

# **APPENDIX G**

## **Section 51**

Outfall 008, February 24, 2008

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 008

Sampled: 02/24/08  
Received: 02/25/08  
Issued: 03/17/08 13:45

NELAP #01108CA California ELAP#1197 CSDLAC #10256

*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.*

### CASE NARRATIVE

**SAMPLE RECEIPT:** Samples were received intact, at 1°C, on ice and with chain of custody documentation.

**HOLDING TIMES:** All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

**PRESERVATION:** Samples requiring preservation were verified prior to sample analysis.

**QA/QC CRITERIA:** All analyses met method criteria, except as noted in the report with data qualifiers.

**COMMENTS:** Results that fall between the MDL and RL are 'J' flagged.

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

**LABORATORY ID**

IRB2401-01

**CLIENT ID**

Outfall 008

**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 008

Report Number: IRB2401

Sampled: 02/24/08  
 Received: 02/25/08

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB2401-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	8B28067	0.20	2.0	<b>0.30</b>	1	02/28/08	02/29/08	J
Cadmium	EPA 200.8	8B28067	0.11	1.0	ND	1	02/28/08	02/29/08	
Copper	EPA 200.8	8B28067	0.75	2.0	<b>2.4</b>	1	02/28/08	02/29/08	
Lead	EPA 200.8	8B28067	0.30	1.0	<b>1.3</b>	1	02/28/08	02/29/08	
Selenium	EPA 200.8	8B28067	0.30	2.0	ND	1	02/28/08	02/29/08	
Thallium	EPA 200.8	8B28067	0.20	1.0	ND	1	02/28/08	02/29/08	
Zinc	EPA 200.8	8B28067	2.5	20	<b>6.0</b>	1	02/28/08	02/29/08	B, J

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Report Number: IRB2401

Sampled: 02/24/08  
 Received: 02/25/08

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB2401-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	8B25123	0.20	2.0	<b>0.30</b>	1	02/25/08	02/26/08	J
Cadmium	EPA 200.8-Diss	8B25123	0.11	1.0	ND	1	02/25/08	02/26/08	
<b>Copper</b>	EPA 200.8-Diss	8B25123	0.75	2.0	<b>1.8</b>	1	02/25/08	02/26/08	J
Lead	EPA 200.8-Diss	8B25123	0.30	1.0	ND	1	02/25/08	02/26/08	
Selenium	EPA 200.8-Diss	8B25123	0.30	2.0	ND	1	02/25/08	02/26/08	
Thallium	EPA 200.8-Diss	8B25123	0.20	1.0	ND	1	02/25/08	02/26/08	
Zinc	EPA 200.8-Diss	8B25123	2.5	20	ND	1	02/25/08	02/26/08	

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Sampled: 02/24/08  
 Received: 02/25/08

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB2401-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	8C04046	1.3	4.8	1.9	1	03/04/08	03/04/08	J
Ammonia-N (Distilled)	EPA 350.2	8B26101	0.30	0.50	ND	1	02/26/08	02/26/08	
Chloride	EPA 300.0	8B25042	0.25	0.50	12	1	02/25/08	02/25/08	
Nitrate-N	EPA 300.0	8B25042	0.060	0.11	3.4	1	02/25/08	02/25/08	
Nitrite-N	EPA 300.0	8B25042	0.090	0.15	ND	1	02/25/08	02/25/08	
Nitrate/Nitrite-N	EPA 300.0	8B25042	0.15	0.26	3.4	1	02/25/08	02/25/08	
Sulfate	EPA 300.0	8B25042	0.20	0.50	15	1	02/25/08	02/25/08	
Total Dissolved Solids	SM2540C	8B27119	10	10	220	1	02/27/08	02/27/08	
<b>Sample ID: IRB2401-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	8B28045	1.5	4.0	ND	1	02/28/08	02/29/08	

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## Metals by EPA 200 Series Methods

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB2401-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: ug/l									
Mercury, Dissolved	EPA 245.1	W8B0982	0.050	0.20	ND	1	02/26/08	02/27/08	
Mercury, Total	EPA 245.1	W8B0982	0.050	0.20	ND	1	02/26/08	02/27/08	

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Report Number: IRB2401

Sampled: 02/24/08

Received: 02/25/08

## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 008 (IRB2401-01) - Water</b>					
EPA 300.0	2	02/24/2008 11:30	02/25/2008 05:20	02/25/2008 07:00	02/25/2008 10:08
Filtration	1	02/24/2008 11:30	02/25/2008 05:20	02/25/2008 09:45	02/25/2008 10:11

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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B28067 Extracted: 02/28/08</b>											
<b>Blank Analyzed: 02/28/2008 (8B28067-BLK1)</b>											
Antimony	ND	2.0	0.20	ug/l							
Cadmium	0.133	1.0	0.11	ug/l							J
Copper	ND	2.0	0.75	ug/l							
Lead	ND	1.0	0.30	ug/l							
Selenium	ND	2.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
Zinc	6.39	20	2.5	ug/l							J
<b>LCS Analyzed: 02/28/2008 (8B28067-BS1)</b>											
Antimony	77.9	2.0	0.20	ug/l	80.0		97	85-115			
Cadmium	76.7	1.0	0.11	ug/l	80.0		96	85-115			
Copper	79.3	2.0	0.75	ug/l	80.0		99	85-115			
Lead	79.9	1.0	0.30	ug/l	80.0		100	85-115			
Selenium	74.4	2.0	0.30	ug/l	80.0		93	85-115			
Thallium	75.5	1.0	0.20	ug/l	80.0		94	85-115			
Zinc	77.1	20	2.5	ug/l	80.0		96	85-115			
<b>Matrix Spike Analyzed: 02/28/2008 (8B28067-MS1) Source: IRB2460-02</b>											
Antimony	78.3	2.0	0.20	ug/l	80.0	ND	98	70-130			
Cadmium	74.6	1.0	0.11	ug/l	80.0	0.128	93	70-130			
Copper	76.4	2.0	0.75	ug/l	80.0	1.05	94	70-130			
Lead	77.7	1.0	0.30	ug/l	80.0	ND	97	70-130			
Selenium	71.5	2.0	0.30	ug/l	80.0	ND	89	70-130			
Thallium	73.2	1.0	0.20	ug/l	80.0	ND	92	70-130			
Zinc	74.0	20	2.5	ug/l	80.0	6.52	84	70-130			
<b>Matrix Spike Analyzed: 02/28/2008 (8B28067-MS2) Source: IRB2402-01</b>											
Antimony	77.4	2.0	0.20	ug/l	80.0	2.51	94	70-130			
Cadmium	75.9	1.0	0.11	ug/l	80.0	1.94	92	70-130			
Copper	78.5	2.0	0.75	ug/l	80.0	2.79	95	70-130			
Lead	79.1	1.0	0.30	ug/l	80.0	1.66	97	70-130			
Selenium	69.4	2.0	0.30	ug/l	80.0	ND	87	70-130			
Thallium	76.3	1.0	0.20	ug/l	80.0	ND	95	70-130			
Zinc	133	20	2.5	ug/l	80.0	65.8	84	70-130			

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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B28067 Extracted: 02/28/08</b>											
<b>Matrix Spike Dup Analyzed: 02/28/2008 (8B28067-MSD1)</b>						<b>Source: IRB2460-02</b>					
Antimony	78.5	2.0	0.20	ug/l	80.0	ND	98	70-130	0	20	
Cadmium	76.2	1.0	0.11	ug/l	80.0	0.128	95	70-130	2	20	
Copper	78.4	2.0	0.75	ug/l	80.0	1.05	97	70-130	3	20	
Lead	78.3	1.0	0.30	ug/l	80.0	ND	98	70-130	1	20	
Selenium	72.4	2.0	0.30	ug/l	80.0	ND	91	70-130	1	20	
Thallium	76.6	1.0	0.20	ug/l	80.0	ND	96	70-130	5	20	
Zinc	75.2	20	2.5	ug/l	80.0	6.52	86	70-130	2	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
<b>Batch: 8B25123 Extracted: 02/25/08</b>											
<b>Blank Analyzed: 02/26/2008 (8B25123-BLK1)</b>											
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							
Selenium	ND	2.0	0.30	ug/l							
Thallium	ND	1.0	0.20	ug/l							
Zinc	ND	20	2.5	ug/l							
<b>LCS Analyzed: 02/26/2008 (8B25123-BS1)</b>											
Antimony	78.6	2.0	0.20	ug/l	80.0		98	85-115			
Cadmium	78.9	1.0	0.11	ug/l	80.0		99	85-115			
Copper	80.6	2.0	0.75	ug/l	80.0		101	85-115			
Lead	83.1	1.0	0.30	ug/l	80.0		104	85-115			
Selenium	78.7	2.0	0.30	ug/l	80.0		98	85-115			
Thallium	79.4	1.0	0.20	ug/l	80.0		99	85-115			
Zinc	80.6	20	2.5	ug/l	80.0		101	85-115			
<b>Matrix Spike Analyzed: 02/26/2008 (8B25123-MS1) Source: IRB2107-01</b>											
Antimony	84.6	2.0	0.20	ug/l	80.0	ND	106	70-130			
Cadmium	77.0	1.0	0.11	ug/l	80.0	ND	96	70-130			
Copper	69.6	2.0	0.75	ug/l	80.0	1.17	85	70-130			
Lead	77.8	1.0	0.30	ug/l	80.0	ND	97	70-130			
Selenium	97.0	2.0	0.30	ug/l	80.0	0.917	120	70-130			
Thallium	75.2	1.0	0.20	ug/l	80.0	0.230	94	70-130			
Zinc	72.5	20	2.5	ug/l	80.0	ND	91	70-130			
<b>Matrix Spike Dup Analyzed: 02/26/2008 (8B25123-MSD1) Source: IRB2107-01</b>											
Antimony	89.1	2.0	0.20	ug/l	80.0	ND	111	70-130	5	20	
Cadmium	82.5	1.0	0.11	ug/l	80.0	ND	103	70-130	7	20	
Copper	71.8	2.0	0.75	ug/l	80.0	1.17	88	70-130	3	20	
Lead	79.1	1.0	0.30	ug/l	80.0	ND	99	70-130	2	20	
Selenium	101	2.0	0.30	ug/l	80.0	0.917	125	70-130	4	20	
Thallium	76.5	1.0	0.20	ug/l	80.0	0.230	95	70-130	2	20	
Zinc	75.6	20	2.5	ug/l	80.0	ND	95	70-130	4	20	

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Report Number: IRB2401

Sampled: 02/24/08  
 Received: 02/25/08

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B25042 Extracted: 02/25/08</b>											
<b>Blank Analyzed: 02/25/2008 (8B25042-BLK1)</b>											
Chloride	ND	0.50	0.25	mg/l							
Nitrate-N	ND	0.11	0.060	mg/l							
Nitrite-N	ND	0.15	0.090	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
Sulfate	ND	0.50	0.20	mg/l							
<b>LCS Analyzed: 02/25/2008 (8B25042-BS1)</b>											
Chloride	5.09	0.50	0.25	mg/l	5.00		102	90-110			
Nitrate-N	1.09	0.11	0.060	mg/l	1.13		96	90-110			
Nitrite-N	1.49	0.15	0.090	mg/l	1.52		98	90-110			
Sulfate	9.95	0.50	0.20	mg/l	10.0		99	90-110			M-3
<b>Matrix Spike Analyzed: 02/25/2008 (8B25042-MS1)</b>											
						<b>Source: IRB2399-01</b>					
Chloride	20.2	0.50	0.25	mg/l	5.00	15.9	88	80-120			
Nitrate-N	1.61	0.11	0.060	mg/l	1.13	0.512	97	80-120			
Nitrite-N	1.74	0.15	0.090	mg/l	1.52	ND	115	80-120			
<b>Matrix Spike Dup Analyzed: 02/25/2008 (8B25042-MSD1)</b>											
						<b>Source: IRB2399-01</b>					
Chloride	20.2	0.50	0.25	mg/l	5.00	15.9	87	80-120	0	20	
Nitrate-N	1.56	0.11	0.060	mg/l	1.13	0.512	93	80-120	3	20	
Nitrite-N	1.76	0.15	0.090	mg/l	1.52	ND	116	80-120	1	20	
<b>Batch: 8B26101 Extracted: 02/26/08</b>											
<b>Blank Analyzed: 02/26/2008 (8B26101-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8B26101 Extracted: 02/26/08</u></b>											
<b>LCS Analyzed: 02/26/2008 (8B26101-BS1)</b>											
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0		101	80-115			
<b>Matrix Spike Analyzed: 02/26/2008 (8B26101-MS1)</b>											
						<b>Source: IRB2399-01</b>					
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0	ND	101	70-120			
<b>Matrix Spike Dup Analyzed: 02/26/2008 (8B26101-MSD1)</b>											
						<b>Source: IRB2399-01</b>					
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0	ND	101	70-120	0	15	
<b><u>Batch: 8B27119 Extracted: 02/27/08</u></b>											
<b>Blank Analyzed: 02/27/2008 (8B27119-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 02/27/2008 (8B27119-BS1)</b>											
Total Dissolved Solids	980	10	10	mg/l	1000		98	90-110			
<b>Duplicate Analyzed: 02/27/2008 (8B27119-DUP1)</b>											
						<b>Source: IRB2154-02</b>					
Total Dissolved Solids	4760	10	10	mg/l		4760			0	10	
<b><u>Batch: 8B28045 Extracted: 02/28/08</u></b>											
<b>Blank Analyzed: 02/28/2008 (8B28045-BLK1)</b>											
Perchlorate	ND	4.0	1.5	ug/l							
<b>LCS Analyzed: 02/28/2008 (8B28045-BS1)</b>											
Perchlorate	54.9	4.0	1.5	ug/l	50.0		110	85-115			

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B28045 Extracted: 02/28/08</b>											
<b>Matrix Spike Analyzed: 02/28/2008 (8B28045-MS1)</b>						<b>Source: IRB2453-07</b>					
Perchlorate	61.1	4.0	1.5	ug/l	50.0	5.03	112	80-120			
<b>Matrix Spike Dup Analyzed: 02/28/2008 (8B28045-MSD1)</b>						<b>Source: IRB2453-07</b>					
Perchlorate	60.6	4.0	1.5	ug/l	50.0	5.03	111	80-120	1	20	
<b>Batch: 8C04046 Extracted: 03/04/08</b>											
<b>Blank Analyzed: 03/04/2008 (8C04046-BLK1)</b>											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
<b>LCS Analyzed: 03/04/2008 (8C04046-BS1)</b>											
Hexane Extractable Material (Oil & Grease)	18.1	5.0	1.4	mg/l	20.2		90	78-114			MNR1
<b>LCS Dup Analyzed: 03/04/2008 (8C04046-BSD1)</b>											
Hexane Extractable Material (Oil & Grease)	18.9	5.0	1.4	mg/l	20.2		94	78-114	4	11	

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 Arcadia, CA 91007  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IRB2401

Sampled: 02/24/08  
 Received: 02/25/08

## METHOD BLANK/QC DATA

### Metals by EPA 200 Series Methods

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: W8B0982 Extracted: 02/26/08</b>											
<b>Blank Analyzed: 02/27/2008 (W8B0982-BLK1)</b>											
Mercury, Dissolved	ND	0.20	0.050	ug/l							
Mercury, Total	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 02/27/2008 (W8B0982-BS1)</b>											
Mercury, Dissolved	0.920	0.20	0.050	ug/l	1.00		92	85-115			
Mercury, Total	0.920	0.20	0.050	ug/l	1.00		92	85-115			
<b>Matrix Spike Analyzed: 02/27/2008 (W8B0982-MS1) Source: 8022631-01</b>											
Mercury, Dissolved	1.95	0.40	0.10	ug/l	2.00	ND	98	70-130			
Mercury, Total	1.95	0.40	0.10	ug/l	2.00	0.0950	93	70-130			
<b>Matrix Spike Analyzed: 02/27/2008 (W8B0982-MS2) Source: 8022633-01</b>											
Mercury, Dissolved	1.91	0.40	0.10	ug/l	2.00	ND	96	70-130			
Mercury, Total	1.91	0.40	0.10	ug/l	2.00	ND	96	70-130			
<b>Matrix Spike Dup Analyzed: 02/27/2008 (W8B0982-MSD1) Source: 8022631-01</b>											
Mercury, Dissolved	2.00	0.40	0.10	ug/l	2.00	ND	100	70-130	2	20	
Mercury, Total	2.00	0.40	0.10	ug/l	2.00	0.0950	95	70-130	2	20	
<b>Matrix Spike Dup Analyzed: 02/27/2008 (W8B0982-MSD2) Source: 8022633-01</b>											
Mercury, Dissolved	1.93	0.40	0.10	ug/l	2.00	ND	96	70-130	1	20	
Mercury, Total	1.93	0.40	0.10	ug/l	2.00	ND	96	70-130	1	20	

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 008

Report Number: IRB2401

Sampled: 02/24/08  
Received: 02/25/08

## 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
IRB2401-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	1.90	4.8	15
IRB2401-01	Antimony-200.8	Antimony	ug/l	0.30	2.0	6
IRB2401-01	Cadmium-200.8	Cadmium	ug/l	0.020	1.0	3.1
IRB2401-01	Chloride - 300.0	Chloride	mg/l	12	0.50	150
IRB2401-01	Copper-200.8	Copper	ug/l	2.43	2.0	14
IRB2401-01	Hg_w 245.1	Mercury, Total	ug/l	0.021	0.20	0.2
IRB2401-01	Lead-200.8	Lead	ug/l	1.26	1.0	5.2
IRB2401-01	Nitrate-N, 300.0	Nitrate-N	mg/l	3.35	0.11	8
IRB2401-01	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
IRB2401-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	3.36	0.26	8
IRB2401-01	Perchlorate 314.0-DEFAULT	Perchlorate	ug/l	0	4.0	6
IRB2401-01	Selenium-200.8	Selenium	ug/l	0.22	2.0	5
IRB2401-01	Sulfate-300.0	Sulfate	mg/l	15	0.50	300
IRB2401-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	219	10	950
IRB2401-01	Thallium-200.8	Thallium	ug/l	0	1.0	2
IRB2401-01	Zinc-200.8	Zinc	ug/l	6.02	20	160

### TestAmerica Irvine

Joseph Doak  
Project Manager

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

Project ID: Routine Outfall 008

Report Number: IRB2401

Sampled: 02/24/08  
Received: 02/25/08

## DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- 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.
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- 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

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

Project ID: Routine Outfall 008

Report Number: IRB2401

Sampled: 02/24/08  
Received: 02/25/08

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water		
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
EPA 350.2	Water		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](http://www.testamericainc.com)*

### Subcontracted Laboratories

#### Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec  
Samples: IRB2401-01

Analysis Performed: Gross Alpha  
Samples: IRB2401-01

Analysis Performed: Gross Beta  
Samples: IRB2401-01

Analysis Performed: Radium, Combined  
Samples: IRB2401-01

Analysis Performed: Strontium 90  
Samples: IRB2401-01

Analysis Performed: Tritium  
Samples: IRB2401-01

Analysis Performed: Uranium, Combined  
Samples: IRB2401-01

### TestAmerica Irvine

Joseph Doak  
Project Manager

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

Project ID: Routine Outfall 008

Report Number: IRB2401

Sampled: 02/24/08  
Received: 02/25/08

**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: IRB2401-01

**Weck Laboratories, Inc**

14859 E. Clark Avenue - City of Industry, CA 91745

Method Performed: EPA 245.1  
Samples: IRB2401-01

**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 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Joseph Doak		Project: Boeing-SSFL NPDES Routine Outfall 008 Stormwater at Happy Valley		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		
Sample Description	Sample Matrix	Container Type	# of Coni.	Sampling Date/Time	Preservative	Bottle #
Outfall 008	W	1L Poly	1	2-27-08 11:30	HNO <sub>3</sub>	1A
Outfall 008-Dup	W	1L Poly	1		HNO <sub>3</sub>	1B
Outfall 008	W	1L Amber	2		None	2A, 2B
Outfall 008	W	1L Amber	2		HCl	3A, 3B
Outfall 008	W	500 ml Poly	2		None	4A, 4B
Outfall 008	W	500 ml Poly	1		None	5
Outfall 008	W	500 ml Poly	1		H <sub>2</sub> SO <sub>4</sub>	6
Outfall 008	W	500 ml Poly	1		None	7
Outfall 008	W	2.5 Gal Cube 500 ml Amber	1	2-27-08	None	8A
Outfall 008	W	1L Poly	1	11:30	None	8B
Outfall 008	W	1L Poly	1	2-27-08 11:30	None	9
Outfall 008	W	1L Poly	1		None	10

Relinquished By <i>Carlin</i>	Date/Time: 2/24/08 1430	Received By <i>Lee</i>	Date/Time: 2/24/08 1430
Relinquished By <i>Carlin</i>	Date/Time: 2/24/08 1745	Received By <i>Carlin</i>	Date/Time: 2/24/08 1745
Relinquished By <i>Carlin</i>	Date/Time: 2/25/08 0520	Received By <i>Shirley</i>	Date/Time: 2/25/08 0520

ANALYSIS REQUIRED	Field readings: Temp = <del>10.6</del> 54.6 pH = 7.4 Time of readings = 11:30
Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl, Se, Zn	
TCDD (and all congeners)	
Oil & Grease (1664-HEM)	
Cl <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> +NO <sub>2</sub> <sup>-</sup> , Perchlorate	
Nitrate-N, Nitrite-N	
Ammonia-N (350.2)	
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, Se, Zn	
Comments	MS 2/25/08 09:45
Unfiltered and unpreserved analysis	
Filter w/in 24hrs of receipt at lab	
Outfall if first and second rain event of the year	

Turn around Time: (check)	24 Hours	5 Days
	48 Hours	10 Days
	72 Hours	Normal
Sample Integrity: (check)	Intact	On Ice: <input checked="" type="checkbox"/>

3/4/14 # 130

**SUBCONTRACT ORDER**

TestAmerica Irvine

IRB2401

8022632

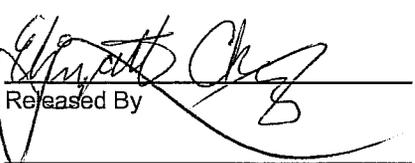
**SENDING LABORATORY:**

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

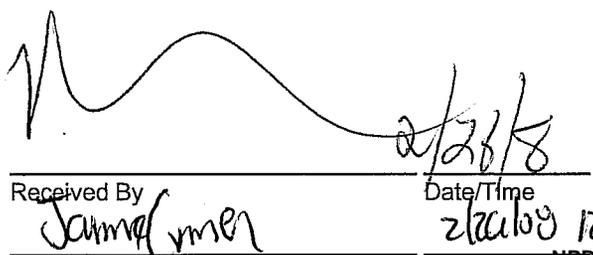
**RECEIVING LABORATORY:**

Weck Laboratories, Inc-SUB  
14859 E. Clark Avenue  
City of Industry, CA 91745  
Phone :(626) 336-2139  
Fax: (626) 336-2634  
Project Location: California  
Receipt Temperature: 46 °C Ice:  / N

Analysis	Units	Due	Expires	Comments
Sample ID: IRB2401-01	Water		Sampled: 02/24/08 11:30	
Level 4 Data Package - Wet	N/A	03/05/08	03/23/08 11:30	
Mercury - 245.1, Diss -OUT	ug/l	03/05/08	03/23/08 11:30	
Mercury - 245.1-OUT	ug/l	03/05/08	03/23/08 11:30	Boeing, permit, J flags
<i>Containers Supplied:</i> 125 mL Poly w/HNO3 250 mL Poly (Q) (P)				

  
\_\_\_\_\_  
Released By  
\_\_\_\_\_  
Released By

\_\_\_\_\_  
Date/Time  
2/28/08  
\_\_\_\_\_  
Date/Time

  
\_\_\_\_\_  
Received By  
\_\_\_\_\_  
Received By

2/28/08  
\_\_\_\_\_  
Date/Time  
2/28/08 1205  
\_\_\_\_\_  
Date/Time



### CERTIFICATE OF ANALYSIS

**Client:** TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine, CA 92614  
Attention: Joseph Doak

**Report Date:** 02/28/08 07:49  
**Received Date:** 02/26/08 12:05  
**Turn Around:** 6 days

Phone: (949) 261-1022  
Fax: (949) 260-3297

**Work Order #:** 8022632  
**Client Project:** IRB2401

NELAP #04229CA ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143

*The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.*

Dear Joseph Doak :

Enclosed are the results of analyses for samples received 02/26/08 12:05 with the Chain of Custody document. The samples were received in good condition. The samples were received at 4.6 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Reviewed by:

Kim G Tu

Project Manager





Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8022632  
Project ID: IRB2401

Date Received: 02/26/08 12:05  
Date Reported: 02/28/08 07:49

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Sampled by:	Sample Comments	Laboratory	Matrix	Date Sampled
IRB2401-01	Client		8022632-01	Water	02/24/08 11:30



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8022632  
Project ID: IRB2401

Date Received: 02/26/08 12:05  
Date Reported: 02/28/08 07:49

**IRB2401-01 8022632-01 (Water)**

Date Sampled: 02/24/08 11:30

**Metals by EPA 200 Series Methods**

Analyte	Result	MDL	Units	Reporting Limit	Dilution Factor	Method	Batch Number	Date Prepared	Date Analyzed	Analyst	Data Qualifiers
Mercury, Dissolved	ND	0.050	ug/l	0.20	1	EPA 245.1	W8B0982	02/26/08	02/27/08	jlp	
Mercury, Total	ND	0.050	ug/l	0.20	1	EPA 245.1	W8B0982	02/26/08	02/27/08	jlp	



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8022632  
Project ID: IRB2401

Date Received: 02/26/08 12:05  
Date Reported: 02/28/08 07:49

# QUALITY CONTROL SECTION



Weck Laboratories, Inc.  
 14859 E. Clark Ave.  
 Industry, CA 91745  
 Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
 17461 Derian Ave, Suite 100  
 Irvine CA, 92614

Report ID: 8022632  
 Project ID: IRB2401

Date Received: 02/26/08 12:05  
 Date Reported: 02/28/08 07:49

**Metals by EPA 200 Series Methods - Quality Control**

%REC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-----------------

**Batch W8B0982 - EPA 245.1**

**Blank (W8B0982-BLK1)**

Analyzed: 02/27/08

Mercury, Dissolved	ND	0.20	ug/l							
Mercury, Total	ND	0.20	ug/l							

**LCS (W8B0982-BS1)**

Analyzed: 02/27/08

Mercury, Dissolved	0.920	0.20	ug/l	1.00		92	85-115			
Mercury, Total	0.920	0.20	ug/l	1.00		92	85-115			

**Matrix Spike (W8B0982-MS1)**

Source: 8022631-01

Analyzed: 02/27/08

Mercury, Dissolved	1.95	0.40	ug/l	2.00	ND	98	70-130			
Mercury, Total	1.95	0.40	ug/l	2.00	0.0950	93	70-130			

**Matrix Spike (W8B0982-MS2)**

Source: 8022633-01

Analyzed: 02/27/08

Mercury, Dissolved	1.91	0.40	ug/l	2.00	ND	96	70-130			
Mercury, Total	1.91	0.40	ug/l	2.00	ND	96	70-130			

**Matrix Spike Dup (W8B0982-MSD1)**

Source: 8022631-01

Analyzed: 02/27/08

Mercury, Dissolved	2.00	0.40	ug/l	2.00	ND	100	70-130	2	20	
Mercury, Total	2.00	0.40	ug/l	2.00	0.0950	95	70-130	2	20	

**Matrix Spike Dup (W8B0982-MSD2)**

Source: 8022633-01

Analyzed: 02/27/08

Mercury, Dissolved	1.93	0.40	ug/l	2.00	ND	96	70-130	0.9	20	
Mercury, Total	1.93	0.40	ug/l	2.00	ND	96	70-130	0.9	20	



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8022632  
Project ID: IRB2401

Date Received: 02/26/08 12:05  
Date Reported: 02/28/08 07:49

### Notes and Definitions

ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL)
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Sub	Subcontracted analysis, original report available upon request
MDL	Method Detection Limit
MDA	Minimum Detectable Activity

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



# EBERLINE

SERVICES

March 20, 2008

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

Reference: Test America Project Nos. IRB1995, IRB2337, IRB2341, IRB2342, IRB2399  
IRB2400, IRB2401, IRB2403  
Eberline Services NELAP Cert #01120CA  
Eberline Services Reports R802140-8609, R802169-8610, R802170-8611  
R802171-8612, R802172-8613, R802173-8614  
R802174-8615, R802175-8616

Dear Mr. Doak:

Attached are data reports for eight water samples. The samples were received at Eberline Services on February 22, 26, 2008 under eight separate Test America subcontract orders. The samples were analyzed according to the accompanying Test America Subcontract Order Forms, the requested analyses were: gross alpha/gross beta (EPA 900.0), tritium (H-3, EPA906.0), Sr-90 (EPA905.0), Ra-226 (EPA903.1), Ra-228 (EPA 904.0), total uranium (ASTM D-5174), and gamma spectroscopy (EPA901.1, K-40 and Cs-137 only). The parenthetical G after a nuclide indicates that the result was obtained by gamma spectroscopy; a "U" in the results column indicates that the nuclide was not detected greater than the indicated minimum detectable activity (MDA). The samples were not filtered prior to analysis. The samples were analyzed in batches with common QC samples. Batch quality control samples consisted of LCS's, blank analyses, duplicate analyses, and matrix spike analyses (gross alpha/gross beta, H-3, Ra-226, Total-U only). All samples were batched with QC samples 8609-002, 003, 004, and 005 for all analyses. All QC sample results were within the limits defined in Eberline Services Quality Control Procedures Manual.

Please call me if you have any questions concerning this report.

Regards,

Melissa Mannion  
Senior Program Manager

MCM/njv

Enclosure: Reports

Analytical Services  
2030 Wright Avenue  
P.O. Box 4040  
Richmond, California 94804-0040  
(510) 235-2633 Fax (510) 235-0438  
Toll Free (800) 841-5487  
www.eberlineservices.com  
NPDES - 2027

# Eberline Services

## ANALYSIS RESULTS

SDG 8615  
Work Order R802174-01  
Received Date 02/26/08

Client TA IRVINE  
Contract PROJECT# IRB2401  
Matrix WATER

Client	Lab						
<u>Sample ID</u>	<u>Sample ID</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
IRB2401-01	8615-001	02/24/08	03/16/08	GrossAlpha	1.49 ± 0.80	pCi/L	1.0
			03/16/08	Gross Beta	2.80 ± 0.90	pCi/L	1.5
			03/10/08	Ra-228	-0.118 ± 0.16	pCi/L	0.48
			03/12/08	K-40 (G)	U	pCi/L	53
			03/12/08	Cs-137 (G)	U	pCi/L	1.9
			03/14/08	H-3	-66.3 ± 85	pCi/L	150
			03/14/08	Ra-226	0.296 ± 0.49	pCi/L	0.84
			03/10/08	Sr-90	0.029 ± 0.40	pCi/L	0.95
			03/05/08	Total U	0.515 ± 0.059	pCi/L	0.023

Certified by   
Report Date 03/20/08  
Page 1



# Eberline Services

## QC RESULTS

SDG <u>8615</u> Work Order <u>R802174-01</u> Received Date <u>02/26/08</u>	Client <u>TA IRVINE</u> Contract <u>PROJECT# IRB2401</u> Matrix <u>WATER</u>
--	--

SPIKED SAMPLE				ORIGINAL SAMPLE				
<u>Sample ID</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>MDA</u>	<u>Sample ID</u>	<u>Results ± 2σ</u>	<u>MDA</u>	<u>Added</u>	<u>%Recv</u>
8609-005	GrossAlpha	207 ± 11	2.6	8609-001	3.00 ± 2.0	2.8	164	124
	Gross Beta	148 ± 4.0	2.4		2.91 ± 2.0	3.3	144	101
	H-3	14800 ± 280	150		-40.9 ± 84	140	16000	93
	Ra-226	113 ± 4.4	0.81		-0.003 ± 0.41	0.79	112	101
	Total U	113 ± 14	2.3		1.30 ± 0.15	0.023	113	99

Certified by <u></u> Report Date <u>03/20/08</u> Page 3
--

8615

## SUBCONTRACT ORDER - PROJECT # IRB2401

**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:**  
 Eberline Services - SUB  
 2030 Wright Avenue  
 Richmond, CA 94804  
 Phone : (510) 235-2633  
 Fax: (510) 235-0438  
 Project Location: California

Standard TAT is requested unless specific due date is requested. => Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

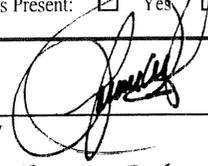
Analysis	Expiration	Comments
<b>Sample ID: IRB2401-01</b>	<b>Water</b>	<b>Sampled: 02/24/08 11:30</b>
Gamma Spec-O	02/23/09 11:30	Boeing, permit, J flags, K-40 and CS-137 only
Gross Alpha-O	08/22/08 11:30	Boeing, permit, J flags
Gross Beta-O	08/22/08 11:30	Boeing, permit, J flags
Level 4 Data Package - Out	03/23/08 11:30	
Radium, Combined-O	02/23/09 11:30	Boeing, permit, J flags
Strontium 90-O	02/23/09 11:30	Boeing, permit, J flags
Tritium-O	02/23/09 11:30	Boeing, permit, J flags
Uranium, Combined-O	02/23/09 11:30	Boeing, permit, J flags

**Containers Supplied:**

- 2.5 gal Poly (IRB2401-01L)
- 500 mL Amber (IRB2401-01M)

**SAMPLE INTEGRITY:**

All containers intact:  Yes  No      Sample labels/COC agree:  Yes  No      Samples Received On Ice::  Yes  No  
 Custody Seals Present:  Yes  No      Samples Preserved Properly:  Yes  No      Samples Received at (temp): \_\_\_\_\_

Released By:  Date: 2/25/08 Time: 1700      Received By: Fed-Ex Date: 2/25/08 Time: 1700  
 Released By: FED EX      Received By:  Date: 2/26/08 Time: 10:00



# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received: 2/26/08 10:00 CoC No. IRB 2401

Container I.D. No. N/A Requested TAT (Days) STAND P.O. Received Yes [ ] No [ ]

### INSPECTION

1. Custody seals on shipping container intact? Yes [  ] No [  ] N/A [  ]
2. Custody seals on shipping container dated & signed? Yes [  ] No [  ] N/A [  ]
3. Custody seals on sample containers intact? Yes [  ] No [  ] N/A [  ]
4. Custody seals on sample containers dated & signed? Yes [  ] No [  ] N/A [  ]
5. Packing material is: Wet [  ] Dry [  ] N/A [  ]
6. Number of samples in shipping container: 1 Sample Matrix: WATER
7. Number of containers per sample: 2 (Or see CoC \_\_\_\_\_)
8. Samples are in correct container Yes [  ] No [  ]
9. Paperwork agrees with samples? Yes [  ] No [  ]
10. Samples have: Tape [  ] Hazard labels [  ] Rad labels [  ] Appropriate sample labels [  ]
11. Samples are: In good condition [  ] Leaking [  ] Broken Container [  ] Missing [  ]
12. Samples are: Preserved [  ] Not preserved [  ] pH 6 Preservative \_\_\_\_\_
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
14. Was P.M. notified of any anomalies? Yes [  ] No [  ] Date \_\_\_\_\_
15. Inspected by Je Date: 2/26/08 Time: 13:20

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>IRB 2401</u>	<u>260</u>						

Ion Chamber Ser. No. \_\_\_\_\_  
 Alpha Meter Ser. No. \_\_\_\_\_  
 Beta/Gamma Meter Ser. No. 100482

Calibration date \_\_\_\_\_  
 Calibration date \_\_\_\_\_  
 Calibration date 9 May 2007

March 14, 2008

**Vista Project I.D.: 30303**

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

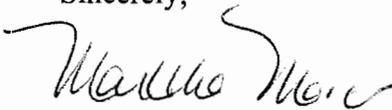
Dear Mr. Doak,

Enclosed are the results for the one aqueous sample received at Vista Analytical Laboratory on February 26, 2008 under your Project Name "IRB2401". 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](mailto:mmaier@vista-analytical.com). Thank you for choosing Vista as part of your analytical support team.

Sincerely,



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.*



**Section I: Sample Inventory Report**

**Date Received: 2/26/2008**

Vista Lab. ID

Client Sample ID

30303-001

IRB2401-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	9997	Lab Sample:	0-MB001	Date Analyzed DB-5:	10-Mar-08	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	9-Mar-08						
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers	
2,3,7,8-TCDD	ND	0.00000937			<b>IS</b> 13C-2,3,7,8-TCDD	87.0	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000106			13C-1,2,3,7,8-PeCDD	77.8	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000142			13C-1,2,3,4,7,8-HxCDD	82.4	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000142			13C-1,2,3,6,7,8-HxCDD	88.5	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000136			13C-1,2,3,4,6,7,8-HpCDD	81.0	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000250			13C-OCDD	72.3	17 - 157		
OCDD	ND	0.00000890			13C-2,3,7,8-TCDF	85.2	24 - 169		
2,3,7,8-TCDF	ND	0.00000547			13C-1,2,3,7,8-PeCDF	73.1	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000924			13C-2,3,4,7,8-PeCDF	73.2	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000985			13C-1,2,3,4,7,8-HxCDF	82.4	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.00000699			13C-1,2,3,6,7,8-HxCDF	94.2	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.00000669			13C-2,3,4,6,7,8-HxCDF	89.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.00000795			13C-1,2,3,7,8,9-HxCDF	83.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000107			13C-1,2,3,4,6,7,8-HpCDF	79.0	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.00000964			13C-1,2,3,4,7,8,9-HpCDF	81.7	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000105			13C-OCDF	72.4	17 - 157		
OCDF	ND	0.00000275			<b>CRS</b> 37Cl-2,3,7,8-TCDD	113	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.00000937			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000167			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000235			c. Method detection limit.				
Total HpCDD	ND	0.00000320			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.00000547							
Total PeCDF	ND	0.00000953							
Total HxCDF	ND	0.00000792							
Total HpCDF	ND	0.00000100							

Analyst: MAS

Approved By: Martha M. Maier 14-Mar-2008 13:47

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	9997	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	9-Mar-08	Date Analyzed DB-5:	10-Mar-08	Date Analyzed DB-225:	NA
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	Qualifier
2,3,7,8-TCDD	10.0	10.5	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	84.4	25 - 164	
1,2,3,7,8-PeCDD	50.0	50.9	35 - 71	13C-1,2,3,7,8-PeCDD	78.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	49.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	77.7	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	50.3	38 - 67	13C-1,2,3,6,7,8-HxCDD	80.5	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	50.3	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	51.0	35 - 70	13C-OCDD	67.4	17 - 157	
OCDD	100	102	78 - 144	13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	10.0	9.70	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	72.2	24 - 185	
1,2,3,7,8-PeCDF	50.0	51.5	40 - 67	13C-2,3,4,7,8-PeCDF	73.8	21 - 178	
2,3,4,7,8-PeCDF	50.0	51.5	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.8	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	52.0	36 - 67	13C-1,2,3,6,7,8-HxCDF	82.8	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	52.6	42 - 65	13C-2,3,4,6,7,8-HxCDF	78.7	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	53.6	35 - 78	13C-1,2,3,7,8,9-HxCDF	78.2	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	51.9	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	74.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	52.4	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	75.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	52.1	39 - 69	13C-OCDF	67.4	17 - 157	
OCDF	100	103	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	107	35 - 197	

Analyst: MAS

Approved By: Martha M. Maier 14-Mar-2008 10:51

Sample ID: <b>IRB2401-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Test America-Irvine, CA		Matrix:	Aqueous	Lab Sample:	30303-001	Date Received:	26-Feb-08
Project:	IRB2401		Sample Size:	1.02 L	QC Batch No.:	9997	Date Extracted:	9-Mar-08
Date Collected:	24-Feb-08				Date Analyzed DB-5:	10-Mar-08	Date Analyzed DB-225:	NA
Time Collected:	1130							
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000879			<b>IS</b> 13C-2,3,7,8-TCDD	80.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000915			13C-1,2,3,7,8-PeCDD	83.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000182			13C-1,2,3,4,7,8-HxCDD	72.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000173			13C-1,2,3,6,7,8-HxCDD	81.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000170			13C-1,2,3,4,6,7,8-HpCDD	82.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND		0.00000192		13C-OCDD	66.2	17 - 157	
OCDD	0.0000131			J	13C-2,3,7,8-TCDF	83.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000818			13C-1,2,3,7,8-PeCDF	70.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000696			13C-2,3,4,7,8-PeCDF	80.2	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000659			13C-1,2,3,4,7,8-HxCDF	73.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000429			13C-1,2,3,6,7,8-HxCDF	80.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000100			13C-2,3,4,6,7,8-HxCDF	77.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000497			13C-1,2,3,7,8,9-HxCDF	76.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000642			13C-1,2,3,4,6,7,8-HpCDF	69.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000140			13C-1,2,3,4,7,8,9-HpCDF	80.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000871			13C-OCDF	66.7	17 - 157	
OCDF	ND	0.00000309			<b>CRS</b> 37Cl-2,3,7,8-TCDD	110	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.000000879			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000202			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000174			c. Method detection limit.			
Total HpCDD	0.00000245		0.00000438		d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000818						
Total PeCDF	ND	0.00000126						
Total HxCDF	ND	0.00000114						
Total HpCDF	ND	0.00000140						

Analyst: MAS

Approved By: Martha M. Maier 14-Mar-2008 10:51

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
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	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

30303 2.1°C

## SUBCONTRACT ORDER - PROJECT # IRB2401

### 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: California

Standard TAT is requested unless specific due date is requested. => Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Analysis	Expiration	Comments
Sample ID: IRB2401-01 Water	Sampled: 02/24/08 11:30	
1613-Dioxin-HR-Alta	03/02/08 11:30	J flags, 17 congeners, no TEQ, ug/L, sub=Vista
EDD + Level 4	03/23/08 11:30	Excel EDD email to pm, Include Std logs for Lvl IV

### Containers Supplied:

- 1 L Amber (IRB2401-01C)
- 1 L Amber (IRB2401-01D)

### SAMPLE INTEGRITY:

All containers intact:  Yes  No      Sample labels/COC agree:  Yes  No      Samples Received On Ice:  Yes  No  
Custody Seals Present:  Yes  No      Samples Preserved Properly:  Yes  No      Samples Received at (temp): \_\_\_\_\_

*M. Aquilino*      *Bethina Benedict*      2/24/08 1525  
Released By      Date      Time      Received By      Date      Time

Released By      Date      Time      Received By      Date      Time

SAMPLE LOG-IN CHECKLIST



Vista Project #: 30303

TAT Standard

Samples Arrival:	Date/Time <u>2/26/08 0910</u>	Initials: <u>BSB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time <u>2/26/08 1525</u>	Initials: <u>BSB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>E-2</u>
Delivered By:	<u>FedEx</u>	UPS	Cal
			DHL
			Hand Delivered
			Other
Preservation:	<u>Ice</u>	Blue Ice	Dry Ice
			None
Temp °C	<u>2.1</u>	Time:	<u>0924</u>
			Thermometer ID: IR-1

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill			
Trk # <u>7992 7799 8726</u>	<input checked="" type="checkbox"/>		
Sample Container Intact?			<input checked="" type="checkbox"/>
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			<input checked="" type="checkbox"/>
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			<u>None</u>
COC			
Sample Container			
Shipping Container	Vista	<u>Client</u>	Retain
			<u>Return</u>
			Dispose

Comments:

# **APPENDIX G**

## **Section 52**

Outfall 009, January 5, 2008

MEC<sup>X</sup> Data Validation Reports



# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IRA0399

Prepared by

MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

**I. INTRODUCTION**

Task Order Title: Boeing SSFL NPDES  
 Contract Task Order: 1261.100D.00  
 Sample Delivery Group: IRA0399  
 Project Manager: B. Kelly  
 Matrix: Soil  
 QC Level: IV  
 No. of Samples: 1  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica-Irvine

**Table 1. Sample Identification**

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009	IRA0399-01	30125-001, 8010770-01, 8678- 001	Water	01/05/08 0830	200.8, 245.1, 900.0, 901.1, 903.1, 904.0, 905.0, 906.0, 1613, ASTM D-5174

**II. Sample Management**

No anomalies were observed regarding sample management. The sample in this SDG was received at TestAmerica-Irvine, Eberline, and Weck within the temperature limits of 4°C ±2°C. The sample was received below the temperature limits at Vista; however, the sample was not noted to have been frozen. According to the case narrative for this SDG, the sample was received intact at all laboratories. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon arrival at Eberline, Vista, and Weck. If necessary, the client ID was added to the sample result summary by the reviewer.

---

**Data Qualifier Reference Table**


---

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

---

### Qualification Code Reference Table

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

**Qualification Code Reference Table Cont.**

---

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

---

### III. Method Analyses

#### A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight

Date Reviewed: March 1, 2008

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

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
  - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
  - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
  - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs  $\leq 20\%$  for the 16 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had no target compound detects above the EDL.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Any EMPC value was qualified as an estimated nondetect, "UJ." Nondetects are valid to the estimated detection limit (EDL).

## **B. EPA METHODS 200.8, 245.1—Metals and Mercury**

Reviewed By: P. Meeks

Date Reviewed: February 29, 2008

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: The analytical holding times, 6 months for metals and 28 days for mercury, were met.
- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were  $\leq 5\%$ , and all masses of interest were calibrated to  $\leq 0.1$  amu and  $\leq 0.9$  amu at 10% peak height.

- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110% for the ICP-MS metals and 85-115% for mercury.
- Blanks: There were no applicable detects in the method blanks or CCBs.
- Interference Check Samples: ICSA/B analyses were performed in association with the total metals analyses only. Recoveries were within the method-established control limits. Most analytes were reported in the 6020 ICSA solution; however, the reviewer was not able to ascertain if the detection was indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: Matrix spike analyses were performed on the sample in this SDG for the 6020 total metals only. All recoveries were within the laboratory-established control limits. Evaluation of mercury method accuracy was based on LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: All sample internal standard intensities were within 30-120% of the internal standard intensities measured in the initial calibration. The bracketing CCV and CCB internal standard intensities were within 80-120% of the internal standard intensities measured in the initial calibration.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

## C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: March 3, 2008

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174, and the National Functional Guidelines for Inorganic Data Review (2/94)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. Aliquots for gross alpha, gross beta, radium-226, radium-228, strontium-90, and gamma spectroscopy were prepared within the five-day analytical holding time for unpreserved samples. The aliquot for total uranium was prepared within five days of collection.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

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

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The internal spike efficiency to default efficiency ratios was near 1, indicating that quenching did not occur.

The strontium chemical yield was at least 70% and was considered acceptable. The strontium continuing calibration results were within the laboratory control limits.

The radium-226 cell efficiencies were determined in September 2006. The radium-226 continuing calibration results were within the laboratory-established control limits. The radium-228 calibration utilized actinium-228 and was verified in February 2001. The radium-228 tracer, yttrium oxalate yields were greater than 70%.

The gamma spectroscopy geometry-specific, detector efficiencies were determined in September 1999 and February 2007. All analytes were determined at the maximum photopeak energy.

The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All calibration check standard recoveries were within 90-110% and were deemed acceptable.

- **Blanks:** There were no analytes detected in the method blank.

- Blank Spikes and Laboratory Control Samples: The gross alpha recovery was above the control limit at 129%; however, gross alpha was not detected in the samples. The remaining recoveries were within laboratory-established control limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Reported nondetects are valid to the MDA.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

Sample ID: IRA0399-01 <i>Out-fall 009</i>		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name: Test America-Irvine, CA	Matrix: Aqueous	Lab Sample: 30125-001	Date Received: 8-Jan-08				
Project: IRA0399	Sample Size: 0.982 L	QC Batch No.: 9886	Date Extracted: 17-Jan-08				
Date Collected: 5-Jan-08		Date Analyzed DB-5: 19-Jan-08	Date Analyzed DB-225: NA				
Time Collected: 0830							
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000138		IS 13C-2,3,7,8-TCDD	73.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000257		13C-1,2,3,7,8-PeCDD	65.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000346		13C-1,2,3,4,7,8-HxCDD	58.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000362		13C-1,2,3,6,7,8-HxCDD	57.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000340		13C-1,2,3,4,6,7,8-HpCDD	58.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000170			13C-OCDD	47.9	17 - 157	
OCDD	0.000161			13C-2,3,7,8-TCDF	69.3	24 - 169	
2,3,7,8-TCDF	ND	0.00000106		13C-1,2,3,7,8-PeCDF	58.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000228		13C-2,3,4,7,8-PeCDF	63.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000221		13C-1,2,3,4,7,8-HxCDF	53.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000129		13C-1,2,3,6,7,8-HxCDF	54.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000132		13C-2,3,4,6,7,8-HxCDF	56.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000135		13C-1,2,3,7,8,9-HxCDF	60.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000181		13C-1,2,3,4,6,7,8-HpCDF	58.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000328			13C-1,2,3,4,7,8,9-HpCDF	53.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000201		13C-OCDF	46.6	17 - 157	
OCDF	ND	0.0000189		CRS 37Cl-2,3,7,8-TCDD	100	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000250					
Total PeCDD	ND	0.00000456					
Total HxCDD	ND	0.00000349					
Total HpCDD	0.0000396						
Total TCDF	ND	0.00000106					
Total PeCDF	ND	0.00000285					
Total HxCDF	ND		0.00000116				
Total HpCDF	0.00000697						
<b>Footnotes</b>							
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: Martha M. Maier  
 23-Jan-2008 09:37

*Level III*

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

Project ID: Routine Outfall 009  
Report Number: IRA0399

Sampled: 01/05/08  
Received: 01/05/08

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IRA0399-01 (Outfall 009 - Water)										
Reporting Units: ug/l										
Antimony	J/DNG	EPA 200.8	8A07054	0.20	2.0	1.0	1	01/07/08	01/08/08	J
Cadmium	U	EPA 200.8	8A07054	0.11	1.0	ND	1	01/07/08	01/08/08	
Copper		EPA 200.8	8A07054	0.75	2.0	5.8	1	01/07/08	01/07/08	
Lead		EPA 200.8	8A07054	0.30	1.0	2.3	1	01/07/08	01/07/08	
Thallium	U	EPA 200.8	8A07054	0.20	1.0	ND	1	01/07/08	01/07/08	

LEVEL IV

TestAmerica Irvine

Joseph Doak  
Project Manager

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

Project ID: Routine Outfall 009  
 Report Number: IRA0399

Sampled: 01/05/08  
 Received: 01/05/08

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA0399-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	8A08129	0.20	2.0	<b>0.92</b>	1	01/08/08	01/08/08	J
Cadmium	EPA 200.8-Diss	8A08129	0.11	1.0	ND	1	01/08/08	01/08/08	
Copper	EPA 200.8-Diss	8A08129	0.75	2.0	<b>4.6</b>	1	01/08/08	01/08/08	
Lead	EPA 200.8-Diss	8A08129	0.30	1.0	<b>0.78</b>	1	01/08/08	01/08/08	J
Thallium	EPA 200.8-Diss	8A08129	0.20	1.0	ND	1	01/08/08	01/08/08	

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 Project Manager

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618 Michillinda Avenue, Suite 200  
Arcadia, CA 91007  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009  
Report Number: IRA0399

Sampled: 01/05/08  
Received: 01/05/08

### Metals by EPA 200 Series Methods

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IRA0399-01 (Outfall 009 - Water) - cont.									
Reporting Units: ug/l									
Mercury, Dissolved	U	EPA 245.1	W8A0148	0.050	0.20	ND	1	01/08/08	01/09/08
Mercury, Total	↓	EPA 245.1	W8A0148	0.050	0.20	ND	1	01/08/08	01/09/08

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IRA0399 <Page 5 of 14>

Eberline Services

ANALYSIS RESULTS

SDG <u>8678</u>	Client <u>TA IRVINE</u>
Work Order <u>R801025-01</u>	Contract <u>PROJECT# IRA0399</u>
Received Date <u>01/08/08</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results ± 2σ	Units	MDA
IRA0399-01	8678-001		01/05/08	01/24/08	GrossAlpha	0.641 ± 0.56	pCi/L	0.84 <i>UT/R</i>
				01/24/08	Gross Beta	2.91 ± 0.66	pCi/L	0.95
				01/23/08	Ra-228	0.064 ± 0.15	pCi/L	0.40 <i>U</i>
				01/12/08	K-40 (G)	U	pCi/L	40 <i>U</i>
				01/12/08	Cs-137 (G)	U	pCi/L	1.5 <i>U</i>
				01/23/08	H-3	-38.2 ± 86	pCi/L	150 <i>U</i>
				01/25/08	Ra-226	-0.035 ± 0.43	pCi/L	0.84 <i>U</i>
				01/28/08	Sr-90	-0.270 ± 0.40	pCi/L	1.1 <i>U</i>
				02/15/08	Total U	0.107 ± 0.015	pCi/L	0.021

*Outfall 009*

*LEVEL IV*

Certified by <u><i>[Signature]</i></u>
Report Date <u>02/19/08</u>
Page 1

# **APPENDIX G**

## **Section 53**

Outfall 009, January 5, 2008

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 009

Sampled: 01/05/08  
Received: 01/05/08  
Issued: 02/25/08 10:07

NELAP #01108CA California ELAP#1197 CSDLAC #10256

*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.

ADDITIONAL INFORMATION: This is a final report to include all subcontract data.

**LABORATORY ID**  
IRA0399-01

**CLIENT ID**  
Outfall 009

**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 009

Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA0399-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	8A07054	0.20	2.0	<b>1.0</b>	1	01/07/08	01/08/08	J
Cadmium	EPA 200.8	8A07054	0.11	1.0	ND	1	01/07/08	01/08/08	
Copper	EPA 200.8	8A07054	0.75	2.0	<b>5.8</b>	1	01/07/08	01/07/08	
Lead	EPA 200.8	8A07054	0.30	1.0	<b>2.3</b>	1	01/07/08	01/07/08	
Thallium	EPA 200.8	8A07054	0.20	1.0	ND	1	01/07/08	01/07/08	

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NPDES - 2062

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
 Received: 01/05/08

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA0399-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8-Diss	8A08129	0.20	2.0	<b>0.92</b>	1	01/08/08	01/08/08	J
Cadmium	EPA 200.8-Diss	8A08129	0.11	1.0	ND	1	01/08/08	01/08/08	
Copper	EPA 200.8-Diss	8A08129	0.75	2.0	<b>4.6</b>	1	01/08/08	01/08/08	
Lead	EPA 200.8-Diss	8A08129	0.30	1.0	<b>0.78</b>	1	01/08/08	01/08/08	J
Thallium	EPA 200.8-Diss	8A08129	0.20	1.0	ND	1	01/08/08	01/08/08	

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Joseph Doak  
 Project Manager

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA0399-01 (Outfall 009 - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	8A07065	1.4	4.9	ND	1	01/07/08	01/07/08	
<b>Chloride</b>	EPA 300.0	8A06026	0.25	0.50	<b>7.8</b>	1	01/06/08	01/06/08	
<b>Nitrate/Nitrite-N</b>	EPA 300.0	8A06026	0.15	0.26	<b>2.5</b>	1	01/06/08	01/06/08	
<b>Sulfate</b>	EPA 300.0	8A06026	0.20	0.50	<b>12</b>	1	01/06/08	01/06/08	
<b>Total Dissolved Solids</b>	SM2540C	8A08083	10	10	<b>120</b>	1	01/08/08	01/08/08	

**TestAmerica Irvine**

Joseph Doak  
 Project Manager

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

## Metals by EPA 200 Series Methods

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA0399-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: ug/l									
Mercury, Dissolved	EPA 245.1	W8A0148	0.050	0.20	ND	1	01/08/08	01/09/08	
Mercury, Total	EPA 245.1	W8A0148	0.050	0.20	ND	1	01/08/08	01/09/08	

**TestAmerica Irvine**

Joseph Doak  
Project Manager

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**IRA0399 <Page 5 of 14>**  
**NPDES - 2065**

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 009 (IRA0399-01) - Water</b> EPA 300.0	2	01/05/2008 08:30	01/05/2008 19:00	01/06/2008 07:00	01/06/2008 08:17

**TestAmerica Irvine**

Joseph Doak  
Project Manager

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**IRA0399 <Page 6 of 14>**  
**NPDES - 2066**

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
Received: 01/05/08

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8A07054 Extracted: 01/07/08</b>											
<b>Blank Analyzed: 01/07/2008-01/08/2008 (8A07054-BLK1)</b>											
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							
<b>LCS Analyzed: 01/07/2008-01/08/2008 (8A07054-BS1)</b>											
Antimony	88.8	2.0	0.20	ug/l	80.0		111	85-115			
Cadmium	89.4	1.0	0.11	ug/l	80.0		112	85-115			
Copper	89.2	2.0	0.75	ug/l	80.0		112	85-115			
Lead	88.5	1.0	0.30	ug/l	80.0		111	85-115			
Thallium	86.1	1.0	0.20	ug/l	80.0		108	85-115			
<b>Matrix Spike Analyzed: 01/07/2008-01/08/2008 (8A07054-MS1) Source: IRA0401-01</b>											
Antimony	89.1	2.0	0.20	ug/l	80.0	1.27	110	70-130			
Cadmium	84.7	1.0	0.11	ug/l	80.0	0.935	105	70-130			
Copper	83.7	2.0	0.75	ug/l	80.0	3.32	101	70-130			
Lead	83.6	1.0	0.30	ug/l	80.0	0.923	103	70-130			
Thallium	88.7	1.0	0.20	ug/l	80.0	ND	111	70-130			
<b>Matrix Spike Analyzed: 01/07/2008-01/08/2008 (8A07054-MS2) Source: IRA0399-01</b>											
Antimony	85.0	2.0	0.20	ug/l	80.0	1.00	105	70-130			
Cadmium	85.6	1.0	0.11	ug/l	80.0	ND	107	70-130			
Copper	88.1	2.0	0.75	ug/l	80.0	5.80	103	70-130			
Lead	82.6	1.0	0.30	ug/l	80.0	2.27	100	70-130			
Thallium	86.9	1.0	0.20	ug/l	80.0	ND	109	70-130			
<b>Matrix Spike Dup Analyzed: 01/07/2008-01/08/2008 (8A07054-MSD1) Source: IRA0401-01</b>											
Antimony	87.9	2.0	0.20	ug/l	80.0	1.27	108	70-130	1	20	
Cadmium	84.2	1.0	0.11	ug/l	80.0	0.935	104	70-130	1	20	
Copper	83.2	2.0	0.75	ug/l	80.0	3.32	100	70-130	1	20	
Lead	83.1	1.0	0.30	ug/l	80.0	0.923	103	70-130	1	20	
Thallium	88.4	1.0	0.20	ug/l	80.0	ND	110	70-130	0	20	

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Arcadia, CA 91007  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
Received: 01/05/08

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 8A08129 Extracted: 01/08/08</b>											
<b>Blank Analyzed: 01/08/2008 (8A08129-BLK1)</b>											
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							
<b>LCS Analyzed: 01/08/2008 (8A08129-BS1)</b>											
Antimony	78.0	2.0	0.20	ug/l	80.0		98	85-115			
Cadmium	79.9	1.0	0.11	ug/l	80.0		100	85-115			
Copper	76.8	2.0	0.75	ug/l	80.0		96	85-115			
Lead	85.3	1.0	0.30	ug/l	80.0		107	85-115			
Thallium	86.4	1.0	0.20	ug/l	80.0		108	85-115			
<b>Matrix Spike Analyzed: 01/08/2008 (8A08129-MS1) Source: IRA0393-01</b>											
Antimony	79.2	2.0	0.20	ug/l	80.0	0.570	98	70-130			
Cadmium	76.6	1.0	0.11	ug/l	80.0	ND	96	70-130			
Copper	76.2	2.0	0.75	ug/l	80.0	2.23	92	70-130			
Lead	83.2	1.0	0.30	ug/l	80.0	ND	104	70-130			
Thallium	84.3	1.0	0.20	ug/l	80.0	ND	105	70-130			
<b>Matrix Spike Dup Analyzed: 01/08/2008 (8A08129-MSD1) Source: IRA0393-01</b>											
Antimony	79.1	2.0	0.20	ug/l	80.0	0.570	98	70-130	0	20	
Cadmium	76.4	1.0	0.11	ug/l	80.0	ND	96	70-130	0	20	
Copper	76.0	2.0	0.75	ug/l	80.0	2.23	92	70-130	0	20	
Lead	82.9	1.0	0.30	ug/l	80.0	ND	104	70-130	0	20	
Thallium	83.6	1.0	0.20	ug/l	80.0	ND	104	70-130	1	20	

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Project Manager

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
 Received: 01/05/08

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8A06026 Extracted: 01/06/08</u></b>											
<b>Blank Analyzed: 01/06/2008 (8A06026-BLK1)</b>											
Chloride	ND	0.50	0.25	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l							
Sulfate	0.320	0.50	0.20	mg/l							J
<b>LCS Analyzed: 01/06/2008 (8A06026-BS1)</b>											
Chloride	4.53	0.50	0.25	mg/l	5.00		91	90-110			
Sulfate	9.97	0.50	0.20	mg/l	10.0		100	90-110			
<b>Matrix Spike Analyzed: 01/06/2008 (8A06026-MS1) Source: IRA0399-01</b>											
Chloride	12.9	0.50	0.25	mg/l	5.00	7.84	101	80-120			
Sulfate	22.3	0.50	0.20	mg/l	10.0	12.0	103	80-120			
<b>Matrix Spike Dup Analyzed: 01/06/2008 (8A06026-MSD1) Source: IRA0399-01</b>											
Chloride	12.6	0.50	0.25	mg/l	5.00	7.84	94	80-120	3	20	
Sulfate	21.6	0.50	0.20	mg/l	10.0	12.0	96	80-120	3	20	
<b><u>Batch: 8A07065 Extracted: 01/07/08</u></b>											
<b>Blank Analyzed: 01/07/2008 (8A07065-BLK1)</b>											
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l							
<b>LCS Analyzed: 01/07/2008 (8A07065-BS1) MNR1</b>											
Hexane Extractable Material (Oil & Grease)	17.9	5.0	1.4	mg/l	20.2		89	78-114			
<b>LCS Dup Analyzed: 01/07/2008 (8A07065-BSD1)</b>											
Hexane Extractable Material (Oil & Grease)	18.6	5.0	1.4	mg/l	20.2		92	78-114	4	11	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
 Received: 01/05/08

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8A08083 Extracted: 01/08/08</b>											
<b>Blank Analyzed: 01/08/2008 (8A08083-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/08/2008 (8A08083-BS1)</b>											
Total Dissolved Solids	992	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 01/08/2008 (8A08083-DUP1)</b>											
Total Dissolved Solids	1930	10	10	mg/l		Source: IRA0479-01 1940			0	10	

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
 Received: 01/05/08

## METHOD BLANK/QC DATA

### Metals by EPA 200 Series Methods

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: W8A0148 Extracted: 01/08/08</b>											
<b>Blank Analyzed: 01/09/2008 (W8A0148-BLK1)</b>											
Mercury, Dissolved	ND	0.20	0.050	ug/l							
Mercury, Total	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 01/09/2008 (W8A0148-BS1)</b>											
Mercury, Dissolved	0.965	0.20	0.050	ug/l	1.00		96	85-115			
Mercury, Total	0.965	0.20	0.050	ug/l	1.00		96	85-115			
<b>Matrix Spike Analyzed: 01/09/2008 (W8A0148-MS1) Source: 7120722-01</b>											
Mercury, Dissolved	1.97	0.40	0.10	ug/l	2.00	ND	98	70-130			
Mercury, Total	1.97	0.40	0.10	ug/l	2.00	ND	98	70-130			
<b>Matrix Spike Analyzed: 01/09/2008 (W8A0148-MS2) Source: 7120722-03</b>											
Mercury, Dissolved	1.88	0.40	0.10	ug/l	2.00	ND	94	70-130			
Mercury, Total	1.88	0.40	0.10	ug/l	2.00	ND	94	70-130			
<b>Matrix Spike Dup Analyzed: 01/09/2008 (W8A0148-MSD1) Source: 7120722-01</b>											
Mercury, Dissolved	1.92	0.40	0.10	ug/l	2.00	ND	96	70-130	2	20	
Mercury, Total	1.92	0.40	0.10	ug/l	2.00	ND	96	70-130	2	20	
<b>Matrix Spike Dup Analyzed: 01/09/2008 (W8A0148-MSD2) Source: 7120722-03</b>											
Mercury, Dissolved	1.96	0.40	0.10	ug/l	2.00	ND	98	70-130	4	20	
Mercury, Total	1.96	0.40	0.10	ug/l	2.00	ND	98	70-130	4	20	

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Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

## DATA QUALIFIERS AND DEFINITIONS

- 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.
- 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

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**IRA0399 <Page 12 of 14>**  
**NPDES - 2072**

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

Project ID: Routine Outfall 009

Report Number: IRA0399

Sampled: 01/05/08  
Received: 01/05/08

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water		
EPA 1664A	Water		
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 300.0	Water	X	X
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](http://www.testamericainc.com)*

### Subcontracted Laboratories

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

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnrc  
Samples: IRA0399-01

#### Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec  
Samples: IRA0399-01

Analysis Performed: Gross Alpha  
Samples: IRA0399-01

Analysis Performed: Gross Beta  
Samples: IRA0399-01

Analysis Performed: Radium, Combined  
Samples: IRA0399-01

Analysis Performed: Strontium 90  
Samples: IRA0399-01

Analysis Performed: Tritium  
Samples: IRA0399-01

Analysis Performed: Uranium, Combined  
Samples: IRA0399-01

### TestAmerica Irvine

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Project Manager

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Report Number: IRA0399

Sampled: 01/05/08

Received: 01/05/08

**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: IRA0399-01

**Weck Laboratories, Inc**

14859 E. Clark Avenue - City of Industry, CA 91745

Method Performed: EPA 245.1  
Samples: IRA0399-01

**TestAmerica Irvine**

Joseph Doak  
Project Manager

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# LABORATORY REPORT



*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** January 13, 2008  
**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Joseph Doak

**Laboratory No.:** A-08010505  
**Sample I.D.:** IRA0399-01 (Outfall 009)

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

Date Sampled: 01/05/08  
Date Received: 01/05/08  
Temp. Received: 8°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 01/06/08 to 01/12/08

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

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

Attached are the test data generated from the analysis of your sample.

## Result Summary:

	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

**Quality Control:** Reviewed and approved by:

Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-08010505-001  
Client/ID: Test America – Outfall 009

Date Tested: 01/06/08 to 01/12/08

**TEST SUMMARY**

Test type: Daily static-renewal.  
Species: *Ceriodaphnia dubia*.  
Age: < 24 hrs; all released within 8 hrs.  
Test vessel size: 30 ml.  
Number of test organisms per vessel: 1.  
Temperature: 25 +/- 1°C.  
Dilution water: Mod. hard reconstituted (MHRW).  
QA/QC Batch No.: RT-080106.

Endpoints: Survival and Reproduction.  
Source: In-laboratory culture.  
Food: .1 ml YTC, algae per day.  
Test solution volume: 15 ml.  
Number of replicates: 10.  
Photoperiod: 16/8 hrs. light/dark cycle.  
Test duration: 6 days.  
Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	19.4
100% Sample	100%	25.8
* Sample not statistically significantly less than Control.		

**CHRONIC TOXICITY**

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

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥ 80%	Pass (100% survival)
≥ 15 young per surviving control female	Pass (19.4 young)
≥ 60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD < 47% for reproduction; if > 47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 15.5%)
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 1/6/2008 13:00 Test ID: 8010505c Sample ID: Outfall 009  
 End Date: 1/12/2008 13:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial  
 Sample Date: 1/5/2008 08:30 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia

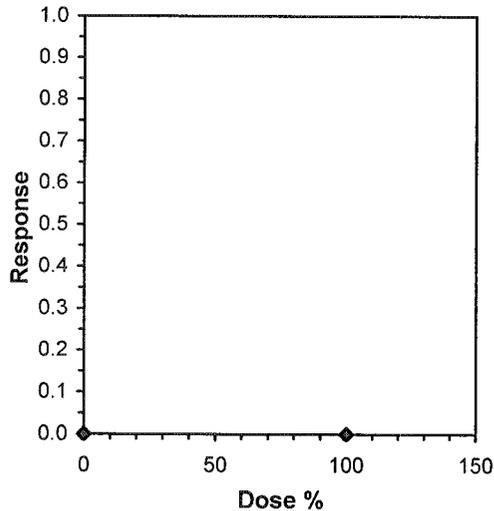
Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

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



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 1/6/2008 13:00 Test ID: 8010505c Sample ID: Outfall 009  
 End Date: 1/12/2008 13:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial  
 Sample Date: 1/5/2008 08:30 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia

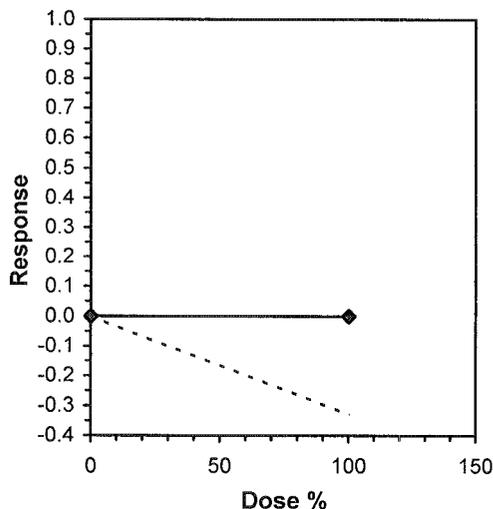
Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	17.000	19.000	11.000	20.000	16.000	20.000	19.000	25.000	23.000
100	28.000	29.000	32.000	23.000	28.000	24.000	26.000	26.000	20.000	22.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	19.400	1.0000	19.400	11.000	25.000	21.350	10				22.600	1.0000	
100	25.800	1.3299	25.800	20.000	32.000	14.011	10	-3.681	1.734	3.015	22.600	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.9804	0.905	-0.3361	-0.0896		
F-Test indicates equal variances (p = 0.69)	1.31293	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	3.01459	0.15539	204.8	15.1111	0.00171	1, 18

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



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



Lab No.: A-08010505

Client ID: TestAmerica - Outfall 009

Start Date: 01/06/2008

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr												
Analyst Initials:		[Handwritten]													
Time of Readings:		1300	1400	1400	1300	1300	1230	1230	1300	1300	1300	1300	1300	1300	1300
Control	DO	7.5	7.7	7.3	8.0	7.2	7.7	7.2	7.5	7.8	8.0	7.8	8.0	-	-
	pH	7.5	7.4	7.4	7.2	7.3	7.3	7.2	7.4	7.4	7.4	7.4	7.5	-	-
	Temp	24.2	25.1	25.5	25.0	24.2	24.9	24.6	24.7	24.6	24.6	24.4	25.1	-	-
100%	DO	9.8	6.9	9.7	7.6	9.4	7.7	10.2	7.1	10.4	8.1	10.6	8.0	-	-
	pH	7.0	7.2	7.0	7.3	7.2	7.4	7.3	7.4	7.3	7.4	7.2	7.4	-	-
	Temp	25.2	25.0	25.0	25.1	24.9	24.6	24.5	24.3	24.5	24.5	24.8	25.0	-	-

Additional Parameters	Control	100% Sample
Conductivity (umohms)	350	156
Alkalinity (mg/l CaCO <sub>3</sub> )	66	30
Hardness (mg/l CaCO <sub>3</sub> )	98	65
Ammonia (mg/l NH <sub>3</sub> -N)	2.1	0.2

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	3E	3G	1G	1E	2J	3F	1H	2D	1C	2I	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials	
		A	B	C	D	E	F	G	H	I	J				
Control	1	0	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten]
	2	0	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten]
	3	3	2	0	0	0	0	3	0	3	0	11	10	[Handwritten]	
	4	0	0	3	4	3	4	0	2	0	2	18	10	[Handwritten]	
	5	8	6	6	7	7	0	6	7	9	8	64	10	[Handwritten]	
	6	13	9	10	0	10	12	11	10	13	13	101	10	[Handwritten]	
	7	-	-	-	-	-	-	-	-	-	-	-	-	-	[Handwritten]
	Total	24	17	19	11	20	16	20	19	25	23	194	10	[Handwritten]	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten]	
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Handwritten]	
	3	3	0	0	3	4	0	0	0	0	3	13	10	[Handwritten]	
	4	9	4	5	0	0	4	4	5	4	7	42	10	[Handwritten]	
	5	16	9	13	10	9	8	10	8	7	12	102	10	[Handwritten]	
	6	17	16	14	10	15	12	12	13	9	10	101	10	[Handwritten]	
	7	-	-	-	-	-	-	-	-	-	-	-	-	-	[Handwritten]
	Total	28	29	32	23	28	24	20	26	20	22	258	10	[Handwritten]	

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

TestAmerica Irvine

IRA0399

**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:**

Aquatic Testing Laboratories-SUB  
4350 Transport Street, Unit 107  
Ventura, CA 93003  
Phone: (805) 650-0546  
Fax: (805) 650-0756  
Project Location: California  
Receipt Temperature: 8 °C Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: IRA0399-01	Water			Sampled: 01/05/08 08:30 pH=7.8, temp=51.50
Bioassay-7 dy Chmic	N/A	01/16/08	01/06/08 20:30	Cerio, EPA/821-R02-013, Sub to Aquatic testing

Containers Supplied:  
1 gal Poly (M)

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_

Received By ATL 1-5-8 1200 Date/Time \_\_\_\_\_

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_





# *REFERENCE TOXICANT DATA*

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



QA/QC Batch No.: RT-080106

Date Tested: 01/06/08 to 01/12/08

**TEST SUMMARY**

Test type: Daily static-renewal.  
 Species: *Ceriodaphnia dubia*.  
 Age: < 24 hrs; all released within 8 hrs.  
 Test vessel size: 30 ml.  
 Number of test organisms per vessel: 1.  
 Temperature: 25 +/- 1°C.  
 Dilution water: Mod. hard reconstituted (MHRW).  
 Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.  
 Source: In-laboratory culture.  
 Food: .1 ml YTC, algae per day.  
 Test solution volume: 20 ml.  
 Number of replicates: 10.  
 Photoperiod: 16/8 hrs. light/dark cycle.  
 Test duration: 6 days.  
 Statistics: ToxCalc computer program.

**RESULTS SUMMARY**

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		20.5	
0.25 g/l	100%		19.5	
0.5 g/l	100%		19.5	
1.0 g/l	100%		14.0	*
2.0 g/l	80%		3.2	*
4.0 g/l	0%	*	0	**

\* Statistically significantly less than control at P = 0.05 level  
 \*\* Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

**CHRONIC TOXICITY**

Survival LC50	2.5 g/l
Reproduction IC25	0.88 g/l

**QA/QC TEST ACCEPTABILITY**

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (20.5 young)
≥60% surviving controls had 3 broods	Pass (90% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 19.1%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. = 31.7%)
Concentration response relationship acceptable	Pass (Response curve normal)

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 1/6/2008 13:00    Test ID: RT-080106c    Sample ID: REF-Ref Toxicant  
 End Date: 1/12/2008 13:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 1/6/2008    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.8000	0.8000	2	8	10	10	0.2368	0.0500	2	10
4	0.0000	0.0000	10	0	10	10			10	10

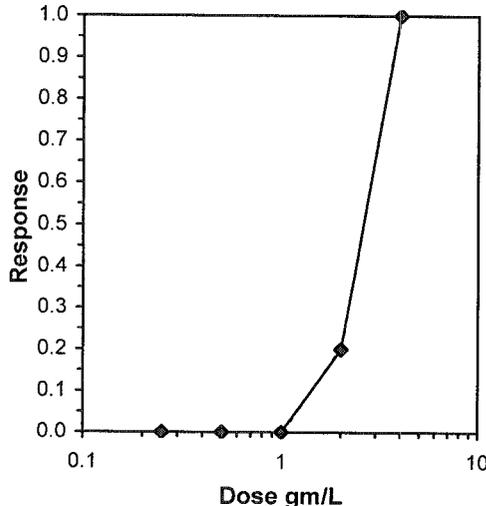
**Hypothesis Test (1-tail, 0.05)**    NOEC    LOEC    ChV    TU

Fisher's Exact Test                      2            4            2.82843

Treatments vs D-Control

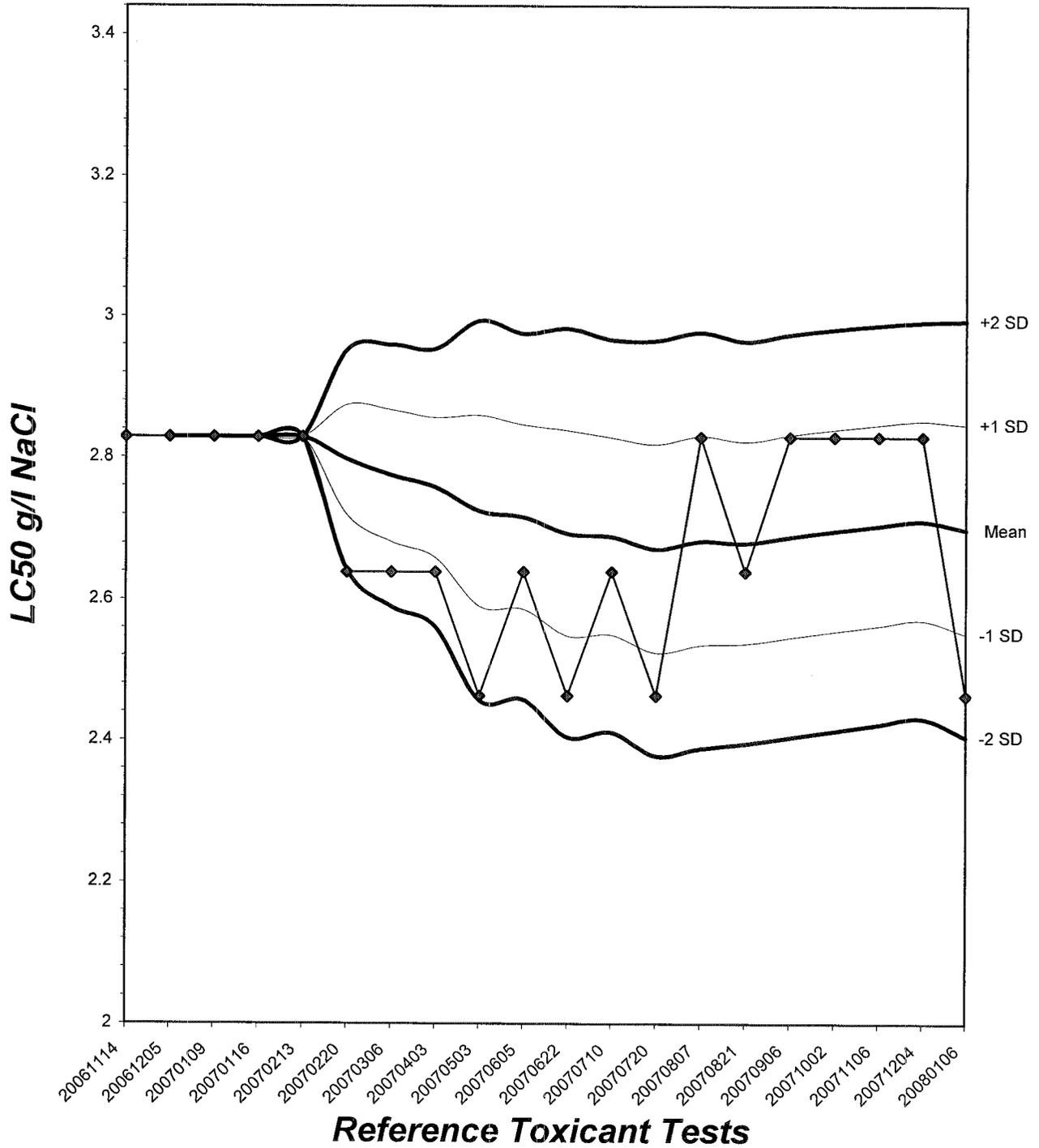
**Trimmed Spearman-Kärber**

Trim Level	EC50	95% CL	
0.0%	2.4623	2.0663	2.9342
5.0%	2.5108	2.0545	3.0683
10.0%	2.5519	1.9976	3.2599
20.0%	2.5937	2.2616	2.9745
Auto-0.0%	2.4623	2.0663	2.9342



# Ceriodaphnia dubia Chronic Survival Laboratory Control Chart

CV% = 5.46



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 1/6/2008 13:00 Test ID: RT-080106c Sample ID: REF-Ref Toxicant  
 End Date: 1/12/2008 13:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride  
 Sample Date: 1/6/2008 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	23.000	11.000	21.000	21.000	23.000	20.000	19.000	22.000	20.000	25.000
0.25	12.000	24.000	19.000	22.000	9.000	20.000	21.000	21.000	22.000	25.000
0.5	21.000	19.000	21.000	22.000	16.000	12.000	22.000	21.000	22.000	19.000
1	19.000	9.000	9.000	19.000	14.000	10.000	16.000	17.000	19.000	8.000
2	8.000	2.000	2.000	5.000	4.000	3.000	3.000	5.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed						Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N	Mean			N-Mean	
D-Control	20.500	1.0000	20.500	11.000	25.000	18.432	10			20.500	1.0000	
0.25	19.500	0.9512	19.500	9.000	25.000	26.177	10	102.00	76.00	19.500	0.9512	
0.5	19.500	0.9512	19.500	12.000	22.000	16.617	10	94.50	76.00	19.500	0.9512	
*1	14.000	0.6829	14.000	8.000	19.000	32.819	10	62.50	76.00	14.000	0.6829	
*2	3.200	0.1561	3.200	0.000	8.000	76.263	10	55.00	76.00	3.200	0.1561	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000	

**Auxiliary Tests**

Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)      Statistic: 0.91281      Critical: 0.947      Skew: -0.9793      Kurt: 0.67912  
 Bartlett's Test indicates equal variances (p = 0.25)      Statistic: 5.39      Critical: 13.2767

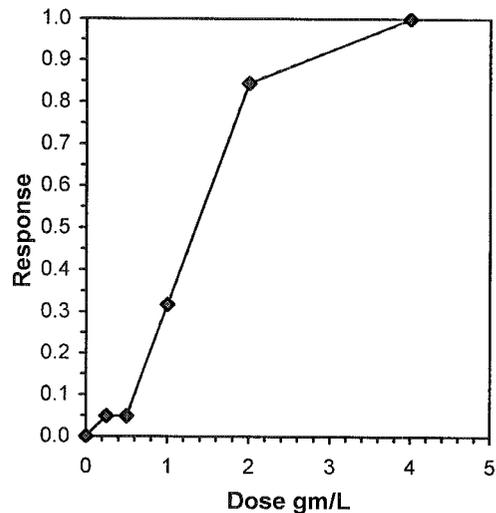
**Hypothesis Test (1-tail, 0.05)**      NOEC      LOEC      ChV      TU

Steel's Many-One Rank Test      0.5      1      0.70711

Treatments vs D-Control

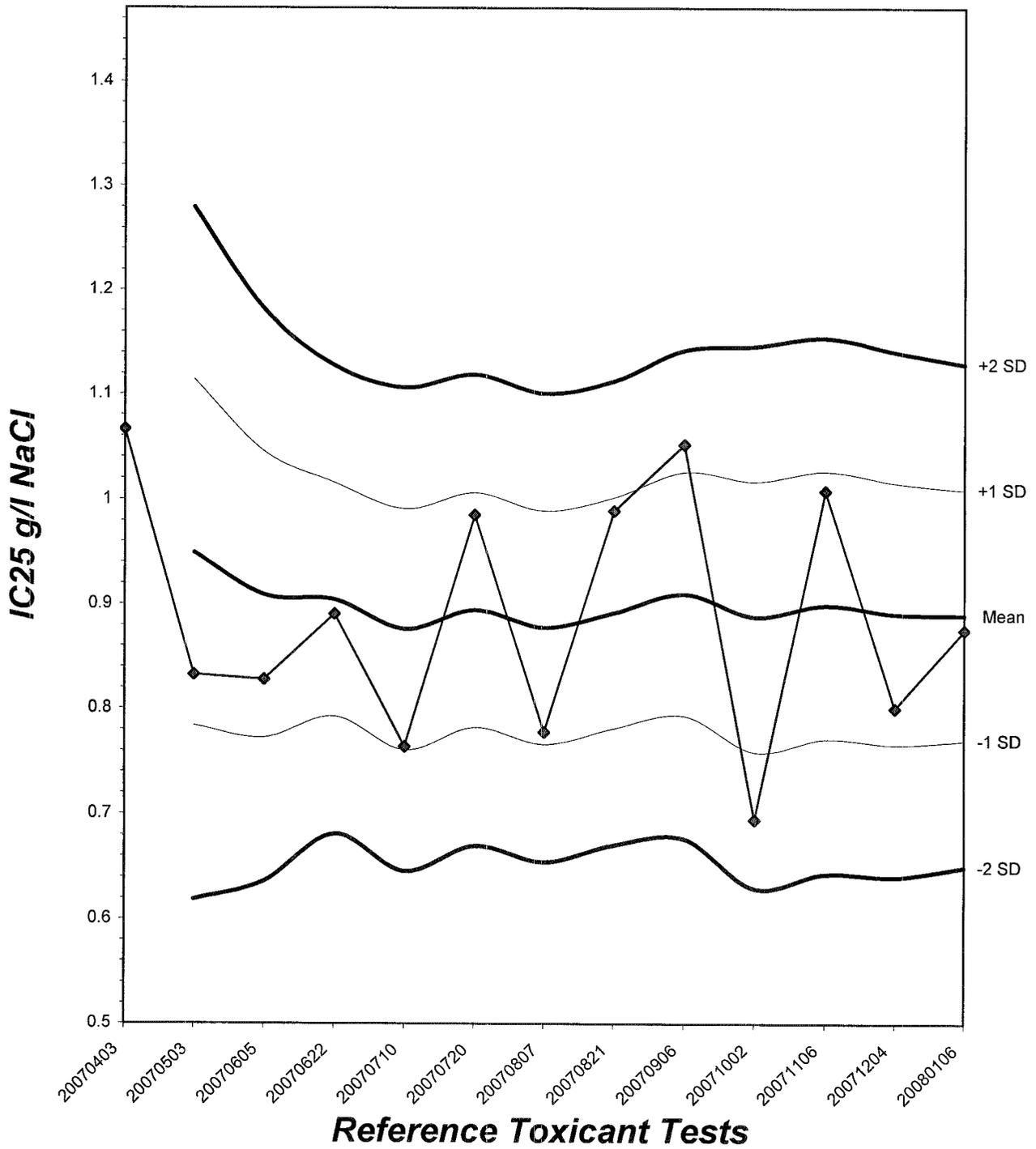
**Linear Interpolation (200 Resamples)**

Point	gm/L	SD	95% CL		Skew
IC05	0.5023	0.1876	0.0809	0.6178	-0.0659
IC10	0.5955	0.1768	0.1617	0.7497	-0.5184
IC15	0.6886	0.1424	0.2426	0.9253	-0.5389
IC20	0.7818	0.1259	0.4995	1.0352	0.2728
IC25	0.8750	0.1224	0.6413	1.1094	0.3153
IC40	1.1574	0.1139	0.9216	1.3331	-0.0890
IC50	1.3472	0.0972	1.1197	1.4847	-0.4227



# ***Ceriodaphnia dubia* Chronic Reproduction Laboratory Control Chart**

CV% = 13.5



# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## Reference Toxicant - NaCl

### Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-080106

Start Date: 01/06/2008

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	h
	3	0	0	2	0	0	0	3	0	3	0	8	10	h
	4	4	3	0	4	3	2	0	2	0	3	21	10	h
	5	9	8	7	7	6	7	6	7	6	7	70	10	h
	6	10	0	12	10	14	11	10	13	11	15	106	10	h
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	23	11	21	21	23	20	19	22	20	25	205	10	h
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	0	3	0	3	0	2	0	0	3	0	11	10	h
	4	4	0	2	0	3	6	4	2	0	3	24	10	h
	5	8	8	7	5	6	0	7	6	7	8	62	10	h
	6	0	13	10	14	0	12	10	13	12	14	98	10	h
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	12	24	19	22	9	20	21	21	22	25	195	10	h
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	h	
	2	0	0	0	0	0	0	0	0	0	0	10	h	
	3	2	0	2	0	0	0	3	2	0	0	9	10	h
	4	0	3	0	3	4	3	0	0	3	3	19	10	h
	5	9	6	7	7	0	9	8	7	7	6	66	10	h
	6	10	10	12	12	12	0	11	10	12	10	101	10	h
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	21	19	21	22	16	12	22	21	22	19	195	10	h

Circled fourth brood not used in statistical analysis.

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

# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## Reference Toxicant - NaCl

### Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-080106

Start Date: 01/06/2008

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	3	0	0	2	0	5	10	
	4	3	2	2	3	0	0	3	2	0	2	17	10	
	5	5	7	7	4	5	7	5	4	7	6	57	10	
	6	11	0	0	12	9	0	8	11	10	0	61	10	
	7	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	19	9	9	19	14	10	16	17	19	8	140	10	
2.0 g/l	1	0	0	0	0	0	0	0	X	0	0	9	h	
	2	0	0	0	0	0	0	0	-	0	0	9		
	3	0	0	0	0	0	0	0	-	0	0	9		
	4	2	0	2	3	0	0	0	2	-	0	9		9
	5	3	0	0	2	2	3	3	0	-	0	13		9
	6	3	2	0	0	2	0	0	3	-	X	10		8
	7	-	-	-	-	-	-	-	-	-	-	-		-
	Total	8	2	2	5	4	3	3	5	0	0	32		8
4.0 g/l	1	X	X	X	X	X	X	X	X	X	0	0	h	
	2	-	-	-	-	-	-	-	-	-	-	-		
	3	-	-	-	-	-	-	-	-	-	-	-		
	4	-	-	-	-	-	-	-	-	-	-	-		
	5	-	-	-	-	-	-	-	-	-	-	-		
	6	-	-	-	-	-	-	-	-	-	-	-		
	7	-	-	-	-	-	-	-	-	-	-	-		
	Total	0	0	0	0	0	0	0	0	0	0	0		0

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

# CERIODAPHNIA DUBIA CHRONIC BIOASSAY

## Reference Toxicant - NaCl Water Chemistries Raw Data Sheet



QA/QC No.: RT-080106

Start Date: 01/06/2008

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7		
		Initial	Final													
Analyst Initials:		g	h	h	h	h	h	h	h	h	h	h	h	-	-	
Time of Readings:		1300	1330	1330	1300	1300	1230	1230	1300	1300	1300	1300	1300	1300	-	-
Control	DO	7.6	7.2	7.4	7.7	7.4	7.6	7.4	7.5	8.2	7.8	7.9	7.7	-	-	
	pH	7.6	7.4	7.4	7.3	7.3	7.2	7.2	7.7	7.5	7.6	7.9	7.6	-	-	
	Temp	24.3	25.1	25.4	24.8	24.1	24.9	24.9	25.1	24.4	25.0	24.6	25.1	-	-	
0.25 g/l	DO	7.5	7.3	7.5	7.5	7.5	7.7	7.3	7.4	8.2	7.8	7.9	7.7	-	-	
	pH	7.5	7.3	7.4	7.4	7.4	7.2	7.3	7.4	7.6	7.5	7.6	7.7	-	-	
	Temp	24.4	25.2	25.3	24.9	24.2	24.9	24.7	25.0	24.4	25.1	24.6	25.1	-	-	
0.5 g/l	DO	7.4	7.2	7.4	7.6	7.4	7.5	7.4	7.6	8.5	7.6	8.0	7.8	-	-	
	pH	7.5	7.3	7.4	7.4	7.4	7.2	7.3	7.5	7.6	7.5	7.7	7.7	-	-	
	Temp	24.3	25.1	25.3	24.9	24.1	25.2	24.6	24.9	24.4	24.9	24.4	24.9	-	-	
1.0 g/l	DO	7.5	7.2	7.6	7.7	7.3	7.8	7.4	7.4	8.4	7.8	7.7	7.7	-	-	
	pH	7.5	7.3	7.6	7.5	7.4	7.2	7.3	7.5	7.6	7.6	7.4	7.6	-	-	
	Temp	24.4	25.2	25.1	24.7	24.2	25.2	24.6	25.0	24.4	24.9	24.6	25.0	-	-	
2.0 g/l	DO	7.4	7.4	7.6	7.5	7.4	7.8	7.2	7.6	8.2	7.6	7.6	7.7	-	-	
	pH	7.5	7.4	7.6	7.6	7.4	7.3	7.2	7.6	7.5	7.6	7.9	7.6	-	-	
	Temp	24.5	25.1	25.0	24.6	24.2	25.3	24.8	25.2	24.4	24.8	24.6	25.1	-	-	
4.0 g/l	DO	7.5	7.8	-	-	-	-	-	-	-	-	-	-	-	-	
	pH	7.6	7.8	-	-	-	-	-	-	-	-	-	-	-	-	
	Temp	24.3	24.6	-	-	-	-	-	-	-	-	-	-	-	-	

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	350	348	305	6400	3100	3210
Alkalinity (mg/l CaCO <sub>3</sub> )	66	65	63	65	66	64
Hardness (mg/l CaCO <sub>3</sub> )	98	97	98	98	97	98

### Source of Neonates

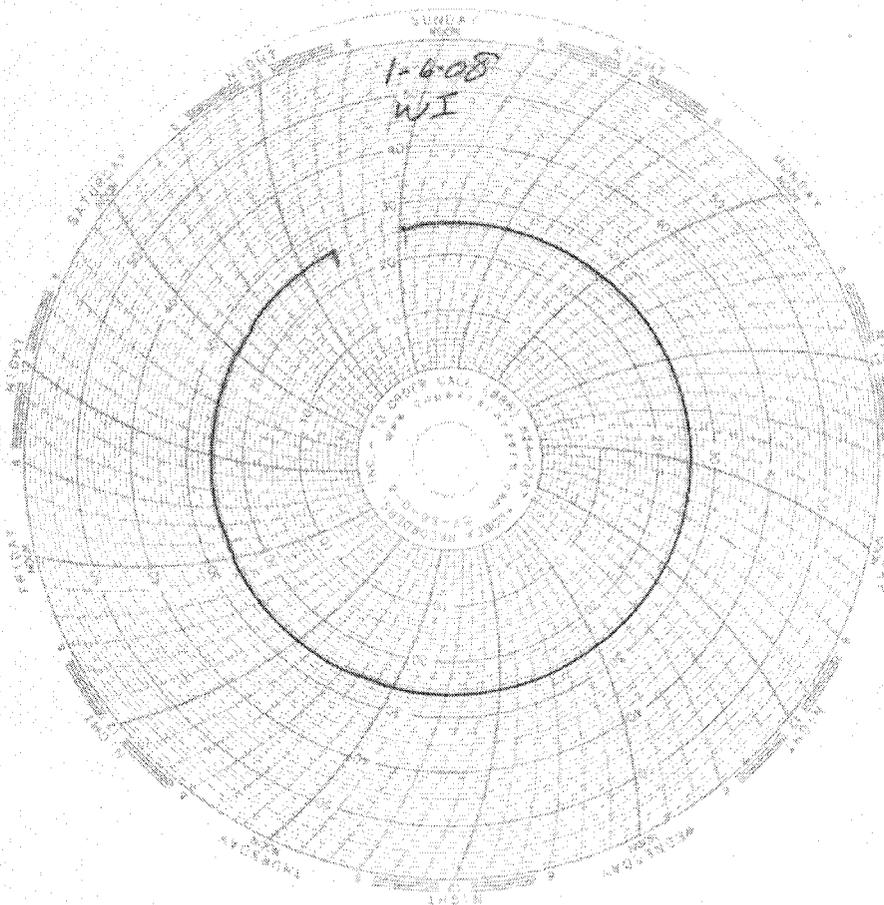
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	2B	1B	3C	2C	2A	3D	3E	2F	3F	2G

# *Laboratory Temperature Chart*

*QA/QC Batch No: RT-080106*

*Date Tested: 01/06/08 to 01/12/08*

*Acceptable Range: 25+/- 1°C*





# EBERLINE SERVICES

February 20, 2008

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

Reference: Test America Project Nos. IRA0393, IRA0398, IRA0399, IRA0400, IRA0906  
Eberline Services NELAP Cert #01120CA  
Eberline Services Reports R801023-8676, R801024-8677, R801025-8678  
R801029-8679, R801048-8680

Dear Mr. Doak:

Enclosed are results from the analyses of five water samples. Four of the samples were received at Eberline Services on January 8, and one on January 12, 2008. The samples were analyzed according to the accompanying Test America Subcontract Order Forms, the requested analyses were: gross alpha/gross beta (EPA 900.0), tritium (H-3, EPA906.0), Sr-90 (EPA905.0), Ra-226 (EPA903.1), Ra-228 (EPA 904.0), total uranium (ASTM D-5174), and gamma spectroscopy (EPA901.1, K-40 and Cs-137). Batch quality control samples consisted of LCS's, blank analyses, duplicate analyses, and matrix spike analyses (gross alpha/gross beta, H-3, Ra-226, Total-U only). All QC sample results were within the limits defined in Eberline Services Quality Control Procedures Manual.

Please call me if you have any questions concerning this report.

Regards,

Melissa Mannion  
Senior Program Manager

MCM/njv

Enclosure: Reports/CoC's  
Invoices

Analytical Services  
2030 Wright Avenue  
P.O. Box 4040  
Richmond, California 94804-0040  
(510) 235-2633 Fax (510) 235-0438  
Toll Free (800) 841-5487  
www.eberlineservices.com  
NPDES - 2093

# Eberline Services

## ANALYSIS RESULTS

SDG 8678  
Work Order R801025-01  
Received Date 01/08/08

Client TA IRVINE  
Contract PROJECT# IRA0399  
Matrix WATER

Client	Lab						
<u>Sample ID</u>	<u>Sample ID</u>	<u>Collected</u>	<u>Analyzed</u>	<u>Nuclide</u>	<u>Results ± 2σ</u>	<u>Units</u>	<u>MDA</u>
IRA0399-01	8678-001	01/05/08	01/24/08	GrossAlpha	0.641 ± 0.56	pCi/L	0.84
			01/24/08	Gross Beta	2.91 ± 0.66	pCi/L	0.95
			01/23/08	Ra-228	0.064 ± 0.15	pCi/L	0.40
			01/12/08	K-40 (G)	U	pCi/L	40
			01/12/08	Cs-137 (G)	U	pCi/L	1.5
			01/23/08	H-3	-38.2 ± 86	pCi/L	150
			01/25/08	Ra-226	-0.035 ± 0.43	pCi/L	0.84
			01/28/08	Sr-90	-0.270 ± 0.40	pCi/L	1.1
			02/15/08	Total U	0.107 ± 0.015	pCi/L	0.021

Certified by   
Report Date 02/19/08  
Page 1

# Eberline Services

## QC RESULTS

SDG <u>8678</u>	Client <u>TA IRVINE</u>
Work Order <u>R801025-01</u>	Contract <u>PROJECT# IRA0399</u>
Received Date <u>01/08/08</u>	Matrix <u>WATER</u>

Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>							
	8676-002	GrossAlpha	13.0 ± 0.93	pCi/Smpl	10.1	0.43	129% recovery
		Gross Beta	9.21 ± 0.38	pCi/Smpl	9.41	0.29	98% recovery
		Ra-228	7.16 ± 0.54	pCi/Smpl	7.97	0.85	90% recovery
		Co-60 (G)	220 ± 17	pCi/Smpl	228	11	96% recovery
		Cs-137 (G)	256 ± 14	pCi/Smpl	236	9.8	108% recovery
		H-3	189 ± 14	pCi/Smpl	203	15	93% recovery
		Ra-226	4.87 ± 0.23	pCi/Smpl	4.46	0.083	109% recovery
		Sr-90	8.90 ± 0.73	pCi/Smpl	9.40	0.33	95% recovery
		Total U	1.05 ± 0.12	pCi/Smpl	1.13	0.004	93% recovery

<u>BLANK</u>							
	8676-003	GrossAlpha	0.067 ± 0.16	pCi/Smpl	NA	0.27	<MDA
		Gross Beta	-0.079 ± 0.26	pCi/Smpl	NA	0.44	<MDA
		Ra-228	-0.491 ± 0.26	pCi/Smpl	NA	0.79	<MDA
		K-40 (G)	U	pCi/Smpl	NA	220	<MDA
		Cs-137 (G)	U	pCi/Smpl	NA	8.0	<MDA
		H-3	-1.49 ± 8.7	pCi/Smpl	NA	15	<MDA
		Ra-226	-0.012 ± 0.035	pCi/Smpl	NA	0.083	<MDA
		Sr-90	-0.030 ± 0.18	pCi/Smpl	NA	0.45	<MDA
		Total U	0.00E 00 ± 1.8E-04	pCi/Smpl	NA	4.2E-04	<MDA

<u>DUPLICATES</u>			
Sample ID	Nuclide	Results ± 2σ	MDA
8676-004	GrossAlpha	-0.027 ± 1.1	1.9
	Gross Beta	62.4 ± 2.4	2.4
	K-40 (G)	U	32
	Cs-137 (G)	U	1.1
	H-3	-71.6 ± 86	150
	Ra-226	-0.062 ± 0.36	0.71
	Sr-90	-0.067 ± 0.35	0.86
	Total U	2.58 ± 0.29	0.021

<u>ORIGINALS</u>						
Sample ID	Results ± 2σ	MDA	RPD	(Tot)	3σ	Eval
8676-001	0.784 ± 2.0	2.8	-	0		satis.
	62.4 ± 2.4	2.1	0	43		satis.
	62.0 ± 8.4	5.3	64	108		satis.
	U	0.54	-	0		satis.
	-15.1 ± 88	150	-	0		satis.
	0.081 ± 0.44	0.81	-	0		satis.
	0.063 ± 0.44	1.0	-	0		satis.
	2.58 ± 0.29	0.021	0	31		satis.

<u>SPIKED SAMPLE</u>			
Sample ID	Nuclide	Results ± 2σ	MDA

<u>ORIGINAL SAMPLE</u>					
Sample ID	Results ± 2σ	MDA	Added	%Recv	

Certified by

Report Date 02/19/08

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# Eberline Services

SDG <u>8678</u>	Client <u>TA IRVINE</u>
Work Order <u>R801025-01</u>	Contract <u>PROJECT# IRA0399</u>
Received Date <u>01/08/08</u>	Matrix <u>WATER</u>

8676-005	GrossAlpha	154 ± 8.1	2.8	8676-001	0.784 ± 2.0	2.8	115	133
	Gross Beta	161 ± 3.3	1.5		62.4 ± 2.4	2.1	102	97
	H-3	15700 ± 510	260		-15.1 ± 88	150	16100	98
	Ra-226	116 ± 4.3	0.75		0.081 ± 0.44	0.81	112	103
	Total U	111 ± 14	2.1		2.58 ± 0.29	0.021	113	96

Certified by 
Report Date <u>02/19/08</u>
Page 3

**TestAmerica Irvine**  
**IRA0399**

8678

**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:**

Eberline Services - SUB  
2030 Wright Avenue  
Richmond, CA 94804  
Phone : (510) 235-2633  
Fax: (510) 235-0438  
Project Location: California  
Receipt Temperature: 4.0 °C      Ice: (Y) / N

Analysis	Units	Due	Expires	Comments
<b>Sample ID: IRA0399-01</b>	<b>Water</b>		<b>Sampled: 01/05/08 08:30</b>	<b>ph=7.8, temp=51.50</b>
Gamma Spec-O	mg/kg	01/16/08	01/04/09 08:30	Boeing, permit, J flags, K-40 and CS-137 only
Gross Alpha-O	pCi/L	01/16/08	07/03/08 08:30	Out to Eberline
Gross Beta-O	pCi/L	01/16/08	07/03/08 08:30	Out to eberline
Level 4 Data Package - Out	N/A	01/16/08	02/02/08 08:30	
Radium, Combined-O	pCi/L	01/16/08	01/04/09 08:30	Out to Eberline
Strontium 90-O	pCi/L	01/16/08	01/04/09 08:30	Out to Eberline
Tritium-O	pCi/L	01/16/08	01/04/09 08:30	Out to Eberline
Uranium, Combined-O	pCi/L	01/16/08	01/04/09 08:30	Out to Eberline
<i>Containers Supplied:</i>				
2.5 gal Poly (K)	500 mL Amber (L)			

      1/7/08 1700  
Released By      Date/Time

FedEx      1/7/08 1700  
Received By      Date/Time

\_\_\_\_\_  
Released By      Date/Time

J. May      01/08/08 09:30  
Received By      Date/Time

January 23, 2008

**Vista Project I.D.: 30125**

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 January 08, 2008 under your Project Name "IRA0399". 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](mailto:mmaier@vista-analytical.com). Thank you for choosing Vista as part of your analytical support team.

Sincerely,



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.*



**Section I: Sample Inventory Report**

**Date Received: 1/8/2008**

Vista Lab. ID

Client Sample ID

30125-001

IRA0399-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	9886	Lab Sample:	0-MB001	Date Analyzed DB-5:	19-Jan-08	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	17-Jan-08						
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers	
2,3,7,8-TCDD	ND	0.00000111			<b>IS</b> 13C-2,3,7,8-TCDD	85.7	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000171			13C-1,2,3,7,8-PeCDD	76.8	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000174			13C-1,2,3,4,7,8-HxCDD	75.3	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000184			13C-1,2,3,6,7,8-HxCDD	75.1	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000172			13C-1,2,3,4,6,7,8-HpCDD	87.8	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000243			13C-OCDD	70.8	17 - 157		
OCDD	ND	0.00000780			13C-2,3,7,8-TCDF	83.6	24 - 169		
2,3,7,8-TCDF	ND	0.00000116			13C-1,2,3,7,8-PeCDF	72.8	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000159			13C-2,3,4,7,8-PeCDF	75.3	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000156			13C-1,2,3,4,7,8-HxCDF	72.9	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000815			13C-1,2,3,6,7,8-HxCDF	73.2	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000832			13C-2,3,4,6,7,8-HxCDF	76.3	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000894			13C-1,2,3,7,8,9-HxCDF	79.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000120			13C-1,2,3,4,6,7,8-HpCDF	88.5	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000977			13C-1,2,3,4,7,8,9-HpCDF	86.1	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000133			13C-OCDF	72.3	17 - 157		
OCDF	ND	0.00000313			<b>CRS</b> 37Cl-2,3,7,8-TCDD	105	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.00000111			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000373			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000177			c. Method detection limit.				
Total HpCDD	ND	0.00000314			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.00000116							
Total PeCDF	ND	0.00000157							
Total HxCDF	ND	0.000000928							
Total HpCDF	ND	0.00000114							

Analyst: MAS

Approved By: Martha M. Maier 23-Jan-2008 09:37

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	9886	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	17-Jan-08	Date Analyzed DB-5:	19-Jan-08	Date Analyzed DB-225:	NA
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	Qualifier
2,3,7,8-TCDD	10.0	10.4	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	76.2	25 - 164	
1,2,3,7,8-PeCDD	50.0	52.4	35 - 71	13C-1,2,3,7,8-PeCDD	68.3	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	52.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	66.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	51.4	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.8	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	52.3	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	87.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	51.7	35 - 70	13C-OCDD	70.1	17 - 157	
OCDD	100	103	78 - 144	13C-2,3,7,8-TCDF	74.1	24 - 169	
2,3,7,8-TCDF	10.0	9.71	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	64.3	24 - 185	
1,2,3,7,8-PeCDF	50.0	50.9	40 - 67	13C-2,3,4,7,8-PeCDF	67.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	51.2	34 - 80	13C-1,2,3,4,7,8-HxCDF	62.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	51.5	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.5	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	52.2	42 - 65	13C-2,3,4,6,7,8-HxCDF	66.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	52.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	69.3	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	51.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	76.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	50.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	85.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	51.2	39 - 69	13C-OCDF	71.9	17 - 157	
OCDF	100	104	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	84.4	35 - 197	

Analyst: MAS

Approved By: Martha M. Maier 23-Jan-2008 09:37

Sample ID: IRA0399-01					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Test America-Irvine, CA		Matrix:	Aqueous	Lab Sample:	30125-001	Date Received:	8-Jan-08
Project:	IRA0399		Sample Size:	0.982 L	QC Batch No.:	9886	Date Extracted:	17-Jan-08
Date Collected:	5-Jan-08				Date Analyzed DB-5:	19-Jan-08	Date Analyzed DB-225:	NA
Time Collected:	0830							
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000138			<b>IS</b> 13C-2,3,7,8-TCDD	73.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000257			13C-1,2,3,7,8-PeCDD	65.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000346			13C-1,2,3,4,7,8-HxCDD	58.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000362			13C-1,2,3,6,7,8-HxCDD	57.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000340			13C-1,2,3,4,6,7,8-HpCDD	58.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000170			J	13C-OCDD	47.9	17 - 157	
OCDD	0.000161				13C-2,3,7,8-TCDF	69.3	24 - 169	
2,3,7,8-TCDF	ND	0.00000106			13C-1,2,3,7,8-PeCDF	58.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000228			13C-2,3,4,7,8-PeCDF	63.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000221			13C-1,2,3,4,7,8-HxCDF	53.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000129			13C-1,2,3,6,7,8-HxCDF	54.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000132			13C-2,3,4,6,7,8-HxCDF	56.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000135			13C-1,2,3,7,8,9-HxCDF	60.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000181			13C-1,2,3,4,6,7,8-HpCDF	58.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000328			J	13C-1,2,3,4,7,8,9-HpCDF	53.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000201			13C-OCDF	46.6	17 - 157	
OCDF	ND	0.0000189			<b>CRS</b> 37Cl-2,3,7,8-TCDD	100	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000250			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000456			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000349			c. Method detection limit.			
Total HpCDD	0.0000396				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000106						
Total PeCDF	ND	0.00000285						
Total HxCDF	ND		0.00000116					
Total HpCDF	0.00000697							

Analyst: MAS

Approved By: Martha M. Maier 23-Jan-2008 09:37

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

<b>B</b>	<b>This compound was also detected in the method blank.</b>
<b>D</b>	<b>Dilution</b>
<b>P</b>	<b>The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.</b>
<b>H</b>	<b>The signal-to-noise ratio is greater than 10:1.</b>
<b>I</b>	<b>Chemical Interference</b>
<b>J</b>	<b>The amount detected is below the Lower Calibration Limit of the instrument.</b>
<b>*</b>	<b>See Cover Letter</b>
<b>Conc.</b>	<b>Concentration</b>
<b>DL</b>	<b>Sample-specific estimated detection limit</b>
<b>MDL</b>	<b>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.</b>
<b>EMPC</b>	<b>Estimated Maximum Possible Concentration</b>
<b>NA</b>	<b>Not applicable</b>
<b>RL</b>	<b>Reporting Limit – concentrations that correspond to low calibration point</b>
<b>ND</b>	<b>Not Detected</b>
<b>TEQ</b>	<b>Toxic Equivalency</b>

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

## CERTIFICATIONS

<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
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	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

**SUBCONTRACT ORDER**

TestAmerica Irvine

IRA0399

30125

**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: California  
Receipt Temperature: \_\_\_\_\_ °C      Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: IRA0399-01	Water			Sampled: 01/05/08 08:30    ph=7.8, temp=51.50
1613-Dioxin-HR-Alta	ug/l	01/16/08	01/12/08 08:30	J flags, 17 congeners, no TEQ, ug/L, sub=Vista
<i>Containers Supplied:</i>				
1 L Amber (C)	1 L Amber (D)			

~~Released By~~ \_\_\_\_\_ ~~Date/Time~~ 1/7/08 1700

Received By \_\_\_\_\_ Date/Time 1/7/08 1700  
FedEx

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_

Received By *Bethune Benedict* Date/Time 1/8/08 1231

SAMPLE LOG-IN CHECKLIST



Vista Project #: 30125 TAT Standard

Samples Arrival:	Date/Time <u>1/8/08 0909</u>	Initials: <u>CRSB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>NA</u>
Logged In:	Date/Time <u>1/8/08 1244</u>	Initials: <u>CRSB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>C-3</u>
Delivered By:	<u>FedEx</u>	UPS	Cal
		DHL	Hand Delivered
		Other	
Preservation:	<u>Ice</u>	Blue Ice	Dry Ice
		None	
Temp °C	<u>0.7°C</u>	Time:	<u>0924</u>
		Thermometer ID:	<u>IR-1</u>

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill			
Trk # <u>79262674 2469</u>	<input checked="" type="checkbox"/>		
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			<input checked="" type="checkbox"/>
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			
COC			<u>None</u>
Sample Container			
Shipping Container	Vista	<u>Client</u>	Retain
			<u>Return</u>
			Dispose

Comments:

SUBCONTRACT ORDER

TestAmerica Irvine

IRA0399

8010774

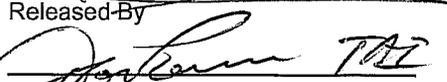
SENDING LABORATORY:

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

RECEIVING LABORATORY:

Weck Laboratories, Inc-SUB  
14859 E. Clark Avenue  
City of Industry, CA 91745  
Phone :(626) 336-2139  
Fax: (626) 336-2634  
Project Location: California  
Receipt Temperature: 3.1 °C Ice: (Y) / N

Analysis	Units	Due	Expires	Comments
Sample ID: IRA0399-01	Water		Sampled: 01/05/08 08:30	ph=7.8, temp=51.50
Level 4 + EDD-OUT	N/A	01/16/08	02/02/08 08:30	Sub to Weck, transfer file EDD
Level 4 Data Package - Wec	N/A	01/16/08	02/02/08 08:30	Out to Weck
Mercury - 245.1, Diss -OUT	mg/l	01/16/08	02/02/08 08:30	Weck, Boeing, J flags
Mercury - 245.1-OUT	mg/l	01/16/08	02/02/08 08:30	Weck,Boeing, permit, J flags, if result>ND,call TA
<i>Containers Supplied:</i>				
125 mL Poly w/HNO3	125 mL Poly (O)			
(N)				

  
 Released-By \_\_\_\_\_ Date/Time 1/7/08 0900  
  
 Released By \_\_\_\_\_ Date/Time 1/7/08 1420

  
 Received By \_\_\_\_\_ Date/Time 1/7/08 0900  
  
 Received By \_\_\_\_\_ Date/Time 1/7/08 1420



### CERTIFICATE OF ANALYSIS

**Client:** TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine, CA 92614  
Attention: Joseph Doak

**Report Date:** 01/10/08 08:42  
**Received Date:** 01/07/08 14:20  
**Turn Around:** 7 days

Phone: (949) 261-1022  
Fax: (949) 260-3297

**Work Order #:** 8010774

**Client Project:** IRA0399

NELAP #04229CA ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143

*The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.*

Dear Joseph Doak :

Enclosed are the results of analyses for samples received 01/07/08 14:20 with the Chain of Custody document. The samples were received in good condition. The samples were received at 3.1 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Reviewed by:

Kim G Tu

Project Manager



Page 1 of 6





Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8010774  
Project ID: IRA0399

Date Received: 01/07/08 14:20  
Date Reported: 01/10/08 08:42

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Sampled by:	Sample Comments	Laboratory	Matrix	Date Sampled
IRA0399-01	Client		8010774-01	Water	01/05/08 08:30



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8010774  
Project ID: IRA0399

Date Received: 01/07/08 14:20  
Date Reported: 01/10/08 08:42

**IRA0399-01 8010774-01 (Water)**

Date Sampled: 01/05/08 08:30

**Metals by EPA 200 Series Methods**

Analyte	Result	MDL	Units	Reporting Limit	Dilution Factor	Method	Batch Number	Date Prepared	Date Analyzed	Data Qualifiers
Mercury, Dissolved	ND	0.050	ug/l	0.20	1	EPA 245.1	W8A0148	01/08/08	01/09/08	jlp
Mercury, Total	ND	0.050	ug/l	0.20	1	EPA 245.1	W8A0148	01/08/08	01/09/08	jlp



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8010774  
Project ID: IRA0399

Date Received: 01/07/08 14:20  
Date Reported: 01/10/08 08:42

## QUALITY CONTROL SECTION



Weck Laboratories, Inc.  
 14859 E. Clark Ave.  
 Industry, CA 91745  
 Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
 17461 Derian Ave, Suite 100  
 Irvine CA, 92614

Report ID: 8010774  
 Project ID: IRA0399

Date Received: 01/07/08 14:20  
 Date Reported: 01/10/08 08:42

**Metals by EPA 200 Series Methods - Quality Control**

%REC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-----------------

**Batch W8A0148 - EPA 245.1**

**Blank (W8A0148-BLK1)**

Analyzed: 01/09/08

Mercury, Dissolved	ND	0.20	ug/l							
Mercury, Total	ND	0.20	ug/l							

**LCS (W8A0148-BS1)**

Analyzed: 01/09/08

Mercury, Dissolved	0.965	0.20	ug/l	1.00		96	85-115			
Mercury, Total	0.965	0.20	ug/l	1.00		96	85-115			

**Matrix Spike (W8A0148-MS1)**

Source: 7120722-01

Analyzed: 01/09/08

Mercury, Dissolved	1.97	0.40	ug/l	2.00	ND	98	70-130			
Mercury, Total	1.97	0.40	ug/l	2.00	ND	98	70-130			

**Matrix Spike (W8A0148-MS2)**

Source: 7120722-03

Analyzed: 01/09/08

Mercury, Dissolved	1.88	0.40	ug/l	2.00	ND	94	70-130			
Mercury, Total	1.88	0.40	ug/l	2.00	ND	94	70-130			

**Matrix Spike Dup (W8A0148-MSD1)**

Source: 7120722-01

Analyzed: 01/09/08

Mercury, Dissolved	1.92	0.40	ug/l	2.00	ND	96	70-130	2	20	
Mercury, Total	1.92	0.40	ug/l	2.00	ND	96	70-130	2	20	

**Matrix Spike Dup (W8A0148-MSD2)**

Source: 7120722-03

Analyzed: 01/09/08

Mercury, Dissolved	1.96	0.40	ug/l	2.00	ND	98	70-130	4	20	
Mercury, Total	1.96	0.40	ug/l	2.00	ND	98	70-130	4	20	



Weck Laboratories, Inc.  
14859 E. Clark Ave.  
Industry, CA 91745  
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine  
17461 Derian Ave, Suite 100  
Irvine CA, 92614

Report ID: 8010774  
Project ID: IRA0399

Date Received: 01/07/08 14:20  
Date Reported: 01/10/08 08:42

### Notes and Definitions

ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL)
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Sub	Subcontracted analysis, original report available upon request
MDL	Method Detection Limit
MDA	Minimum Detectable Activity

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

## **APPENDIX G**

### **Section 54**

Outfall 009 – Northern Drainage-DTSC Requirement, January 5, 2008

Test America Analytical Laboratory Report

## LABORATORY REPORT

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

Project: Northern Drainage-DTSC  
Requirement  
Surface Water Sampling

Sampled: 01/05/08  
Received: 01/05/08  
Issued: 01/24/08 09:24

NELAP #01108CA California ELAP#1197 CSDLAC #10256

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

## SAMPLE CROSS REFERENCE

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

**LABORATORY ID**  
IRA0408-01

**CLIENT ID**  
OUTFALL 009

**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: Northern Drainage-DTSC Requirement  
Surface Water Sampling  
Report Number: IRA0408

Sampled: 01/05/08  
Received: 01/05/08

## DATA QUALIFIERS AND DEFINITIONS

**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.*

**IRA0408 <Page 2 of 2>**  
**NPDES - 2118**

IRAO408  
IRAO408

**CHAIN OF CUSTODY FORM**

Test America CAO No. R4-2007-0054

<b>Client Name/Address:</b> MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007		<b>Project:</b> Boeing-SSFL Northern Drainage <b>Surface Water Sampling - DTSC Requirement</b> Outfall 009		<b>Phone Number:</b> (626) 568-6691 <b>Fax Number:</b> (626) 568-6515		Asbestos (EPA 100.2)	
<b>Test America Contact:</b> Joseph Doak <b>Project Manager:</b> Bronwyn Kelly		<b>Sampler:</b> MARISOL J. BARRERA		X		ANALYSIS REQUIRED	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Comments
Outfall 009	W	1 L Poly	1	7-5-08 2:30	None	1	HOLD
							Field readings: Temp = 57.26 pH = 7.8 Time of readings = 2:30
							Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Sample integrity: (check) Intact _____ On Ice: 30 _____
Relinquished By: <i>Dev Ban</i> Date/Time: 7-5-08 1530		Received By: <i>Spencer Green</i> Date/Time: 7-10-08 1530		Relinquished By: <i>TAI</i> Date/Time: 7-10-08 1900		Received By: <i>Arayda Chosco</i> Date/Time: 7-15-08 19:00	

AD  
7/5/08  
DO:00

## Joseph Doak

---

**From:** EXT-Walker, Eric L [Eric.L.Walker2@boeing.com]  
**Sent:** Tuesday, January 08, 2008 4:12 PM  
**To:** Joseph Doak  
**Cc:** Bronwyn K Kelly; Blair, Lori N  
**Subject:** DTSC Sample From 1-5-08

**Attachments:** DTSC COC\_Outfall 009.pdf



DTSC COC\_Outfall  
009.pdf (134 ...

Joe:

Please run the DTSC Requirement sample from Outfall 009 (Asbestos) that was placed on hold. I have attached the COC for your reference.

<<DISC COC\_Outfall 009.pdf>>  
Thanks

Eric Walker

Confidentiality Notice: The information contained in this message is intended only for the use of the addressee, and may be confidential and/or privileged. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

Log in for  
Asbestos out to  
EMS & Level 4

DATE: January 14, 2008

Page 1 of 9

CLIENT: TestAmerica, Irvine  
17461 Derian Ave., Ste 100  
Irvine, CA 92614

ATTENTION: Joseph Doak

REFERENCE: IRA0408

REPORT NO: 118495

DATE RECEIVED: 1/9/08 at 1515

DATE ANALYZED: 1/14/08

SUBJECT: ANALYSIS OF WATER SAMPLE FOR ASBESTOS BY TEM

ACCREDITED: California Department of Health Services (ELAP-1119)

The water was UV-ozone treated to remove any microbial contamination as prescribed by the method since the sample arrived after the 48-hour holding time.

The sample, date and time of collection, ozonation and filtration are as follows:

<u>Sample #</u>	<u>Date/Time of Collection</u>	<u>Date/Time of ozonation</u>	<u>Date/Time of Filtration</u>
IRA0408-01	1/5/08 0830	1/10/08 0700-1000	1/10/08 1030

The sample was analyzed for fibers  $>10\mu\text{m}$  in length to conform with the drinking water document, EPA 600/94/134, 100.2. This regulation calls for an MCL (maximum contaminant level) of 7 MFL and an analytical sensitivity level of 0.2 MFL.

No asbestos structures  $>10\mu\text{m}$  in length were detected. The analytical sensitivity of 0.2 MFL was not reached due to the turbidity.

The results of the analyses and the detection limits are summarized on the following pages.

Respectfully submitted,

EMS LABORATORIES, INC.



B. M. Kolk  
Laboratory Director

BMK/ah

NOTE: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.

This report, from a NIST laboratory through NVLAP, must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

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

Any deviation or exclusion from the test method is noted in this cover letter.

Unless otherwise noted in this cover letter, the samples were received properly packaged, clearly identified and intact.



SUBCONTRACT ORDER

TestAmerica Irvine  
IRA0408

118495

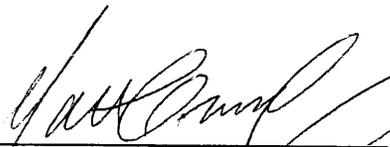
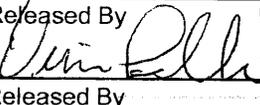
SENDING LABORATORY:

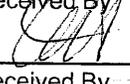
TestAmerica Irvine  
17461 Derian Avenue. Suite 100  
Irvine, CA 92614  
Phone: (949) 261-1022  
Fax: (949) 260-3297  
Project Manager: Joseph Doak

RECEIVING LABORATORY:

EMS Laboratories  
117 W. Bellevue Drive  
Pasadena, CA 91105  
Phone : (626) 568-4065  
Fax: (626) 796-5282  
Project Location: California  
Receipt Temperature: \_\_\_\_\_ °C      Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: IRA0408-01	Water		Sampled: 01/05/08 08:30	
Asbestos-TEM (100.2 - DW)	Present/Not Pr	01/16/08	01/07/08 08:30	Boeing, permit, J flags Out to EMS
Level 4 Data Package - Out	N/A	01/16/08	02/02/08 08:30	Boeing, permit, J flags
<i>Containers Supplied:</i>				
1 Liter Poly (A)				

  
 Released By \_\_\_\_\_ Date/Time 1/9/08 1135  
  
 Released By \_\_\_\_\_ Date/Time 1/9/08 1510

  
 Received By \_\_\_\_\_ Date/Time 1/9/08 1135  
  
 Received By \_\_\_\_\_ Date/Time 1-9-08 1510

# **APPENDIX G**

## **Section 55**

Outfall 009, January 24, 2008

MEC<sup>X</sup> Data Validation Reports



# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IRA2352

Prepared by

MEC<sup>X</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

**I. INTRODUCTION**

Task Order Title: Boeing SSFL NPDES  
 Contract Task Order: 1261.100D.00  
 Sample Delivery Group: IRA2352  
 Project Manager: B. Kelly  
 Matrix: Soil  
 QC Level: IV  
 No. of Samples: 1  
 No. of Reanalyses/Dilutions: 0  
 Laboratory: TestAmerica-Irvine

**Table 1. Sample Identification**

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009	IRA2352-01	30203-001, 8012538-01	Water	01/24/08 0830	200.8, 245.1, 900.0, 901.1, 903.0, 904.0, 905.0, 906.0, 1613, ASTM D-5174

**II. Sample Management**

No anomalies were observed regarding sample management. The sample in this SDG was received at TestAmerica-Irvine and Vista within the temperature limits of 4°C ±2°C. The sample was received above the temperature limit at Weck; however, mercury is not considered volatile. The sample was received above the temperature limit at Eberline; however, radiological samples are not required to be chilled. According to the case narrative for this SDG, the sample was received intact at all laboratories. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon arrival at Eberline and Vista. No custody seals were present upon receipt at Weck. If necessary, the client ID was added to the sample result summary by the reviewer.

---

### Data Qualifier Reference Table

---

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

---

### Qualification Code Reference Table

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

**Qualification Code Reference Table Cont.**

---

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

---

### III. Method Analyses

#### A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight  
Date Reviewed: March 1, 2008

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

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
  - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
  - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
  - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs  $\leq 20\%$  for the 16 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had no target compound detects above the EDL.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Nondetects are valid to the estimated detection limit (EDL).

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

Reviewed By: P. Meeks

Date Reviewed: March 4, 2008

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: The analytical holding times, 6 months for metals and 28 days for mercury, were met.
- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were  $\leq 5\%$ , and all masses of interest were calibrated to  $\leq 0.1$  amu and  $\leq 0.9$  amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110% for the ICP-MS metals and 85-115% for mercury. The cadmium 0.2 ppb check standard was recovered

above the control limit at 139%; however, total cadmium was not detected in the sample. All remaining check standard recoveries were within the control limits of 70-130%

- Blanks: There were no applicable detects in the method blanks or CCBs.
- Interference Check Samples: ICSA/B analyses were performed in association with the total metals analyses only. Recoveries were within the method-established control limits. Most analytes were reported in the 6020 ICSA solution; however, the reviewer was not able to ascertain if the detection was indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Evaluation of method accuracy was based on LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: All sample internal standard intensities were within 30-120% of the internal standard intensities measured in the initial calibration. The bracketing CCV and CCB internal standard intensities were within 80-120% of the internal standard intensities measured in the initial calibration.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

The reviewer noted that antimony was detected at a slightly higher concentration in the dissolved metals sample fraction. The difference between the antimony results is within the sensitivity limits of the analytical instrument and, therefore, the reviewer considered the two results to be equivalent.

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

## C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: March 3, 2008

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174*, and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. Aliquots for gross alpha, gross beta, radium-226, radium-228, strontium-90, and gamma spectroscopy were prepared within the five-day analytical holding time for unpreserved samples. The aliquot for total uranium was prepared within five days of collection.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

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

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The internal spike efficiency to default efficiency ratios was near 1, indicating that quenching did not occur.

The strontium chemical yield was at least 70% and was considered acceptable. The strontium continuing calibration results were within the laboratory control limits.

The radium-226 cell efficiencies were determined in September 2006. The radium-226 continuing calibration results were within the laboratory-established control limits. The radium-228 calibration utilized actinium-228 and was verified in February 2001. The radium-228 tracer, yttrium oxalate yields were greater than 70%.

The gamma spectroscopy geometry-specific, detector efficiencies were determined in September 1999 and February 2007. All analytes were determined at the maximum photopeak energy.

The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All calibration check standard recoveries were within 90-110% and were deemed acceptable.

- **Blanks:** There were no analytes detected in the method blank.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Reported nondetects are valid to the MDA.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

**Sample ID: IRA2352-01** *Outfall 009* **EPA Method 1613**

**Client Data**  
 Name: Test America-Irvine, CA  
 Project: IRA2352  
 Date Collected: 24-Jan-08  
 Time Collected: 0830

**Sample Data**  
 Matrix: Aqueous  
 Sample Size: 1.00 L

**Laboratory Data**  
 Lab Sample: 30203-001  
 QC Batch No.: 9917  
 Date Analyzed DB-5: 6-Feb-08  
 Date Received: 26-Jan-08  
 Date Extracted: 31-Jan-08  
 Date Analyzed DB-225: NA

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Labeled Standard	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.00000874			IS 13C-2,3,7,8-TCDD	70.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000104			13C-1,2,3,7,8-PeCDD	64.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000142			13C-1,2,3,4,7,8-HxCDD	88.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147			13C-1,2,3,6,7,8-HxCDD	87.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000139			13C-1,2,3,4,6,7,8-HpCDD	89.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000888			J	13C-OCDD	76.0	17 - 157	
OCDD	0.0000852				13C-2,3,7,8-TCDF	102	24 - 169	
2,3,7,8-TCDF	ND	0.00000664			13C-1,2,3,7,8-PeCDF	78.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000160			13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000117			13C-1,2,3,4,7,8-HxCDF	87.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000654			13C-1,2,3,6,7,8-HxCDF	83.3	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000709			13C-2,3,4,6,7,8-HxCDF	82.6	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000800			13C-1,2,3,7,8,9-HxCDF	84.5	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000104			13C-1,2,3,4,6,7,8-HpCDF	87.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000260			13C-1,2,3,4,7,8,9-HpCDF	83.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000115			13C-OCDF	82.2	17 - 157	
OCDF	ND	0.00000149			CRS 37Cl-2,3,7,8-TCDD	72.2	35 - 197	

**Totals**

Total TCDD	ND	0.00000176						
Total PeCDD	ND	0.00000297						
Total HxCDD	ND	0.00000330						
Total HpCDD	0.0000203							
Total TCDF	ND	0.00000664						
Total PeCDF	ND	0.00000170						
Total HxCDF	ND	0.00000192						
Total HpCDF	0.00000172							

**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 08-Feb-2008 13:08

*level JII*

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

Project ID: Routine Outfall 009

Report Number: IRA2352

Sampled: 01/24/08  
Received: 01/24/08

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IRA2352-01 (Outfall 009 - Water)										
Reporting Units: ug/l										
Antimony	J/DNQ	EPA 200.8	8A25068	0.20	2.0	0.87	1	01/25/08	01/25/08	J
Cadmium	U	EPA 200.8	8A25068	0.11	1.0	ND	1	01/25/08	01/25/08	
Copper		EPA 200.8	8A25068	0.75	2.0	4.6	1	01/25/08	01/25/08	
Lead		EPA 200.8	8A25068	0.30	1.0	1.3	1	01/25/08	01/25/08	
Thallium	U	EPA 200.8	8A25068	0.20	1.0	ND	1	01/25/08	01/25/08	

LEVEL LV

TestAmerica Irvine

Joseph Doak  
Project Manager

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

Project ID: Routine Outfall 009

Report Number: IRA2352

Sampled: 01/24/08

Received: 01/24/08

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
<b>Sample ID: IRA2352-01 (Outfall 009 - Water) - cont.</b>										
<b>Reporting Units: ug/l</b>										
Antimony	J/DNQ	EPA 200.8-Diss	8A24169	0.20	2.0	<b>0.92</b>	1	01/24/08	01/25/08	J
Cadmium	U	EPA 200.8-Diss	8A24169	0.11	1.0	ND	1	01/24/08	01/24/08	
Copper		EPA 200.8-Diss	8A24169	0.75	2.0	<b>3.6</b>	1	01/24/08	01/24/08	
Lead	J/DNQ	EPA 200.8-Diss	8A24169	0.30	1.0	<b>0.37</b>	1	01/24/08	01/24/08	J
Thallium	U	EPA 200.8-Diss	8A24169	0.20	1.0	ND	1	01/24/08	01/24/08	

LEVEL IV

TestAmerica Irvine

Joseph Doak  
Project Manager

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

Project ID: Routine Outfall 009

Report Number: IRA2352

Sampled: 01/24/08  
Received: 01/24/08

### Metals by EPA 200 Series Methods

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRA2352-01 (Outfall 009 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Mercury, Dissolved	EPA 245.1	W8A1053	0.050	0.20	ND	1	01/30/08	01/31/08	
Mercury, Total	EPA 245.1	W8A1053	0.050	0.20	ND	1	01/30/08	01/31/08	

LEVEL IV

TestAmerica Irvine

Joseph Doak  
Project Manager

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Eberline Services

ANALYSIS RESULTS

SDG <u>8683</u>	Client <u>TA IRVINE</u>
Work Order <u>R801161-01</u>	Contract <u>PROJECT# IRA2352</u>
Received Date <u>01/26/08</u>	Matrix <u>WATER</u>

Client	Lab	Sample ID	Collected	Analyzed	Nuclide	Results ± 2σ	Units	MDA
Client <u>Sample ID</u> Outfall 009 IRA2352-01	8683-001	01/24/08	02/06/08	02/06/08	GrossAlpha	0.769 ± 0.39	pCi/L	0.40
			02/06/08	02/06/08	Gross Beta	1.47 ± 0.55	pCi/L	0.84
			02/04/08	02/04/08	Ra-228	-0.021 ± 0.17	pCi/L	0.46
			01/31/08	01/31/08	K-40 (G)	U	pCi/L	12
			01/31/08	01/31/08	Cs-137 (G)	U	pCi/L	0.61
			02/15/08	02/15/08	H-3	-89.1 ± 92	pCi/L	160
			02/11/08	02/11/08	Ra-226	-0.059 ± 0.40	pCi/L	0.76
			02/07/08	02/07/08	Sr-90	0.195 ± 0.45	pCi/L	0.97
			02/19/08	02/19/08	Total U	0.108 ± 0.015	pCi/L	0.022

J/R, Q  
U  
↓

LEVEL IV

PM 3/5/08

Certified by <u>[Signature]</u>
Report Date <u>02/22/08</u>
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