS ANALYZED				
TEST	MATRIX	METHOD	BATCH	2σ ¥	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	FIERS	
Beta	Counting												
AC	WATER	Radium-228 in Water	7271-037	10.4	1			1	1	1/0/1			
SR	WATER	Strontium-90 in Water	7271-037	10.4	1			1	1	1/0/1			
Gas F	roportiona	l Counting											
80A	WATER	Gross Alpha in Water	7271-037	20.6	1			1	1	1/0/1			
80B	WATER	Gross Beta in Water	7271-037	11.0	1			1	1	1/0/1			
Gamma	Spectroso	сору											
GAM	WATER	Gamma Emitters in Water	7271-037	7.0	1			1	1	1/0/1			
Kinet	ic Phospho	primetry, ug											
U_T	WATER	Uranium, Total	7271-037		1			1	1.	1/0/1			
Liqui	d Scintill	lation Counting											
н	WATER	Tritium in Water	7271-037	10.0	1			1	1	1/0/1			
Rador	n Counting								,				
RA	WATER	Radium-226 in Water	7271-037	16.4	l			1	1	1/0/1			

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

> Lab id EAS Protocol TA Version Ver 1.0 Form DVD-PBS Version 3.06 Report date 01/31/11

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8650

SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

LAB SAMPLE

CLIENT SAMPLE ID

# LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

COLLECTED RECEIVED	LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
S012365-01	ITL2485-02		8650-001	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water
12/23/10	Boeing - SSFL	WATER	8650-001	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water
12/29/10	ITL2485		8650-001	AC		01/24/11	01/25/11	BW	Radium-228 in Water
			8650-001	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water
			8650-001	н		01/12/11	01/18/11	BW	Tritium in Water
			8650-001	RA		01/22/11	01/24/11	BW	Radium-226 in Water
	•		8650-001	SR		01/13/11	01/25/11	BW	Strontium-90 in Water
			8650-001	ד_ט		01/20/11	01/24/11	BW	Uranium, Total
S012369-03	Lab Control Sample		8654-003	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water
		WATER	8654-003	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water
			8654-003	AC		01/24/11	01/25/11	BW	Radium-228 in Water
			8654-003	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water
			8654-003	н		01/12/11	01/18/11	BW	Tritium in Water
			8654-003	RA		01/22/11	01/24/11	BW	Radium-226 in Water
			8654-003	SR		01/13/11	01/25/11	BW	Strontium-90 in Water
			8654-003	U_T		01/20/11	01/24/11	BW	Uranium, Total
S012369-04	Method Blank		8654-004	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water
		WATER	8654-004	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water
			8654-004	AC		01/24/11	01/25/11	BW	Radium-228 in Water
			8654-004	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water
			8654-004	н		01/12/11	01/18/11	BW	Tritium in Water
			8654-004	RA		01/22/11	01/24/11	BW	Radium-226 in Water
			8654-004	SR		01/13/11	01/25/11	BW	Strontium-90 in Water
			8654-004	U_T		01/20/11	01/24/11	BW	Uranium, Total
S012369-05	Duplicate (S012369-01)		8654-005	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water
12/26/10	Boeing - SSFL	WATER	8654-005	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water
12/29/10			8654-005	AC		01/24/11	01/25/11	BW	Radium-228 in Water
			8654-005	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water
			8654-005	н		01/12/11	01/18/11	BW	Tritium in Water
			8654-005	RA		01/22/11	01/24/11	BW	Radium-226 in Water
			8654-005	SR		01/13/11	01/25/11	BW	Strontium-90 in Water
			8654-005	υ_т		01/20/11	01/24/11	BW	Uranium, Total

Lab id EAS Protocol TA Version Ver 1.0 Form <u>DVD-LWS</u> Version 3.06 Report date 01/31/11\_

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WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8650

SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

#### WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	ΒY	SAMPLE TYPE CLIENT MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
			000.0				1		1	4
80A/80		Gross Alpha in Water	900.0		T		7	T	-	-
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		l		l	l	1	4
н		Tritium in Water	906.0		l		l	l	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	l	1	4
TOTALS		· .			8		8	8	. 8	32

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

Lab id EAS Protocol <u>TA</u> Version Ver 1.0 Form DVD-LWS Version 3.06 Report date 01/31/11

8654-004

Method Blank

#### METHOD BLANK

	8650 N. Joseph Verville	Client Contract	<u>Test America, Inc.</u> ITL2485	
Lab sample id Dept sample id		Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	$2\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.205	0.31	0.492	3.00	U	80A
Gross Beta	12587472	-0.321	0.59	0.999	4.00	U	80B
Tritium	10028178	22.6	160	272	500	U	н
Radium-226	13982633	0.034	0.34	0.640	1.00	U	RA
Radium-228	15262201	-0.118	0.17	0.473	1.00	U	AC
Strontium-90	10098972	0.064	0.30	0.666	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	U_T
Potassium-40	13966002	U		20.1	25.0	U	GAM
Cesium-137	10045973	. <b>U</b>		1.73	20.0	U	GAM

QC-BLANK #76729

Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-DS</u> Version <u>3.06</u> Report date <u>01/31/11</u>

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8650

8654-003

#### Lab Control Sample

LAB CONTROL SAMPLE

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SDG <u>8650</u> Contact <u>N. Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

Lab sample id <u>8012369-03</u> Dept sample id <u>8654-003</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	2ø ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL
Gross Alpha	36.6	2.4	0.654	3.00		80A	40.4	1.6	91	80-120	70-130
Gross Beta	33.6	1.6	1.58	4.00		80B	35.0	1.4	96	88-112	70-130
Tritium	2420	260	271	500		н	2550	100	95	86-114	80-120
Radium-226	58.4	1.9	0.577	1.00		RA	55.7	2.2	105	82-118	80-120
Radium-228	4.53	0.30	0.432	1.00		AC	4.62	0.18	98	87-113	60-140
Strontium-90	17.9	1.4	0.597	2.00		SR	17.5	0.70	102	86-114	80-120
Uranium, Total	59.8	7.2	0.174	1.00		U_T	62.5	2.5	96	88-112	80-120
Cobalt-60	94.8	4.6	2.23	10.0		GAM	102	4.1	93	91-109	80-120
Cesium-137	114	4.2	2.92	20.0		GAM	110	4.4	104	91-109	80-120

QC-LCS #76728

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-LCS</u> Version <u>3.06</u> Report date <u>01/31/11</u>

SDG 8650

8654-005

ITL2489-03

## DUPLICATE

SDG <u>8650</u>		Client	Test America, Inc.
Contact <u>N. Joseph Verville</u>		Contract	ITL2485
DUPLICATE	ORIGINAL		
Lab sample id <u>S012369-05</u>	Lab sample id <u>S012369-01</u>	Client sample id	ITL2489-03
Dept sample id <u>8654-005</u>	Dept sample id 8654-001	Location/Matrix	Boeing - SSFL WATER
	Received <u>12/29/10</u>	Collected/Volume	<u>12/26/10 08:58</u> <u>10.0 L</u>
		Chain of custody id	ITL2489

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	1.65	0.42	0.342	3.00	J	A08	1.89	0.47	0.400	J	14	69	0.6
Gross Beta	3.05	0.59	0.819	4.00	J	80B	3.06	0.63	0.885	J	0	48	0
Tritium	44.4	160	267	500	U	н	-40.3	150	270	U	-		0.8
Radium-226	-0.022	0.31	0.592	1.00	U.	RA	0.097	0.36	0.653	υ	-		0.5
Radium-228	0.035	0.16	0.446	1.00	U	AC	0.109	0.17	0.456	U	-		0.6
Strontium-90	-0.005	0.29	0.693	2.00	U	SR	0.222	0.33	0.684	U	-		1.0
Uranium, Total	0.164	0.023	0.017	1.00	J	υ_т	0.177	0.022	0.017	J	8	28	0.8
Potassium-40	υ		53.7	25.0	U	GAM	U		53.7	υ	-		0
Cesium-137	U		2.68	20.0	U	GAM	υ		2.68	U	-		0

QC-DUP#1 76730

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10

EAS
TA
<u>Ver 1.0</u>
DVD-DUP
3.06
01/31/11

SDG 8650

8650-001

ITL2485-02

DATA SHEET

	8650	Client	Test America, Inc.
	N. Joseph Verville	Contract	ITL2485
Lab sample id Dept sample id Received	<u>8650-001</u> 12/29/10	Client sample id Location/Matrix Collected/Volume ain of custody id	Boeing - SSFL         WATER           12/23/10 00:00         10.0 L

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.66	0.54	0.646	3.00	J	80A
Gross Beta	12587472	4.16	0.66	0.923	4.00		80B
Tritium	10028178	18.3	160	275	500	υ	н
Radium-226	13982633	0.303	0.42	0.701	1.00	U	RA
Radium-228	15262201	0.030	0.17	0.460	1.00	υ	AC
Strontium-90	10098972	-0.112	0.30	0.752	2.00	U	SR
Uranium, Total		0.677	0.077	0.017	1.00	J	U_T
Potassium-40	13966002	υ		18.9	25.0	υ	GAM
Cesium-137	10045973	U		1.64	20.0	U	GAM

**DATA SHEETS** Page 1 **SUMMARY DATA SECTION** Page 11

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-DS
Version	3.06
Report date	01/31/11

SDG 8650

Test AC Matrix WATER SDG <u>8650</u> Contact N. Joseph Verville

#### LAB METHOD SUMMARY RADIUM-228 IN WATER BETA COUNTING

Client Test America, Inc. Contract ITL2485

#### RESULTS

				****
Preparation b	atch 7271-037			
5012365-01	8650-001	ITL2485-02	U	
5012369-03	8654-003	Lab Control Sample	ok	
S012369-04	8654-004	Method Blank	U	
S012369-05	8654-005	Duplicate (S012369-01)	- U	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW S TEST F	SUF- 7IX CLIN	INT S	SAMPLE	ID		MDA pCi/I	ALI	Q	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	batch	7271-037	,	20 pi	cep err	or 10	.4 %	Referen	ce	Lab N	oteboo	k No. '	7271	pg.03'	7				
S012365-01		ITL2	485-	02			0.40	50 1.8	0			70		150		32	01/24/11	01/24	GRB-221
S012369-03		Lab	Cont	rol Sa	ample		0.43	32 1.8	0			74		150			01/24/11	01/24	GRB-230
S012369-04		Meth	iod E	Blank			0.4	73 1.8	0			73		150			01/24/11	01/24	GRB-231
S012369-05		Dup	icat	e (S01	L2369-0	1)	0.44	1.8	0			73		150		29	01/24/11	01/24	GRB-232
Nominal valu	ies and	l limits	fro	n metho	bđ		1.0	) 1.8	0			30-10	5	50		180			

PROCEDURES	REFERENCE	904.0		AVERAGES ± 2 SD	MDA	0.453	. ± _	(
	DWP-894	Sequential Separation of Actinium-228 and		FOR 4 SAMPLES	YIELD	72	. ± _	
		Radium-226 in Drinking Water (>1 Liter Aliquot),						
		rev 5						
			1					

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/31/11

MDA 0.453 ± 0.035

3

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8650

Test	<u>SR</u> Matrix <u>WATER</u>
SDG	8650
Contact	N. Joseph Verville

## LAB METHOD SUMMARY STRONTIUM-90 IN WATER

BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX PLA	ANCHET CLIENT	SAMPLE ID	Strontium-9	0		
Preparation	batch 7271-03	37					
S012365-01	865	50-001 ITL248	35-02	υ			
S012369-03	865	54-003 Lab Co	ontrol Sample	ok			
S012369-04	865	54-004 Method	1 Blank	υ			
S012369-05	865	54-005 Duplic	cate (S012369-01	) - U			
<b></b>	1					 	
Nominal val	ues and limits	from method	RDLs (pCi/L	) 2.00			

#### 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 7271-037 2 grep error 1	0.4 % Re	ference	Lab N	lotebool	k No. 7	7271	pg.037	,					
S012365-01	ITL2485-02	0.752	0.500			67		50			21	01/08/11	01/13	GRB-223
S012369-03	Lab Control Sample	0.597	0.500			83		50		,		01/08/11	01/13	GRB-222
S012369-04	Method Blank	0.666	0.500		•	82		50				01/08/11	01/13	GRB-201
S012369-05	Duplicate (S012369-01)	0.693	0.500			72		50		•	18	01/08/11	01/13	GRB-202
Nominal val	ues and limits from method	2.00	0.500	*****		30-105	5	50			180			

PROCEDURES	REFERENCE	905.0	AVERAGES ± 2 SD	MDA	0.677 ± _	0.129
	DWP-380	Strontium in Drinking Water, rev 8	FOR 4 SAMPLES	YIELD	<u>76</u> ± _	16

EAS
TA
<u>Ver 1.0</u>
DVD-LMS
3.06
01/31/11

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8650

Test <u>80A</u> Matrix <u>WATER</u> SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

## LAB METHOD SUMMARY GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX		CLIENT SAMPLE ID	Gross Alpha	
Preparation	h batch 727	1-037			
S012365-01	80	8650-001	ITL2485-02	1.66 J	
S012369-03	80	8654-003	Lab Control Sample	ok	
S012369-04	80	8654-004	Method Blank	υ	
S012369-05	80	8654-005	Duplicate (S012369-01)	ok J	
Nominal val	ues and li	mits from m	ethod RDLs (pCi/L)	3.00	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF TEST FIX		MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %				PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 72	271-037 2σ prep error 2	20.6 % Re	ference	Lab N	lotebool	k No. '	7271	pg.037	,				
S012365-01	80	ITL2485-02	0.646	0.300			59		400		14	01/06/11	01/06	GRB-216
S012369-03	80	Lab Control Sample	0.654	0.250			60		400			01/06/11	01/06	GRB-107
S012369-04	80	Method Blank	0.492	0.250			62		400			01/06/11	01/06	GRB-109
S012369-05	80	Duplicate (S012369-01)	0.342	0.300			31		400		11	01/06/11	01/06	GRB-111
Nominal val	ues and ]	limits from method	3.00	0.250			0-20	0	100		180			

PROCEDURES	REFERENCE	900.0		AVERAGES ± 2 SD	MDA	<u>0.534</u> ±	0.296
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,		FOR 4 SAMPLES	RESIDUE	<u>53</u> ±	
		rev 10	1				

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/31/11

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8650

Test	80B Matrix WATER
SDG	8650
Contact	N. Joseph Verville

## LAB METHOD SUMMARY GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation	batch 727	1-037		· · · · · · · · · · · · · · · · · · ·
S012365-01	80	8650-001	ITL2485-02	4.16
S012369-03	80	8654-003	Lab Control Sample	ok
S012369-04	80	8654-004	Method Blank	U
S012369-05	80	8654-005	Duplicate (S012369-01)	ok J
Nominal val	ues and li	mits from m	ethod RDLs (pCi/L)	4.00

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-037 2ø prep error 1	1.0 % Rei	ference	Lab N	lotebool	k No. 1	7271	pg.037	7				
S012365-01	80	ITL2485-02	0.923	0.300			59		400		14	01/06/11	01/06	GRB-216
S012369-03	80	Lab Control Sample	1.58	0.250			60		400			01/06/11	01/06	GRB-107
S012369-04	80	Method Blank	0.999	0.250			62		400			01/06/11	01/06	GRB-109
S012369-05	80	Duplicate (S012369-01)	0.819	0.300			31		400		11	01/06/11	01/06	GRB-111
Nominal val	ues and li	mits from method	4.00	0.250			0-200	0	100		180			

	PROCEDURES	REFERENCE	900.0		AVERA
		DWP-121	Gross Alpha and Gross Beta in Drinking Water,		FOR 4
			rev 10	1	
l					

AVERAGES ± 2 SD	MDA _	1.08	±	0.682
FOR 4 SAMPLES	RESIDUE _	53	±	

Lab id	EAS				
Protocol	TA				
Version	<u>Ver 1.0</u>				
Form	DVD-LMS				
Version	3.06				
Report date	01/31/11				

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8650

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8650</u> Contact N. Joseph Verville

## LAB METHOD SUMMARY

Client Test America, Inc. Contract <u>ITL2485</u>

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation	a batch 727	1-037				
5012365-01		8650-001	ITL2485-02		U	
S012369-03		8654-003	Lab Control Sample	ok	ok	
S012369-04		8654-004	Method Blank		υ	
S012369-05		8654-005	Duplicate (S012369-01)		- 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	-037 2 <i>g</i> prep e:	rror 7.0 %	Reference	Lab	Noteboo	k No.	7271	pg.03'	7				
S012365-01		ITL2485-02		2.00					540		13	01/05/11	01/05	MB,01,00
S012369-03		Lab Control Sample		2.00					540			01/05/11	01/05	MB,02,00
S012369-04		Method Blank		2.00					541			01/05/11	01/05	01,04,00
S012369-05		Duplicate (S012369	-01)	2.00					540		10	.01/05/11	01/05	MB,05,00
Nominal val	ues and lim	its from method	6.00	2.00					400		 180			

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

<u>TA</u>				
<u>Ver 1.0</u>				
LMS				
1/11				

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 16

SDG 8650

Test	<u>U T</u> Matrix <u>WATER</u>
SDG	8650
Contact	N. Joseph Verville

## LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

#### RESULTS

LAB	RAW SUF-			Uranium,	
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total	
Preparation	n batch 727	1-037			
S012365-01		8650-001	ITL2485-02	0.677 J	
S012369-03		8654-003	Lab Control Sample	ok	
S012369-04		8654-004	Method Blank	υ	
S012369-05		8654-005	Duplicate (S012369-01)	ok J	
Nominal val	lues and li	mits from n	ethod RDLs (pCi/L)	1.00	
NOMITHAL VA.	Lues and 11	INTES FIOM a			

## 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		DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-037 2 prep error	Ref	erence	Lab N	otebool	k No. '	7271	pg.03	7					
S012365-01	ITL2485-02	0.017 0	.0200								28	01/20/11	01/20	KPA-001
S012369-03	Lab Control Sample	0.174 0	.0200									01/20/11	01/20	KPA-001
S012369-04	Method Blank	0.017 0	.0200									01/20/11	01/20	KPA-001
S012369-05	Duplicate (S012369-01)	0.017 0	.0200								25	01/20/11	01/20	KPA-001
Nominal val	ues and limits from method	1.00 0	.0200								180			

PROCEDURES	REFERENCE	D5174	AVERAGES ± 2 SD	MDA <u>0.056</u> ± <u>0.157</u>
			FOR 4 SAMPLES	YIELD ±

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/31/11

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8650

Test <u>H</u> Matrix <u>WATER</u> SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

#### RESULTS

LAB SAMPLE ID	RAW SU		CLIENT SAMPLE ID	Trit	ium	
Preparation	batch 7	271-037				
- S012365-01		8650-001	ITL2485-02	U		
5012369-03		8654-003	Lab Control Sample	ok		
5012369-04		8654-004	Method Blank	υ		
S012369-05		8654-005	Duplicate (S012369-01)	-	υ	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %			FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-037 2σ prep error	10.0 %	Reference	Lab	Notebool	k No.	7271	pg.037	,				
S012365-01		ITL2485-02	275	0.0100			100		50		20	01/12/11	01/12	LSC-004
S012369-03		Lab Control Sample	271	0.100			10		50			01/12/11	01/12	LSC-004
S012369-04		Method Blank	272	0.100			10		50			01/12/11	01/12	LSC-004
S012369-05	*	Duplicate (S012369-01)	267	0.0100			100		50		17	01/12/11	01/12	LSC-004
Nominal val	ues and lin	mits from method	500	0.0100					100		 180			

PROCEDURES REFERENCE 906.0

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

 AVERAGES ± 2 SD
 MDA 271 ± 6.61

 FOR 4 SAMPLES
 YIELD 55 ± 104

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	01/31/11

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 18

SDG 8650

Test	<u>RA</u> Matrix <u>WATER</u>
SDG	8650
Contact	N. Joseph Verville

#### LAB METHOD SUMMARY RADIUM-226 IN WATER RADON COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

## .

RESULTS

	I SUF-		Radium-226	
SAMPLE ID TES	T FIX PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation bat	ch 7271-037			
S012365-01	8650-001	ITL2485-02	U	
S012369-03	8654-003	Lab Control Sample	ok	
S012369-04	8654-004	Method Blank	υ	
S012369-05	8654-005	Duplicate (S012369-01)	- 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 7271-037 2 g prep error 1	16.4 % Re:	ference	Lab N	lotebool	k No.	7271	pg.037	,				
S012365-01	ITL2485-02	0.701	0.100			100		87		30	01/22/11	01/22	RN-015
S012369-03	Lab Control Sample	0.577	0.100			100		178			01/22/11	01/22	RN-009
S012369-04	Method Blank	0.640	0.100			100		87			01/22/11	01/22	RN-010
S012369-05	Duplicate (S012369-01)	0.592	0.100			100		87		27	01/22/11	01/22	RN-012
Nominal val	ues and limits from method	1.00	0.100					100		 180			

PROCEDURES REFERENCE	903.1	AVERAGES ± 2 SD	MDA <u>0.628</u> ± <u>0.112</u>
DWP-881A	Ra-226 Screening in Drinking Water, rev 6	FOR 4 SAMPLES	YIELD <u>100</u> ± <u>0</u>

Lab id	EAS			
Protocol	TA			
Version	<u>Ver 1.0</u>			
Form	DVD-LMS			
Version	3.06			
Report date	01/31/11			

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 19

SDG 8650

SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL2485</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

1
EAS
<u>TA</u>
<u>Ver 1.0</u>
DVD-RG
3.06
01/31/11

SDG 8650

SDG	86	50	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

## PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	01/31/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 21

SDG 8650

SDG <u>8650</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL2485</u>

WORK SUMMARY

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

The following notes apply to this report:

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

REPORT GUIDES Page 3 SUMMARY DATA SECTION Page 22 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>01/31/11</u>

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SDG	865	50	
Contact	<u>N.</u>	Joseph	Verville

REPORT GUIDE

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## DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

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#### DATA SHEET

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

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

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

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

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

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

The following values are underlined to indicate possible problems:

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

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#### DATA SHEET

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

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REPORT GUIDE

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## LAB CONTROL SAMPLE

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

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

This value reported for this limit is at most 999.

\* The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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## 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

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MATRIX SPIKE

suj	e Matrix Spike Report shows all results, recoveries and primary 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:
	<ol> <li>The errors of the two RESULTs, including those introduced by rounding them prior to printing.</li> </ol>
	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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SDG	86!	50	*
Contact	<u>N.</u>	Joseph	Verville

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## MATRIX SPIKE

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

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

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SDG	<u>86</u>	50	
Contact	<u>N.</u>	Joseph	Verville

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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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#### 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

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#### GUIDE, cont.

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#### METHOD SUMMARY

specified for the method.

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

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

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

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

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

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

> 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>01/31/11</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.

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## SUBCONTRACT ORDER TestAmerica Irvine

## ITL2485

8650

SENDING LABORATORY:	RECEIVING LABORATORY:	
TestAmerica Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 260-3297 Project Manager: Debby Wilson	Eberline Services 2030 Wright Avenue Richmond, CA 94804 Phone :(510) 235-2633 Fax: (510) 235-0438 Project Location: California Receipt Temperature: °C Ice:	Y / N

Analysis	Units	ς Due	Expires	Comments
Sample ID: ITL2485-02 (Out	fall 008 (Co	mposite) - Wat	er) Sampled: 12/23/10	00:00
Gamma Spec-O	mg/kg	01/03/11	12/23/11 00:00	Out St Louis, k-40 and cs-137 only, DO
Gross Alpha-O	pCi/L	01/03/11	06/21/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	01/03/11	06/21/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	01/03/11	01/20/11 00:00	
Radium, Combined-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Containers Supplied:				
2.5 gal Poly (I)	500 mL Am	ber (J)		

Released By FEDEX

Released By

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Date/Time

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## **APPENDIX G**

## Section 19

Outfall 008 – December 29 & 30, 2010 MEC<sup>X</sup> Data Validation Report THIS PAGE LEFT INTENTIONALLY BLANK



# DATA VALIDATION REPORT

# Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL2723

Prepared by

MEC<sup>x</sup>, 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:	ITL2723
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 008 (Composite)	ITL2723-02	G0L310428-001, S101003-01	Water	12/30/2010 1:57:00 AM	245.1, 245.1-Diss, 900, 901.1, 903.1, 904, 905, 906, 1613B, SM 2540D, 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 below the control limit; however, the samples 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. The remaining samples were received at the laboratories within the temperature limits of  $4^{\circ}C \pm 2^{\circ}C$ . According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples in this SDG were delivered by courier, 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.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
М	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: January 21, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the  $MEC^{\times}$  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.
  - o 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 between the EDL and the RL for several isomers and totals. Most method blank detects were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. All individual isomers detected in both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of

contamination in the sample. The sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- Blank Spikes and Laboratory Control Samples: LCS recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Any totals including EMPC peaks 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.

The case narrative for this SDG noted that some results were reported below the EDL based on retention time and signal to noise ratio >2.5; however, the reviewer noted that all reported results were above the EDL.

### B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks Date Reviewed: January 20, 2011

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

- Holding Times: The analytical holding time, 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration r<sup>2</sup> values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. CRA recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Not applicable to this analysis.
- 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: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: Not applicable to this analysis.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

### C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: February 8, 2011

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

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

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

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

- Blanks: There were no analytes detected in the method blanks.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished control limits.
- Laboratory Duplicates: There were no laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

A notation in the sample preparation logbook indicated that the aliquots for radium-226, radium-228, and strontium were filtered and that the filter was digested and added to the aliquot.

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

#### D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: January 20, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the  $MEC^{X}$  Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Method 2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was 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 not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with

"DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

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

## Validated Sample Result Forms ITL2723

#### Analysis Method 8656 Sample Name Outfall 008 (Composite) Matrix Type: WATER Validation Level: IV ITL2723-02 Sample Date: 12/30/2010 1:57:00 AM Lab Sample Name: Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier **Oualifier** Notes Uranium. Total NA 0.749 0.017 pCi/L DNQ 1 Jb J 900 Analysis Method Sample Name Outfall 008 (Composite) Matrix Type: WATER Validation Level: IV Sample Date: 12/30/2010 1:57:00 AM ITL2723-02 Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Gross Alpha 12587461 0.928 3 0.566 pCi/L Jb J C, DNQ Gross Beta 12587472 3.17 4 0.844 pCi/L Jb J DNO Analysis Method 901.1 Matrix Type: WATER Sample Name Outfall 008 (Composite) Validation Level: IV ITL2723-02 Sample Date: 12/30/2010 1:57:00 AM Lab Sample Name: CAS No Result RL Analyte MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Cesium-137 10045973 ND 20 1.54 pCi/L U U Potassium-40 13966002 ND 25 39.2 pCi/L U U Analysis Method 903.1 Matrix Type: WATER Validation Level: IV Sample Name Outfall 008 (Composite) ITL2723-02 Sample Date: 12/30/2010 1:57:00 AM Lab Sample Name: CAS No Analyte Result RL MDL Result Lab Validation Validation Qualifier Value Units Notes Qualifier Radium-226 13982633 0.214 1 0.754 pCi/L U U Analysis Method 904 Matrix Type: WATER Validation Level: IV Sample Name Outfall 008 (Composite) Sample Date: 12/30/2010 1:57:00 AM Lab Sample Name: ITL2723-02 Analyte CAS No Result RL MDL Result Lab Validation Validation Value Units Qualifier Qualifier Notes Radium-228 15262201 -0.069 1 0.79 pCi/L U U

Tuesday, February 08, 2011

Sample Name	Outfall 008 (	Composite	) Matri	ix Type:	WATER	I I	alidation Le	vel: IV
Lab Sample Name:	ITL2723-02	Sam	ple Date:	12/30/201	10 1:57:00 A	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.221	2	2.24	pCi/L	U	U	
Analysis Metho	od 906							
Sample Name	Outfall 008 (	Composite	) Matri	ix Type:	WATER	V	alidation Le	vel: IV
Lab Sample Name:	ITL2723-02	Sam	ple Date:	12/30/201	10 1:57:00 A	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	31.2	500	314	pCi/L	U	U	
Analysis Metho	od EPA	245.1						
Sample Name	Outfall 008 (	Composite	) Matri	ix Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	ITL2723-02	Sam	ple Date:	12/30/201	10 1:57:00 A	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	
Analysis Metho	od EPA	245.1-L	Diss					
Sample Name	Outfall 008 (	Composite	) Matri	ix Type:	Water	V	alidation Le	vel: IV
-		Sam	ple Date:	12/30/201	10 1:57:00 A	М		
Lab Sample Name:	ITL2723-02	Bail	<b>r</b>					
Lab Sample Name: Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

## Analysis Method 905

Sample Name	Outfall 008 (C	omposite	) Matri	x Type: V	WATER	V	alidation Le	evel: IV		
Lab Sample Name:	ITL2723-02	Sam	ple Date:	12/30/2010	М	Λ				
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000008	ug/L	J, B	U	В		
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000003	ug/L	J, Q, B	U	В		
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000004	ug/L		U			
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000007	ug/L		U			
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000003	ug/L	J, Q	UJ	*Ш		
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000003	ug/L		U			
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000002	ug/L	J, Q	UJ	*Ш		
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000003	ug/L		U			
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000003	ug/L		U			
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000007	ug/L		U			
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000003	ug/L		U			
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000002	ug/L	J, Q	UJ	*Ш		
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000003	ug/L	J, Q	UJ	*Ш		
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000004	ug/L		U			
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000004	ug/L		U			
Total HpCDD	37871-00-4	2e-005	0.00005	0.0000008	ug/L	J, B	J	B, DNQ		
Total HpCDF	38998-75-3	5.4e-006	0.00005	0.0000003	ug/L	J, Q, B	J	B, DNQ, *II		
Total HxCDD	34465-46-8	1.1e-006	0.00005	0.0000004	ug/L	J	J	DNQ		
Total HxCDF	55684-94-1	2.8e-006	0.00005	0.0000003	ug/L	J, Q	J	DNQ, *III		
Total PeCDD	36088-22-9	ND	0.00005	0.0000007	ug/L		U			
Total PeCDF	30402-15-4	3.6e-007	0.00005	0.0000003	ug/L	J, Q	J	DNQ, *III		
Total TCDD	41903-57-5	1.9e-006	0.00001	0.0000004	ug/L	J, Q	J	DNQ, *III		
Total TCDF	55722-27-5	ND	0.00001	0.0000004	ug/L		U			

## Analysis Method EPA-5 1613B

### Analysis Method SM 2540D

Sample Name	Outfall 008 (	Composite	) Matri	ix Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	ITL2723-02	Sam	ple Date:	12/30/202	10 1:57:00 A	М		
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	12	10	1.0	mg/l			

## **APPENDIX G**

## Section 20

Outfall 008 – December 29 & 30, 2010 Test America Analytical Laboratory Report THIS PAGE LEFT INTENTIONALLY BLANK

THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project: Routine Outfall 008 2010 Routine Outfall 008

Sampled: 12/29/10-12/30/10 Received: 12/29/10 Issued: 02/05/11 11:42

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

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

#### CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 4°C, on ice and with chain of custody documentation.	
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the TestAme Sample Acceptance Policy unless otherwise noted in the report.	rica
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.	
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.	
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.	
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.	
ADDITIONAL INFORMATION:	WATER, 1613B, Dioxins/Furans with Totals	
	Some analytes in this sample and the associated method blank have an ion abundance ratio that is o criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) be the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with flag.	oecause
LABORATORY I	ID CLIENT ID MAT	RIX

LADUKATUKY ID	CLIENT ID	MAIKIA
ITL2723-01	Outfall 008 (Grab)	Water
ITL2723-02	Outfall 008 (Composite)	Water

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

Reviewed By:

Debby Wilson

**TestAmerica Irvine** Debby Wilson Project Manager



17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Grease)

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

#### HEXANE EXTRACTABLE MATERIAL MDL Reporting Sample Dilution Date Data Qualifiers Method Limit Analyte Batch Limit Result Factor Analyzed Analyst Sample ID: ITL2723-01 (Outfall 008 (Grab) - Water) Sampled: 12/29/10 Reporting Units: mg/l EPA 1664A 11A0167 4.7 ND 1 DA 01/04/11 Hexane Extractable Material (Oil & 1.3

**TestAmerica** Irvine

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

		Ι	META	LS					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (C				Sample	ed: 12/30/1	0			
Reporting Units: ug/l									
Mercury	EPA 245.1	11A0093	0.10	0.20	ND	1	DB	01/03/11	
Antimony	EPA 200.8	11A0078	0.30	2.0	ND	1	RDC	01/03/11	
Cadmium	EPA 200.8	11A0078	0.10	1.0	ND	1	RDC	01/03/11	
Zinc	EPA 200.7	11A0077	6.00	20.0	11.8	1	VRS	01/03/11	Ja
Copper	EPA 200.8	11A0078	0.500	2.00	2.69	1	RDC	01/03/11	
Lead	EPA 200.8	11A0078	0.20	1.0	0.87	1	RDC	01/03/11	Ja
Selenium	EPA 200.8	11A0078	0.50	2.0	ND	1	RDC	01/03/11	
Thallium	EPA 200.8	11A0078	0.20	1.0	ND	1	RDC	01/03/11	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

**DISSOLVED METALS** 

Sampled: 12/29/10-12/30/10 Received: 12/29/10

#### MDL Reporting Sample Dilution Date Data Method Batch Limit Result Factor Qualifiers Analyte Limit Analyst Analyzed Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont. Sampled: 12/30/10 Reporting Units: ug/l 0.20 Mercury EPA 245.1-Diss 11A0094 0.10 ND 1 DB 01/03/11 11A0064 2.0 ND RDC 01/03/11 Antimony EPA 200.8-Diss 0.30 1 Cadmium 11A0064 0.10 ND RDC EPA 200.8-Diss 1.0 1 01/03/11 Zinc EPA 200.7-Diss 11A0063 6.00 20.0 ND 1 VRS 01/03/11 Copper EPA 200.8-Diss 11A0064 0.500 2.00 2.03 1 RDC 01/03/11 Lead EPA 200.8-Diss 11A0064 0.20 1.0 ND RDC 01/03/11 1 Selenium EPA 200.8-Diss 11A0064 0.50 2.0 ND 1 RDC 01/03/11 Thallium 01/03/11 EPA 200.8-Diss 11A0064 0.20 1.0 ND 1 RDC

**TestAmerica** Irvine

THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

INORGANICS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (C	omposite) - Water)	- cont.			Sample	ed: 12/30/10	)		
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11A0108	0.500	0.500	ND	1	TMK	01/03/11	
Chloride	EPA 300.0	10L3421	0.25	0.50	16	1	NN	12/30/10	
Nitrate-N	EPA 300.0	10L3421	0.060	0.11	0.79	1	NN	12/30/10	
Nitrite-N	EPA 300.0	10L3421	0.090	0.15	ND	1	NN	12/30/10	
Nitrate/Nitrite-N	EPA 300.0	10L3421	0.15	0.26	0.79	1	NN	12/30/10	
Sulfate	EPA 300.0	10L3421	0.20	0.50	15	1	NN	12/30/10	
Total Dissolved Solids	SM2540C	11A0030	1.0	10	200	1	MC	01/03/11	
Total Suspended Solids	SM 2540D	10L3516	1.0	10	12	1	DC	12/30/10	
Sample ID: ITL2723-02 (Outfall 008 (C	omposite) - Water)				Sample	ed: 12/30/10	)		
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11A0037	0.90	4.0	ND	1	MN	01/03/11	
Total Cyanide	SM4500CN-E	11A0118	2.2	5.0	ND	1	HH	01/03/11	

**TestAmerica** Irvine



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Arcadia, CA 91007 Attention: Bronwyn Kelly	Report Number:		Received:		
MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200	Project ID:	Routine Outfall 008 2010 Routine Outfall 008	Sampled:	12/29/10-12/30/10	

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont. Sampled: 12/30/10									
Reporting Units: pCi/L									
Uranium, Total	8656	8656		1	0.749	1	CSS	01/20/11	Jb

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MWH-Pasadena/BoeingProject ID:618 Michillinda Avenue, Suite 200Arcadia, CA 91007Report Number:Attention: Bronwyn KellyKellyKelly		Routine Outfall 008 2010 Routine Outfall 008 ITL2723		Sampled: Received:	12/29/10-12 12/29/10	/30/10
		900 MDL Reporting	Sample Dilution		Date	Data

Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (C Reporting Units: pCi/L	Composite) - Water	) - cont.			Sample	d: 12/30/1	0		
Gross Alpha	900	8656		3	0.928	1	KT	01/11/11	Jb
Gross Beta	900	8656		4	3.17	1	KT	01/11/11	Jb

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 2010 Routine Outfall 008 ITL2723	Sampled: Received:	12/29/10-12/30/10 12/29/10
		901.1		

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (C	ed: 12/30/1	D							
Reporting Units: pCi/L									
Cesium-137	901.1	8656		20	ND	1	LS	01/11/11	U
Potassium-40	901.1	8656		25	ND	1	LS	01/11/11	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Report Number:	Routine Outfall 008 2010 Routine Outfall 008 ITL2723	Sampled: Received:	12/29/10-12/30/10 12/29/10
		903.1		

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont. Sampled: 12/30/10									
Reporting Units: pCi/L Radium-226	903.1	8656		1	0.214	1	TM	01/21/11	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project Report Numb	Routin	e Outfall 008 20 e Outfall 008 23	10		1	12/29/10-1 12/29/10	12/30/10
Analyte	Method Ba	ME	1	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers

Sample ID: ITL2723-02 (Outfall 008 (Co		Sampled	: 12/30/1	0				
Reporting Units: pCi/L								
Radium-228	904	8656	1	-0.069	1	ASM	01/26/11	U

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project II Report Numbe	<ul><li>D: Routine Outfall 008 2010</li><li>Routine Outfall 008</li><li>r: ITL2723</li></ul>		Sampled: Received:	12/29/10-12/30/10 12/29/10
Analyte	Method Bat	1 8	Sample Dilution Result Factor	Analyst	Date Data Analyzed Qualifiers

		Butth	2		itesuite	1 40001	1 mary se		<b>C</b> · · · ·	
Sample ID: ITL2723-02 (Outfall 008 (Co	Sample	d: 12/30/1	0							
<b>Reporting Units: pCi/L</b>										
Strontium-90	905	8656		2	-0.221	1	ASM	01/26/11	U	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly		5	Routine Ou Routine Ou ITL2723	ıtfall 008 201 ıtfall 008	0		Sampled: Received:	12/29/10-1 12/29/10	12/30/10	
Angleta	Mathad	Patah	906 MDL Limit	1. 8		Dilution	Analyst	Date	Data	

Analyte	Method	Batch	Limit	Limit	Result	ractor	Analyst	Analyzed	Quanners
Sample ID: ITL2723-02 (Outfall 008 (Co		Sample	d: 12/30/1	0					
<b>Reporting Units: pCi/L</b>									
Tritium	906	8656		500	31.2	1	JO	01/18/11	U

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THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly 17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

	EPA-5 1613Bx									
		D ( 1	MDL	Reporting	-	Dilution		Date	Data Qualifiers	
Analyte	Method	Batch	Limit	Limit	Result	Factor	Analyst	Analyzed	Quanners	
Sample ID: ITL2723-02 (Outfall 008 Reporting Units: ug/L	(Composite) - Water)	- cont.			Sample	ed: 12/30/10	D			
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1012285	0.0000008	4 0.00005	8.5e-006	0.98	GV	01/13/11	J, B	
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B			4 0.00005	2.4e-006	0.98	GV	01/13/11	J, Q, B	
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1012285	0.0000004	5 0.00005	ND	0.98	GV	01/13/11		
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1012285	0.0000007	7 0.00005	ND	0.98	GV	01/13/11		
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1012285	0.0000003	1 0.00005	4.2e-007	0.98	GV	01/13/11	J, Q	
1,2,3,6,7,8-HxCDD	EPA-5 1613B			8 0.00005	ND	0.98	GV	01/13/11		
1,2,3,6,7,8-HxCDF	EPA-5 1613B			9 0.00005	4.5e-007	0.98	GV	01/13/11	J, Q	
1,2,3,7,8,9-HxCDD	EPA-5 1613B			9 0.00005	ND	0.98	GV	01/13/11		
1,2,3,7,8,9-HxCDF	EPA-5 1613B			4 0.00005	ND	0.98	GV	01/13/11		
1,2,3,7,8-PeCDD	EPA-5 1613B			7 0.00005	ND	0.98	GV	01/13/11		
1,2,3,7,8-PeCDF	EPA-5 1613B			1 0.00005	ND	0.98	GV	01/13/11		
2,3,4,6,7,8-HxCDF	EPA-5 1613B			8 0.00005	4.1e-007	0.98	GV	01/13/11	J, Q	
2,3,4,7,8-PeCDF	EPA-5 1613B			3 0.00005	3.6e-007	0.98	GV CV	01/13/11	J, Q	
2,3,7,8-TCDD 2,3,7,8-TCDF	EPA-5 1613B EPA-5 1613B		0.0000004		ND ND	0.98 0.98	GV GV	01/13/11 01/13/11		
OCDD	EPA-5 1613B		0.0000002		8.4e-005	0.98	GV GV	01/13/11	J, B	
OCDF	EPA-5 1613B		0.00000018		6.6e-005	0.98	GV	01/13/11	J, В J, В	
Total HpCDD	EPA-5 1613B			4 0.00005	2e-005	0.98	GV	01/13/11	, в Ј, В	
Total HpCDF	EPA-5 1613B			9 0.00005	5.4e-006	0.98	GV	01/13/11	J, Q, B	
Total HxCDD	EPA-5 1613B			1 0.00005	1.1e-006	0.98	GV	01/13/11	-, Q = J	
Total HxCDF	EPA-5 1613B			3 0.00005	2.8e-006	0.98	GV	01/13/11	J, Q	
Total PeCDD	EPA-5 1613B			7 0.00005	ND	0.98	GV	01/13/11		
Total PeCDF	EPA-5 1613B	1012285	0.0000003	2 0.00005	3.6e-007	0.98	GV	01/13/11	J, Q	
Total TCDD	EPA-5 1613B	1012285	0.0000004	3 0.00001	1.9e-006	0.98	GV	01/13/11	J, Q	
Total TCDF	EPA-5 1613B	1012285	0.0000004	4 0.00001	ND	0.98	GV	01/13/11		
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD					97 %					
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (	,				101 %					
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF					103 %					
Surrogate: 13C-1,2,3,4,7,8-HxCDD (3.					77 %					
Surrogate: 13C-1,2,3,4,7,8-HxCDF (20					91 %					
Surrogate: 13C-1,2,3,6,7,8-HxCDD (2)	<i>,</i>				106 %					
Surrogate: 13C-1,2,3,6,7,8-HxCDF (20					96 %					
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29)					94 % 85 %					
Surrogate: 13C-1,2,3,7,8-PeCDD (25- Surrogate: 13C-1,2,3,7,8-PeCDF (24-					85 % 86 %					
Surrogate: 13C-2,3,4,6,7,8-HxCDF (24-1)					80 % 95 %					
Surrogate: 13C-2,3,4,7,8-PeCDF (21-					89 %					
Surrogate: 13C-2,3,7,8-TCDD (25-164)	· ·				89 %					
Surrogate: 13C-2,3,7,8-TCDD (25-104)					79 %					
Surrogate: 13C-OCDD (17-157%)	· ·/				104 %					
Surrogate: 37Cl4-2,3,7,8-TCDD (35-1)	97%)				93 %					
<b>C</b>	÷									

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### SHORT HOLD TIME DETAIL REPORT

Hold Time (in days) Sample ID: Outfall 008 (Composite) (ITL2723-02) - Water		Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	12/30/2010 01:57	12/29/2010 16:55	12/30/2010 14:00	12/30/2010 20:05
Filtration	1	12/30/2010 01:57	12/29/2010 16:55	12/30/2010 20:31	12/30/2010 20:32

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0167 Extracted: 01/04/11										
Blank Analyzed: 01/04/2011 (11A0167- Hexane Extractable Material (Oil & Grease)	BLK1) ND	5.0	mg/l							
LCS Analyzed: 01/04/2011 (11A0167-B Hexane Extractable Material (Oil & Grease)	<b>S1)</b> 18.8	5.0	mg/l	20.0		94	78-114			MNR1
<b>LCS Dup Analyzed: 01/04/2011 (11A01</b> Hexane Extractable Material (Oil & Grease)	. <b>67-BSD1)</b> 19.5	5.0	mg/l	20.0		98	78-114	4	11	

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Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0077 Extracted: 01/03/11										
<b>Blank Analyzed: 01/03/2011 (11A0077-B</b> Zinc	LK1) ND	20.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0077-BS										
Zinc	514	20.0	ug/l	500		103	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A	.0077-MS1)				Source: I	TL2721-0	3			
Zinc	511	20.0	ug/l	500	ND	102	70-130			
Matrix Spike Dup Analyzed: 01/03/2011	(11A0077-M	SD1)			Source: I	TL2721-0	3			
Zinc	518	20.0	ug/l	500	ND	104	70-130	1	20	
Batch: 11A0078 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0078-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0078-BS	1)									
Antimony	81.8	2.0	ug/l	80.0		102	85-115			
Cadmium	82.6	1.0	ug/l	80.0		103	85-115			
Copper	81.0	2.00	ug/l	80.0		101	85-115			
Lead	82.3	1.0	ug/l	80.0		103	85-115			
Selenium	81.7	2.0	ug/l	80.0		102	85-115			
Thallium	82.3	1.0	ug/l	80.0		103	85-115			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0078 Extracted: 01/03/11										
Matrix Spike Analyzed: 01/03/2011 (11A	0070 MS1)				Saumaa, I	TL2724-0	n			
Antimony	82.2	2.0	ug/l	80.0	1.69	101	2 70-130			
Cadmium	81.3	1.0	ug/l	80.0	ND	101	70-130			
Copper	79.8	2.00	ug/l	80.0	3.47	95	70-130			
Lead	90.9	1.0	ug/l	80.0	1.50	112	70-130			
Selenium	81.1	2.0	ug/l	80.0	ND	101	70-130			
Thallium	89.1	1.0	ug/l	80.0	ND	101	70-130			
1 nanium	07.1	1.0	ug/1	00.0	ND	111	/0-150			
Matrix Spike Dup Analyzed: 01/03/2011	(11A0078-M	SD1)			Source: I	TL2724-0	2			
Antimony	83.3	2.0	ug/l	80.0	1.69	102	70-130	1	20	
Cadmium	80.5	1.0	ug/l	80.0	ND	101	70-130	1	20	
Copper	78.5	2.00	ug/l	80.0	3.47	94	70-130	2	20	
Lead	85.2	1.0	ug/l	80.0	1.50	105	70-130	6	20	
Selenium	81.4	2.0	ug/l	80.0	ND	102	70-130	0.4	20	
Thallium	84.0	1.0	ug/l	80.0	ND	105	70-130	6	20	
Batch: 11A0093 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0093-B	LK1)									
Mercury	ND	0.20	ug/l							
LCS Analyzed: 01/03/2011 (11A0093-BS	1)									
Mercury	7.96	0.20	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0093-MS1)					Source: I	TL2721-0	3			
Mercury	8.05	0.20	ug/l	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0093-MSD1)					Source: I	TL2721-0	3			
Mercury	8.07	0.20	ug/l	8.00	ND	101	70-130	0.2	20	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0063 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0063-B Zinc	LK1) ND	20.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0063-BS Zinc	<b>1)</b> 496	20.0	ug/l	500		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2011 (11A</b> Zinc	<b>.0063-MS1)</b> 786	20.0	ug/l	500	<b>Source: I</b> 287	<b>TL2295-0</b> 100	<b>1</b> 70-130			
<b>Matrix Spike Analyzed: 01/03/2011 (11A</b> Zinc	<b>.0063-MS2)</b> 520	20.0	ug/l	500	<b>Source: I</b> 6.20	<b>TL2299-0</b> 103	<b>1</b> 70-130			
Matrix Spike Dup Analyzed: 01/03/2011	(11A0063-N	,				TL2295-0				
Zinc	794	20.0	ug/l	500	287	101	70-130	1	20	
Batch: 11A0064 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0064-B	LK1)									
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0064-BS	1)									
Antimony	79.3	2.0	ug/l	80.0		99	85-115			
Cadmium	79.2	1.0	ug/l	80.0		99	85-115			
Copper	82.4	2.00	ug/l	80.0		103	85-115			
Lead	80.2	1.0	ug/l	80.0		100	85-115			
Selenium	80.6	2.0	ug/l	80.0		101	85-115			
Thallium	81.3	1.0	ug/l	80.0		102	85-115			

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

		Reporting	<b>T</b> T <b>1</b> /	Spike	Source	AV DE C	%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 11A0064 Extracted: 01/03/11										
Matrix Spike Analyzed: 01/03/2011 (11A	0064-MS1)				Source: I	TL2724-0	2			
Antimony	81.6	2.0	ug/l	80.0	1.58	100	70-130			
Cadmium	81.2	1.0	ug/l	80.0	ND	102	70-130			
Copper	84.8	2.00	ug/l	80.0	3.50	102	70-130			
Lead	82.3	1.0	ug/l	80.0	0.404	102	70-130			
Selenium	79.6	2.0	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	ug/l	80.0	ND	102	70-130			
Matrix Spike Analyzed: 01/03/2011 (11A	0064-MS2)				Source: I	TL2299-0	2			
Antimony	80.1	2.0	ug/l	80.0	ND	100	70-130			
Cadmium	81.6	1.0	ug/l	80.0	ND	102	70-130			
Copper	81.2	2.00	ug/l	80.0	1.94	99	70-130			
Lead	82.1	1.0	ug/l	80.0	0.209	102	70-130			
Selenium	79.5	2.0	ug/l	80.0	ND	99	70-130			
Thallium	82.1	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Dup Analyzed: 01/03/2011	(11A0064-MS	D1)			Source: I	TL2724-0	2			
Antimony	79.3	2.0	ug/l	80.0	1.58	97	70-130	3	20	
Cadmium	77.9	1.0	ug/l	80.0	ND	97	70-130	4	20	
Copper	82.5	2.00	ug/l	80.0	3.50	99	70-130	3	20	
Lead	81.6	1.0	ug/l	80.0	0.404	102	70-130	0.8	20	
Selenium	78.6	2.0	ug/l	80.0	ND	98	70-130	1	20	
Thallium	80.8	1.0	ug/l	80.0	ND	101	70-130	1	20	
Batch: 11A0094 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0094-B	LK1)									
Mercury	ND	0.20	ug/l							



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Sampled: 12/29/10-12/30/10 Received: 12/29/10

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#### **METHOD BLANK/QC DATA**

#### **DISSOLVED METALS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0094 Extracted: 01/03/11										
LCS Analyzed: 01/03/2011 (11A0094-BS	51)									
Mercury	8.07	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A	A0094-MS1)			8.00 101 85-115 Source: ITL2721-04						
Mercury	8.25	0.20	ug/l	8.00	ND	103	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0094-MSD1)					Source: IT	ГL2721-04	4			
Mercury	8.13	0.20	ug/l	8.00	ND	102	70-130	1	20	

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3421 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3421-B										
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
			0							
LCS Analyzed: 12/30/2010 (10L3421-BS	/									
Chloride	5.09	0.50	mg/l	5.00		102	90-110			M-3
Nitrate-N	1.13	0.11	mg/l	1.13		100	90-110			
Nitrite-N	1.58	0.15	mg/l	1.52		104	90-110			
Sulfate	10.2	0.50	mg/l	10.0		102	90-110			
Matrix Spike Analyzed: 12/30/2010 (10L	3421-MS1)				Source: I	TL2761-0	2			
Nitrate-N	6.04	0.55	mg/l	1.13	4.86	105	80-120			MHA
Nitrite-N	1.92	0.75	mg/l	1.52	ND	126	80-120			MI
Sulfate	34.6	2.5	mg/l	10.0	25.2	94	80-120			
Matrix Spike Dup Analyzed: 12/30/2010	(10L3421-M	(SD1)			Source: I	TL2761-0	2			
Nitrate-N	6.37	0.55	mg/l	1.13	4.86	134	80-120	5	20	MHA
Nitrite-N	1.92	0.75	mg/l	1.52	ND	126	80-120	0.02	20	<i>M1</i>
Sulfate	34.5	2.5	mg/l	10.0	25.2	93	80-120	0.3	20	
Batch: 10L3516 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3516-B	LK1)									
Total Suspended Solids	ND	10	mg/l							

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3516 Extracted: 12/30/10										
LCS Analyzed: 12/30/2010 (10L3516-BS Total Suspended Solids	1) 996	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 12/30/2010 (10L351 Total Suspended Solids	<b>6-DUP1)</b> 3.00	10	mg/l		<b>Source: I</b> 3.00	TL2841-0	1	0	10	Ja
Batch: 11A0030 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0030-E Total Dissolved Solids	BLK1) ND	10	mg/l							
LCS Analyzed: 01/03/2011 (11A0030-BS Total Dissolved Solids	5 <b>1)</b> 986	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 01/03/2011 (11A003 Total Dissolved Solids	<b>30-DUP1)</b> 580	10	mg/l		<b>Source: I</b> 582	TL2530-0	1	0.3	10	
Batch: 11A0037 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0037-E Perchlorate	BLK1) ND	4.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0037-BS Perchlorate	5 <b>1)</b> 24.1	4.0	ug/l	25.0		96	85-115			
<b>Matrix Spike Analyzed: 01/03/2011 (11</b> A Perchlorate	<b>0037-MS1)</b> 26.4	4.0	ug/l	25.0	<b>Source: I</b> 1.25	<b>TL2774-0</b> 101	<b>3</b> 80-120			

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0037 Extracted: 01/03/11										
Matrix Spike Dup Analyzed: 01/03/2011	(11A0037-N	ASD1)			Source: I	TL2774-0	3			
Perchlorate	26.5	4.0	ug/l	25.0	1.25	101	80-120	0.3	20	
Batch: 11A0108 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0108-B	BLK1)									
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 01/03/2011 (11A0108-BS	,									
Ammonia-N (Distilled)	10.1	0.500	mg/l	10.0		101	80-115			
Matrix Spike Analyzed: 01/03/2011 (11A	,					TL2721-0				
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 01/03/2011		,				TL2721-0				
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 11A0118 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0118-B	BLK1)									
Total Cyanide	ND	5.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0118-BS	51)									
Total Cyanide	192	5.0	ug/l	200		96	90-110			
Matrix Spike Analyzed: 01/03/2011 (11A0118-MS1)						TL2724-0				
Total Cyanide	163	5.0	ug/l	200	ND	81	70-115			

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#### **METHOD BLANK/QC DATA**

#### **INORGANICS**

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 11A0118 Extracted: 01/03/11										
Matrix Spike Dup Analyzed: 01/03/201		Source: I	TL2724-02	2						
Total Cyanide	163	5.0	ug/l	200	ND	81	70-115	0.1	15	

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## **METHOD BLANK/QC DATA**

## EPA-5 1613Bx

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 1012285 Extracted: 01/12/11										
Blank Analyzed: 01/13/2011 (G1A120	000285B)				Source:					
1,2,3,4,6,7,8-HpCDD	8.4e-007	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	4.6e-006	0.0001	ug/L				-			J, Q
OCDF	1e-006	0.0001	ug/L				-			J, Q
Total HpCDD	1.9e-006	0.00005	ug/L				-			J, Q
Total HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0018		ug/L	0.002		89	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0019		ug/L	0.002		94	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0019		ug/L	0.002		95	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0015		ug/L	0.002		73	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0016		ug/L	0.002		82	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0021		ug/L	0.002		104	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0017		ug/L	0.002		88	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		82	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016		ug/L	0.002		82	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0016		ug/L	0.002		78	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0017		ug/L	0.002		87	28-136			

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## **METHOD BLANK/QC DATA**

## EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
•	ixesuit	Linit	Omto	Lever	Result	JUNEC	Linnts	ΝD	Linnt	Quanners
Batch: 1012285 Extracted: 01/12/11										
Blank Analyzed: 01/13/2011 (G1A1200	00285B)				Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0017		ug/L	0.002		84	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0014		ug/L	0.002		71	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0013		ug/L	0.002		68	24-169			
Surrogate: 13C-OCDD	0.0038		ug/L	0.004		95	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00073		ug/L	0.0008		92	35-197			
LCS Analyzed: 01/14/2011 (G1A12000	0285C)				Source:					
1,2,3,4,6,7,8-HpCDD	0.00111	0.00005	ug/L	0.001		111	70-140			В
1,2,3,4,6,7,8-HpCDF	0.00106	0.00005	ug/L	0.001		106	82-122			В
1,2,3,4,7,8,9-HpCDF	0.00102	0.00005	ug/L	0.001		102	78-138			
1,2,3,4,7,8-HxCDD	0.00111	0.00005	ug/L	0.001		111	70-164			
1,2,3,4,7,8-HxCDF	0.001	0.00005	ug/L	0.001		100	72-134			
1,2,3,6,7,8-HxCDD	0.00112	0.00005	ug/L	0.001		112	76-134			
1,2,3,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	84-130			
1,2,3,7,8,9-HxCDD	0.00118	0.00005	ug/L	0.001		118	64-162			
1,2,3,7,8,9-HxCDF	0.00105	0.00005	ug/L	0.001		105	78-130			
1,2,3,7,8-PeCDD	0.00111	0.00005	ug/L	0.001		111	70-142			
1,2,3,7,8-PeCDF	0.00107	0.00005	ug/L	0.001		107	80-134			
2,3,4,6,7,8-HxCDF	0.000997	0.00005	ug/L	0.001		100	70-156			
2,3,4,7,8-PeCDF	0.00106	0.00005	ug/L	0.001		106	68-160			
2,3,7,8-TCDD	0.000216	0.00001	ug/L	0.0002		108	67-158			
2,3,7,8-TCDF	0.000206	0.00001	ug/L	0.0002		103	75-158			
OCDD	0.00196	0.0001	ug/L	0.002		98	78-144			В
OCDF	0.00223	0.0001	ug/L	0.002		111	63-170			В
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00157		ug/L	0.002		79	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0018		ug/L	0.002		90	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00188		ug/L	0.002		94	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00133		ug/L	0.002		66	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00162		ug/L	0.002		81	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00176		ug/L	0.002		88	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00168		ug/L	0.002		84	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00168		ug/L	0.002		84	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00143		ug/L	0.002		72	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00161		ug/L	0.002		81	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00176		ug/L	0.002		88	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00167		ug/L	0.002		83	13-328			

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## **METHOD BLANK/QC DATA**

## EPA-5 1613Bx

A	D14	Reporting	T	Spike	Source	0/DEC	%REC	RPD	RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	KPD	Limit	Qualifiers
Batch: 1012285 Extracted: 01/12/11										
LCS Analyzed: 01/14/2011 (G1A12000	00285C)				Source:					
Surrogate: 13C-2,3,7,8-TCDD	0.00135		ug/L	0.002		68	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00145		ug/L	0.002		73	22-152			
Surrogate: 13C-OCDD	0.00276		ug/L	0.004		69	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000714		ug/L	0.0008		89	31-191			

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## **Compliance Check**

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

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL2723-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

## **Compliance Check**

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

						Compliance
LabNumber	Analysis	Analyte	Units	Result	MRL	Limit
ITL2723-02	Ammonia-N, Titr 4500NH3-C (w	//di:Ammonia-N (Distilled)	mg/l	0	0.500	10.1
ITL2723-02	Antimony-200.8	Antimony	ug/l	0.22	2.0	6
ITL2723-02	Cadmium-200.8	Cadmium	ug/l	0.051	1.0	3.1
ITL2723-02	Chloride - 300.0	Chloride	mg/l	16	0.50	150
ITL2723-02	Copper-200.8	Copper	ug/l	2.69	2.00	14
ITL2723-02	Lead-200.8	Lead	ug/l	0.87	1.0	5.2
ITL2723-02	Mercury - 245.1	Mercury	ug/l	0	0.20	0.13
ITL2723-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.79	0.11	8
ITL2723-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL2723-02	Nitrogen, NO3+NO2 -N EPA 30	0.0 Nitrate/Nitrite-N	mg/l	0.79	0.26	8
ITL2723-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6
ITL2723-02	Selenium-200.8	Selenium	ug/l	0.45	2.0	5
ITL2723-02	Sulfate-300.0	Sulfate	mg/l	15	0.50	300
ITL2723-02	TDS - SM2540C	Total Dissolved Solids	mg/l	198	10	950
ITL2723-02	Thallium-200.8	Thallium	ug/l	0.032	1.0	2
ITL2723-02	Zinc-200.7	Zinc	ug/l	12	20.0	159

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Sampled: 12/29/10-12/30/10 Received: 12/29/10

## DATA QUALIFIERS AND DEFINITIONS

- Method blank contamination. The associated method blank contains the target analyte at a reportable level. В Estimated result. Result is less than the reporting limit. J Ja Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability. Jb The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned. **M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS). M-3 Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS). MHA Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS). MNR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- **Q** Estimated maximum possible concentration (EMPC).
- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- **RPD** Relative Percent Difference



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Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

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## **Certification Summary**

#### **TestAmerica** Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	Х	Х
EPA 200.7-Diss	Water	Х	Х
EPA 200.7	Water	Х	Х
EPA 200.8-Diss	Water	Х	Х
EPA 200.8	Water	Х	Х
EPA 245.1-Diss	Water	Х	Х
EPA 245.1	Water	Х	Х
EPA 300.0	Water	Х	Х
EPA 314.0	Water	Х	Х
Filtration	Water	N/A	N/A
SM 2540D	Water	Х	Х
SM2540C	Water	Х	
SM4500CN-E	Water	Х	Х
SM4500NH3-C	Water	Х	Х

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

#### **Subcontracted Laboratories**

**TestAmerica** Irvine

# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### **Eberline Services - SUB**

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec Samples: ITL2723-02

- Analysis Performed: Gross Alpha Samples: ITL2723-02
- Analysis Performed: Gross Beta Samples: ITL2723-02
- Analysis Performed: Level 4 Data Package Samples: ITL2723-02
- Analysis Performed: Radium, Combined Samples: ITL2723-02
- Analysis Performed: Strontium 90 Samples: ITL2723-02
- Analysis Performed: Tritium Samples: ITL2723-02
- Analysis Performed: Uranium, Combined Samples: ITL2723-02

#### **TestAmerica** Irvine

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THE LEADER IN ENVIRONMENTAL TESTING

MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly Project ID: Routine Outfall 008 2010 Routine Outfall 008 Report Number: ITL2723

Sampled: 12/29/10-12/30/10 Received: 12/29/10

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

#### TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8656 Samples: ITL2723-02

Method Performed: 900 Samples: ITL2723-02

- Method Performed: 901.1 Samples: ITL2723-02
- Method Performed: 903.1 Samples: ITL2723-02
- Method Performed: 904 Samples: ITL2723-02
- Method Performed: 905 Samples: ITL2723-02
- Method Performed: 906 Samples: ITL2723-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B Samples: ITL2723-02

#### **TestAmerica** Irvine



# **CHAIN OF CUSTODY FORM**

Test A	meric	a Version <del>6/</del>	2/9	2610		CI	IAI	N C	of (	CUS	то	DY	FC	RN	1			Ţ	(	$\sum$	Page 1 of 21
Client Name/	Address:			Project:											A	NALYSIS	REQUI		-		
MWH-Arca 618 Michillinc Arcadia, CA	WH-Arcadia 8 Michillinda Ave, Suite 200 cadia, CA 91007 est America Contact: Debby Wilson Boeing-SSFL NPDES <b>Routine Outfall 008</b> <b>GRAB</b> Stormwater at Happy						HEM)														Field readings: (Log in and include in report Temp and pH) Temp °F = $49^{3}$
Project Mana	ger: Bro	nwyn Kelly		Phone Numbe			1664-F														рн = <b>7.6</b>
Sampler: <b>2</b> .3	ch B	<b>n</b> 4 rg p		(626) 568-669 Fax Number: (626) 568-651			Grease (1664-HEM)														Time of readings =
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil &														Comments
Outfall 008	w	1L Amber	2	12.29.2010	нсі	1A, 1B	x														
				10:30				•													
																					/ 18',55 / 12/29/10 /
			1																	1 1	N N
																				· · ·	W V
			<b> </b>																		
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	ļ									<u> </u>											
	<u> </u>			re the Grab Po			r thic			ant (							t are to	bo adda	d to this	s work o	rder
Relinguished By		iese Samp	Date/													round time: (		De auue		5 WOIN 0	
	<u>~</u>	ò.		17.0	9.2010		f/	M		1	te/Time 12 1	-29 7. ''	-10 1 r			ur:		72 Hour:			10 Day:
Relinquistied By	1	r	Date/	lime:		Received By	Y	-	$\not\vdash$	Da	te/Time	ก่	12					· /· - /			· · · · · ·
Relinguished By	£0,nu				6:55	Vn	BA	ul inl	l_	12/.	z <i>q</i> //	0	16:	55	<del>Sa</del> mple Intact:	e Integrity: (C	heck)	On Ice:	<u>×_</u>		
		Ú	Date/	inne.		Received By				Da					Data R	Requirements	(Check)				
															No Lev	vel IV:		All Level IV	:		NPDES Level IV:

291103 4.5



## CHAIN OF CUSTODY FORM

Client Name/A	ddress			Project:			<u> </u>							A	NALY	SIS RE	QUIRED	)			
MWH-Arcad				Boeing-SSFL			-				ģ		•								
618 Michillinda		Suite 200		Routine Outfa		,	, Pb,				, T	), K- , K-									
Arcadia, CA	91007			COMPOSITE			Ċr,				<u>а</u> -	00.( 03. T. 8.0)									
	<u> </u>			Stormwater at	Happy Vall	ley	Ś		rate		Ũ	(90 c (90 c)			1						
Test America	Contact	: Debby Wil	son				ç,		0 H		õ	) um (60 Bel									
							is:	(s)	erc		Ŝ	oss 90 (90) 1.1									
							Aeta	ene	ź		als:	, C S S S									Comments
Project Manag	ger: Bro	nwyn Kelly		Phone Numbe	r:		le l	Buo	03		Met	0.0) 0.4.0		ļŗ	0.2)						
-				(626) 568-669	1		erat	alto	4+°		/ed	(90) (90) (90) (90) (90)		trite	(35						
Sampler: Ric	-KK	BANACO	7	Fax Number:			6, V	p	2	S	Nov L	pha d R 37 (	l i	Ï.	Z,						
			·	(626) 568-651	5		Å.	(e)	04	TS	Dis Z	s Al bine S-1.		2	ioni	iide					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Hg, Tl, Se, Zn	TCDD (and all congeners)	CI <sup>-</sup> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K- 40, CS-137 (901.0 or 901.1)		Nitrate-N, Nitrite-N	Ammonia-N (350.2)	Cyanide					
Outfall 008	w	1L Poly	1	12-30-2610	HNO <sub>3</sub>	2A	X	- <u>-</u>	Ť	, 	<u> </u>		Ħ	†=	Ì						
Outfall 008 Dup	w	1L Poly	1	01:57	HNO <sub>3</sub>	2B	x							1							
Outfall 008	w	1L Amber	2		None	3A, 3B	1	x													
Outfall 008	w	500 mL Poly	2		None	4A, 4B			x												
Outfall 008	W	500 mL Poly	1		None	5				Х											
Outfall 008	w	1L Poly	1		None	6					х										Filter w/in 24hrs of receipt at lab
0	144	2.5 Gal Cube	1	12-30-2010	None	7A						x									Unfiltered and unpreserved
Outfall 008	W	500 mL Amber	1	01:57	None	7B							Π								analysis
Outfall 008		1.Cel Poly			None																Only test if first or second rain events of the year
Outfall 008	w	500 mL Poly	1	12.30-2010	None	9	<u> </u>						1	+ x							events of the year
Outfall 008	w	500 mL Poly	1	01:57	H <sub>2</sub> SO <sub>4</sub>	10								<u> </u>	x						
Outfall 008	w	500 mL Poly	1	12.50.2010	NaOH	11									<b> </b>	x					19:115
			-	01:57																	10/10/10
														+							
														1							
															1						
		1	I	<b>I</b>	COC	Page 2 d	of 2 list	the C	Comp	osite	Samp	les for Outfall	008	for th	is sto	rm eve	nt.	L	L	L	
				The						order	fopCC	OC Page 1 of 2	for (		1 008	for the	same e	vent.			·····
Relinquished By		C	ate/Tir			Received F	Ş	7	~	Da	ter ime:	12-30-10	6		Turn-a	round time	(Check)				
1.		,			-		NAN	1	() , ,	1. <b>1</b> /1	1					ır:		72 Hour:			10 Day:
ilan	[6]	<u>~</u>	1			1010	WUN	$( \prime \prime$	//u	IT /		13:5	9		48 Hou	ır:		5 Day:	X-		Normal:
Relinquished By	-7	2	ye/Ti	<sup>me:</sup> 12 - 30	- 10 _	Received B	у	0.		10	te/Time:										
	41		1	<sup>me:</sup> 12-30 [A :		ιι			l							e Integrity:		/			
Mar					15										Intact:	V_	On Ice: 🛓				
Relinquished By	7		ate/Tir	me:		Received B	У	_		Da	te/Time:										
																	ts: (Check)				
															No Lev	el IV:		All Level IV	·:		NPDES Level IV:

301103 1.1



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

February 2, 2011

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

## Reference: Test America-Irvine ITL2723 Eberline Analytical Report S101003-8656 Sample Delivery Group 8656

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL2723. The sample was received on December 31, 2010.

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

Sincerely,

N. Joseph Verville Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

## Case Narrative, page 1

February 1, 2011

## 1.0 General Comments

Sample delivery group 8656 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

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

## 2.0 Quality Control

For efficiency of analysis, sample ITL2723-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8657 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

### 3.0 Method Errors

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

February 1, 2011

#### 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.
- Strontium-90 Analysis The Sr-90 MDA in the QC Method Blank (2.02 pCi/L) 4.3 and sample ITL2723-02 (2.24 pCi/L) was greater than the required detection limit of 2.00 pCi/L. No other problems were encountered during the processing of the samples. All other 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
- Total Uranium Analysis No problems were encountered during the processing 4.6 of the samples. All quality control sample results were within required control limits.
- 4.7 Gamma Spectroscopy - The K-40 MDA for the duplicate of sample ITL2724-02 (28.0 pCi/L) and sample ITL2723-02 (39.2 pCi/L) were greater than the required detection limit of 25 pCi/L due to an elevated K40 background in the ROI for K40 on the detector used for analysis. No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

#### 5.0 **Case Narrative Certification Statement**

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

 $\frac{2/2}{11}$ 

N. Joseph Verville **Client Services Manager** 

SDG	8656	
Contact	<u>N. Joseph Vervill</u>	<u>e</u>

Client	<u>Test America, Inc.</u>
Contract	ITL2723

## SUMMARY DATA SECTION

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Duplicates	•	•	•	•	10
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Method Summaries	•	•	•	•	12
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(B)

Prepared by

Reviewed by

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-TOC
Version	3.06
Report date	02/01/11

SDG 8656

SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>ITL2723</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	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	02/01/11

SDG 8656

SDG	86	56	
Contact	N.	Joseph	Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL2723</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.

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
Report date	02/01/11

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

SDG 8656

SDG <u>8656</u>

Contact N. Joseph Verville

## LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S101003-01	ITL2723-02	Boeing - SSFL	WATER			ITL2723	12/30/10 01:57
S101004-02	Lab Control Sample		WATER				
S101004-03	Method Blank		WATER	·			
S101004-04	Duplicate (S101004-01)	Boeing - SSFL	WATER				12/30/10 02:55

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LS
Version	3.06
Report date	02/01/11

LAB SUMMARY Page 1 SUMMARY DATA SECTION Page 3

SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

#### SDG 8656

QC SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE	BASIS	DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8656	ITL2723	ITL2723-02	WATER		10.0 L		12/31/10	1	S101003-01	8656-001
8657		Method Blank Lab Control Sample Duplicate (S101004-01)	WATER WATER WATER		10.0 L		12/31/10	1	S101004-03 S101004-02 S101004-04	8657-003 8657-002 8657-004

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4 Lab id <u>EAS</u> Protocol <u>TA</u> Version <u>Ver 1.0</u> Form <u>DVD-QS</u> Version <u>3.06</u> Report date <u>02/01/11</u>

SDG 8656

SDG <u>8656</u>

Contact N. Joseph Verville

#### PREP BATCH SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

		PREPARATION	PREPARATION ERROR			- PLANCHETS ANALYZED				- QUALI-	
TEST	MATRIX	METHOD	BATCH	20 ¥	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7271-039	10.4	1			1	1	1/0/1	
SR	WATER	Strontium-90 in Water	7271-039	10.4	1			1	1	1/0/1	. <u></u>
Gas P	roportiona	al Counting									
80A	WATER	Gross Alpha in Water	7271-039	20.6	1			1	1	1/0/1	
80B	WATER	Gross Beta in Water	7271-039	11.0	1			1	l	1/0/1	
Gamma	Spectros	сору									
GAM	WATER	Gamma Emitters in Water	7271-039	7.0	1			1	1	1/0/1	
Kinet	ic Phospho	primetry, ug									
U_T	WATER	Uranium, Total	7271-039		1			1	1	1/0/1	
Liqui	d Scintill	lation Counting									
н	WATER	Tritium in Water	7271-039	10.0	1			1	1	1/0/1	
Radon	Counting										
RA	WATER	Radium-226 in Water	7271-039	16.4	1			1	1	1/0/1	

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

EAS
<u>TA</u>
<u>Ver 1.0</u>
DVD-PBS
3.06
02/01/11

PREP BATCH SUMMARY Page 1 SUMMARY DATA SECTION Page 5

SDG 8656

SDG <u>8656</u> Contact N. Joseph Verville

CLIENT SAMPLE ID

LAB SAMPLE

## LAB WORK SUMMARY

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

COLLECTED RECEIVED	LOCATION CUSTODY SAS no	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	ВҮ	METHOD
S101003-01	ITL2723-02		8656-001	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
12/30/10	Boeing - SSFL	WATER	8656-001	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
12/31/10	ITL2723		8656-001	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8656-001	GAM		01/11/11	01/31/11	MWT	Gamma Emitters in Water
			8656-001	Н		01/18/11	01/24/11	BW	Tritium in Water
			8656-001	RA		01/21/11	01/24/11	BW	Radium-226 in Water
	x		8656-001	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
		-	8656-001	U_T		01/20/11	01/24/11	BW	Uranium, Total
S101004-02	Lab Control Sample		8657-002	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
		WATER	8657-002	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
	s.		8657-002	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-002	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water
			8657-002	Н		01/18/11	01/24/11	BW	Tritium in Water
			8657-002	RA		01/21/11	01/24/11	BW	Radium-226 in Water
			8657-002	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
	. · · · ·		8657-002	U_T		01/20/11	01/24/11	BW	Uranium, Total
S101004-03	Method Blank	, ,	8657-003	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
		WATER	8657-003	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
			8657-003	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-003	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water
			8657-003	Н		01/18/11	01/24/11	BW	Tritium in Water
			8657-003	RA		01/21/11	01/24/11	вW	Radium-226 in Water
			8657-003	SR		01/26/11	01/31/11	BW	Strontium-90 in Water
			8657-003	U_T		01/20/11	01/24/11	BW	Uranium, Total
S101004-04	Duplicate (S101004-01)		8657-004	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water
12/30/10	Boeing - SSFL	WATER	8657-004	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water
12/31/10			8657-004	AC		01/26/11	01/31/11	BW	Radium-228 in Water
			8657-004	GAM		01/11/11	01/31/11	MWT	Gamma Emitters in Water
			8657-004	н		01/18/11	01/24/11	BW	Tritium in Water
			8657-004	RA		01/21/11	01/24/11	BW	Radium-226 in Water
			8657-004	KA .		01/21/11	01/24/11	DW	Radium-226 in water
			8657-004	SR			01/31/11	BW	Strontium-90 in Water

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>02/01/11</u>

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SDG 8656

SDG <u>8656</u>

#### Contact N. Joseph Verville

## WORK SUMMARY, cont.

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	ВҮ	SAMPLE TYPE CLIENT MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0		1		1	1	1	4
80B/80		Gross Beta in Water	900.0		1		1	1	1	4
AC		Radium-228 in Water	904.0		1		1	1	1	4
GAM		Gamma Emitters in Water	901.1		1		1	1	1	4
н		Tritium in Water	906.0		1		l	'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>02/01/11</u>

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

SDG 8656

8657-003

#### Method Blank

## METHOD BLANK

SDG <u>8656</u> Contact <u>N. Joseph Vervil</u>		<u>Test America, Inc.</u> ITL2723	-
Lab sample id <u>S101004-03</u> Dept sample id <u>8657-003</u>	Client sample id Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	$2\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.035	0.30	0.620	3.00	U	80A
Gross Beta	12587472	-0.211	0.63	1.11	4.00	υ	80B
Tritium	10028178	84.6	190	319	500	U	Н
Radium-226	13982633	0.053	0.35	0.627	1.00	U	RA
Radium-228	15262201	-0.165	0.28	0.717	1.00	U	AC
Strontium-90	10098972	0.357	0.92	2.02	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	UΤ
Potassium-40	13966002	U		22.5	25.0	Ŭ	GAM
Cesium-137	10045973	U		0.916	20.0	U	GAM

QC-BLANK #76735

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-DS Version 3.06 Report date 02/01/11

METHOD BLANKS Page 1 SUMMARY DATA SECTION Page 8

SDG 8656

8657-002

Lab Control Sample

#### LAB CONTROL SAMPLE

SDG <u>8656</u> Contact <u>N. Joseph Verville</u> Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

Client sample id <u>Lab Control Sample</u> Material/Matrix

WATER

Lab sample id <u>S101004-02</u> Dept sample id <u>8657-002</u>

ANĂLYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	36.1	2.2	0.821	3.00		80A	40.4	1.6	89	80-120	70-130
Gross Beta	33.7	1.4	1.13	4.00		80B	35.0	1.4	96	88-112	70-130
Tritium	2470	300	327	500		н	2540	100	97	84-116	80-120
Radium-226	59.0	2.5	0.639	1.00		RA	55.7	2.2	106	82-118	80-120
Radium-228	4.07	0.98	0.438	1.00		AC	4.62	0.18	88	77-123	60-140
Strontium-90	17.8	1.9	1.12	2.00		SR	17.5	0.70	102	84-116	80-120
Uranium, Total	60.8	7.3	0.174	1.00		υ_т	62.5	2.5	97	88-112	80-120
Cobalt-60	104	5.2	2.76	10.0		GAM	102	4.1	102	90-110	80-120
Cesium-137	117	4.6	3.40	20.0		GAM	110	4.4	106	91-109	80-120

QC-LCS #76734

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-LCS Version 3.06 Report date 02/01/11

LAB CONTROL SAMPLES Page 1 SUMMARY DATA SECTION Page 9

SDG 8656

8657-004

#### DUPLICATE

ITL2724-02

#### Client Test America, Inc. SDG <u>8656</u> Contact N. Joseph Verville Contract ITL2723 ORIGINAL DUPLICATE Lab sample id <u>S101004-01</u> Client sample id ITL2724-02 Lab sample id S101004-04 WATER Dept sample id 8657-004 Dept sample id <u>8657-001</u> Location/Matrix Boeing - SSFL Received <u>12/31/10</u> Collected/Volume <u>12/30/10 02:55</u> <u>10.0 L</u> Chain of custody id ITL2724

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 σ
Gross Alpha	0.672	0.31	0.372	3.00	J	80A	0.336	0.29	0.412	υ	67	134	1.5
Gross Beta	1.60	0.58	0.884	4.00	J	80B	1.23	0.54	0.835	J	26	87	0.9
Tritium	-26.6	180	321	500	U	н	80.3	190	323	υ	-		0.8
Radium-226	0.082	0.32	0.566	1.00	U	RA	0.146	0.31	0.541	υ	-		0.3
Radium-228	0.063	0.29	0.734	1.00	U	AC	0.030	0.21	0.458	U	-		0.2
Strontium-90	-0.236	0.71	1.75	2.00	U	SR	-0.099	0.80	1.94	U	-		0.3
Uranium, Total	0.082	0.012	0.017	1.00	J	U_T	0.093	0.013	0.017	J	13	30	1.2
Potassium-40	υ		28.0	25.0	U	GAM	υ		16.2	U	-		0.7
Cesium-137	υ		1.50	20.0	U	GAM	υ		1.25	U	-		0.3

QC-DUP#1 76736

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>02/01/11</u>

DUPLICATES Page 1 SUMMARY DATA SECTION Page 10

SDG 8656

8656-001

ITL2723-02

## DATA SHEET

	8656	Client	<u>Test America, Inc.</u>
	N. Joseph Verville	Contract	ITL2723
Lab sample id Dept sample id Received	<u>8656-001</u> 12/31/10	Client sample id Location/Matrix Collected/Volume ain of custody id	Boeing - SSFL WATER 12/30/10 01:57 10.0 L

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.928	0.46	0.566	3.00	J	80A
Gross Beta	12587472	3.17	0.60	0.844	4.00	J	80B
Tritium	10028178	31.2	180	314	500	U	н
Radium-226	13982633	0.214	0.43	0.754	1.00	U	RA
Radium-228	15262201	-0.069	0.28	0.790	1.00	U	AC
Strontium-90	10098972	-0.221	1.0	2.24	2.00	U	SR
Uranium, Total		0.749	0.085	0.017	1.00	J	U_T
Potassium-40	13966002	U		39.2	25.0	U	GAM
Cesium-137	10045973	υ		1.54	20.0	U	GAM

EAS
TA
<u>Ver 1.0</u>
DVD-DS
3.06
02/01/11

DATA SHEETS Page 1 SUMMARY DATA SECTION Page 11

SDG 8656

Test	ACMatrix WATER
SDG	8656
Contact	N. Joseph Verville

## LAB METHOD SUMMARY

RADIUM-228 IN WATER BETA COUNTING Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

<b>LAB</b> SAMPLE ID	RAW SUI		CLIENT SAMPLE ID	Radium-228	
Preparation	n batch 7:	271-039			
5101003-01		8656-001	ITL2723-02	υ	
5101004-02		8657-002	Lab Control Sample	ok	
3101004-03		8657-003	Method Blank	υ	
5101004-04		8657-004	Duplicate (S101004-01)	- U	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE	MDA ID pCi/L	ALIQ L	PREP FAC	DILU- TION	% YIELD	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	a batch 7271-039 2σ p	rep error 10.4 % Ref	ference	Lab N	iotebool	c No. 7	7271	pg.039	<b>)</b> .				
S101003-01	ITL2723-02	0.790	1.80			78		150		27	01/26/11	01/26	GRB-231
S101004-02	Lab Control S	ample 0.438	1.80			85		150			01/26/11	01/26	GRB-204
S101004-03	Method Blank	0.717	1.80			88		150			01/26/11	01/26	GRB-229
S101004-04	Duplicate (S1	01004-01) 0.734	1.80			78		150		27	01/26/11	01/26	GRB-230
Nominal val	ues and limits from meth	od 1.00	1.80			30-105	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	0.670	±	0.315
FOR 4 SAMPLES	YIELD _	82	±	10

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/01/11

METHOD SUMMARIES Page 1 SUMMARY DATA SECTION Page 12

SDG 8656

Test <u>SR</u> Matrix <u>WATER</u> SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY STRONTIUM-90 IN WATER BETA COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

SAMPLE ID	TEST FIX PLANCHE	CLIENT SAMPLE ID	Strontium-90		
Preparation	batch 7271-039			······································	
S101003-01	8656-00	ITL2723-02	υ		
S101004-02	8657-00	2 Lab Control Sample	ok		
S101004-03	8657-00	Method Blank	υ		
S101004-04	8657-004	Duplicate (S101004-01)	- 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 7271-039 20 prep error 1	.0.4 % Re:	ference	Lab N	lotebool	cNo. 7	7271	pg.039	)		-		
S101003-01	ITL2723-02	2.24	0.500			49		50		27	01/19/11	01/26	GRB-206
S101004-02	Lab Control Sample	1.12	0.500			59		50			01/19/11	01/26	GRB-221
S101004-03	Method Blank	2.02	0.500			44		50			01/19/11	01/26	GRB-230
S101004-04	Duplicate (S101004-01)	1,75	0.500			55		50		27	01/19/11	01/26	GRB-231
Nominal val	ues and limits from method	2.00	0.500			30-10	5	50		180			

	PROCEDURES	REFERENCE DWP-380	905.0 Strontium in Drinking Water, rev 8	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>1.78</u> ± <u>0.970</u> YIELD <u>52</u> ± <u>13</u>
L				L	

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/01/11

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 13

SDG 8656

Test	80A Matrix WATER
SDG	8656
Contact	<u>N. Joseph Verville</u>

## LAB METHOD SUMMARY

GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client Test America, Inc. Contract ITL2723

#### RESULTS

SAMPLE ID T	AW SUF-	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation ba	atch 7271	-039		
S101003-01 8	0	8656-001	ITL2723-02	0.928 J
S101004-02 8	0	8657-002	Lab Control Sample	ok
S101004-03 8	0	8657-003	Method Blank	U
S101004-04 8	0	8657-004	Duplicate (S101004-01)	ok J

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mg	EFF %	COUNT min		DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-039 2 <i>0</i> prep error 2	0.6 % Re	ference	Lab N	iotebool	k No. '	7271	pg.039	•					
S101003-01	80	ITL2723-02	0.566	0.300			63		400			12	01/11/11	01/11	GRB-111
S101004-02	80	Lab Control Sample	0.821	0.250			62		400				01/11/11	01/11	GRB-214
S101004-03	80	Method Blank	0.620	0.250			61		400				01/11/11	01/11	GRB-216
S101004-04	80	Duplicate (S101004-01)	0.372	0.300			20		400			12	01/11/11	01/11	GRB-105
Nominal val	ues and li	mits from method	3.00	0.250			0-20	0	100			180			

PROCEDURES	REFERENCE	900.0	AVERAGES ± 2 SD	MDA <u>0.595</u> ± <u>0.369</u>
	DWP-121	Gross Alpha and Gross Beta in Drinking Water,	FOR 4 SAMPLES	RESIDUE <u>52</u> ± <u>42</u>
		rev 10		, <u>, , , , , , , , , , , , , , , , , , </u>

Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/01/11

METHOD SUMMARIES Page 3 SUMMARY DATA SECTION Page 14

SDG 8656

Test <u>80B</u> Matrix <u>WATER</u> SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY GROSS BETA IN WATER GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
SAMPLIS ID		FIRMCHIST		
Preparation	batch 727	1-039		
S101003-01	80	8656-001	ITL2723-02	3.17 J
S101004-02	80	8657-002	Lab Control Sample	ok
S101004-03	80	8657-003	Method Blank	υ
S101004-04	80	8657-004	Duplicate (S101004-01)	ok J
Nominal val	ues and li	mits from m	ethod RDLs (pCi/L)	4.00

#### METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	mg	96	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	n batch 727	1-039 2σ prep error 1	1.0 % Rei	ference	Lab 1	Noteboo	k No.	7271	pg.039	•					
S101003-01	80	ITL2723-02	0.844	0.300			63		400			12	01/11/11	01/11	GRB-111
S101004-02	80	Lab Control Sample	1.13	0.250			62		400				01/11/11	01/11	GRB-214
S101004-03	80	Method Blank	1.11	0.250			61		400				01/11/11	01/11	GRB-216
S101004-04	80	Duplicate (S101004-01)	0.884	0.300			20		400			12	01/11/11	01/11	GRB-105
Nominal val	ues and li	mits from method	4.00	0.250			0-20	0	100			180			<u> </u>
Nominal val	ues and li	mits from method	4.00	0.250			0-20	0	100			180		··	

PROCEDURES	REFERENCE DWP-121	900.0 Gross Alpha and Gross Beta in Drinking Water,	AVERAGES ± 2 SD FOR 4 SAMPLES	MDA	<u>0.992</u> ± . <u>52</u> ± .	0.298
		rev 10		,		I

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/01/11

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 15

SDG 8656

Test <u>GAM</u> Matrix <u>WATER</u> SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation	batch 727	1-039				
S101003-01		8656-001	ITL2723-02		υ	
S101004-02		8657-002	Lab Control Sample	ok	ok	
S101004-03		8657-003	Method Blank		υ	
S101004-04		8657-004	Duplicate (S101004-01)		- U	
Nominal val	ues and li	·		10.0	20.0	- 

#### METHOD PERFORMANCE

<b>LAB</b> SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		YIELD %	EFF %	COUNT min		DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	. batch 7271-039 2σ prep error 7	.0% Re	ference	Lab I	Notebool	k No.	7271	pg.039	<b>,</b>					
S101003-01	ITL2723-02		2.00					596			12	01/10/11	01/11	MB,01,00
S101004-02	Lab Control Sample		2.00					946				01/10/11	01/10	MB,05,00
S101004-03	Method Blank		2.00					924				01/10/11	01/10	MB,08,00
S101004-04	Duplicate (S101004-01)		2.00					596			12	01/10/11	01/11	01,02,00
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

Lab id	EAS			
Protocol	TA			
Version	<u>Ver 1.0</u>			
Form	DVD-LMS			
Version	3.06			
Report date	02/01/11			

METHOD SUMMARIES Page 5 SUMMARY DATA SECTION Page 16

SDG 8656

Test	<u>U T</u> Matrix <u>WATER</u>
SDG	8656
Contact	N. Joseph Verville

## LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY, UG Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

	LANCHET CLIENT SAMPLE ID	Total
Preparation batch 7271-	039	
S101003-01 8	656-001 ITL2723-02	0.749 J
S101004-02 8	657-002 Lab Control Sample	ok
S101004-03 8	657-003 Method Blank	U .
S101004-04 8	657-004 Duplicate (S101004-01)	ok J

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT	SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	¥IELD	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batc	h 7271	-039	2ø prep error	Re	ference	Lab N	loteboo	k No.	7271	pg.03	9				
S101003-01			ITL272	3-02	0.017	0.0200							21	01/20/11	01/20	KPA-001
S101004-02			Lab Con	ntrol Sample	0.174	0.0200								01/20/11	01/20	KPA-001
S101004-03			Method	Blank	0.017	0.0200								01/20/11	01/20	KPA-001
S101004-04			Duplica	ate (S101004-01)	0.017	0.0200							21	01/20/11	01/20	KPA-001
Nominal val	ues a	nd lim	nits fro	om method	1.00	0.0200							 180			

PROCEDURES REFERENCE D5174

 AVERAGES ± 2 SD
 MDA \_\_0.056 ± \_\_0.157

 FOR 4 SAMPLES
 YIELD \_\_\_\_\_ ± \_\_\_\_

Lab id	EAS				
Protocol	TA				
Version	<u>Ver 1.0</u>				
Form	DVD-LMS				
Version	3.06				
Report date	02/01/11				

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 17

SDG 8656

Test <u>H</u> Matrix <u>WATER</u> SDG <u>8656</u> Contact <u>N. Joseph Verville</u>

#### LAB METHOD SUMMARY TRITIOM IN WATER LIQUID SCINTILLATION COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

	RAW SUF- TEST FIX PLANCH	ET CLIENT SAMPLE ID	Tritium
Preparation	batch 7271-039		
S101003-01	8656-0	01 ITL2723-02	U
S101004-02	8657-0	02 Lab Control Sample	ok
S101004-03	8657-0	03 Method Blank	U
S101004-04	8657-0	04 Duplicate (S101004-0	)1) - U

#### METHOD PERFORMANCE

LAB	RAW SUF-		Mida	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/I	L L	FAC	TION	8	જ	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 727	1-039 2σ prep error	10.0 %	Reference	Lab 1	Notebool	c No.	7271	pg.039	9					
S101003-01		ITL2723-02	314	0.0100			100		50			19	01/18/11	01/18	LSC-006
S101004-02		Lab Control Sample	327	0.100			10		50				01/18/11	01/18	LSC-006
S101004-03		Method Blank	319	0.100			10		50				01/18/11	01/18	LSC-006
S101004-04		Duplicate (S101004-01)	321	0.0100			100		50			19	01/18/11	01/18	LSC-006
. <u></u>	······································	······································	*****												
Nominal val	ues and li	mits from method	500	0.0100					100			180			

PROCEDURES	REFERENCE DWP-212	906.0 Tritium in Drinking Water by Distillation, rev 8		AVERAGES ± 2 SD FOR 4 SAMPLES	MDA <u>320</u> ± 10.8 YIELD <u>55</u> ± 104
			L	·····	

Lab id	EAS			
Protocol	TA			
Version	<u>Ver 1.0</u>			
Form	DVD-LMS			
Version	3.06			
Report date	02/01/11			

METHOD SUMMARIES Page 7 SUMMARY DATA SECTION Page 18

SDG 8656

Test	RA Matrix WATER
SDG	8656
Contact	N. Joseph Verville

#### LAB METHOD SUMMARY RADIUM-226 IN WATER

RADON COUNTING

Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>

#### RESULTS

	RAW SUF- TEST FIX PLANC	HET CLIENT SAMPLE ID	Radium-226	,
Preparation	batch 7271-039			
S101003-01	8656-	001 ITL2723-02	υ	
S101004-02	8657-	002 Lab Control Sample	ok	
S101004-03	8657-	003 Method Blank	U	
S101004-04	8657-	004 Duplicate (S101004-0)	.) – U	

#### METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		YIELD %	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-039 2ø prep error	16.4 % Re	ference	Lab I	Notebool	k No.	7271	pg.039	9				
S101003-01		ITL2723-02	0.754	0.100			100		86		22	01/21/11	01/21	RN-015
S101004-02		Lab Control Sample	0.639	0.100			100		106			01/21/11	01/21	RN-011
S101004-03		Method Blank	0.627	0.100			100		106			01/21/11	01/21	RN-015
S101004-04		Duplicate (S101004-01)	0.566	0.100			100		106		22	01/21/11	01/21	RN-014
Nominal val	ues and li	mits from method	1.00	0.100		-			100		 180			

PROCEDURES REFERENCE	903.1	AVERAGES ± 2 SD	MDA <u>0.646</u> ± <u>0.157</u>
DWP-881A	Ra-226 Screening in Drinking Water, rev 6	FOR 4 SAMPLES	YIELD <u>100</u> ± <u>0</u>

Lab id	EAS
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-LMS
Version	3.06
Report date	02/01/11

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 19

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#### SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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EAS
TA
<u>Ver 1.0</u>
DVD-RG
3.06
02/01/11

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## PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

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Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
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#### WORK SUMMARY

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

The following notes apply to this report:

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

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Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 02/01/11

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## DATA SHEET

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

The following notes apply to this report:

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

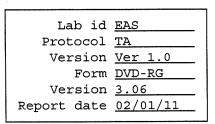
The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

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

The following qualifiers are defined by the DVD system:

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

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## DATA SHEET

J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
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'.
x	Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
2	There were two or more results available for this analyte. The reported result may not be the same as in the raw data.
	Other qualifiers are lab defined. Definitions should be in the SDG narrative.
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

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>02/01/11</u>

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## DATA SHEET

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

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

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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:
<ul> <li>* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.</li> </ul>
<ul> <li>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.</li> </ul>
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.
<ul> <li>The second limits are protocol defined upper and lower QC limits for the recovery.</li> </ul>
<ul> <li>The recovery is underlined if it is outside either of these ranges.</li> </ul>

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Version	3.06
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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.

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## DUPLICATE

- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.
  - Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.
- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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# MATRIX SPIKE

su	e Matrix Spike Report shows all results, recoveries and primary pporting information for one Matrix Spike and associated Original mple.
${\tt Th}$	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.

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MATRIX SPIKE

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

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

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Lab id	EAS
Protocol	TA
Version	<u>Ver 1.0</u>
Form	DVD-RG
Version	3.06
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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.

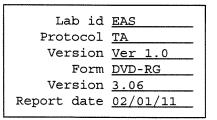
The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

\* 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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#### 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

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## METHOD SUMMARY

specified for the method.

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

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

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

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

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

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

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#### METHOD SUMMARY

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

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

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

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

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# DEC. 30. 2010 7:24PM TESTAMERICA

## SUBCONTRACT ORDER TestAmerica Irvine

# ITL2723

8656

SENDING LABORATORY;	RECEIVING LABORATORY:	
TestAmerica Irvine	Eberline Services	
17461 Derian Avenue. Suite 100	2030 Wright Avenue	
Irvine, CA 92614	Richmond, CA 94804	
Phone: (949) 261-1022	Рһопе :(510) 235-2633	
Fax: (949) 260-3297	Fax: (510) 235-0438	
Project Manager: Debby Wilson	Project Location: California	
•	Receipt Temperature: °C Ice: Y / N	

Analysis	Units	Due	Expires	Comments
Sample ID: ITL2723-02 (Ou	tfall 008 (Cor	nposite) - Wat	er) Sampled: 12/30/10 (	01:57
Gamma Spec-O	mg/kg	01/04/11	12/30/11 01:57	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	01/04/11	06/28/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	01/04/11	06/28/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Ou	t N/A	01/04/11	01/27/11 01:57	
Radium, Combined-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-0	pĊi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Containers Supplied:				
2.5 gal Poly (I)	500 mL Aml	ber (J)		

2(30/10 Date/Time Released By 12/31/10 FEDEX Released By Date/Time

Received By Date/Time KELENGEN 31/10/0500 Page 1 of 1 Celeres Received By Date/Time

NO. 026 P. 1

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6. Num	nber of sample	s: as in shipping containe hers per sample:	r:		)		
7 NUT	nber of contair	hers per sample.	<u> </u>	Yes [ 1 ] N	o[]		
1 0	moles are in co	prrect container		N	1 10	,	
g Pap	oerwork agree	s with samples? Tape [] Hazard la			propriate samp	e labels [1/]	
g. Far	mples have:	Tape [ ] Hazard la	abels [ ] Ra		ontainer [ ]	Missing [ ]	
10. Sar	mples are:	Tape [] Hazard la In good condition []	Leaking	LI 2 Pres	ervative Hin	10.3	
11. Sat	moles are: P	In good condition [/] Preserved [/] Not pro	eserved [ ]	рн ноз			
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13. De	3501100 0.1.						
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	Vas P.M. notif	fied of any anomalies?	Yes	[] NO[	] Date	2	
		fied of any anomalies?	Yes Date:	5] NO] 12/37/10Time	12:3	0	1
15. Ir	nspected by _	JK.	Date:		] Date ::i2_:3 Beta/Gamma cpm	دی Ion Chamber mR/hr	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Yes Date: Wipe	12/30/10Time	1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
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15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:		1213   Beta/Gamma	Ion Chamber	
15. Ir Custom	nspected by	Gamma ion Chamber om mR/hr	Date:	12/37/10Time Customer Sample No.	E 12:3	Ion Chamber mR/hr	
15. Ir Custom Sample ALL ĴC	nspected by	Samma Ion Chamber pm mR/hr	Date:	Calibration C	Eta/Gamma Cpm	Ion Chamber mR/hr	
15. Ir Custom Sample ALL ĴC	mber Ser. No.	Samma Ion Chamber pm mR/hr	Uate:	Calibration C	E 12:3	Ion Chamber mR/hr	

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