

APPENDIX G

Section 19

Outfall 006, February 13, 2009

Test America Analytical Laboratory Report

LABORATORY REPORT

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

Project: Routine Outfall 006

Sampled: 02/13/09
Received: 02/13/09
Issued: 03/16/09 14:49

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 of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID
ISB1693-01

CLIENT ID
Outfall 006

MATRIX
Water

Reviewed By:



TestAmerica Irvine

Joseph Doak
Project Manager

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

Project ID: Routine Outfall 006

Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	9B23085	1.3	4.8	2.5	1	02/23/09	02/24/09	J

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NPDES - 1350

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	9B23088	0.20	2.0	0.27	1	02/23/09	02/24/09	J
Cadmium	EPA 200.8	9B23088	0.11	1.0	0.12	1	02/23/09	02/24/09	J
Copper	EPA 200.8	9B23088	0.75	2.0	7.6	1	02/23/09	02/24/09	
Lead	EPA 200.8	9B23088	0.30	1.0	2.4	1	02/23/09	02/24/09	
Thallium	EPA 200.8	9B23088	0.20	1.0	ND	1	02/23/09	02/24/09	C

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NPDES - 1351

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Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	9B20106	0.20	2.0	0.56	1	02/20/09	02/23/09	J
Cadmium	EPA 200.8-Diss	9B20106	0.11	1.0	ND	1	02/20/09	02/23/09	
Copper	EPA 200.8-Diss	9B20106	0.75	2.0	1.3	1	02/20/09	02/23/09	J
Lead	EPA 200.8-Diss	9B20106	0.30	1.0	ND	1	02/20/09	02/23/09	
Thallium	EPA 200.8-Diss	9B20106	0.20	1.0	ND	1	02/20/09	02/23/09	

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Received: 02/13/09

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	9B13065	0.25	0.50	8.8	1	02/13/09	02/13/09	
Nitrate/Nitrite-N	EPA 300.0	9B13065	0.15	0.26	2.5	1	02/13/09	02/13/09	
Sulfate	EPA 300.0	9B13065	0.20	0.50	6.8	1	02/13/09	02/13/09	
Total Dissolved Solids	SM2540C	9B17036	10	10	160	1	02/17/09	02/17/09	

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Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

MCAWW 245.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water) - cont.									
Reporting Units: ug/L									
Mercury	MCAWW 245.1	9049249	0.027	0.2	ND	1	02/18/09	02/18/09	

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Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

MCAWW 245.1-DISS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1693-01 (Outfall 006 - Water) - cont.									
Reporting Units: ug/L									
Mercury	MCAWW 245.1-DISS	9049255	0.027	0.2	ND	1	02/18/09	02/18/09	

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Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 006 (ISB1693-01) - Water					
EPA 300.0	2	02/13/2009 15:25	02/13/2009 20:10	02/13/2009 19:00	02/13/2009 21:20
Filtration	1	02/13/2009 15:25	02/13/2009 20:10	02/14/2009 12:53	02/14/2009 12:55

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Project ID: Routine Outfall 006

Report Number: ISB1693

Sampled: 02/13/09

Received: 02/13/09

METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 9B23085 Extracted: 02/23/09											
Blank Analyzed: 02/24/2009 (9B23085-BLK1)											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
LCS Analyzed: 02/24/2009 (9B23085-BS1)											
Hexane Extractable Material (Oil & Grease)	19.9	5.0	1.4	mg/l	20.0		100	78-114			MNR1
LCS Dup Analyzed: 02/24/2009 (9B23085-BSD1)											
Hexane Extractable Material (Oil & Grease)	19.7	5.0	1.4	mg/l	20.0		98	78-114	1	11	

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Sampled: 02/13/09
 Received: 02/13/09

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 9B23088 Extracted: 02/23/09											
Blank Analyzed: 02/24/2009 (9B23088-BLK1)											
Antimony	ND	2.0	0.20	ug/l							
Cadmium	ND	1.0	0.11	ug/l							
Copper	ND	2.0	0.75	ug/l							
Lead	ND	1.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
LCS Analyzed: 02/24/2009 (9B23088-BS1)											
Antimony	81.2	2.0	0.20	ug/l	80.0		102	85-115			
Cadmium	79.6	1.0	0.11	ug/l	80.0		100	85-115			
Copper	80.0	2.0	0.75	ug/l	80.0		100	85-115			
Lead	83.7	1.0	0.30	ug/l	80.0		105	85-115			
Thallium	83.6	1.0	0.20	ug/l	80.0		104	85-115			
Matrix Spike Analyzed: 02/24/2009 (9B23088-MS1) Source: ISB1530-03											
Antimony	85.5	2.0	0.20	ug/l	80.0	0.241	107	70-130			
Cadmium	84.1	1.0	0.11	ug/l	80.0	ND	105	70-130			
Copper	75.7	2.0	0.75	ug/l	80.0	1.56	93	70-130			
Lead	76.4	1.0	0.30	ug/l	80.0	ND	95	70-130			
Thallium	77.3	1.0	0.20	ug/l	80.0	ND	97	70-130			
Matrix Spike Analyzed: 02/24/2009 (9B23088-MS2) Source: ISB1780-01											
Antimony	82.0	2.0	0.20	ug/l	80.0	ND	102	70-130			
Cadmium	79.0	1.0	0.11	ug/l	80.0	ND	99	70-130			
Copper	74.4	2.0	0.75	ug/l	80.0	1.17	92	70-130			
Lead	77.8	1.0	0.30	ug/l	80.0	0.676	96	70-130			
Thallium	77.9	1.0	0.20	ug/l	80.0	ND	97	70-130			
Matrix Spike Dup Analyzed: 02/24/2009 (9B23088-MSD1) Source: ISB1530-03											
Antimony	85.0	2.0	0.20	ug/l	80.0	0.241	106	70-130	1	20	
Cadmium	81.7	1.0	0.11	ug/l	80.0	ND	102	70-130	3	20	
Copper	75.5	2.0	0.75	ug/l	80.0	1.56	92	70-130	0	20	
Lead	76.0	1.0	0.30	ug/l	80.0	ND	95	70-130	1	20	
Thallium	78.0	1.0	0.20	ug/l	80.0	ND	97	70-130	1	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 9B20106 Extracted: 02/20/09											
Blank Analyzed: 02/23/2009 (9B20106-BLK1)											
Antimony	ND	2.0	0.20	ug/l							
Cadmium	ND	1.0	0.11	ug/l							
Copper	ND	2.0	0.75	ug/l							
Lead	ND	1.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
LCS Analyzed: 02/23/2009 (9B20106-BS1)											
Antimony	85.1	2.0	0.20	ug/l	80.0		106	85-115			
Cadmium	83.3	1.0	0.11	ug/l	80.0		104	85-115			
Copper	78.1	2.0	0.75	ug/l	80.0		98	85-115			
Lead	83.7	1.0	0.30	ug/l	80.0		105	85-115			
Thallium	83.4	1.0	0.20	ug/l	80.0		104	85-115			
Matrix Spike Analyzed: 02/23/2009 (9B20106-MS1) Source: ISB1693-01											
Antimony	85.2	2.0	0.20	ug/l	80.0	0.558	106	70-130			
Cadmium	82.0	1.0	0.11	ug/l	80.0	ND	103	70-130			
Copper	78.5	2.0	0.75	ug/l	80.0	1.32	97	70-130			
Lead	83.6	1.0	0.30	ug/l	80.0	ND	105	70-130			
Thallium	83.6	1.0	0.20	ug/l	80.0	ND	105	70-130			
Matrix Spike Analyzed: 02/23/2009 (9B20106-MS2) Source: ISB1694-01											
Antimony	87.7	2.0	0.20	ug/l	80.0	0.567	109	70-130			
Cadmium	82.9	1.0	0.11	ug/l	80.0	ND	104	70-130			
Copper	76.3	2.0	0.75	ug/l	80.0	1.12	94	70-130			
Lead	81.7	1.0	0.30	ug/l	80.0	ND	102	70-130			
Thallium	81.6	1.0	0.20	ug/l	80.0	ND	102	70-130			
Matrix Spike Dup Analyzed: 02/23/2009 (9B20106-MSD1) Source: ISB1693-01											
Antimony	88.4	2.0	0.20	ug/l	80.0	0.558	110	70-130	4	20	
Cadmium	84.3	1.0	0.11	ug/l	80.0	ND	105	70-130	3	20	
Copper	78.9	2.0	0.75	ug/l	80.0	1.32	97	70-130	0	20	
Lead	83.6	1.0	0.30	ug/l	80.0	ND	105	70-130	0	20	
Thallium	83.1	1.0	0.20	ug/l	80.0	ND	104	70-130	1	20	

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 Received: 02/13/09

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 9B13065 Extracted: 02/13/09											
Blank Analyzed: 02/13/2009 (9B13065-BLK1)											
Chloride	ND	0.50	0.25	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
Sulfate	ND	0.50	0.20	mg/l							
LCS Analyzed: 02/13/2009 (9B13065-BS1)											
Chloride	4.75	0.50	0.25	mg/l	5.00		95	90-110			
Sulfate	10.0	0.50	0.20	mg/l	10.0		100	90-110			
Matrix Spike Analyzed: 02/13/2009 (9B13065-MS1) Source: ISB1470-04											
Chloride	309	10	5.0	mg/l	50.0	294	29	80-120			MHA
Sulfate	396	10	4.0	mg/l	100	331	65	80-120			M2
Matrix Spike Analyzed: 02/13/2009 (9B13065-MS2) Source: ISB1660-01											
Chloride	131	2.5	1.2	mg/l	5.00	124	125	80-120			MHA
Sulfate	134	2.5	1.0	mg/l	10.0	119	151	80-120			MHA
Matrix Spike Dup Analyzed: 02/13/2009 (9B13065-MSD1) Source: ISB1470-04											
Chloride	322	10	5.0	mg/l	50.0	294	54	80-120	4	20	MHA
Sulfate	409	10	4.0	mg/l	100	331	78	80-120	3	20	M2
Batch: 9B17036 Extracted: 02/17/09											
Blank Analyzed: 02/17/2009 (9B17036-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 02/17/2009 (9B17036-BS1)											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 9B17036 Extracted: 02/17/09										
Duplicate Analyzed: 02/17/2009 (9B17036-DUP1)										
Total Dissolved Solids	206	10	10	mg/l		Source: ISB1533-01 202		2	10	

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METHOD BLANK/QC DATA

MCAWW 245.1

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 9049249 Extracted: 02/18/09											
Matrix Spike Dup Analyzed: 02/18/2009 (D9B170143001D)						Source: D9B170143001					
Mercury	5.08	0.2	0.027	ug/L	5	ND	101	90-110	4	10	
Matrix Spike Analyzed: 02/18/2009 (D9B170143001S)						Source: D9B170143001					
Mercury	4.89	0.2	0.027	ug/L	5	ND	98	90-110	4	10	
Blank Analyzed: 02/18/2009 (D9B180000249B)						Source:					
Mercury	ND	0.2	0.027	ug/L				-			
LCS Analyzed: 02/18/2009 (D9B180000249C)						Source:					
Mercury	4.87	0.2	0.027	ug/L	5		97	90-110			

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METHOD BLANK/QC DATA

MCAWW 245.1-DISS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 9049255 Extracted: 02/18/09											
Matrix Spike Dup Analyzed: 02/18/2009 (D9B170143001D)						Source: D9B170143001					
Mercury	4.92	0.2	0.027	ug/L	5	ND	98	90-110	1	10	
Matrix Spike Analyzed: 02/18/2009 (D9B170143001S)						Source: D9B170143001					
Mercury	4.98	0.2	0.027	ug/L	5	ND	100	90-110	1	10	
Blank Analyzed: 02/18/2009 (D9B180000255B)						Source:					
Mercury	ND	0.2	0.027	ug/L				-			
LCS Analyzed: 02/18/2009 (D9B180000255C)						Source:					
Mercury	4.64	0.2	0.027	ug/L	5		93	90-110			

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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.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ISB1693-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	2.50	4.8	15
ISB1693-01	Antimony-200.8	Antimony	ug/l	0.27	2.0	6
ISB1693-01	Cadmium-200.8	Cadmium	ug/l	0.12	1.0	4
ISB1693-01	Chloride - 300.0	Chloride	mg/l	8.82	0.50	150
ISB1693-01	Copper-200.8	Copper	ug/l	7.57	2.0	14
ISB1693-01	Lead-200.8	Lead	ug/l	2.37	1.0	5.2
ISB1693-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	2.49	0.26	10
ISB1693-01	Sulfate-300.0	Sulfate	mg/l	6.80	0.50	250
ISB1693-01	TDS - SM2540C	Total Dissolved Solids	mg/l	158	10	850
ISB1693-01	Thallium-200.8	Thallium	ug/l	0.035	1.0	2

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DATA QUALIFIERS AND DEFINITIONS

- C** Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- J** 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See 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.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

Joseph Doak
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

ISB1693 <Page 17 of 19>
NPDES - 1365

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

Project ID: Routine Outfall 006

Report Number: ISB1693

Sampled: 02/13/09
Received: 02/13/09

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 300.0	Water	X	X
Filtration	Water	N/A	N/A
SM2540C	Water	X	

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 Denver

4955 Yarrow Street - Arvada, CO 80002

Method Performed: MCAWW 245.1
Samples: ISB1693-01

Method Performed: MCAWW 245.1-DISS
Samples: ISB1693-01

TestAmerica Irvine

Joseph Doak
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

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

Project ID: Routine Outfall 006

Report Number: ISB1693

Sampled: 02/13/09
Received: 02/13/09

TestAmerica St. Louis

13715 Rider Trail North - Earth City, MO 63045

Analysis Performed: Gamma Spec
Samples: ISB1693-01

Analysis Performed: Gross Alpha
Samples: ISB1693-01

Analysis Performed: Gross Beta
Samples: ISB1693-01

Analysis Performed: Radium, Combined
Samples: ISB1693-01

Analysis Performed: Strontium 90
Samples: ISB1693-01

Analysis Performed: Tritium
Samples: ISB1693-01

Analysis Performed: Uranium, Combined
Samples: ISB1693-01

Vista Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: ISB1693-01

TestAmerica Irvine

Joseph Doak
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

CHAIN OF CUSTODY FORM

Test America Version 12/20/07

Client Name/Address: MWH-Arcadia 618 Michilinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Joseph Doak		Project: Boeing-SSFL NPDES Routine Outfall 006 Stormwater at FSDF-2		ANALYSIS REQUIRED											
Project Manager: Bronwyn Kelly Sampler: Pollock		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Field readings: Temp = 50.4 pH = 6.97 Time of readings = 15:25											
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (1664-HEM)	CI, SO ₄ , NO ₃ +NO ₂ -N	TDS	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)	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Comments	
Outfall 006	W	1L Poly	1	2-13-09 1600	HNO ₃	1A	X								
Outfall 006-Dup	W	1L Poly	1	2-13-09 1600	HNO ₃	1B	X								
Outfall 006	W	1L Amber	2		None	2A, 2B		X							
Outfall 006	W	1L Amber	2		HCl	3A, 3B			X						
Outfall 006	W	500 ml Poly	2		None	4A, 4B				X					
Outfall 006	W	500 ml Poly	1		None	5					X				
Outfall 006	W	2.5 Gal Cube 500 ml Amber	1		None	6A						X		Unfiltered and unpreserved analysis	
Outfall 006	W	500 ml Amber	1		None	6B								Test first and second rain event of the season	
Outfall 006	W	1L Poly	1		None	8							X	Filter w/in 24hrs of receipt at lab	
Relinquished By				Date/Time			Received By								Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/>
Relinquished By				Date/Time			Received By								Sample Integrity: (check) Intact <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>
Relinquished By				Date/Time			Received By								Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV <input checked="" type="checkbox"/>



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

MWH-Pasadena / Boeing

Lot D9B170149

Project ISB1693

Joseph Doak
17461 Derian Avenue
Suite 100
Irvine, CA 92614

TestAmerica Laboratories, Inc.


for Diana Griego
Project Manager

February 24, 2009

Table of Contents

Standard Deliverables with Supporting Documentation

Report Contents

Number of Pages

Standard Deliverables

(The Cover Letter and the Report Cover page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.)

- Table of Contents
- Case Narrative
- Executive Summary – Detection Highlights
- Methods Summary
- Method/Analyst Summary
- Lot Sample Summary
- Analytical Results
- QC Data Association Summary
- Chain-of-Custody

Supporting Documentation

(Note: A one-page "Description of Supporting Documentation" is provided at the beginning of this section.)

Check below when supporting documentation is present.

- Volatile GC/MS
- Semivolatile GC/MS
- Volatile GC
- Semivolatile GC
- LC/MS or HPLC
- Metals
- General Chemistry
- Subcontracted Data

Quality Control Definitions of Qualifiers

Qualifier	Definition
U	Result is less than the method detection limit (MDL).
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL
J	Organics: Estimated result. Result is less than RL Inorganics: Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E	Estimated result. Result concentrations exceed the calibration range.
p	Relative Percent Difference (RPD) is outside control limits.
*	Surrogate or Relative Percent Difference (RPD) is outside control limits.
DIL	The concentration is estimated or not reported due to dilution.
COL	More than 40% difference between the primary and confirmation detector results. The lower of the two results is reported.
CHI	More than 40% difference between the primary and confirmation detector results. The higher of the two results is reported.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.
a	Spiked analyte recovery is outside stated control limits.
N	Spiked analyte recovery is outside stated control limits.
NC	The recovery and/or RPD were not calculated.
MSB	The recovery and/or RPD were not calculated because the sample amount was greater than four times the spike amount.

Case Narrative

Enclosed is the report for one sample received at TestAmerica Laboratories, Inc. – Denver laboratory on February 17, 2009. The results included in this report relate only to the samples in this report and have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted below.

This report may include reporting limits (RLs) less than the Denver laboratory's standard reporting limits. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Dilution factors and footnotes have been provided to assist in the interpretation of the results. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at concentrations above the linear calibration curve, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Laboratories, Inc. utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the analytical methods summary page in accordance with the methods indicated. A summary of quality control parameters is provided below.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Quality Control Summary for Lot D9B170149

Sample Receiving

The cooler temperature upon receipt at the laboratory was acceptable at 1.2°C.

Total Mercury –Method 245.1

No anomalies were observed.

Dissolved Mercury –Method 245.1

No anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9B170149

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
NO DETECTABLE PARAMETERS				

METHODS SUMMARY

D9B170149

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Dissolved Mercury (CVAA)	MCAWW 245.1	MCAWW 245.1
Mercury (Manual Cold Vapor Technique)	MCAWW 245.1	MCAWW 245.1

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

METHOD / ANALYST SUMMARY

D9B170149

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 245.1	Christopher Gridale	9582

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

SAMPLE SUMMARY

D9B170149

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
K6973	001	ISB1693-01	02/13/09	15:25

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9B170149

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 245.1		9049249	9049147
	WATER	MCAWW 245.1		9049255	9049154

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Total Metals

CLP-Like Forms

Lot ID: D9B170149

Client: TestAmerica-Irvine

Method: 245.1

Associated Samples: -001

Batch: 9049249

Total Metals Analysis
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: TestAmerica Irvine SDG No.: D9B170149
Lab Code: _____ Case No.: _____ SAS No.: _____
SOW No.: _____

Sample ID. Lab Sample No.
ISB1693-01 D9B170149-001

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Janice Collins Name: Janice Collins
Date: 2/23/09 Title: Metals Analyst

TestAmerica Irvine

Total Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049249
Sample Aliquot: 10 mL
Dilution Factor: 1

Client Sample ID: ISB1693-01
Lab Sample ID: D9B170149-001
Lab WorkOrder: K6973
Date/Time Collected: 02/13/09 15:25
Date/Time Received: 02/17/09 09:30
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 17:52
Instrument ID: 023

CAS No.	Analyte	Conc.	MDL	RL	Q
7439-97-6	Mercury	0.027	0.027	0.20	U

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: Ultra Scientific

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	7.000	6.913	98.8	5.000	5.051	101.0	5.095	101.9	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis

-2A-

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: Ultra Scientific

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.000	5.028	100.6			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Total Metals Analysis
-2B-
CRDL STANDARD FOR AA AND ICP

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9B170149

AA CRDL Standard Source: Ultra Scientific

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial		Final		
	True	Found	%R	True	Found	%R	Found	%R
Mercury	0.200	0.19500	97.5					

Comments:

TestAmerica Irvine

Total Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture:
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049249
Sample Aliquot: 10 mL
Dilution Factor: 1

Client Sample ID:
Lab Sample ID: D9B180000-249B
Lab WorkOrder: K7C0J
Date/Time Collected:
Date/Time Received:
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 17:27
Instrument ID: 023

CAS No.	Analyte	Conc.	MDL	RL	Q
7439-97-6	Mercury	0.027	0.027	0.20	U

Total Metals Analysis

-3-

BLANKS

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	Continuing Calibration Blank (ug/L)						Preparation Blank		M
		1	2	3	C	C	C	C		
Mercury	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	0.027 U	CV	

Comments:

TestAmerica Irvine

Total Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049249
MS Sample Aliquot: 10 mL
MS Dilution Factor: 1

Client Sample ID: LAB MS/MSD
MS Lab Sample ID: D9B170143-001S
MS Lab WorkOrder: K695D
Date/Time Collected: 02/13/09 11:50
Date/Time Received: 02/17/09 09:30
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 17:38
Instrument ID: 023

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Mercury	5.00	0.027	U	4.89		98		90 - 110

TestAmerica Irvine

Total Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049249
MSD Sample Aliquot: 10 mL
MSD Dilution Factor: 1

Client Sample ID: LAB MS/MSD
MSD Lab Sample ID: D9B170143-001D
MSD Lab WorkOrder: K695D
Date/Time Collected: 02/13/09 11:50
Date/Time Received: 02/17/09 09:30
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 17:40
Instrument ID: 023

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Mercury	5.00	0.027	U	5.08		101		3.8		90 - 110	10

TestAmerica Irvine

Total Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049249
Sample Aliquot: 10 mL
Dilution Factor: 1

Client Sample ID:
Lab Sample ID: D9B180000-249C
Lab WorkOrder: K7C0J
Date/Time Collected:
Date/Time Received:
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 17:29
Instrument ID: 023

Analyte	True	Found	%Rec	Q	Limits
Mercury	5.00	4.87	97		90 - 110

Total Metals Analysis

-10-

DETECTION LIMITS

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

ICP ID Number: _____ Date: 12/26/2008

Flame AA ID Number: Cetac M7500 Hg

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	PQL (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.20	0.027	CV

Comments:

Total Metals Analysis

-13-

PREPARATION LOG

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Method: CV Prep Method: _____

Sample ID	Preparation Date	Initial Volume	Final Volume (mL)
INTRA-LAB QC	2/18/2009	10.0	10.0
LAB MS/MSD MS	2/18/2009	10.0	10.0
LAB MS/MSD MSD	2/18/2009	10.0	10.0
ISB1693-01	2/18/2009	10.0	10.0
MB9049249	2/18/2009	10.0	10.0
Check Sample	2/18/2009	10.0	10.0

Comments:

Total Metals Analysis

-14-

ANALYSIS RUN LOG

Contract: TestAmerica Irvine
 Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9B170149
 Instrument ID Number: Cetac M7500 Hg Method: CV
 Start Date: 2/18/2009 End Date: 2/18/2009

Sample ID.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K E	S E	A G	N A	T A	V L	Z N	C N				
Cal Blank	1.00	16:45																										X			
Std1	1.00	16:47																										X			
Std2	1.00	16:50																										X			
Std3	1.00	16:52																										X			
Std4	1.00	16:54																										X			
Std5	1.00	16:56																										X			
Std6	1.00	16:59																										X			
ICB	1.00	17:01																										X			
ICV	1.00	17:03																										X			
RL	1.00	17:06																										X			
CCV	1.00	17:08																										X			
CCB	1.00	17:10																										X			
MB9049249	1.00	17:27																										X			
Check Sample	1.00	17:29																										X			
INTRA-LAB QC	1.00	17:31																										X			
CCV	1.00	17:33																										X			
CCB	1.00	17:36																										X			
LAB MS/MSD MS	1.00	17:38																										X			
LAB MS/MSD MSD	1.00	17:40																										X			
ISB1693-01	1.00	17:52																										X			
CCV	1.00	17:59																										X			
CCB	1.00	18:01																										X			

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Dissolved Metals

CLP-Like Forms

Lot ID: D9B170149

Client: TestAmerica-Irvine

Method: 245.1

Associated Samples: -001

Batch: 9049255

Dissolved Metals Analysis
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: TestAmerica Irvine SDG No.: D9B170149
Lab Code: _____ Case No.: _____ SAS No.: _____
SOW No.: _____

Sample ID. Lab Sample No.
ISB1693-01 D9B170149-001

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Janice Collins Name: Janice Collins
Date: 2/23/09 Title: Metals Analyst

TestAmerica Irvine

Dissolved Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049255
Sample Aliquot: 10 mL
Dilution Factor: 1

Client Sample ID: ISB1693-01
Lab Sample ID: D9B170149-001
Lab WorkOrder: K6973
Date/Time Collected: 02/13/09 15:25
Date/Time Received: 02/17/09 09:30
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 18:22
Instrument ID: 023

CAS No.	Analyte	Conc.	MDL	RL	Q
7439-97-6	Mercury	0.027	0.027	0.20	U

Dissolved Metals Analysis
 -2A-
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: Ultra Scientific

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	7.000	6.913	98.8	5.000	5.051	101.0	5.095	101.9	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Dissolved Metals Analysis
 -2A-
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: Ultra Scientific

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.000	5.028	100.6	5.030	100.6	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Dissolved Metals Analysis
-2B-
CRDL STANDARD FOR AA AND ICP

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9B170149

AA CRDL Standard Source: Ultra Scientific

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP					
	True	Found	%R	Initial True	Initial Found	Initial %R	Final True	Final Found	Final %R
Mercury	0.200	0.19500	97.5						

Comments:

TestAmerica Irvine

Dissolved Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9B170149

Matrix: WATER

% Moisture:

Basis: Wet

Analysis Method: 245.1

Unit: ug/L

QC Batch ID: 9049255

Sample Aliquot: 10 mL

Dilution Factor: 1

Client Sample ID:

Lab Sample ID: D9B180000-255B

Lab WorkOrder: K7C08

Date/Time Collected:

Date/Time Received:

Date Leached:

Date/Time Extracted: 02/18/09 14:15

Date/Time Analyzed: 02/18/09 17:57

Instrument ID: 023

CAS No.	Analyte	Conc.	MDL	RL	Q
7439-97-6	Mercury	0.027	0.027	0.20	U

Dissolved Metals Analysis

-3-

BLANKS

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	Continuing Calibration Blank (ug/L)						Preparation Blank		M
		1	C	2	C	3	C	C		
Mercury	0.027 U	0.027	U	0.027	U	0.027	U	0.027	U	CV

Comments:

Dissolved Metals Analysis

-3-

BLANKS

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	Continuing Calibration Blank (ug/L)						Preparation Blank	M
		1	C	2	C	3	C		
Mercury		0.027	U						CV

Comments:

TestAmerica Irvine

Dissolved Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049255
MS Sample Aliquot: 10 mL
MS Dilution Factor: 1

Client Sample ID: LAB MS/MSD
MS Lab Sample ID: D9B170143-001S
MS Lab WorkOrder: K695D
Date/Time Collected: 02/13/09 11:50
Date/Time Received: 02/17/09 09:30
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 18:08
Instrument ID: 023

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Mercury	5.00	0.027	U	4.98		100		90 - 110

TestAmerica Irvine

Dissolved Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9B170149

Matrix: WATER

% Moisture: N/A

Basis: Wet

Analysis Method: 245.1

Unit: ug/L

QC Batch ID: 9049255

MSD Sample Aliquot: 10 mL

MSD Dilution Factor: 1

Client Sample ID: LAB MS/MSD

MSD Lab Sample ID: D9B170143-001D

MSD Lab WorkOrder: K695D

Date/Time Collected: 02/13/09 11:50

Date/Time Received: 02/17/09 09:30

Date Leached:

Date/Time Extracted: 02/18/09 14:15

Date/Time Analyzed: 02/18/09 18:10

Instrument ID: 023

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Mercury	5.00	0.027	U	4.92		98		1.3		90 - 110	10

TestAmerica Irvine

Dissolved Metals Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9B170149
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 245.1
Unit: ug/L
QC Batch ID: 9049255
Sample Aliquot: 10 mL
Dilution Factor: 1

Client Sample ID:
Lab Sample ID: D9B180000-255C
Lab WorkOrder: K7C08
Date/Time Collected:
Date/Time Received:
Date Leached:
Date/Time Extracted: 02/18/09 14:15
Date/Time Analyzed: 02/18/09 18:03
Instrument ID: 023

Analyte	True	Found	%Rec	Q	Limits
Mercury	5.00	4.64	93		90 - 110

Dissolved Metals Analysis

-10-

DETECTION LIMITS

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

ICP ID Number: _____ Date: 12/26/2008

Flame AA ID Number: Cetac M7500 Hg

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	PQL (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.20	0.027	CV

Comments: _____

Dissolved Metals Analysis

-13-

PREPARATION LOG

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: D9B170149

Method: CV Prep Method: _____

Sample ID	Preparation Date	Initial Volume	Final Volume (mL)
INTRA-LAB QC	2/18/2009	10.0	10.0
LAB MS/MSD MS	2/18/2009	10.0	10.0
LAB MS/MSD MSD	2/18/2009	10.0	10.0
ISB1693-01	2/18/2009	10.0	10.0
MB9049255	2/18/2009	10.0	10.0
Check Sample	2/18/2009	10.0	10.0

Comments:

Dissolved Metals Analysis

-14-

ANALYSIS RUN LOG

Contract: TestAmerica Irvine

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: D9B170149

Instrument ID Number: Cetac M7500 Hg Method: CV

Start Date: 2/18/2009 End Date: 2/18/2009

Sample ID.	D/F	Time	% R	Analytes																									
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K E	S E	A G	N A	T L	V L	Z N	C N		
Cal Blank	1.00	16:45																									X		
Std1	1.00	16:47																									X		
Std2	1.00	16:50																									X		
Std3	1.00	16:52																									X		
Std4	1.00	16:54																									X		
Std5	1.00	16:56																									X		
Std6	1.00	16:59																									X		
ICB	1.00	17:01																									X		
ICV	1.00	17:03																									X		
RL	1.00	17:06																									X		
CCV	1.00	17:08																									X		
CCB	1.00	17:10																									X		
CCV	1.00	17:33																									X		
CCB	1.00	17:36																									X		
MB9049255	1.00	17:57																									X		
CCV	1.00	17:59																									X		
CCB	1.00	18:01																									X		
Check Sample	1.00	18:03																									X		
INTRA-LAB QC	1.00	18:06																									X		
LAB MS/MSD MS	1.00	18:08																									X		
LAB MS/MSD MSD	1.00	18:10																									X		
ISB1693-01	1.00	18:22																									X		
CCV	1.00	18:24																									X		
CCB	1.00	18:27																									X		

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

TestAmerica Denver
Sample Receiving Checklist

Lot #: D9B170149 Date/Time Received: 2/17/9 0930

Company Name & Sampling Site: TA Irvine

PM to Complete This Section: Yes No
Residual chlorine check required: Quarantined:

Quote #: 72743

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures (°C): 1.2

N/A Yes No

- 1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.
- 2. Coolers scanned for radiation. Is the reading \leq to background levels? Yes: No:
- 3. Chain of custody present? If no, document on CUR.
- 4. Bottles broken and/or are leaking? If yes, document on CUR.
- 5. Multiphasic samples obvious? If yes, document on CUR.
- 6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.
- 7. pH of all samples checked and meet requirements? If no, document on CUR.
- 8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
- 9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.
- 10. Were VOA samples without headspace? If no, document on CUR.
- 11. Were VOA vials preserved? Preservative HCl 4±2°C Sodium Thiosulfate Ascorbic Acid
- 12. Did samples require preservation with sodium thiosulfate?
- 13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.
- 14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.
- 15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
- 16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.
- 17. Are analyses with short holding times requested?
- 18. Was a quick Turn Around (TAT) requested?

Initials

TestAmerica Denver
Sample Receiving Checklist

Lot # D9B170149

Login Checks:

Initials
AB

N/A Yes No

- 19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
- 20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
- 21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?
- 22. Were special log in instructions read and followed?
- 23. Were AFCEE metals logged for refrigerated storage?
- 24. Were tests logged checked against the COC? Which samples were confirmed? All
- 25. Was a Rush form completed for quick TAT?
- 26. Was a Short Hold form completed for any short holds?
- 27. Were special archiving instructions indicated in the General Comments? If so, what were they?

Labeling and Storage Checks:

Initials

SL

- 28. Was the subcontract COC signed and sent with samples to bottle prep?
- 29. Were sample labels double-checked by a second person?
- 30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
- 31. Did the sample ID, Date, and Time from label match what was logged?
- 32. Were stickers for special archiving instructions affixed to each box? See #27
- 33. Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

112
AG
IRJ
2/17/9

SUBCONTRACT ORDER
TestAmerica Irvine
ISB1693

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Joseph Doak
Client: MWH-Pasadena/Boeing

RECEIVING LABORATORY:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone : (303) 736-0100
Fax: (303) 431-7171
Project Location: CA - CALIFORNIA
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Interlab Price Surch	Comments
Sample ID: ISB1693-01	Water				
			Sampled: 02/13/09 15:25		Instant Notification
Level 4 + EDD-OUT	N/A	02/25/09	03/13/09 15:25	\$0.00	0% Sub to Denver, transfer file EDD
Mercury - 245.1, Diss -OUT	ug/l	02/25/09	03/13/09 15:25	\$36.00	0% Denver, Boeing, J flags
Mercury - 245.1-OUT	ug/l	02/25/09	03/13/09 15:25	\$36.00	0% Denver, Boeing, permit, J flags,
<i>Containers Supplied:</i>					
1 L Poly w/HNO3 (B)	125 mL Poly (M)				

Vn Bank 2/16/09 17:00
Released By Date/Time

FedEx 2/16/09 17:00
Received By Date/Time

Released By Date/Time
TestAmerica

A Green 2/17/9 0930
Received By Date/Time

Metals

Supporting Documentation

Sample Sequence, Instrument Printouts

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot ID: D9B170149

Client: TA-Irvine Boeing

Batch(es) #: 9049249 + 9049255

Associated Samples: 1

I certify that, to the best of my knowledge, the attached package represents a complete and accurate copy of the original data.

Signature/Date: Christopher Grisdale 2/19/09

Metals Raw Data RoadMap

<i>LotID</i>		<i>Metal</i>	<i>WorkOrder</i>	<i>Anal Date</i>	<i>TestDesc</i>	<i>Batch</i>	<i>File Id</i>	<i>Instr</i>
D9B170149	1	HG	K69731AC	20090218	M2451DS	9049255	090218AA	023
D9B170149	1	HG	K69731AA	20090218	M2451_L	9049249	090218AA	023

**METALS
PREPARATION LOGS
CVAA**

TestAmerica



THE LEADER IN ENVIRONMENTAL TESTING

SUPPLEMENTAL METALS PREP SHEET

(Used in conjunction with METALS PREP LOG/BATCH SUMMARY)



THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Denver

Hg PREP & ANALYSIS - WATERS

SOP: DEN-MT-0015 QC Batch #: 9049249

Prep Date: 02/18/09	Prep By: CGG	Analysis Date: 02/18/09	Analyst: CGG
---------------------	--------------	-------------------------	--------------

Balance ID: H53865	Thermometer ID: MT 4025
---------------------------	--------------------------------

Digestion Cycles	Start Time	Temp °C	End Time	Temp °C
	14:15	93	16:15	93

Purple color persists or black ppt present: Yes No If "No", explain in Comments below.

Digestion Tube Lot # :

For dissolved mercury only, were samples filtered in the lab? Yes No

One or more samples were filtered prior to analysis at the instrument. Yes No

If "yes", then the method blank and the LCS were also filtered in the same manner using the same type of filter.

Analyst(s) Initials: CG

Reagents Used

Reagent	Manufacturer	Lot #	Standards Log #	Vol (mL)
HNO ₃	JT Baker	G25032		0.25
H ₂ SO ₄	Fisher	E49F06		0.5
HCl	JT Baker	G36024		used by instrument
10% SnCl ₂	Fisher	G20637	STD-0921-09	added by instrument
NaCl / NH ₂ OH	Fisher	G28617	STD-0688-09	0.6
	Fisher	G06476		
KMnO ₄	Fisher	G10662	STD-0920-09	1.5
K ₂ S ₂ O ₈	Fisher	083661	STD-0351-09	0.8

Parent Calibration Stock Standards

	Lot #	Verification #	Exp. Date
Second Source	A2-HG02056	STD-2364-08	06/01/09
Primary Calibration	H00091	STD-1683-08	05/01/09

Standards Preparation Final digestate volume = 10 ml

Standards	Final Conc	Parent Standard	Standards Log #	Vol (mL)	Pipette
Cal Working	10 mg/L	Primary Cal	See Attached Standards Log Printouts	1.00	7
Daily Cal Working	100 ug/L	Cal Working		1.00	7
ICAL 0.2	0.2 ug/L	Daily Cal Working		0.2	7
ICAL 0.5	0.5 ug/L	Daily Cal Working		0.5	7
ICAL 1	1.0 ug/L	Daily Cal Working		1.0	7
ICAL 2	2.0 ug/L	Daily Cal Working		2.0	7
ICAL 5	5.0 ug/L	Daily Cal Working		5.0	24
ICAL 10	10 ug/L	Daily Cal Working		10.0	24
CCV	5 ug/L	Daily Cal Working		5.0	7
ICV Intermed	700 ug/L	ICV Stock		0.70	7
ICV Daily Working	7.0 ug/L	ICV Intermed		1.00	7
LCS	5 ug/L	Daily Cal Working		0.5	7
MS/MSD	5 ug/L	Daily Cal Working		0.5	7
RL	0.2 ug/L	Daily Cal Working		0.2	7

Second Source ICV Intermediate Stock Standard Prep Standards Log #: STD-0993-09

NOTE: Details for each reagent & standard prep are documented in the attached Standards Preparation Logbook Record.

Comments Total - 245.1 - Boeing

I certify that all information above is correct and complete.

Signature: Cris Godale Date: 2/19/09

REVIEWED BY: [Signature] Date: 2/19/09

TestAmerica Laboratories, Inc.
Metals Prep Log/ Batch Summary

Prep Date: 02/18/09 OS
Due Date: 02/23/09

<u>Lot</u>	<u>Work Order</u>			<u>Initial Weight/Volume</u>
D9B180000 Water	K7C0J	B 1	Due Date: SDG:	<u>10 mL</u>
D9B180000 Water	K7C0J	C 2	Due Date: SDG:	<u>10 mL</u>
D9B170143 Water	K695D Total	3	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170143 Water	K695D Total	S 4	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170143 Water	K695D Total	D 5	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170145 Water	K696G Total	6	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170148 Water	K697Q Total	7	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170149 Water	K6973 Total	8	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170154 Water	K698T Total	9	Due Date: 02/23/09 SDG:	<u>10 mL</u>

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

✓
Z
2/18/09

SUPPLEMENTAL METALS PREP SHEET

(Used in conjunction with METALS PREP LOG/BATCH SUMMARY)



THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Denver

Hg PREP & ANALYSIS - WATERS

SOP: DEN-MT-0015 QC Batch #: 9049255

Prep Date: 02/18/09	Prep By: CGG	Analysis Date: 02/18/09	Analyst: CGG
---------------------	--------------	-------------------------	--------------

Balance ID: H53865	Thermometer ID: MT 4025
--------------------	-------------------------

Digestion Cycles	Start Time	Temp °C	End Time	Temp °C
	14:15	93	16:15	93

Purple color persists or black ppt present: Yes No If "No", explain in Comments below.

Digestion Tube Lot # :

For dissolved mercury only, were samples filtered in the lab? Yes No

One or more samples were filtered prior to analysis at the instrument. Yes No

If "yes", then the method blank and the LCS were also filtered in the same manner using the same type of filter.

Analyst(s) Initials:

Reagents Used

Reagent	Manufacturer	Lot #	Standards Log #	Vol (mL)
HNO ₃	JT Baker	G25032		0.25
H ₂ SO ₄	Fisher	E49F06		0.5
HCl	JT Baker	G36024		used by instrument
10% SnCl ₂	Fisher	G20637	STD-0921-09	added by instrument
NaCl / NH ₂ OH	Fisher	G28617	STD-0688-09	0.6
	Fisher	G06476		
KMnO ₄	Fisher	G10662	STD-0920-09	1.5
K ₂ S ₂ O ₈	Fisher	083661	STD-0351-09	0.8

Parent Calibration Stock Standards

	Lot #	Verification #	Exp. Date
Second Source	A2-HG02056	STD-2364-08	06/01/09
Primary Calibration	H00091	STD-1683-08	05/01/09

Standards Preparation Final digestate volume = 10 ml

Standards	Final Conc	Parent Standard	Standards Log #	Vol (mL)	Pipette
Cal Working	10 mg/L	Primary Cal	See Attached Standards Log Printouts	1.00	7
Daily Cal Working	100 ug/L	Cal Working		1.00	7
ICAL 0.2	0.2 ug/L	Daily Cal Working		0.2	7
ICAL 0.5	0.5 ug/L	Daily Cal Working		0.5	7
ICAL 1	1.0 ug/L	Daily Cal Working		1.0	7
ICAL 2	2.0 ug/L	Daily Cal Working		2.0	7
ICAL 5	5.0 ug/L	Daily Cal Working		5.0	24
ICAL 10	10 ug/L	Daily Cal Working		10.0	24
CCV	5 ug/L	Daily Cal Working		5.0	7
ICV Intermed	700 ug/L	ICV Stock		0.70	7
ICV Daily Working	7.0 ug/L	ICV Intermed		1.00	7
LCS	5 ug/L	Daily Cal Working		0.5	7
MS/MSD	5 ug/L	Daily Cal Working		0.5	7
RL	0.2 ug/L	Daily Cal Working		0.2	7

Second Source ICV Intermediate Stock Standard Prep Standards Log #: STD-0993-09

NOTE: Details for each reagent & standard prep are documented in the attached Standards Preparation Logbook Record.

Comments *Dissolved - 245.1 - Boeing*

I certify that all information above is correct and complete.

Signature: *Chris Stodale* Date: *2/19/09*

REVIEWED BY: *Z* Date: *2/19/09*

TestAmerica Laboratories, Inc. Metals Prep Log/ Batch Summary

Prep Date: 02/18/09 *JD*
Due Date: 02/23/09

<u>Lot</u>	<u>Work Order</u>			<u>Initial Weight/Volume</u>
D9B180000 Water	K7C08	B	Due Date: SDG:	<u>10 mL</u>
D9B180000 Water	K7C08	C 2	Due Date: SDG:	<u>10 mL</u>
D9B170143 Water	K695D Dissolved	3	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170143 Water	K695D Dissolved	S 4	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170143 Water	K695D Dissolved	D 5	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170145 Water	K696G Dissolved	6	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170148 Water	K697Q Dissolved	7	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170149 Water	K6973 Dissolved	8	Due Date: 02/23/09 SDG:	<u>10 mL</u>
D9B170154 Water	K698T Dissolved	9	Due Date: 02/23/09 SDG:	<u>10 mL</u>

Comments:

B-BLANK; C-CHECK SAMPLE; L-CHECK SAMPLE DUPLICATE; P-SERIAL DILUTION; S-MATRIX SPIKE SAMPLE; D-MATRIX SPIKE DUPLICATE SAMPLE

✓
Z
2/19/09

**METALS
SAMPLE DATA
CVAA**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Denver

Standards Preparation Logbook Record

Feb-19-2009

Logbook: \\Densvr06\StdsLog\metals.std

STD1683-08, 1000 mg/L Hg Calibration Stock Standard (Ultra)

Analyst: grisdalec

Vendor: Ultra Scientific (Metals) Lot No.: H00091 Vendor's Expiration Date: 05-01-2009
Solvent: 2% HN03
Date Prep./Opened: 04-03-2008 Date Received: 03-31-2008
Date Expires(1): 04-03-2009 (1 Year)
Date Expires(2): 05-01-2009 (None)
Date Verified: 12-31--4714 by 0 (Verification ID: -)

<u>Component</u>	<u>Initial Conc (%)</u>	<u>Final Conc (%)</u>
Mercuric Nitrate	100.00	100.00

STD2364-08, Hg Inorganic Ventures ICV 100ppm Std

Analyst: grisdalec

Vendor: Inorganic Ventures Lot No.: A2-HG02056 Vendor's Expiration Date: 06-01-2009
Solvent: 3.3%HCl
Date Prep./Opened: 05-01-2008 Date Received: 05-02-2007
Date Expires(1): 05-01-2009 (1 Year)
Date Expires(2): 06-01-2009 (None)
Date Verified: 12-31--4714 by 0 (Verification ID: -)

<u>Component</u>	<u>Initial Conc (mg/L)</u>	<u>Final Conc (mg/L)</u>
Hg	100.00	100.00

STD0437-09, 10 mg/L Hg Calibration Std

Analyst: wellsds

Solvent: 1% HN03 Lot No.: G02058 Volume (ml): 100.00
Date Prep./Opened: 01-26-2009
Date Expires(1): 02-26-2009 (1 Month)
Date Expires(2): 02-26-2009 (1 Month)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD1683-08, 1000 mg/L Hg Calibration Stock Standard (Ultra) Aliquot Amount (ml): 1.0000
Parent Date Expires(1): 04-03-2009 Parent Date Expires(2): 05-01-2009

<u>Component</u>	<u>Initial Conc (%)</u>	<u>Final Conc (mg/L)</u>
Mercuric Nitrate	100.00	10,000

STD0984-09, 100 ppb Hg Calibration Std

Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00

Parent Std No.: STD0437-09, 10 mg/L Hg Calibration Std
 Parent Date Expires(1): 02-26-2009 Parent Date Expires(2): 02-26-2009

Aliquot Amount (ml): 1.0000

Component	Initial Conc (mg/L)	Final Conc (ug/ml)
Mercuric Nitrate	10,000	100.00

STD0985-09, Blank Daily Hg Calibration Std

Analyst: GRISDALEC

Vendor: Baker Lot No.: G17027
 Solvent: 1% HN03
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 08-18-2009 (6 Months)
 Date Expires(2): 02-18-2010 (1 Year)
 Date Verified: 12-31--4714 by 0 (Verification ID: -)

Component	Initial Conc (%)	Final Conc (%)
Nitric Acid	1.0000	1.0000

STD0986-09, 0.2 ppb Daily Hg Calibration Std

Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std
 Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

Aliquot Amount (ml): 0.2000

Component	Initial Conc (ug/ml)	Final Conc (ug/ml)
Mercuric Nitrate	100.00	0.2000

STD0987-09, 0.5 ppb Daily Hg Calibration Std

Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std Aliquot Amount (ml): 0.5000
 Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

<u>Component</u>	<u>Initial Conc (ug/ml)</u>	<u>Final Conc (ug/ml)</u>
Mercuric Nitrate	100.00	0.5000

STD0988-09, 1.0 ppb Daily Hg Calibration Std Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027 Volume (ml): 100.00
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std Aliquot Amount (ml): 1.0000
 Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

<u>Component</u>	<u>Initial Conc (ug/ml)</u>	<u>Final Conc (ug/ml)</u>
Mercuric Nitrate	100.00	1.0000

STD0989-09, 2.0 ppb Daily Hg Calibration Std Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027 Volume (ml): 100.00
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std Aliquot Amount (ml): 2.0000
 Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

<u>Component</u>	<u>Initial Conc (ug/ml)</u>	<u>Final Conc (ug/ml)</u>
Mercuric Nitrate	100.00	2.0000

STD0990-09, 5.0 ppb Daily Hg Calibration Std Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027 Volume (ml): 100.00
 Date Prep./Opened: 02-18-2009
 Date Expires(1): 02-19-2009 (1 Day)
 Date Expires(2): 05-01-2009 (None)
 Date Verified: 12-31--4714 by - (Verification ID: 0)

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std Aliquot Amount (ml): 5.0000
 Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

<u>Component</u>	<u>Initial Conc (ug/ml)</u>	<u>Final Conc (ug/ml)</u>
Mercuric Nitrate	100.00	5.0000

STD0991-09, 10.0 ppb Daily Hg Calibration Std

Analyst: GRISDALEC

Solvent: 1% HN03 Lot No.: G17027
Date Prep./Opened: 02-18-2009
Date Expires(1): 02-19-2009 (1 Day)
Date Expires(2): 05-01-2009 (None)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00
Date Consumed: 12-06-2006

Parent Std No.: STD0984-09, 100 ppb Hg Calibration Std
Parent Date Expires(1): 02-19-2009 Parent Date Expires(2): 05-01-2009

Aliquot Amount (ml): 10.000

Component	Initial Conc (ug/ml)	Final Conc (ug/ml)
Mercuric Nitrate	100.00	10.000

STD0993-09, Hg Inorganic Ventures ICV 700ppb

Analyst: GRISDALEC

Solvent: 1% HNO3 Lot No.: G02058
Date Prep./Opened: 02-18-2009
Date Expires(1): 03-04-2009 (2 Weeks)
Date Expires(2): 06-01-2009 (None)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00

Parent Std No.: STD2364-08, Hg Inorganic Ventures ICV 100ppm Std
Parent Date Expires(1): 05-01-2009 Parent Date Expires(2): 06-01-2009

Aliquot Amount (ml): 0.7000

Component	Initial Conc (mg/L)	Final Conc (ug/L)
Hg	100.00	700.00

STD0994-09, Hg Daily ICV 7ppb Calibration Std

Analyst: GRISDALEC

Solvent: 1% HNO3 Lot No.: G17027
Date Prep./Opened: 02-18-2009
Date Expires(1): 02-19-2009 (1 Day)
Date Expires(2): 06-01-2009 (None)
Date Verified: 12-31--4714 by - (Verification ID: 0)

Volume (ml): 100.00

Parent Std No.: STD0993-09, Hg Inorganic Ventures ICV 700ppb
Parent Date Expires(1): 03-04-2009 Parent Date Expires(2): 06-01-2009

Aliquot Amount (ml): 1.0000

Component	Initial Conc (ug/L)	Final Conc (ug/L)
Hg	700.00	7.0000

Reviewed By:

Christopher Grisdale 2/19/09

Denver

RUN SUMMARY

Method: CVHG - Mercury (Cold Vapor Mercury)

Instrument: A (023)

Reported: 02/19/09 08:50:34

Sequence: 090218AA

Date: 02/18/09 16:45

Analyst: CGG

ICV: _____

CALCCV: _____

#	Sample ID	Lot No.	Batch	Matrix	Raw	DF	Result	Units	%R	Analyzed Date	Comment	Q
1	Cal Blank				0.00	1.0	0.00	ppb		02/18/09 16:45		<input type="checkbox"/>
2	Std1				0.20	1.0	0.20	ppb	100.0%	02/18/09 16:47		<input type="checkbox"/>
3	Std2				0.50	1.0	0.50	ppb	100.0%	02/18/09 16:50		<input type="checkbox"/>
4	Std3				1.00	1.0	1.00	ppb	100.0%	02/18/09 16:52		<input type="checkbox"/>
5	Std4				2.00	1.0	2.00	ppb	100.0%	02/18/09 16:54		<input type="checkbox"/>
6	Std5				5.00	1.0	5.00	ppb	100.0%	02/18/09 16:56		<input type="checkbox"/>
7	Std6				10.00	1.0	10.00	ppb	100.0%	02/18/09 16:59		<input type="checkbox"/>
8	ICB				0.00	1.0	0.00	ppb		02/18/09 17:01		<input type="checkbox"/>
9	ICV				6.91	1.0	6.91	ppb	98.8%	02/18/09 17:03		<input type="checkbox"/>
10	RL				0.19	1.0	0.19	ppb		02/18/09 17:06		<input type="checkbox"/>
11	CCV				5.05	1.0	5.05	ppb	101.0%	02/18/09 17:08		<input type="checkbox"/>
12	CCB				0.00	1.0	0.00	ppb		02/18/09 17:10		<input type="checkbox"/>
13	K7CXWB		9049246		0.00	1.0	0.00	ppb		02/18/09 17:13		<input type="checkbox"/>
14	K7CXWC	D9B180000 = 5.00	9049246		4.67	1.0	4.67	ppb	93.3%	02/18/09 17:15		<input type="checkbox"/>
15	K7AXL	D9B170237-2	9049246	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 17:17		<input type="checkbox"/>
16	K7AXLS	D9B170237-2 = 5.00	9049246	AQUEOUS	4.94	1.0	4.94	ppb		02/18/09 17:20		<input type="checkbox"/>
17	K7AXLD	D9B170237-2 = 5.00	9049246	AQUEOUS	4.82	1.0	4.82	ppb		02/18/09 17:22		<input type="checkbox"/>
18	K7AXQ	D9B170237-4	9049246	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 17:24		<input type="checkbox"/>
19	K7C0JB	D9B180000	9049249		0.00	1.0	0.00	ppb		02/18/09 17:27		<input type="checkbox"/>
20	K7C0JC	D9B180000 = 5.00	9049249		4.87	1.0	4.87	ppb	97.4%	02/18/09 17:29		<input type="checkbox"/>
21	K695D	D9B170143-1	9049249	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 17:31		<input type="checkbox"/>
22	CCV	= 5.00			5.09	1.0	5.09	ppb	101.9%	02/18/09 17:33		<input type="checkbox"/>
23	CCB				0.00	1.0	0.00	ppb		02/18/09 17:36		<input type="checkbox"/>
24	K695DS	D9B170143-1 = 5.00	9049249	AQUEOUS	4.89	1.0	4.89	ppb		02/18/09 17:38		<input type="checkbox"/>
25	K695DD	D9B170143-1 = 5.00	9049249	AQUEOUS	5.08	1.0	5.08	ppb		02/18/09 17:40		<input type="checkbox"/>
26	K695DE	D9B170143-1 = 5.00	9049249	AQUEOUS	5.09	1.0	5.09	ppb		02/18/09 17:42		<input type="checkbox"/>
27	K695DD	D9B170143-1 = 5.00	9049249	AQUEOUS	5.03	1.0	5.03	ppb		02/18/09 17:45	NA, verifies above	<input type="checkbox"/>
28	K696G	D9B170145-1	9049249	AQUEOUS	0.03	1.0	0.03	ppb		02/18/09 17:47		<input type="checkbox"/>
29	K697Q	D9B170148-1	9049249	AQUEOUS	0.02	1.0	0.02	ppb		02/18/09 17:50		<input type="checkbox"/>
30	K6973	D9B170149-1	9049249	AQUEOUS	0.02	1.0	0.02	ppb		02/18/09 17:52		<input type="checkbox"/>
31	K698T	D9B170154-1	9049249	AQUEOUS	0.02	1.0	0.02	ppb		02/18/09 17:54		<input type="checkbox"/>
32	K7C08BF	D9B180000	9049255		0.00	1.0	0.00	ppb		02/18/09 17:57		<input type="checkbox"/>
33	CCV	= 5.00			5.03	1.0	5.03	ppb	100.6%	02/18/09 17:59		<input type="checkbox"/>
34	CCB				0.00	1.0	0.00	ppb		02/18/09 18:01		<input type="checkbox"/>

See 2/19/09

Denver

RUN SUMMARY

Method: CV/HG - Mercury (Cold Vapor Mercury)

Instrument: A (023)

Reported: 02/19/09 08:50:34

Sequence: 090218AA

Date: 02/18/09 16:45

Analyst: CGG

ICV: _____

CAL/CCV: _____

#	Sample ID	Lot No.	Batch	Matrix	Raw	DF	Result	Units	%R	Analyzed Date	Comment	Q
35	K7C08CF	D9B180000 = 5.00	9049255	AQUEOUS	4.64	1.0	4.64	ppb	92.7%	02/18/09 18:03		<input type="checkbox"/>
36	K695DF	D9B170143-1	9049255	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 18:06		<input type="checkbox"/>
37	K695DSF	D9B170143-1 = 5.00	9049255	AQUEOUS	4.99	1.0	4.99	ppb		02/18/09 18:08		<input type="checkbox"/>
38	K695DDF	D9B170143-1 = 5.00	9049255	AQUEOUS	4.92	1.0	4.92	ppb		02/18/09 18:10		<input type="checkbox"/>
39	K695DDF	D9B170143-1 = 5.00	9049255	AQUEOUS	5.10	1.0	5.10	ppb		02/18/09 18:13	NA, verifies above	<input type="checkbox"/>
40	K695DDE	D9B170143-1 = 5.00	9049255	AQUEOUS	4.96	1.0	4.96	ppb		02/18/09 18:15	NA, verifies above	<input type="checkbox"/>
41	K696GF	D9B170145-1	9049255	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 18:17		<input type="checkbox"/>
42	K697QF	D9B170148-1	9049255	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 18:20		<input type="checkbox"/>
43	K6973F	D9B170149-1	9049255	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 18:22		<input type="checkbox"/>
44	CCV	= 5.00			5.03	1.0	5.03	ppb	100.6%	02/18/09 18:24		<input type="checkbox"/>
45	CCB				0.01	1.0	0.01	ppb		02/18/09 18:27		<input type="checkbox"/>
46	K698TF	D9B170154-1	9049255	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 18:29		<input type="checkbox"/>
47	K7C1HBF	D9B180000	9049258		0.00	1.0	0.00	ppb		02/18/09 18:31		<input type="checkbox"/>
48	K7C1HCF	D9B180000 = 5.00	9049258		5.07	1.0	5.08	ppb	101.5%	02/18/09 18:33		<input type="checkbox"/>
49	K7AJCF	D9B170176-3	9049258	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 18:36		<input type="checkbox"/>
50	K7AJCSF	D9B170176-3 = 5.00	9049258	AQUEOUS	4.99	1.0	4.99	ppb		02/18/09 18:38		<input type="checkbox"/>
51	K7AJCDF	D9B170176-3 = 5.00	9049258	AQUEOUS	5.02	1.0	5.02	ppb		02/18/09 18:40		<input type="checkbox"/>
52	K7AJG6F	D9B170176-3 = 5.00	9049258	AQUEOUS	5.10	1.0	5.10	ppb		02/18/09 18:43	NA, verifies above	<input type="checkbox"/>
53	K7AJGDF	D9B170176-3 = 5.00	9049258	AQUEOUS	4.96	1.0	4.96	ppb		02/18/09 18:45	NA, verifies above	<input type="checkbox"/>
54	K7C1PBF	D9B180000	9049259		0.00	1.0	0.00	ppb		02/18/09 18:47		<input type="checkbox"/>
55	CCV	= 5.00			5.16	1.0	5.16	ppb	103.1%	02/18/09 18:50		<input type="checkbox"/>
56	CCB				0.00	1.0	0.00	ppb		02/18/09 18:52		<input type="checkbox"/>
57	K7C1PCF	D9B180000 = 5.00	9049259		5.02	1.0	5.02	ppb	100.4%	02/18/09 18:54		<input type="checkbox"/>
58	K7A63F	D9B170255-13	9049259	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 18:56		<input type="checkbox"/>
59	K7A63SF	D9B170255-13 = 5.00	9049259	AQUEOUS	4.88	1.0	4.88	ppb		02/18/09 18:59		<input type="checkbox"/>
60	K7A63DF	D9B170255-13 = 5.00	9049259	AQUEOUS	4.95	1.0	4.95	ppb		02/18/09 19:01		<input type="checkbox"/>
61	K7A65F	D9B170255-15	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:03		<input type="checkbox"/>
62	K7A68F	D9B170255-17	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:06		<input type="checkbox"/>
63	K7A7AF	D9B170255-19	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:08		<input type="checkbox"/>
64	K7A7DF	D9B170255-21	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:10		<input type="checkbox"/>
65	K7A7FF	D9B170255-23	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:13		<input type="checkbox"/>
66	CCV	= 5.00			5.03	1.0	5.03	ppb	100.7%	02/18/09 19:15		<input type="checkbox"/>
67	CCB				0.00	1.0	0.00	ppb		02/18/09 19:17		<input type="checkbox"/>
68	K7A7HF	D9B170255-25	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:20		<input type="checkbox"/>

Denver

RUN SUMMARY

Method: CV/HG - Mercury (Cold Vapor Mercury)

Instrument: A (023)

Reported: 02/19/09 08:50:34

Sequence: 090218AA Date: 02/18/09 16:45

Analyst: CGG

ICV: _____

CALCV: _____

#	Sample ID	Lot No.	Batch	Matrix	Raw	DF	Result	Units	%R	Analyzed Date	Comment
69	K7A7KF	D9B170255-27	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:22	
70	K7A7MF	D9B170255-29	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:24	
71	K7A7PF	D9B170255-31	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:26	
72	K7A7RF	D9B170255-33	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:29	
73	K7A7VF	D9B170255-35	9049259	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 19:31	
74	K7CDJBT	D9B180000	9049262		0.01	1.0	0.01	ppb		02/18/09 19:33	
75	K7C12CT	D9B180000 = 5.00	9049262		4.93	1.0	4.93	ppb	98.7%	02/18/09 19:36	
76	K6X6QT	D9B090170-2	9049262	LEACHATE	0.00	1.0	0.00	ppb		02/18/09 19:38	
77	CCV	= 5.00			5.10	1.0	5.10	ppb	102.0%	02/18/09 19:40	
78	CCB				0.00	1.0	0.00	ppb		02/18/09 19:43	
79	K6X6QP5T	D9B090170	9049262	LEACHATE	0.01	5.0	0.01	ppb		02/18/09 19:45	
80	K69WLB	D9B170000	9049283		0.01	1.0	0.01	ppb		02/18/09 19:47	
81	K7C3VCT	D9B180000 = 5.00	9049283		5.00	1.0	5.00	ppb	100.0%	02/18/09 19:50	
82	K660WT	D9B130200-1	9049283	LEACHATE	0.01	1.0	0.01	ppb		02/18/09 19:52	
83	K660WST	D9B130200-1 = 5.00	9049283	LEACHATE	5.03	1.0	5.03	ppb		02/18/09 19:54	
84	K660WDT	D9B130200-1 = 5.00	9049283	LEACHATE	5.20	1.0	5.20	ppb		02/18/09 19:56	
85	K7C30BT	D9B180000	9049287		0.00	1.0	0.00	ppb		02/18/09 19:59	
86	K7C30CT	D9B180000 = 5.00	9049287		5.24	1.0	5.24	ppb	104.7%	02/18/09 20:01	
87	K67HMT	D9B130290-1	9049287	LEACHATE	5.48	1.0	5.48	ppb		02/18/09 20:03	
88	CCV	= 5.00			5.18	1.0	5.18	ppb	103.7%	02/18/09 20:06	
89	CCB				0.00	1.0	0.00	ppb		02/18/09 20:08	
90	K6ZHMST	D9B130290-1 = 5.00	9049287	LEACHATE	10.61	1.0	10.61	ppb		02/18/09 20:15	
91	K6ZHMSTR 10	D9B130290-1 = 5.00	9049287	LEACHATE	0.99	10.0	9.93	ppb		02/18/09 20:15	
92	K67HMT	D9B130290-1 = 5.00	9049287	LEACHATE	5.64	1.0	5.64	ppb		02/18/09 20:17	
93	K67HWJ	D9B130290-2	9049287	LEACHATE	0.02	1.0	0.02	ppb		02/18/09 20:20	
94	K67HXT	D9B130290-3	9049287	LEACHATE	0.01	1.0	0.01	ppb		02/18/09 20:22	
95	K69WJBT	D9B170000	9049287		0.00	1.0	0.01	ppb		02/18/09 20:24	
96	K7C40CT	D9B180000 = 5.00	9049287		5.33	1.0	5.33	ppb	106.6%	02/18/09 20:26	
97	K67RJT	D9B130339-1	9049297	LEACHATE	0.03	1.0	0.03	ppb		02/18/09 20:29	
98	K67RJ5T	D9B130339	9049297	LEACHATE	0.01	5.0	0.01	ppb		02/18/09 20:31	
99	K67R7T	D9B130339-2	9049297	LEACHATE	0.00	1.0	0.00	ppb		02/18/09 20:33	
100	CCV	= 5.00			5.34	1.0	5.34	ppb	106.8%	02/18/09 20:36	
101	CCB				0.00	1.0	0.00	ppb		02/18/09 20:38	
102	K67HMT 2X	D9B130290-1	9049287	LEACHATE	2.61	2.0	5.23	ppb		02/18/09 20:43	

sample MS > LR
 so all associated
 samples return
 of 2x dil.
 05 2/19/09

05 2/19/09

Denver

RUN SUMMARY

Method: CV/HG - Mercury (Cold Vapor Mercury)

Instrument: A (023)

Reported: 02/19/09 08:50:34

Sequence: 090218AA Date: 02/18/09 16:45

Analyst: CGG

ICV: _____

CAL/CCV: _____

#	Sample ID	Lot No.	Batch	Matrix	Raw	DF	Result	Units	%R	Analyzed Date	Comment	Q
103	K67HMST 2X	D9B130280-1 = 5.00	9049287	LEACHATE	4.84	2.0	9.68	ppb		02/18/09 20:45		<input type="checkbox"/>
104	K67HMXT 2X	D9B130280-1 = 5.00	9049287	LEACHATE	2.60	2.0	5.20	ppb		02/18/09 20:48		<input type="checkbox"/>
105	CCV	= 5.00			5.32	1.0	5.32	ppb	106.3%	02/18/09 20:50		<input type="checkbox"/>
106	CCV	= 5.00			0.00	1.0	0.00	ppb		02/18/09 20:52		<input type="checkbox"/>
107	K67TET	D9B130339-3	9049297	LEACHATE	0.00	1.0	0.00	ppb		02/18/09 20:55		<input type="checkbox"/>
108	K67TLT	D9B130339-4	9049297	LEACHATE	0.00	1.0	0.01	ppb		02/18/09 20:57		<input type="checkbox"/>
109	K67TTT	D9B130339-5	9049297	LEACHATE	0.01	1.0	0.01	ppb		02/18/09 20:59		<input type="checkbox"/>
110	K67T3T	D9B130339-6	9049297	LEACHATE	0.01	1.0	0.01	ppb		02/18/09 21:02		<input type="checkbox"/>
111	K67T5T	D9B130339-7	9049297	LEACHATE	0.03	1.0	0.03	ppb		02/18/09 21:04		<input type="checkbox"/>
112	K7C04B	D9B180000	9049253		0.00	1.0	0.00	ppb		02/18/09 21:06		<input type="checkbox"/>
113	K7C04C	D9B180000 = 5.00	9049253		5.37	1.0	5.37	ppb	107.5%	02/18/09 21:09		<input type="checkbox"/>
114	K7AFD	D9B170169-1	9049253	AQUEOUS	0.07	1.0	0.07	ppb		02/18/09 21:11		<input type="checkbox"/>
115	K7AFDP5	D9B170169	9049253	AQUEOUS	0.02	5.0	0.02	ppb		02/18/09 21:13		<input type="checkbox"/>
116	CCV	= 5.00			5.38	1.0	5.38	ppb	107.5%	02/18/09 21:16		<input type="checkbox"/>
117	CCB				0.00	1.0	0.00	ppb		02/18/09 21:18		<input type="checkbox"/>
118	K7AFDS	D9B170169-1 = 5.00	9049253	AQUEOUS	4.92	1.0	4.92	ppb		02/18/09 21:20		<input type="checkbox"/>
119	K7AFDD	D9B170169-1 = 5.00	9049253	AQUEOUS	5.07	1.0	5.07	ppb		02/18/09 21:22		<input type="checkbox"/>
120	K7AFE	D9B170169-2	9049253	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 21:25		<input type="checkbox"/>
121	K7C0XB	D9B180000	9049252		-0.00	1.0	-0.00	ppb		02/18/09 21:27		<input type="checkbox"/>
122	K7C0XC	D9B180000 = 5.00	9049252		5.37	1.0	5.37	ppb	107.5%	02/18/09 21:29		<input type="checkbox"/>
123	K7A61	D9B170255-12	9049252	AQUEOUS	0.04	1.0	0.04	ppb		02/18/09 21:32		<input type="checkbox"/>
124	K7A61S	D9B170255-12 = 5.00	9049252	AQUEOUS	5.10	1.0	5.10	ppb		02/18/09 21:34		<input type="checkbox"/>
125	K7A61D	D9B170255-12 = 5.00	9049252	AQUEOUS	5.00	1.0	5.00	ppb		02/18/09 21:36		<input type="checkbox"/>
126	K7A64	D9B170255-14	9049252	AQUEOUS	0.19	1.0	0.19	ppb		02/18/09 21:39		<input type="checkbox"/>
127	CCV	= 5.00			5.29	1.0	5.29	ppb	105.8%	02/18/09 21:41		<input type="checkbox"/>
128	CCB				0.00	1.0	0.00	ppb		02/18/09 21:43		<input type="checkbox"/>
129	K7A66	D9B170255-16	9049252	AQUEOUS	0.02	1.0	0.02	ppb		02/18/09 21:46		<input type="checkbox"/>
130	K7A69	D9B170255-18	9049252	AQUEOUS	0.05	1.0	0.05	ppb		02/18/09 21:48		<input type="checkbox"/>
131	K7A7C	D9B170255-20	9049252	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 21:50		<input type="checkbox"/>
132	K7A7E	D9B170255-22	9049252	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 21:53		<input type="checkbox"/>
133	K7A7G	D9B170255-24	9049252	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 21:55		<input type="checkbox"/>
134	K7A7J	D9B170255-26	9049252	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 21:57		<input type="checkbox"/>
135	K7A7L	D9B170255-28	9049252	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 21:59		<input type="checkbox"/>
136	K7A7N	D9B170255-30	9049252	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 22:02		<input type="checkbox"/>

Jos 2/19/09

Denver

RUN SUMMARY

Method: CVHG - Mercury (Cold Vapor Mercury) Instrument: A (023) Reported: 02/19/09 08:50:34

Sequence: 090218AA Date: 02/18/09 16:45 Analyst: CGG ICV: CALCCV:

#	Sample ID	Lot No.	Batch	Matrix	Raw	DF	Result	Units	%R	Analyzed Date	Comment	Q
137	K7A7Q	D9B170255-32	9049252	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 22:04		<input type="checkbox"/>
138	CCV	= 5.00			5.39	1.0	5.39	ppb	107.8%	02/18/09 22:06		<input type="checkbox"/>
139	CCB				0.01	1.0	0.01	ppb		02/18/09 22:09		<input type="checkbox"/>
140	K7A7T	D9B170255-34	9049252	AQUEOUS	0.01	1.0	0.01	ppb		02/18/09 22:11		<input type="checkbox"/>
141	K7C0PB	D9B180000	9049251		0.00	1.0	0.00	ppb		02/18/09 22:13		<input type="checkbox"/>
142	K7C0PC	D9B180000 = 5.00	9049251		5.26	1.0	5.26	ppb	105.1%	02/18/09 22:16		<input type="checkbox"/>
143	K69E5	D9B160158-1	9049251	AQUEOUS	0.05	1.0	0.05	ppb		02/18/09 22:18		<input type="checkbox"/>
144	K69E5			AQUEOUS	0.52	1.0	0.52	ppb		02/18/09 22:20		<input type="checkbox"/>
145	K69E5B			AQUEOUS	0.36	1.0	0.36	ppb		02/18/09 22:23	NA as 2/19/09	<input type="checkbox"/>
146	K7APM	D9B170218-1	9049251	AQUEOUS	-0.01	1.0	-0.01	ppb		02/18/09 22:25		<input type="checkbox"/>
147	CCV	= 5.00			5.11	1.0	5.11	ppb	102.2%	02/18/09 22:27		<input type="checkbox"/>
148	CCB				0.00	1.0	0.00	ppb		02/18/09 22:30		<input type="checkbox"/>
149	K7APMS	D9B170218-1 = 5.00	9049251	AQUEOUS	5.13	1.0	5.13	ppb		02/18/09 22:32		<input type="checkbox"/>
150	K7APMD	D9B170218-1 = 5.00	9049251	AQUEOUS	5.05	1.0	5.05	ppb		02/18/09 22:34		<input type="checkbox"/>
151	K7APT	D9B170218-2	9049251	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 22:36		<input type="checkbox"/>
152	K7APV	D9B170218-3	9049251	AQUEOUS	0.04	1.0	0.04	ppb		02/18/09 22:39		<input type="checkbox"/>
153	K7AAP	D9B170163-1	9049251	AQUEOUS	-0.00	1.0	-0.00	ppb		02/18/09 22:41		<input type="checkbox"/>
154	K7ACH	D9B170163-4	9049251	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 22:43		<input type="checkbox"/>
155	K7ACX	D9B170163-6	9049251	AQUEOUS	0.00	1.0	0.00	ppb		02/18/09 22:46		<input type="checkbox"/>
156	CCV	= 5.00			5.18	1.0	5.18	ppb	103.5%	02/18/09 22:48		<input type="checkbox"/>
157	CCB				0.00	1.0	0.00	ppb		02/18/09 22:50		<input type="checkbox"/>

005 2/19/09

CETAC Hg Analysis Report

Analyst: gridalec

Worksheet file: C:\Program Files\QuickTrace\Worksheets\090218AA.wsz

Date Started: 2/18/2009 2:33:41 PM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt.	Vol.	ODF
Cal Blank	STD	02/18/09 04:45:25 pm	0.000	28	18.71	✓	1.00	1.00	1.00
Std1	STD	02/18/09 04:47:43 pm	0.200	1542	0.37	✓	1.00	1.00	1.00
Std2	STD	02/18/09 04:50:01 pm	0.500	3838	0.23	✓	1.00	1.00	1.00
Std3	STD	02/18/09 04:52:20 pm	1.000	7753	0.45	✓	1.00	1.00	1.00
Std4	STD	02/18/09 04:54:40 pm	2.000	15358	0.60	✓	1.00	1.00	1.00
Std5	STD	02/18/09 04:56:59 pm	5.000	39014	0.77	✓	1.00	1.00	1.00
Std6	STD	02/18/09 04:59:20 pm	10.000	77017	0.62	✓	1.00	1.00	1.00

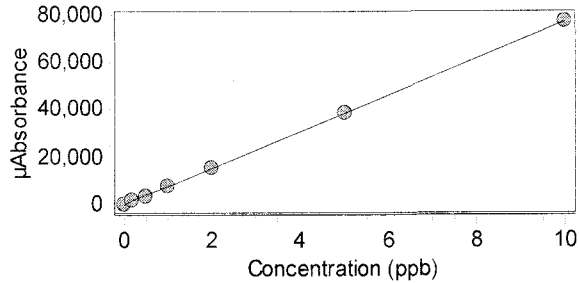
Calibration

Equation: $A = 39.467 + 7715.083C$

R2: 0.99996 ✓

SEE: 203.3353

Flags:



ICB	ICB	02/18/09 05:01:38 pm	0.001	45	17.39	✓	1.00	1.00	1.00
ICV	ICV	02/18/09 05:03:59 pm	6.913	53377	0.84	✓	1.00	1.00	1.00
% Recovery			98.76			✓			
RL	CRDL	02/18/09 05:06:17 pm	0.195	1546	0.10	✓	1.00	1.00	1.00
% Recovery			97.62			✓			

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol. ODF
CCV	CCV	02/18/09 05:08:37 pm	5.051 ✓	39005	0.76		1.00	1.00
% Recovery 101.01 ✓							1.00	
CCB	CCB	02/18/09 05:10:54 pm	0.003 ✓	63	2.14		1.00	1.00
K7CXWB	UNK	02/18/09 05:13:11 pm	0.003 ✓	61	3.76		1.00	1.00
K7CXWC	UNK	02/18/09 05:15:28 pm	4.667 ✓	36044	0.59		1.00	1.00
K7AXL	UNK	02/18/09 05:17:46 pm	0.000	36	5.77		1.00	1.00
K7AXLS	UNK	02/18/09 05:20:04 pm	4.943 ✓	38178	0.58		1.00	1.00
K7AXLD	UNK	02/18/09 05:22:23 pm	4.825 ✓	37268	0.65		1.00	1.00
K7AXQ	UNK	02/18/09 05:24:41 pm	0.007	91	5.72		1.00	1.00
K7C0JB	UNK	02/18/09 05:27:00 pm	0.000 ✓	42	6.72		1.00	1.00
K7C0JC	UNK	02/18/09 05:29:19 pm	4.870 ✓	37609	0.69		1.00	1.00
K695D	UNK	02/18/09 05:31:38 pm	0.015	159	3.15		1.00	1.00
CCV	CCV	02/18/09 05:33:58 pm	5.095 ✓	39349	0.97		1.00	1.00
% Recovery 101.90 ✓							1.00	
CCB	CCB	02/18/09 05:36:15 pm	0.004 ✓	69	3.57		1.00	1.00
K695DS	UNK	02/18/09 05:38:35 pm	4.890 ✓	37764	0.49		1.00	1.00
K695DD	UNK	02/18/09 05:40:55 pm	5.078 ✓	39218	0.90		1.00	1.00
K695DS	UNK	02/18/09 05:43:14 pm	5.032	38856	0.99		1.00	1.00
<i>NA, Verifies above results as 2/19/09</i>								
K695DD	UNK	02/18/09 05:45:34 pm	5.032	38861	1.15		1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol. ODF
K696G	UNK	02/18/09 05:47:55 pm	0.027	245	0.95		1.00	1.00
K697Q	UNK	02/18/09 05:50:11 pm	0.017	171	1.33		1.00	1.00
K6973	UNK	02/18/09 05:52:28 pm	0.017	171	3.57		1.00	1.00
K698T	UNK	02/18/09 05:54:45 pm	0.022	207	1.11		1.00	1.00
K7C08B	UNK	02/18/09 05:57:03 pm	0.001 ✓	51	2.53		1.00	1.00
CCV	CCV	02/18/09 05:59:23 pm	5.028 ✓	38828	1.60		1.00	1.00
% Recovery 100.55 ✓								
CCB	CCB	02/18/09 06:01:40 pm	0.005 ✓	78	4.76		1.00	1.00
K7C08C	UNK	02/18/09 06:03:58 pm	4.635 ✓	35802	0.11		1.00	1.00
K695D	UNK	02/18/09 06:06:16 pm	0.007	93	6.45		1.00	1.00
K695DS	UNK	02/18/09 06:08:34 pm	4.985 ✓	38498	0.65		1.00	1.00
K695DD	UNK	02/18/09 06:10:53 pm	4.921 ✓	38008	0.93		1.00	1.00
K695DC	UNK	02/18/09 06:13:12 pm	5.098	39374	0.57		1.00	1.00
<i>NA verifies sample results above as 2/19/09</i>								
K695DB	UNK	02/18/09 06:15:30 pm	4.865	37572	0.15		1.00	1.00
K696G	UNK	02/18/09 06:17:49 pm	0.009	106	5.70 s		1.00	1.00
K697Q	UNK	02/18/09 06:20:08 pm	0.002	58	5.91		1.00	1.00
K6973	UNK	02/18/09 06:22:28 pm	0.005	81	4.54		1.00	1.00
CCV	CCV	02/18/09 06:24:48 pm	5.030 ✓	38848	1.23		1.00	1.00
% Recovery 100.60 ✓								

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol. ODF
CCB	CCB	02/18/09 06:27:05 pm	0.006 ✓	89	3.14		1.00	1.00
K698T	UNK	02/18/09 06:29:25 pm	0.007	93	1.23		1.00	1.00
K7C1HB	UNK	02/18/09 06:31:42 pm	0.000 ✓	37	6.75		1.00	1.00
K7C1HC	UNK	02/18/09 06:33:59 pm	5.075 ✓	39192	0.88		1.00	1.00
K7AJC	UNK	02/18/09 06:36:16 pm	0.003	62	3.25		1.00	1.00
K7AJCS	UNK	02/18/09 06:38:34 pm	4.992 ✓	38556	0.13		1.00	1.00
K7AJCD	UNK	02/18/09 06:40:52 pm	5.020 ✓	38767	0.76		1.00	1.00
K7AJCS	UNK	02/18/09 06:43:09 pm	5.097	39367	0.92		1.00	1.00
<i>NA, verifies sample results above. as 2/19/09</i>								
K7AJCD	UNK	02/18/09 06:45:27 pm	4.960	38304	0.58		1.00	1.00
K7C1PB	UNK	02/18/09 06:47:45 pm	0.002 ✓	51	7.29		1.00	1.00
CCV	CCV	02/18/09 06:50:05 pm	5.155 ✓	39815	1.31		1.00	1.00
% Recovery		103.11 ✓						
CCB	CCB	02/18/09 06:52:22 pm	0.005 ✓	76	3.28		1.00	1.00
K7C1PC	UNK	02/18/09 06:54:41 pm	5.022 ✓	38781	1.05		1.00	1.00
K7A63	UNK	02/18/09 06:56:59 pm	0.009	109	2.17		1.00	1.00
K7A63S	UNK	02/18/09 06:59:18 pm	4.876 ✓	37656	0.69		1.00	1.00
K7A63D	UNK	02/18/09 07:01:37 pm	4.948 ✓	38210	1.01		1.00	1.00
K7A65	UNK	02/18/09 07:03:57 pm	0.003	65	3.25		1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol. ODF
K7A68	UNK	02/18/09 07:06:17 pm	0.004	73	3.70		1.00	1.00
K7A7A	UNK	02/18/09 07:08:34 pm	0.003	62	7.33		1.00	1.00
K7A7D	UNK	02/18/09 07:10:51 pm	0.005	80	5.45		1.00	1.00
K7A7F	UNK	02/18/09 07:13:09 pm	0.003	64	5.59		1.00	1.00
CCV	CCV	02/18/09 07:15:29 pm	5.033 ✓	38867	0.30		1.00	1.00
% Recovery		100.65 ✓						
CCB	CCB	02/18/09 07:17:46 pm	0.005 ✓	79	3.23		1.00	1.00
K7A7H	UNK	02/18/09 07:20:03 pm	0.003	64	3.54		1.00	1.00
K7A7K	UNK	02/18/09 07:22:21 pm	0.003	61	2.89		1.00	1.00
K7A7M	UNK	02/18/09 07:24:39 pm	0.001	50	0.78		1.00	1.00
K7A7P	UNK	02/18/09 07:26:58 pm	0.002	57	5.63		1.00	1.00
K7A7R	UNK	02/18/09 07:29:16 pm	0.003	61	6.67		1.00	1.00
K7A7V	UNK	02/18/09 07:31:35 pm	0.001	46	13.89		1.00	1.00
K7CDJB	UNK	02/18/09 07:33:55 pm	0.011 ✓	126	0.77		1.00	1.00
K7C12C	UNK	02/18/09 07:36:14 pm	4.934 ✓	38107	0.78		1.00	1.00
K6X6Q	UNK	02/18/09 07:38:34 pm	0.003	63	3.83		1.00	1.00
CCV	CCV	02/18/09 07:40:54 pm	5.099 ✓	39378	1.25		1.00	1.00
% Recovery		101.98 ✓						
CCB	CCB	02/18/09 07:43:11 pm	0.005 ✓	76	2.70		1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Voi. ODF
K6X6QP5	UNK	02/18/09 07:45:29 pm	0.010	113	4.36		1.00	1.00
K69WLB	UNK	02/18/09 07:47:46 pm	0.006 ✓	85	5.97		1.00	1.00
K7C3VC	UNK	02/18/09 07:50:04 pm	4.999 ✓	38606	0.67		1.00	1.00
K660W	UNK	02/18/09 07:52:21 pm	0.006	85	0.96		1.00	1.00
K660WS	UNK	02/18/09 07:54:39 pm	5.030 ✓	38846	1.26		1.00	1.00
K660WD	UNK	02/18/09 07:56:57 pm	5.204 ✓	40189	1.24		1.00	1.00
K7C30B	UNK	02/18/09 07:59:16 pm	0.004 ✓	68	3.69		1.00	1.00
K7C30C	UNK	02/18/09 08:01:34 pm	5.236 ✓	40436	1.24		1.00	1.00
K67HM	UNK	02/18/09 08:03:53 pm	5.464	42194	2.34		1.00	1.00
CCV	CCV	02/18/09 08:06:13 pm	5.183 ✓	40026	0.89		1.00	1.00
% Recovery 103.66 ✓								
CCB	CCB	02/18/09 08:08:31 pm	0.005 ✓	79	2.47		1.00	1.00
K67HMS	UNK	02/18/09 08:10:50 pm	10.812	81915	0.90	○	1.00	1.00
K67HMS*	UNK	02/18/09 08:15:22 pm	0.993	7704	1.37		1.00	1.00
K67HMX	UNK	02/18/09 08:17:41 pm	5.698	43538	1.45		1.00	1.00
K67HW	UNK	02/18/09 08:20:01 pm	0.018	182	2.43		1.00	1.00
K67HX	UNK	02/18/09 08:22:19 pm	0.007	96	1.75		1.00	1.00
K69WJB	UNK	02/18/09 08:24:37 pm	0.005 ✓	80	4.00		1.00	1.00

NA, sample MS > LR so all associated samples diluted 2x. on 2/19/09

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol. ODF
K7C40C	UNK	02/18/09 08:26:55 pm	5.328 ✓	41145	1.13		1.00	1.00 1.00
K67RJ	UNK	02/18/09 08:29:13 pm	0.031 ✓	276	1.04		1.00	1.00 1.00
K67RJP5	UNK	02/18/09 08:31:31 pm	0.011 ✓	122	1.32		1.00	1.00 1.00
K67R7	UNK	02/18/09 08:33:49 pm	0.001	47	6.54		1.00	1.00 1.00
CCV % Recovery 106.77 ✓	CCV	02/18/09 08:36:09 pm	5.338 ✓	41226	2.27		1.00	1.00 1.00
CCB	CCB	02/18/09 08:38:26 pm	0.005 ✓	77	2.93		1.00	1.00 1.00
K67HM 2X ✓	UNK	02/18/09 08:43:36 pm	2.613 ✓	20201	1.10	}	1.00	1.00 1.00
K67HMS 2X ✓	UNK	02/18/09 08:45:55 pm	4.839 ✓	37374	1.09		1.00	1.00 1.00
K67HMX 2X ✓	UNK	02/18/09 08:48:15 pm	2.600 ✓	20097	1.11		1.00	1.00 1.00
CCV % Recovery 106.34 ✓	CCV	02/18/09 08:50:35 pm	5.317 ✓	41061	1.29		1.00	1.00 1.00
CCB	CCB	02/18/09 08:52:52 pm	0.005 ✓	80	3.99		1.00	1.00 1.00
K67TE	UNK	02/18/09 08:55:10 pm	0.001	45	6.22		1.00	1.00 1.00
K67TL	UNK	02/18/09 08:57:29 pm	0.005	81	3.20		1.00	1.00 1.00
K67TT	UNK	02/18/09 08:59:48 pm	0.009	107	1.88		1.00	1.00 1.00
K67T3	UNK	02/18/09 09:02:07 pm	0.006	84	3.73		1.00	1.00 1.00
K67T5	UNK	02/18/09 09:04:27 pm	0.029	263	1.10		1.00	1.00 1.00
K7C04B	UNK	02/18/09 09:06:47 pm	0.000 ✓	36	11.41		1.00	1.00 1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol.
							ODF	
K7C04C	UNK	02/18/09 09:09:05 pm	5.374 ✓	41504	1.37		1.00	1.00
							1.00	
K7AFD	UNK	02/18/09 09:11:23 pm	0.073 ✓	603	0.51		1.00	1.00
							1.00	
K7AFDP5	UNK	02/18/09 09:13:41 pm	0.016 ✓	165	1.02		1.00	1.00
							1.00	
CCV	CCV	02/18/09 09:16:02 pm	5.375 ✓	41509	1.16		1.00	1.00
% Recovery		107.50 ✓					1.00	
CCB	CCB	02/18/09 09:18:19 pm	0.005 ✓	80	2.95		1.00	1.00
							1.00	
K7AFDS	UNK	02/18/09 09:20:37 pm	4.919 ✓	37992	1.24		1.00	1.00
							1.00	
K7AFDD	UNK	02/18/09 09:22:55 pm	5.070 ✓	39153	0.99		1.00	1.00
							1.00	
K7AFE	UNK	02/18/09 09:25:14 pm	0.001	49	1.86		1.00	1.00
							1.00	
K7C0XB	UNK	02/18/09 09:27:32 pm	-0.001 ✓	32	6.11		1.00	1.00
							1.00	
K7C0XC	UNK	02/18/09 09:29:51 pm	5.374 ✓	41502	1.13		1.00	1.00
							1.00	
K7A61	UNK	02/18/09 09:32:10 pm	0.038	335	0.67		1.00	1.00
							1.00	
K7A61S	UNK	02/18/09 09:34:29 pm	5.101 ✓	39391	1.22		1.00	1.00
							1.00	
K7A61D	UNK	02/18/09 09:36:49 pm	5.002 ✓	38629	1.36		1.00	1.00
							1.00	
K7A64	UNK	02/18/09 09:39:09 pm	0.186	1474	0.86		1.00	1.00
							1.00	
CCV	CCV	02/18/09 09:41:29 pm	5.288 ✓	40839	0.95		1.00	1.00
% Recovery		105.77 ✓					1.00	
CCB	CCB	02/18/09 09:43:46 pm	0.005 ✓	76	5.94		1.00	1.00
							1.00	
K7A66	UNK	02/18/09 09:46:04 pm	0.019	187	0.92		1.00	1.00
							1.00	

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol. ODF
K7A69	UNK	02/18/09 09:48:23 pm	0.047	403	0.76		1.00	1.00
K7A7C	UNK	02/18/09 09:50:41 pm	0.010	116	1.27		1.00	1.00
K7A7E	UNK	02/18/09 09:53:00 pm	0.001	48	4.47		1.00	1.00
K7A7G	UNK	02/18/09 09:55:18 pm	0.001	50	4.41		1.00	1.00
K7A7J	UNK	02/18/09 09:57:37 pm	0.010	120	3.20		1.00	1.00
K7A7L	UNK	02/18/09 09:59:56 pm	0.007	94	3.12		1.00	1.00
K7A7N	UNK	02/18/09 10:02:14 pm	0.001	46	4.68		1.00	1.00
K7A7Q	UNK	02/18/09 10:04:33 pm	0.001	49	4.52		1.00	1.00
CCV	CCV	02/18/09 10:06:53 pm	5.388 ✓	41608	1.20		1.00	1.00
% Recovery 107.76 ✓								
CCB	CCB	02/18/09 10:09:10 pm	0.006 ✓	85	3.49		1.00	1.00
K7A7T	UNK	02/18/09 10:11:29 pm	0.012	136	2.75		1.00	1.00
K7C0PB	UNK	02/18/09 10:13:49 pm	0.000 ✓	38	1.81		1.00	1.00
K7C0PC	UNK	02/18/09 10:16:09 pm	5.257 ✓	40595	1.27		1.00	1.00
K69E5	UNK	02/18/09 10:18:28 pm	0.050	428	2.64		1.00	1.00
K69E5S	UNK	02/18/09 10:20:47 pm	0.520 ✓	4052	0.76		1.00	1.00
NA CS 2/19/09								
K69E5D	UNK	02/18/09 10:23:05 pm	0.362	2835	2.09		1.00	1.00
K7APM	UNK	02/18/09 10:25:24 pm	-0.007	-12	78.02		1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt.	Vol.
							ODF	
CCV % Recovery 102.19 ✓	CCV	02/18/09 10:27:44 pm	5.110 ✓	39460	1.79		1.00	1.00
							1.00	
CCB	CCB	02/18/09 10:30:01 pm	0.000 ✓	36	16.86		1.00	1.00
							1.00	
K7APMS	UNK	02/18/09 10:32:20 pm	5.129 ✓	39613	0.76		1.00	1.00
							1.00	
K7APMD	UNK	02/18/09 10:34:39 pm	5.054 ✓	39028	0.48		1.00	1.00
							1.00	
K7APT	UNK	02/18/09 10:36:58 pm	0.000	36	23.41		1.00	1.00
							1.00	
K7APV	UNK	02/18/09 10:39:17 pm	0.044	375	0.61		1.00	1.00
							1.00	
K7AAP	UNK	02/18/09 10:41:36 pm	-0.001	32	19.61		1.00	1.00
							1.00	
K7ACH	UNK	02/18/09 10:43:55 pm	0.001	51	5.65		1.00	1.00
							1.00	
K7ACX	UNK	02/18/09 10:46:14 pm	0.002	54	9.64		1.00	1.00
							1.00	
CCV % Recovery 103.49 ✓	CCV	02/18/09 10:48:34 pm	5.174 ✓	39961	0.81		1.00	1.00
							1.00	
CCB	CCB	02/18/09 10:50:51 pm	0.004 ✓	72	4.24		1.00	1.00
							1.00	

Analysis Parameters

Instrument

Conditions

Gas flow (mL/min)	Sample Uptake (s)	Rinse (s)	Read delay (s)	Replicates (#)	Replicate time (s)	Pump speed (%)	Wavelength (nm)
100	40.00	90.00	50.00	4	1.50	50	253.65

Instrumental Zero

Zero before first sample: No

Zero periodically: Yes

Before each calibration.

Baseline Correction

#1 Start time (s)	#1 End time (s)	#2 Start time (s)	#2 End time (s)
25.00	29.00		

Standby Mode

Enabled: Yes

Standby Options: pump slow

Autodilution

Enabled: Yes

Condition: Saturate

Tube # range: 4:1 - 4:60

If no autodilution tubes remaining continue undiluted

Calibration

Settings

Algorithm	Through blank	Weighted fit	Cal. Type	Racalibration rate	Reslope rate	Reslope standard
Linear	No	No	Normal	0	0	N/A

Limits

Calibration slope		Reslope		Coeff. of Determination
Lower (%)	Upper (%)	Lower (%)	Upper (%)	
20	150	75	125	0.99500

Error action: Flag and continue

QC

GLP Override: Yes

QC Tests

CCB

Concentration
(ppb)
0.2000

Failure flag: Q

Error action for manually inserted QC: Stop analysis

ICB

Concentration
(ppb)
0.2000

Failure flag: Z

Error action for manually inserted QC: Stop analysis

CCV

Concentration (ppb)	Low Limit %	High Limit %
5.0000	80.0000	120.0000

Failure flag: Q

Error action for manually inserted QC: Stop analysis

ICV

Concentration (ppb)	Low Limit %	High Limit %
7.0000	90.0000	110.0000

Failure flag: Q

Error action for manually inserted QC: Stop analysis

CRDL

Concentration (ppb)	Low Limit %	High Limit %
0.2000	70.0000	130.0000

Failure flag: Y

Error action for manually inserted QC: Stop analysis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. BOEING NPDES

SSFL MWH-Pasadena/Boeing

Lot #: F9B170209

Joseph Doak

TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.

for: 
Sherryl Adam
Project Manager

March 16, 2009

Case Narrative
LOT NUMBER: F9B170209

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on February 17, 2009. This sample is associated with your SSFL MWH-Pasadena/Boeing project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

There are no observations or nonconformances associated with the analysis in this lot.

METHODS SUMMARY

F9B170209

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Gamma Spectroscopy - Cesium-137 & Hits	EPA 901.1 MOD	
Gross Alpha/Beta EPA 900	EPA 900.0 MOD	EPA 900.0
H-3 by Distillation & LSC	EPA 906.0 MOD	
Radium-226 by GFPC	EPA 903.0 MOD	EPA 903.0
Radium-228 by GFPC	EPA 904 MOD	EPA 904
Strontium 90 by GFPC	EPA 905 MOD	
Total Uranium By Laser Ph osphorimetry	ASTM 5174-91	

References:

ASTM Annual Book Of ASTM Standards.

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

SAMPLE SUMMARY

F9B170209

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
K7AN2	001	ISB1693-01	02/13/09	15:25

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

TestAmerica Irvine
Client Sample ID: ISB1693-01

Radiochemistry

Lab Sample ID: F9B170209-001
 Work Order: K7AN2
 Matrix: WATER

Date Collected: 02/13/09 1525
 Date Received: 02/17/09 0900

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD				pCi/L		Batch # 9058211	Yld %
Cesium 137	-0.9	U	7.9	20.0	15	02/27/09	03/10/09
Potassium 40	-60	U	680		250	02/27/09	03/10/09
Gross Alpha/Beta EPA 900				pCi/L		Batch # 9050133	Yld %
Gross Alpha	2.7	J	1.2	3.0	1.2	02/24/09	03/03/09
Gross Beta	4.3		1.0	4.0	1.1	02/24/09	03/03/09
Radium 226 by EPA 903.0 MOD				pCi/L		Batch # 9048417	Yld % 69
Radium (226)	0.09	U	0.13	1.00	0.21	02/17/09	03/12/09
Radium 228 by GFPC EPA 904 MOD				pCi/L		Batch # 9048418	Yld % 58
Radium 228	-0.22	U	0.35	1.00	0.64	02/17/09	03/12/09
TRITIUM (Distill) by EPA 906.0 MOD				pCi/L		Batch # 9064253	Yld %
Tritium	220	U	200	500	310	03/05/09	03/11/09
SR-90 BY GFPC EPA-905 MOD				pCi/L		Batch # 9048419	Yld % 50
Strontium 90	0.04	U	0.50	3.00	0.86	02/17/09	02/28/09
Total Uranium by KPA ASTM 5174-91				pCi/L		Batch # 9050413	Yld %
Total Uranium	0.435	J	0.051	0.677	0.21	02/19/09	03/08/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

U Result is less than the sample detection limit.

TestAmerica Irvine

Client Sample ID: ISB1693-01 DUP

Radiochemistry

Lab Sample ID: F9B170209-001X
 Work Order: K7AN2
 Matrix: WATER

Date Collected: 02/13/09 1525
 Date Received: 02/17/09 0900

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD				pCi/L		Batch # 9058211	Yld %
Cesium 137	-3.1	U	9.9	20.0	17	02/27/09	03/13/09
Potassium 40	-90	U	3500		300	02/27/09	03/13/09
TRITIUM (Distill) by EPA 906.0 MOD				pCi/L		Batch # 9064253	Yld %
Tritium	60	U	180	500	320	03/05/09	03/11/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F9B170209
 Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
TRITIUM (Distill) by EPA 906.0 MOD Tritium	-20	U	pCi/L 180	Batch # 9064253 500	Yld % 320	03/05/09	F9C050000-253B 03/11/09
Radium 226 by EPA 903.0 MOD Radium (226)	0.055	U	pCi/L 0.092	Batch # 9048417 1.00	Yld % 90 0.16	02/17/09	F9B170000-417B 03/12/09
Radium 228 by GFPC EPA 904 MOD Radium 228	0.09	U	pCi/L 0.24	Batch # 9048418 1.00	Yld % 85 0.41	02/17/09	F9B170000-418B 03/12/09
SR-90 BY GFPC EPA-905 MOD Strontium 90	-0.14	U	pCi/L 0.20	Batch # 9048419 3.00	Yld % 70 0.38	02/17/09	F9B170000-419B 02/28/09
Total Uranium by KPA ASTM 5174-91 Total Uranium	0.124	U	pCi/L 0.015	Batch # 9050413 0.677	Yld % 0.21	02/19/09	F9B190000-413B 03/08/09
Gross Alpha/Beta EPA 900 Gross Alpha Gross Beta	-0.13 -0.71	U U	pCi/L 0.47 0.61	Batch # 9050133 3.00 4.00	Yld % 0.99 1.2	02/24/09 02/24/09	F9B190000-133B 03/04/09 03/04/09
Gamma Cs-137 & Hits by EPA 901.1 MOD Cesium 137 Potassium 40	4.7 -1	U U	pCi/L 9.8 150	Batch # 9058211 20.0	Yld % 17 280	02/27/09 02/27/09	F9B270000-211B 03/13/09 03/13/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
 Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F9B170209
 Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Gross Alpha/Beta EPA 900							
Gross Beta	67.6	56.3	4.9	900.0 MOD		83	F9B190000-133C (73 - 122)
	Batch #:	9050133		Analysis Date:	03/04/09		
Gross Alpha/Beta EPA 900							
Gross Alpha	49.4	53.2	6.0	900.0 MOD		108	F9B190000-133C (73 - 136)
	Batch #:	9050133		Analysis Date:	03/04/09		
Total Uranium by KPA ASTM 5174-91							
Total Uranium	27.1	29.7	3.5	5174-91		110	F9B190000-413C (90 - 118)
	Batch #:	9050413		Analysis Date:	03/08/09		
Total Uranium by KPA ASTM 5174-91							
Total Uranium	5.42	5.86	0.61	5174-91		108	F9B190000-413C (90 - 118)
	Batch #:	9050413		Analysis Date:	03/08/09		
Gamma Cs-137 & Hits by EPA 901.1 MOD							
Americium 241	141000	137000	11000	901.1 MOD		97	F9B270000-211C (90 - 110)
Cesium 137	53100	51600	3000			97	(90 - 110)
Cobalt 60	87900	85500	4800			97	(90 - 110)
	Batch #:	9058211		Analysis Date:	03/13/09		
TRITIUM (Distill) by EPA 906.0 MOD							
Tritium	4780	4230	480	906.0 MOD		88	F9C050000-253C (77 - 110)
	Batch #:	9064253		Analysis Date:	03/11/09		

NOTE (S)

MDC is determined by instrument performance only
 Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F9B170209
 Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	% Yld	% Rec	Lab Sample ID	
						QC Control Limits	Precision
Radium 226 by EPA	903.0 MOD	pCi/L	903.0 MOD			F9B170000-417C	
Radium (226)	11.3	10.9	1.1	94	97	(52 - 150)	
Spk 2	11.3	11.5	1.2	96	102	(52 - 150)	6 %RPD
Batch #:		9048417	Analysis Date:		03/12/09		
Radium 228 by GFPC EPA	904 MOD	pCi/L	904 MOD			F9B170000-418C	
Radium 228	7.20	8.34	0.95	78	116	(64 - 140)	
Spk 2	7.20	8.44	0.95	82	117	(64 - 140)	1 %RPD
Batch #:		9048418	Analysis Date:		03/12/09		
SR-90 BY GFPC EPA	905 MOD	pCi/L	905 MOD			F9B170000-419C	
Strontium 90	6.97	7.65	0.92	67	110	(78 - 146)	
Spk 2	6.97	8.80	1.00	69	126	(78 - 146)	14 %RPD
Batch #:		9048419	Analysis Date:		02/28/09		

NOTE(S)

Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F9B170209
 Matrix: WATER

Date Sampled: 02/13/09
 Date Received: 02/17/09

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID	
							Precision	
Gamma Cs-137 & Hits by EPA 901.1 MOD			pCi/L	901.1 MOD			F9B170209-001	
Cesium 137	-0.9 U	7.9		-3.1 U	9.9		112	%RPD
Potassium 40	-60 U	680		-90 U	3500		35	%RPD
	Batch #:	9058211 (Sample)		9058211 (Duplicate)				
TRITIUM (Distill) by EPA 906.0 MOD			pCi/L	906.0 MOD			F9B170209-001	
Tritium	220 U	200		60 U	180		113	%RPD
	Batch #:	9064253 (Sample)		9064253 (Duplicate)				
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F9B200166-001	
Gross Alpha	1.86 J	0.97		1.9 J	1.0		4	%RPD
Gross Beta	4.2	1.2		4.1	1.2		3	%RPD
	Batch #:	9050133 (Sample)		9050133 (Duplicate)				

NOTE (S)

Data are incomplete without the case narrative.
 Calculations are performed before rounding to avoid round-off error in calculated results

J Result is greater than sample detection limit but less than stated reporting limit.
 U Result is less than the sample detection limit.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F9B170209
 Matrix: WATER

Date Sampled: 02/13/09 1525
 Date Received: 02/17/09 0900

Parameter	Spike Amount	SPIKE Result	Total Uncert. (2σ +/-)	Spike Yld	SAMPLE Result	Total Uncert. (2σ +/-)	QC Sample ID		QC Control Limits
							% Yld	%Rec	
Total Uranium by KPA ASTM 5			pCi/L	5174-91		F9B170209-001			
Total Uranium	27.1	30.1	3.6	0.435	J	0.051	110		(90 - 121)
	Spk2 27.1	29.8	3.6	0.435	J	0.051	108		(90 - 121)
						Precision:	1		%RPD
	Batch #:	9050413	Analysis date:	03/08/09					

NOTE (S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

J Result is greater than sample detection limit but less than stated reporting

MATRIX SPIKE REPORT

Radiochemistry

Client Lot Id: F9B170212
 Matrix: WATER

Date Sampled: 02/13/09
 Date Received: 02/17/09

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2σ +/-)	QC Sample ID		QC Control Limits
							%YLD	%REC	
TRITIUM (Distill) by EPA 906.0 MOD			pCi/L	906.0 MOD			F9B170212-001		
Tritium	4780	4340	480	-80	170		93		(47 - 150)
	Batch #:	9064253		Analysis Date:	03/11/09				
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F9B200166-001		
Gross Beta	67.5	73.3	6.2	4.2	1.2		102		(66 - 147)
	Batch #:	9050133		Analysis Date:	03/04/09				
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F9B200166-001		
Gross Alpha	49.4	39.8	5.0	1.86	0.97		77		(44 - 150)
	Batch #:	9050133		Analysis Date:	03/04/09				

NOTE(S)

Data are incomplete without the case narrative.
 Calculations are performed before rounding to avoid round-off errors in calculated results.

cur
3/1/06

SUBCONTRACT ORDER
TestAmerica Irvine
ISB1693

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Joseph Doak
Client: MWH-Pasadena/Boeing

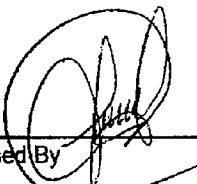
RECEIVING LABORATORY:

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone : (314) 298-8566
Fax: (314) 298-8757
Project Location: CA - CALIFORNIA
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Interlab Price	Surch	Comments
Sample ID: ISB1693-01	Water					Sampled: 02/13/09 15:25 Instant Notification
Gamma Spec-O	mg/kg	02/25/09	02/13/10 15:25	\$250.00	0%	Out St Louis, K-40 and CS-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	02/25/09	08/12/09 15:25	\$100.00	50%	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	02/25/09	08/12/09 15:25	\$100.00	50%	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	02/25/09	03/13/09 15:25	\$0.00	0%	
Radium, Combined-O	pCi/L	02/25/09	02/13/10 15:25	\$238.00	50%	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	02/25/09	02/13/10 15:25	\$155.00	50%	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	02/25/09	02/13/10 15:25	\$80.00	50%	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	02/25/09	02/13/10 15:25	\$120.00	0%	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:

2.5 gal Poly (J) 500 mL Amber (K)



Released By

2/17/09

Date/Time

Fed - Ex 2/16/09 1700

Received By

Zena P...

Date/Time

2-17-09 0900

Date/Time



Lot #(s): F9B170209
212
213
- 398 - 215
217

CONDITION UPON RECEIPT FORM

Client: TA Irvine
Quote No: 81594
COC/RFA No: below

Initiated By: _____ Date: 2-17-09 Time: 0900

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*	Sample Temperature (s):**
1. <u>79634577 3011</u> 6. _____	1. <u>4</u> 6. _____
2. <u>7973 4211 8207</u> 7. _____	2. <u>4</u> 7. _____
3. <u>79634577 3527</u> 8. _____	3. <u>3</u> 8. _____
4. _____ 9. _____	4. _____ 9. _____
5. _____ 10. _____	5. _____ 10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1. <input checked="" type="radio"/> Y <input type="radio"/> N	Are there custody seals present on the cooler?	8. <input type="radio"/> Y <input checked="" type="radio"/> N	Are there custody seals present on bottles?
2. <input type="radio"/> Y <input checked="" type="radio"/> N <input type="radio"/> N/A	Do custody seals on cooler appear to be tampered with?	9. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Do custody seals on bottles appear to be tampered with?
3. <input checked="" type="radio"/> Y <input type="radio"/> N	Were contents of cooler frisked after opening, but before unpacking?	10. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Was sample received with proper pH? (If not, make note below)
4. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received with Chain of Custody?	11. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received in proper containers?
5. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Does the Chain of Custody match sample ID's on the container(s)?	12. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
6. <input type="radio"/> Y <input checked="" type="radio"/> N	Was sample received broken?	13. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Was Internal <input checked="" type="radio"/> COC / <input checked="" type="radio"/> Workshare received?
7. <input checked="" type="radio"/> Y <input type="radio"/> N	Is sample volume sufficient for analysis?	14. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Was pH taken by original TestAmerica lab?

¹ For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes: 15B1693
15B1695
15B1694
15B1699
15B1703

Corrective Action:

Client Contact Name: _____
 Sample(s) processed "as is"
 Sample(s) on hold until: _____
Project Management Review: Sheryl A. Adams

Informed by: _____
If released, notify: _____
Date: 2-19-09

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.



February 25, 2009

Vista Project I.D.: 31432

Mr. Joseph Doak
Test America-Irvine, CA
17461 Derian Avenue
Suite 100
Irvine, CA 92614

Dear Mr. Doak,

Enclosed are the results for the one aqueous sample received at Vista Analytical Laboratory on February 17, 2009 under your Project Name "ISB1693". This work was authorized under your Purchase Order No. 2293724. This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Vista's current certifications, and copies of the raw data (if requested).

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com. Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in black ink that reads "Martha M. Maier".

Martha M. Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista Analytical Laboratory.



NPDES - 1453

Section I: Sample Inventory Report

Date Received: 2/17/2009

Vista Lab. ID

Client Sample ID

31432-001

ISB1693-01

SECTION II

Method Blank		EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	1900	Lab Sample:	0-MB001
Sample Size:	1.00 L	Date Extracted:	19-Feb-09	Date Analyzed DB-5:	24-Feb-09
Date Analyzed DB-225:	NA				
Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.00000106		79.1	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000999		68.5	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000203		78.7	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000190		77.3	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000189		79.3	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000348		72.6	17 - 157
OCDD	ND	0.00000285		77.8	24 - 169
2,3,7,8-TCDF	ND	0.00000100		67.3	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000108		66.1	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000107		76.0	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000138		76.7	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000140		78.0	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000156		75.7	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000216		77.1	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000328		76.5	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000421		67.9	17 - 157
OCDF	ND	0.00000285		86.7	35 - 197
Totals					
Total TCDD	ND	0.00000106			
Total PeCDD	ND	0.000000999			
Total HxCDD	ND	0.00000194			
Total HpCDD	ND	0.00000348			
Total TCDF	ND	0.00000100			
Total PeCDF	ND	0.00000108			
Total HxCDF	ND	0.00000162			
Total HpCDF	ND	0.00000374			
Footnotes					
a. Sample specific estimated detection limit.					
b. Estimated maximum possible concentration.					
c. Method detection limit.					
d. Lower control limit - upper control limit.					

Analyst: JMH

Approved By: William J. Luksemburg 25-Feb-2009 13:44

OPR Results		EPA Method 1613					
Matrix: Aqueous	QC Batch No.: 1900	Lab Sample: 0-OPR001	Date Analyzed DB-5: 23-Feb-09	Date Analyzed DB-225: NA			
Sample Size: 1.00 L	Date Extracted: 19-Feb-09						
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	Qualifier
2,3,7,8-TCDD	10.0	9.54	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	78.8	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.2	35 - 71	13C-1,2,3,7,8-PeCDD	67.9	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	49.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	73.1	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	48.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	72.0	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	48.5	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	68.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.9	35 - 70	13C-OCDD	59.5	17 - 157	
OCDD	100	99.5	78 - 144	13C-2,3,7,8-TCDF	78.2	24 - 169	
2,3,7,8-TCDF	10.0	10.2	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	73.2	24 - 185	
1,2,3,7,8-PeCDF	50.0	50.7	40 - 67	13C-2,3,4,7,8-PeCDF	70.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	50.1	34 - 80	13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	49.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	69.9	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF	74.1	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	49.6	35 - 78	13C-1,2,3,7,8,9-HxCDF	72.1	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	50.5	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	65.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	50.9	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	64.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	53.1	39 - 69	13C-OCDF	58.1	17 - 157	
OCDF	100	104	63 - 170	CRS 37Cl-2,3,7,8-TCDD	83.5	35 - 197	

Analyst: JMH

Approved By:

William J. Luksemburg 25-Feb-2009 13:44

Sample ID: ISB1693-01 **EPA Method 1613**

Client Data		Laboratory Data	
Name: Testf. America-Irvine, CA	Lab Sample: 31432-001	Date Received: 17-Feb-09	
Project: ISB1693	QC Batch No.: 1900	Date Extracted: 19-Feb-09	
Date Collected: 13-Feb-09	Date Analyzed DB-5: 21-Feb-09	Date Analyzed DB-225: NA	
Time Collected: 1525			

Analyte	Conc. (ug/L)	DL^a	EMPC^b	Qualifiers	Labeled Standard	%R	LCL-UCL^d	Qualifiers
2,3,7,8-TCDD	ND	0.00000666			IS 13C-2,3,7,8-TCDD	90.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000983			13C-1,2,3,7,8-PeCDD	94.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000300			13C-1,2,3,4,7,8-HxCDD	79.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000298			13C-1,2,3,6,7,8-HxCDD	78.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000277			13C-1,2,3,4,6,7,8-HpCDD	78.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000875			J	13C-OCDD	63.4	17 - 157	
OCDD	0.000102				13C-2,3,7,8-TCDF	88.3	24 - 169	
2,3,7,8-TCDF	ND	0.00000125			13C-1,2,3,7,8-PeCDF	92.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000123			13C-2,3,4,7,8-PeCDF	92.5	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000138			13C-1,2,3,4,7,8-HxCDF	74.4	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000756			13C-1,2,3,6,7,8-HxCDF	70.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000781			13C-2,3,4,6,7,8-HxCDF	74.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000842			13C-1,2,3,7,8,9-HxCDF	81.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000107			13C-1,2,3,4,6,7,8-HpCDF	77.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000288			13C-1,2,3,4,7,8,9-HpCDF	78.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000957			13C-OCDF	66.0	17 - 157	
OCDF	ND	0.00000821			CRS 37Cl-2,3,7,8-TCDD	88.8	35 - 197	

Totals	
Total TCDD	ND
Total PeCDD	ND
Total HxCDD	ND
Total HpCDD	0.0000213
Total TCDF	ND
Total PeCDF	ND
Total HxCDF	ND
Total HpCDF	ND

Footnotes

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.

Analyst: MAS Approved By: William J. Luksemburg 25-Feb-2009 13:44

APPENDIX

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-2008
State of Arizona	AZ0639
State of Arkansas, DEQ	08-043-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	N/A
State of Connecticut	PH-0182
State of Florida, DEP	E87777
State of Indiana Department of Health	C-CA-02
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA08000
State of Louisiana, DEQ	01977
State of Maine	2008024
State of Michigan	9932
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	NFESC413
State of Nevada	CA004132007A
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-006
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	TN02996
State of Texas	T104704189-08-TX
U.S. Army Corps of Engineers	N/A
State of Utah	CA16400
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

SUBCONTRACT ORDER

TestAmerica Irvine

ISB1693

31432

-0.9°C

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Joseph Doak

RECEIVING LABORATORY:

Vista Analytical Laboratory- SUB
1104 Windfield Way
El Dorado Hills, CA 95762
Phone : (916) 673-1520
Fax: (916) 673-0106
Project Location: CA - CALIFORNIA
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: ISB1693-01	Water		Sampled: 02/13/09 15:25	Instant Notification
1613-Dioxin-HR-Alta	ug/l	02/25/09	02/20/09 15:25	J flags, 17 congeners, no TEQ, ug/L, sub=Vista
EDD + Level 4	N/A	02/25/09	03/13/09 15:25	Excel EDD email to pm, Include Std logs for Lvl IV
<i>Containers Supplied:</i>				
1 L Amber (C)		1 L Amber (D)		

Released By Va Bauls Date/Time 2/16/09 17:00
 Received By FedEx Date/Time 2/16/09 17:00
 Released By FedEx Date/Time 2/17/09 08:42
 Received By Belma Benedict Date/Time 2/17/09 16:06
 Project 31432 NIDES - 1462 Page 1 of 1
Page 10 of 417

SAMPLE LOG-IN CHECKLIST



31432

Vista Project #:

TAT unspecified

Samples Arrival:	Date/Time	Initials:	Location:			
	2/17/09 0842	BBB	WR-2			
Logged In:	Date/Time	Initials:	Location:			
	2/17/09 1606	BBB	WR-2			
Delivered By:	FedEx	UPS	Cal	DHL	Hand Delivered	Other
	Ice	Blue Ice	Dry Ice		None	
Temp °C	Time:		Thermometer ID:			
-0.9°	0845		IR-1			

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	Trk #		
	796346457290	✓	
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na ₂ S ₂ O ₃ Preservation Documented?	COC	Sample Container	None
Shipping Container	Vista	Client	Retain Return Dispose

Comments:

ISB1693-01 A3 B bottle