

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8396 FAX (619) 505-9689  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2320 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Brouwny Kelly

Project ID: Routine Outfall 004  
 Report Number: IPA1192

Sampled: 01/14/06  
 Received: 01/15/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA1192-01 (Outfall 004 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A16092	0.050	2.0	1.2	1	01/16/06	01/17/06	J J
Cadmium	EPA 200.8	6A16092	0.025	1.0	0.080	1	01/16/06	01/17/06	J J
Copper	EPA 200.8	6A16092	0.25	2.0	1.9	1	01/16/06	01/17/06	J
Lead	EPA 200.8	6A16092	0.040	1.0	0.69	1	01/16/06	01/17/06	J
Mercury	EPA 245.1	6A17070	0.050	0.20	0.051	1	01/17/06	01/17/06	J

Rev Qual | Qual Code  
 J J | DNS  
 J J | 8 J  
 J |  
 J |

LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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# **APPENDIX G**

## **Section 21**

Outfall 005, January 01, 2006

Del Mar Analytical Laboratory Report



**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 005

Sampled: 01/01/06  
Received: 01/01/06  
Issued: 01/18/06 08:29

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.*

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

**SAMPLE CROSS REFERENCE**

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

LABORATORY ID	CLIENT ID	MATRIX
IPA0005-01	Outfall 005	Water

Reviewed By:

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager





MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005

Report Number: IPA0005

Sampled: 01/01/06

Received: 01/01/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0005-01 (Outfall 005 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.18	2.0	5.9	1	01/04/06	01/05/06	
Cadmium	EPA 200.8	6A04084	0.015	1.0	0.052	1	01/04/06	01/05/06	J
Copper	EPA 200.8	6A04084	0.49	2.0	2.2	1	01/04/06	01/05/06	B
Lead	EPA 200.8	6A04084	0.040	1.0	0.72	1	01/04/06	01/05/06	J
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	

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Michele Chamberlin  
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005

Report Number: IPA0005

Sampled: 01/01/06

Received: 01/01/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0005-01 (Outfall 005 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A01004	2.6	5.0	160	10	01/01/06	01/01/06	
Nitrate/Nitrite-N	EPA 300.0	6A01004	0.72	2.6	51	10	01/01/06	01/01/06	
Oil & Grease	EPA 413.1	6A06048	0.91	4.9	2.3	1	01/06/06	01/06/06	J
Sulfate	EPA 300.0	6A01004	1.8	5.0	76	10	01/01/06	01/01/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	980	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05089	10	10	25	1	01/05/06	01/05/06	
<b>Sample ID: IPA0005-01RE1 (Outfall 005 - Water)</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A12052	1.5	5.0	160	10	01/12/06	01/12/06	
Total Dissolved Solids	SM2540C	6A10114	10	10	900	1	01/06/06	01/06/06	

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Michele Chamberlin  
Project Manager

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 005  Report Number: IPA0005	Sampled: 01/01/06 Received: 01/01/06
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**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 005 (IPA0005-01) - Water</b> EPA 300.0	2	01/01/2006 09:06	01/01/2006 15:25	01/01/2006 17:30	01/01/2006 21:46

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 Project Manager

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MWH-Pasadena/Boeing Project ID: Routine Outfall 005  
300 North Lake Avenue, Suite 1200 Report Number: IPA0005  
Pasadena, CA 91101  
Attention: Bronwyn Kelly  
Sampled: 01/01/06  
Received: 01/01/06

**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: 6A03072 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03072-BLK1)</b>											
Mercury	ND	0.20	0.063	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03072-BS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03072-MS1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	7.95	0.20	0.063	ug/l	8.00	ND	99	70-130			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03072-MSD1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130	1	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
						<b>Source: IOL2694-49</b>					
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

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Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing Project ID: Routine Outfall 005  
300 North Lake Avenue, Suite 1200 Report Number: IPA0005  
Pasadena, CA 91101  
Attention: Bronwyn Kelly  
Sampled: 01/01/06  
Received: 01/01/06

**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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 005  
 Report Number: IPA0005

Sampled: 01/01/06  
 Received: 01/01/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A01004 Extracted: 01/01/06</b>											
<b>Blank Analyzed: 01/01/2006 (6A01004-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/01/2006 (6A01004-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			M-3
Sulfate	9.56	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 01/01/2006 (6A01004-MS1) Source: IPA0003-01</b>											
Sulfate	14.4	0.50	0.45	mg/l	10.0	5.1	93	80-120			
<b>Matrix Spike Dup Analyzed: 01/01/2006 (6A01004-MSD1) Source: IPA0003-01</b>											
Sulfate	14.8	0.50	0.45	mg/l	10.0	5.1	97	80-120	3	20	
<b>Batch: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1) Source: IPA0005-01</b>											
Total Dissolved Solids	981	10	10	mg/l		980			0	10	
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05089-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005

Report Number: IPA0005

Sampled: 01/01/06  
Received: 01/01/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>LCS Analyzed: 01/05/2006 (6A05089-BS1)</b>											
Total Suspended Solids	979	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05089-DUP1)</b>											
						<b>Source: IPA0012-01</b>					
Total Suspended Solids	458	10	10	mg/l		350			27	10	R-3
<b>Batch: 6A06048 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	
<b>Batch: 6A10114 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A10114-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A10114-BS1)</b>											
Total Dissolved Solids	948	10	10	mg/l	1000		95	90-110			
<b>Duplicate Analyzed: 01/06/2006 (6A10114-DUP1)</b>											
						<b>Source: IPA0005-01RE1</b>					
Total Dissolved Solids	946	10	10	mg/l		900			5	10	

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005  
Report Number: IPA0005

Sampled: 01/01/06  
Received: 01/01/06

**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: 6A12052 Extracted: 01/12/06</b>											
<b>Blank Analyzed: 01/12/2006 (6A12052-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
<b>LCS Analyzed: 01/12/2006 (6A12052-BS1)</b>											
Chloride	5.09	0.50	0.15	mg/l	5.00		102	90-110			M-3

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Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005

Report Number: IPA0005

Sampled: 01/01/06  
Received: 01/01/06

**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
IPA0005-01	413.1 Oil and Grease	Oil & Grease	mg/l	2.30	4.9	15
IPA0005-01	Antimony-200.8	Antimony	ug/l	5.90	2.0	6.00
IPA0005-01	Cadmium-200.8	Cadmium	ug/l	0.052	1.0	4.00
<b>IPA0005-01</b>	<b>Chloride - 300.0</b>	<b>Chloride</b>	<b>mg/l</b>	<b>160</b>	<b>5.0</b>	<b>150</b>
IPA0005-01	Copper-200.8	Copper	ug/l	2.20	2.0	14
IPA0005-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
<b>IPA0005-01</b>	<b>Nitrogen, NO3+NO2 -N</b>	<b>Nitrate/Nitrite-N</b>	<b>mg/l</b>	<b>51</b>	<b>2.6</b>	<b>10.00</b>
IPA0005-01	Sulfate-300.0	Sulfate	mg/l	76	5.0	250
<b>IPA0005-01</b>	<b>TDS - SM 2540C</b>	<b>Total Dissolved Solids</b>	<b>mg/l</b>	<b>980</b>	<b>10</b>	<b>850</b>
IPA0005-01RE1	Chloride - 300.0	Chloride	mg/l	160	5.0	150
IPA0005-01RE1	TDS - SM 2540C	Total Dissolved Solids	mg/l	900	10	850

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Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 005  
Report Number: IPA0005

Sampled: 01/01/06  
Received: 01/01/06

### 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 005  Report Number: IPA0005	Sampled: 01/01/06 Received: 01/01/06
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### Certification Summary

#### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).

#### Subcontracted Laboratories

**Alta 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: IPA0005-01

Analysis Performed: EDD + Level 4  
Samples: IPA0005-01

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Michele Chamberlin  
Project Manager

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CHAIN OF CUSTODY FORM

IPAA00045

<b>Client Name/Address:</b> MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		<b>Project:</b> Boeing-SSFL NPDES Routine Outfall 005 Stormwater at FSDF-1		<b>ANALYSIS REQUIRED</b> Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg TCDD (and all congeners) Oil & Grease (EPA 413.1) Cr, SO4, NO3+NO2-N TDS, TSS		Field readings: Temp = 56 pH = 7.80 Comments	
<b>Project Manager:</b> Bronwyn Kelly Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Sampling Date/Time: 11-09-06		Preservative: HNO3		Bottle #: 1A	
Sample Description: Outfall 005		Container Type: Poly-1L		# of Cont.: 1		Matrix: W	
Sample Description: Outfall 005-Dup		Container Type: Poly-1L		# of Cont.: 1		Matrix: W	
Sample Description: Outfall 005		Container Type: Glass-Amber		# of Cont.: 2		Matrix: W	
Sample Description: Outfall 005		Container Type: Glass-Amber		# of Cont.: 2		Matrix: W	
Sample Description: Outfall 005		Container Type: Poly-500 ml		# of Cont.: 2		Matrix: W	
Sample Description: Outfall 005		Container Type: Poly-500 ml		# of Cont.: 2		Matrix: W	
Date/Time: 11-09-06		Date/Time: 11-09-06		Date/Time: 11-09-06		Date/Time: 11-09-06	
Relinquished By: [Signature]		Date/Time: 11-09-06		Received By: [Signature]		Date/Time: 11-09-06	
Relinquished By: [Signature]		Date/Time: 11-09-06		Received By: [Signature]		Date/Time: 11-09-06	
Relinquished By: [Signature]		Date/Time: 11-09-06		Received By: [Signature]		Date/Time: 11-09-06	
Turn around Time: (check) 24 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 48 Hours <input type="checkbox"/> 10 Days <input type="checkbox"/> 72 Hours <input type="checkbox"/> Normal <input checked="" type="checkbox"/> Perchlorate Only 72 Hours <input type="checkbox"/> Metals Only 72 Hours <input type="checkbox"/> Sample Integrity (Check) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> On Ice: <input checked="" type="checkbox"/>		11106 1925		1315		1315	



January 16, 2006

**Alta Project I.D.: 27137**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0005". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

Alta Lab. ID

Client Sample ID

27137-001

IPA0005

## SECTION II

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06		
				Date Analyzed DB-225:	NA		
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	0.000000671		13C-2,3,7,8-TCDD	84.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000560		13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149		13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147		13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145		13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		13C-OCDD	40.1	17 - 157	
OCDD	ND	0.000000535		13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.000000546		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885		13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511		13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518		13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522		13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675		13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		13C-OCDF	49.6	17 - 157	
OCDF	ND	0.000000360		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000671					
Total PeCDD	ND	0.000000560					
Total HxCDD	ND	0.00000147					
Total HpCDD	ND	0.00000146					
Total TCDF	ND	0.000000546					
Total PeCDF	ND	0.000000997					
Total HxCDF	ND	0.000000553					
Total HpCDF	ND	0.000000692					
<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: JMH

Approved By: Martha M. Maier 16-Jan-2006 11:43



OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ug/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.2	25 - 104
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 16-Jan-2006 11:43

Sample ID: IPA0005		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample:	27137-001		
Project	IPA0005	Sample Size:	0.925 L	QC Hatch No.:	7632		
Date Collected	1-Jan-06			Date Analyzed DB-5:	12-Jan-06		
Time Collected	0906			Date Analyzed DB-225:	NA		
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	0.000000816		IS 13C-2,3,7,8-TCDD	65.7	25 - 161	
1,2,3,7,8-PeCDD	ND	0.000000897		13C-1,2,3,7,8-PeCDD	66.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000126		13C-1,2,3,4,7,8-HxCDD	65.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000125		13C-1,2,3,6,7,8-HxCDD	62.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000123		13C-1,2,3,4,6,7,8-HpCDD	64.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000326			13C-OCDD	40.7	17 - 157	
OCDD	0.0000311			13C-2,3,7,8-TCDF	61.4	24 - 169	J
2,3,7,8-TCDF	ND	0.000000735		13C-1,2,3,7,8-PeCDF	59.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000131		13C-2,3,4,7,8-PeCDF	61.7	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000112		13C-1,2,3,4,7,8-HxCDF	62.6	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000915		13C-1,2,3,6,7,8-HxCDF	63.1	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000864		13C-2,3,4,6,7,8-HxCDF	64.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000971		13C-1,2,3,7,8,9-HxCDF	66.3	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000133		13C-1,2,3,4,6,7,8-HpCDF	57.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000176		13C-1,2,3,4,7,8,9-HpCDF	66.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000169		13C-OCDF	49.3	17 - 157	
OCDF	ND		0.00000839	CRS 37Cl-2,3,7,8-TCDD	75.9	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000816					
Total PeCDD	ND	0.000000897					
Total HxCDD	ND	0.00000124					
Total HpCDD	0.00000631						
Total TCDF	ND	0.000000735					
Total PeCDF	ND	0.00000121					
Total HxCDF	ND	0.00000101					
Total HpCDF	ND	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: JMH  
Approved By: Martha M. Maier  
16-Jan-2006 11:43

**APPENDIX**

## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<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



17461 Darian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4567 Fax (909) 370-1046  
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689  
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2620 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

**SUBCONTRACT ORDER - PROJECT # IPA0005**

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Darian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106  <i>27137</i>  <i>0.7°C</i>

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

Analysis	Expiration	Comments
Sample ID: IPA0005-01 Water	Sampled: 01/01/06 09:06	Instant Notification
1613-Dioxin-HR-Alta	01/08/06 09:06	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	01/29/06 09:06	Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IPA0005-01C)		
1 L Amber (IPA0005-01D)		

**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): \_\_\_\_\_

Released By: *[Signature]* Date: *1/3/06* Time: \_\_\_\_\_ Received By: *Bethuna A. Benedict* Date: *1/4/06* Time: *0925*

Released By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27137

Samples Arrival:	Date/Time 1/4/06 0935	Initials: BBB	Location: WR-2			
Logged In:	Date/Time 1/5/06 0930	Initials: BBB	Location: WR-2			
Delivered By:	<u>FedEx</u>	UPS	Cal	DHL	Hand Delivered	Other
Preservation:	<u>Ice</u>	Blue Ice	Dry Ice	None		
Temp °C	C.7	Time:	0945	Thermometer ID:	DT-20	

	YES	NO	NA		
Adequate Sample Volume Received?	✓				
Holding Time Acceptable?	✓				
Shipping Container(s) Intact?	✓				
Shipping Custody Seals Intact?	✓				
Shipping Documentation Present?	✓				
Airbill					
Trk #	792479034183				
Sample Container Intact?	✓				
Sample Custody Seals Intact?		✓	✓		
Chain of Custody / Sample Documentation Present?					
COC Anomaly/Sample Acceptance Form completed?			✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓		
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container	<u>None</u>	
Shipping Container	Alta	<u>Client</u>	Retain	<u>Return</u>	Dispose

Comments:

## **Section 22**

Outfall 005, January 01, 2006

AMEC Data Validation Reports



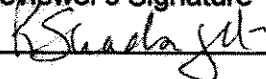
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

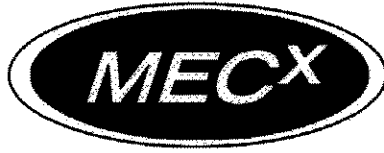
Package ID B4DF8  
 Task Order 1261.001D.01  
 SDG No. IPA0005

No. of Analyses 1

Laboratory Alta  
 Reviewer K. Shadowlight  
 Analysis/Method Dioxin/Furan by Method 1613

Date: February 10, 2006  
 Reviewer's Signature  


ACTION ITEMS <sup>a</sup>	
<b>1. Case Narrative Deficiencies</b>	_____
<b>2. Out of Scope Analyses</b>	_____
<b>3. Analyses Not Conducted</b>	_____
<b>4. Missing Hardcopy Deliverables</b>	_____
<b>5. Incorrect Hardcopy Deliverables</b>	_____
<b>6. Deviations from Analysis Protocol, e.g.,</b>	<b>Detects below the laboratory lower calibration level were qualified as estimated.</b>
Holding Times	<b>Qualification was assigned for an EMPC.</b>
GC/MS Tune/Inst. Performance	_____
Calibration	_____
Method blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification	_____
Quantitation	_____
System Performance	_____
COMMENTS <sup>b</sup>	_____
	_____
	_____
	_____
	_____
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 005

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA0005

Prepared by  
MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA0005  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 10, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 005	IPA0005-01	27137-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however no sample custody seals were present. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

#### 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on

the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. Any reported estimated maximum possible concentration (EMPC) was qualified as an estimated nondetect, "UJ." No further qualifications were required.

EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Sample ID: IPA0005	Del Mar Analytical, Irvine	Matrix: Aqueous	Sample Size: 0.925 L	Lab Sample: 27137-001	Date Received: 4-Jan-06
Project: IPA0005	1-Jan-06	EMPC <sup>b</sup>	Qualifiers	QC Batch No.: 7632	Date Extracted: 8-Jan-06
Date Collected: 0906				Date Analyzed (99-5): 12-Jan-06	Date Analyzed (01-225): N/A
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	Qualifiers
2,3,7,8-TCDD	ND	0.000000816			IS 13C-2,3,7,8-TCDD 65.7 25 161
1,2,3,7,8-PeCDD	ND	0.000000897			13C-1,2,3,7,8-PeCDD 66.4 25 181
1,2,3,4,7,8-HxCDD	ND	0.00000126			13C-1,2,3,4,7,8-HxCDD 65.9 32 141
1,2,3,6,7,8-HxCDD	ND	0.00000125			13C-1,2,3,6,7,8-HxCDD 62.6 28 130
1,2,3,7,8,9-HxCDD	ND	0.00000123			13C-1,2,3,4,6,7,8-HpCDD 64.6 23 140
1,2,3,4,6,7,8-HpCDD	0.00000326				13C-OCDD 40.7 17 157
OCDD	0.0000311				13C-2,3,7,8-TCDF 61.4 24 169
2,3,7,8-TCDF	ND	0.000000735			13C-1,2,3,7,8-PeCDF 59.9 24 185
1,2,3,7,8-PeCDF	ND	0.00000131			13C-2,3,4,7,8-PeCDF 61.7 21 178
2,3,4,7,8-PeCDF	ND	0.00000112			13C-1,2,3,4,7,8-HxCDF 62.6 26 152
1,2,3,4,7,8-HxCDF	ND	0.000000915			13C-1,2,3,6,7,8-HxCDF 63.1 26 123
1,2,3,6,7,8-HxCDF	ND	0.000000864			13C-2,3,4,6,7,8-HxCDF 64.1 28 136
2,3,4,6,7,8-HxCDF	ND	0.000000971			13C-1,2,3,7,8,9-HxCDF 66.3 29 147
1,2,3,7,8,9-HxCDF	ND	0.00000133			13C-1,2,3,4,6,7,8-HpCDF 57.8 28 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000176			13C-1,2,3,4,7,8,9-HpCDF 66.7 26 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000169			13C-OCDF 49.3 17 157
OCDF	ND		0.00000839		CRS 37C1-2,3,7,8-TCDD 75.9 35 197
<b>Totals</b>					
Total TCDD	ND	0.000000816			
Total PeCDD	ND	0.000000897			
Total HxCDD	ND	0.00000124			
Total HpCDD	0.00000631				
Total TCDF	ND	0.000000735			
Total PeCDF	ND	0.00000121			
Total HxCDF	ND	0.00000101			
Total HpCDF	ND	0.00000172			

Analyst: JMH

Approved By: Martha M. Mater 16-Jan-2006 11:43

Level IV



**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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


Package ID B4MT9  
 Task Order 1261.001D.01  
 SDG No. IPA0005

No. of Analyses 1

Laboratory Del Mar Analytical

Date: February 3, 2006

Reviewer P. Meeks

Reviewer's Signature  


Analysis/Method Metals

<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	  
2. Out of Scope Analyses	  
3. Analyses Not Conducted	  
4. Missing Hardcopy Deliverables	  
5. Incorrect Hardcopy Deliverables	  
6. Deviations from Analysis	
Protocol, e.g.,	Analytes detected below the reporting limit were qualified as estimated.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 005

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0005

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0005  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 3, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 005	IPA0005-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead or antimony, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No

transcription errors or calculation errors were noted. Cadmium and lead detected below the reporting limit were qualified as estimated, "J," and annotated with "DNQ," in accordance with the requirements of the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 005 Report Number: IPA0005	Sampled: 01/01/06 Received: 01/01/06
--	---	---

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Raw Qual	Qual Code
Sample ID: IPA0005-01 (Outfall 005 - Water)										
Reporting Units: ug/l										
Antimony	EPA 200.8	6A04084	0.18	2.0	5.9	1	01/04/06	01/05/06	J J	DNQ
Cadmium	EPA 200.8	6A04084	0.015	1.0	0.052	1	01/04/06	01/05/06	B	DNQ
Copper	EPA 200.8	6A04084	0.49	2.0	2.2	1	01/04/06	01/05/06	J J	DNQ
Lead	EPA 200.8	6A04084	0.040	1.0	0.72	1	01/04/06	01/05/06	U	
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06		

LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4WC1  
 Task Order 1261.001D.01  
 SDG No. IPA0005

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method General Minerals

Date: February 4, 2006  
 Reviewer's Signature  


<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	
Protocol, e.g.,	Reanalysis results rejected in favor of original results.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 005

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPA0005

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IOJ0411  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 4, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0*, *Standard Methods for the Examination of Water and Wastewater Method SM2540-C*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 005	IPA0005-01	Water	General Minerals
Outfall 005 RE1	IPA0005-01 RE1	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary.

Per a request from MWH personnel, Outfall 005 was reanalyzed for chloride and TDS. As the laboratory did not append the client ID of the reanalysis with "RE1," the reviewer added this information to the Form I. No sample qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the dates of collection with the dates of analysis. The 28-day sulfate and chloride the seven-day TDS, and the 48-hour nitrate analytical holding times were met. No qualifications were required.

### 2.2 CALIBRATION

For chloride, sulfate, and nitrate, the initial calibration correlation coefficients were  $\geq 0.995$  and the ICV and CCV recoveries were within the control limits of 90-110%. Balance calibration logs were included in the data package for TDS. No qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses. Raw data was reviewed to verify the blank data. No qualifications were required.

## 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The reported LCS recoveries were within the laboratory-established control limits. No LCS recovery was listed for nitrate; however, the reviewer checked the raw data and found that nitrate was spiked into the LCS and was recovered acceptably. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

Duplicate analyses were performed on Outfall 005 and Outfall 005 RE1 for TDS only. The RPD was less than the laboratory control limit of  $\leq 20\%$ . No qualifications were required.

## 2.6 MATRIX SPIKES

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of method accuracy was based on LCS results. No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Chloride, nitrate, and sulfate were reported from 10 $\times$  dilutions. The chloride and sulfate MDLs, and the nitrate MDL and reporting limit were not correctly adjusted for the dilutions; therefore, the reviewer hand corrected the Form I.

As the reanalysis results for chloride and TDS were similar to the original results, the reviewer rejected, "R," the reanalysis results, Outfall 005 RE1, in favor of the original results, Outfall 005. No further qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

*DATA VALIDATION REPORT*

Project: NPDES  
SDG: IPA0005  
Analysis: Gen. Min.

---

There were no field duplicate pairs associated with this SDG.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 005 Report Number: IPA0005	Sampled: 01/01/06 Received: 01/01/06
--	---	---

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Qual Code
Sample ID: IPA0005-01 (Outfall 005 - Water) - cont.										
Reporting Units: mg/l										
Chloride	EPA 300.0	6A01004	281.5	5.0	160	10	01/01/06	01/01/06		\$
Nitrate/Nitrite-N	EPA 300.0	6A01004	2720.40	251.5	51	10	01/01/06	01/01/06		\$
Oil & Grease	EPA 413.1	6A06048	0.91	4.9	2.3	1	01/06/06	01/06/06	* J	
Sulfate	EPA 300.0	6A01004	184.5	5.0	76	10	01/01/06	01/01/06		\$
Total Dissolved Solids	SM2540C	6A03093	10	10	980	1	01/03/06	01/03/06		
Total Suspended Solids	EPA 160.2	6A05089	10	10	25	1	01/05/06	01/05/06	*	
Sample ID: IPA0005-01RE1 (Outfall 005 - Water) Outfall 005 RE1										
Reporting Units: mg/l										
Chloride	EPA 300.0	6A12052	1.5	5.0	160	10	01/12/06	01/12/06	R	D
Total Dissolved Solids	SM2540C	6A10114	10	10	900	1	01/06/06	01/06/06	R	D

pm 2/4/06

\* Analysis not validated

*MIC*  
02-03-06

LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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IPA0005 <Page 3 of 12>



# **APPENDIX G**

## **Section 23**

Outfall 006, January 01, 2006

Del Mar Analytical Laboratory Report



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### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project: Routine Outfall 006

Sampled: 01/01/06  
 Received: 01/01/06  
 Issued: 01/16/06 09:51

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. 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 3°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical 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**  
 IPA0003-01

**CLIENT ID**  
 Outfall 006

**MATRIX**  
 Water

Reviewed By:

**Del Mar Analytical, Irvine**  
 Amy Windham For Michele Chamberlin  
 Project Manager



# Del Mar Analytical

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0003-01 (Outfall 006 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.18	2.0	5.0	1	01/04/06	01/05/06	
Cadmium	EPA 200.8	6A04084	0.015	1.0	ND	1	01/04/06	01/05/06	
Copper	EPA 200.8	6A04084	0.49	2.0	3.0	1	01/04/06	01/05/06	B
Lead	EPA 200.8	6A04084	0.040	1.0	0.34	1	01/04/06	01/05/06	J
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06

Received: 01/01/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0003-01 (Outfall 006 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A01004	1.3	2.5	48	5	01/01/06	01/01/06	
Nitrate/Nitrite-N	EPA 300.0	6A01004	0.072	0.26	0.13	1	01/01/06	01/01/06	J
Oil & Grease	EPA 413.1	6A06048	0.91	4.9	1.6	1	01/06/06	01/06/06	J
Sulfate	EPA 300.0	6A01004	0.18	0.50	5.1	1	01/01/06	01/01/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	200	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05089	10	10	ND	1	01/05/06	01/05/06	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

**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 006 (IPA0003-01) - Water</b> EPA 300.0	2	01/01/2006 09:25	01/01/2006 15:25	01/01/2006 17:30	01/01/2006 18:42

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 Amy Windham For Michele Chamberlin  
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

## 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: 6A03072 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03072-BLK1)</b>											
Mercury	ND	0.20	0.063	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03072-BS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03072-MS1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	7.95	0.20	0.063	ug/l	8.00	ND	99	70-130			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03072-MSD1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130	1	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
						<b>Source: IOL2694-49</b>					
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

## 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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

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Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06

Received: 01/01/06

## 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: 6A01004 Extracted: 01/01/06</b>											
<b>Blank Analyzed: 01/01/2006 (6A01004-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/01/2006 (6A01004-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			M-3
Sulfate	9.56	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 01/01/2006 (6A01004-MS1)</b>											
						<b>Source: IPA0003-01</b>					
Sulfate	14.4	0.50	0.45	mg/l	10.0	5.1	93	80-120			
<b>Matrix Spike Dup Analyzed: 01/01/2006 (6A01004-MSD1)</b>											
						<b>Source: IPA0003-01</b>					
Sulfate	14.8	0.50	0.45	mg/l	10.0	5.1	97	80-120	3	20	
<b>Batch: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1)</b>											
						<b>Source: IPA0005-01</b>					
Total Dissolved Solids	981	10	10	mg/l		980			0	10	
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05089-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 006  
 Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

**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: 6A05089 Extracted: 01/05/06</u></b>											
<b>LCS Analyzed: 01/05/2006 (6A05089-BS1)</b>											
Total Suspended Solids	979	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05089-DUP1)</b>											
						<b>Source: IPA0012-01</b>					
Total Suspended Solids	458	10	10	mg/l		350			27	10	R-3
<b><u>Batch: 6A06048 Extracted: 01/06/06</u></b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	

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Report Number: IPA0003

Sampled: 01/01/06  
Received: 01/01/06

### 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
IPA0003-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.60	4.9	15
IPA0003-01	Antimony-200.8	Antimony	ug/l	5.00	2.0	6.00
IPA0003-01	Cadmium-200.8	Cadmium	ug/l	0	1.0	4.00
IPA0003-01	Chloride - 300.0	Chloride	mg/l	48	2.5	150
IPA0003-01	Copper-200.8	Copper	ug/l	3.00	2.0	14
IPA0003-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPA0003-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.13	0.26	10.00
IPA0003-01	Sulfate-300.0	Sulfate	mg/l	5.10	0.50	250
IPA0003-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	200	10	850

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Report Number: IPA0003

Sampled: 01/01/06  
Received: 01/01/06

### 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Project ID: Routine Outfall 006

Report Number: IPA0003

Sampled: 01/01/06  
 Received: 01/01/06

## Certification Summary

### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

### Subcontracted Laboratories

**Alta 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: IPA0003-01

Analysis Performed: EDD + Level 4  
 Samples: IPA0003-01

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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January 16, 2006

**Alta Project I.D.: 27133**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0003". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

Alta Lab. ID

Client Sample ID

27133-001

IPA0003-01

**SECTION II**



Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001			
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06			
				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	0.000000671			IS 13C-2,3,7,8-TCDD	84.0	25 - 161	
1,2,3,7,8-PeCDD	ND	0.000000560			13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149			13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147			13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145			13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146			13C-OCDD	40.1	17 - 157	
OCDD	ND	0.00000535			13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.000000546			13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112			13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885			13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511			13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518			13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522			13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675			13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8,9-HpCDF	ND	0.000000764			13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622			13C-OCDF	49.6	17 - 157	
OCDF	ND	0.000000360			CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>								
Total TCDD	ND	0.000000671						
Total PeCDD	ND	0.000000560						
Total HxCDD	ND	0.00000147						
Total HpCDD	ND	0.00000146						
Total TCDF	ND	0.000000546						
Total PeCDF	ND	0.000000997						
Total HxCDF	ND	0.000000553						
Total HpCDF	ND	0.000000692						

**Footnotes**

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

Analyst: JMH      Approved By: Martha M. Maier      16-Jan-2006 11:31

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-1CDD	66.2	25 - 164
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-1CDD	81.7	35 - 197

Analyst: JMH  
Approved By: Martha M. Maier  
16-Jan-2006 11:31

**EPA Method 1613**

**Sample ID: IPA0003-01**

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27133-001
Project:	IPA0003	Sample Size:	0.927 L	QC Batch No.:	7632
Date Collected:	1-Jan-06			Date Analyzed DB-5:	12-Jan-06
Time Collected:	0925			Date Analyzed DB-225:	NA

Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	%R	LCL-UCL <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000496			79.0	25 - 161	
1,2,3,7,8-PeCDD	ND	0.000000585			79.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000128			76.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000137			69.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000132			68.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000662			J	41.2	17 - 157	
OCDD	0.0000757				78.9	24 - 169	
2,3,7,8-TCDF	ND	0.000000526			79.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000967			81.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000840			72.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000940			70.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000871			75.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000926			75.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000134			62.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000207			69.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000207			49.1	17 - 157	
OCDF	0.0000166			J	83.4	35 - 197	

Totals	Footnotes						
Total TCDD	ND	0.000000496					a. Sample specific estimated detection limit.
Total PeCDD	ND	0.000000585					b. Estimated maximum possible concentration.
Total HxCDD	ND	0.00000132					c. Method detection limit.
Total HpCDD	0.0000144						d. Lower control limit - upper control limit.
Total TCDF	ND	0.000000526					
Total PeCDF	ND	0.000000901					
Total HxCDF	ND	0.00000101					
Total HpCDF	ND	0.00000206					

Analyst: DMS  
Approved By: Martha M. Maier  
16-Jan-2006 11:31

**APPENDIX**

## DATA QUALIFIERS & ABBREVIATIONS

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

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

**CERTIFICATIONS**

<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



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 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9889  
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

## SUBCONTRACT ORDER - PROJECT # IPA0003

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlain	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 1.5em; font-family: cursive;">27133</div> <div style="text-align: right; font-size: 1.5em; font-family: cursive;">0.9°C</div>

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

Analysis	Expiration	Comments
Sample ID: IPA0003-01 Water	Sampled: 01/01/06 09:25	Instant Notification
1613-Dioxin-HR-Alta	01/08/06 09:25	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	01/29/06 09:25	Excel EDD email to pm, include Std logs for Lvl IV
Containers Supplied:		
1 L Amber (IPA0003-01C)		
1 L Amber (IPA0003-01D)		

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp):	_____

Released By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	1/3/06		<i>Bethnaia Benedict</i>	1/4/06	0935

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27133

Samples Arrival:	Date/Time 1/4/06 0935	Initials: PAB	Location: WR-2
Logged In:	Date/Time 1/4/06 1519	Initials: PAB	Location: WR-2
Delivered By:	<u>FedEx</u> UPS	Cal	DHL Hand Delivered Other
Preservation:	<u>Ice</u> Blue Ice	Dry Ice	None
Temp °C	0.9	Time: 0940	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk # 7924 7903 4161	✓		
Sample Container Intact?			✓
Sample Custody Seals Intact?	✓		
Chain of Custody / Sample Documentation Present?		✓	
COC Anomaly/Sample Acceptance Form completed?			✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container <u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain <u>Return</u> Dispose

Comments:





# **APPENDIX G**

## **Section 24**

Outfall 006, January 01, 2006  
AMEC Data Validation Reports





# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 006

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0003

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0003  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 3, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 006	IPA0003-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead or antimony, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No



*DATA VALIDATION REPORT*

---

transcription errors or calculation errors were noted. Lead detected below the reporting limit was qualified as estimated, "J," and annotated with "DNQ," in accordance with the requirements of the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



# Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 006 Report Number: IPA0003	Sampled: 01/01/06 Received: 01/01/06
--	---	---

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0003-01 (Outfall 006 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.18	2.0	5.0	1	01/04/06	01/05/06	Raw Qual   Qual Code
Cadmium	EPA 200.8	6A04084	0.015	1.0	ND	1	01/04/06	01/05/06	U
Copper	EPA 200.8	6A04084	0.49	2.0	3.0	1	01/04/06	01/05/06	B
Lead	EPA 200.8	6A04084	0.040	1.0	0.34	1	01/04/06	01/05/06	J J
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	U   DNQ

LEVEL IV

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

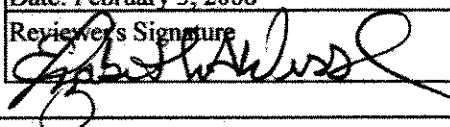
*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.*

IPA0003 <Page 2 of 11>

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4DF2  
 Task Order 1261.001.01  
 SDG No. IPA0003

No. of Analyses 7/1  
 Date: February 3, 2006  
 Reviewer's Signature 

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxins/Furans by 1613

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardecopy Deliverables	
5. Incorrect Hardecopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: --estimated values between the RL and the MDL
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 006

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA0003

Prepared by  
MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title:	NPDES
Contract Task Order:	1261.001.01
Sample Delivery Group:	IPA0003
Project Manager:	P. Costa
Matrix:	Water
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Reviewer:	E. Wessling
Date of Review:	February 2, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Sample ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 006	IPA0003-01	27133-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received within the temperature limits of 4°C ±2°C or slightly below. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however not sample custody seals were present. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

#### 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. The confirmation ICAL was analyzed on VG-6 on 4/29/2005. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.



## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG. No qualification was required.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No qualifications were required.

Sample ID: IPA0003-01		EPA Method 1613						
Client Data		Laboratory Data						
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 27133-001	Date Received: 4-Jan-06					
Project: IPA0003	Sample Size: 0.927 L	QC Batch No.: 7632	Date Extracted: 8-Jan-06					
Date Collected: 1-Jan-06		Date Analyzed DB-5: 12-Jan-06	Date Analyzed DB-235: N/A					
Time Collected: 0923								
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	0.000000496			IS 13C-2,3,7,8-TCDD	79.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000585			13C-1,2,3,7,8-PeCDD	79.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000128			13C-1,2,3,4,7,8-HxCDD	76.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000137			13C-1,2,3,6,7,8-HxCDD	69.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000132			13C-1,2,3,4,6,7,8-HpCDD	68.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000662			J	13C-OCDD	41.2	17 - 157	
OCDD	0.0000737				13C-2,3,7,8-TCDF	78.9	24 - 169	
2,3,7,8-TCDF	ND	0.000000526			13C-1,2,3,7,8-PeCDF	79.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000967			13C-2,3,4,7,8-PeCDF	81.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000840			13C-1,2,3,4,7,8-HxCDF	72.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000940			13C-1,2,3,6,7,8-HxCDF	70.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000871			13C-2,3,4,6,7,8-HxCDF	75.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000926			13C-1,2,3,7,8,9-HxCDF	75.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000134			13C-1,2,3,4,6,7,8-HpCDF	62.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000207			13C-1,2,3,4,7,8,9-HpCDF	69.1	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000207			13C-OCDF	49.1	17 - 157	
OCDF	0.0000166			J	CIS 37Cl-2,3,7,8-TCDD	83.4	35 - 197	
Totals								
Total TCDD	ND	0.000000496						
Total PeCDD	ND	0.000000585						
Total HxCDD	ND	0.00000132						
Total HpCDD	0.00000662							
Total TCDF	ND	0.000000526						
Total PeCDF	ND	0.000000967						
Total HxCDF	ND	0.00000101						
Total HpCDF	ND	0.00000206						

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

Analyst: DMS  
Approved By: Martha M. Maier 16-Jan-2006 11:31

# LEVEL IV

Project 27133

# **APPENDIX G**

## **Section 25**

Outfall 007, January 01, 2006

Del Mar Analytical Laboratory Report



**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 007

Sampled: 01/01/06  
Received: 01/01/06  
Issued: 01/16/06 14:34

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.*

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

**SAMPLE CROSS REFERENCE**

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

LABORATORY ID	CLIENT ID	MATRIX
IPA0007-01	Outfall 007	Water

Reviewed By:

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager



# Del Mar Analytical

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06

Received: 01/01/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0007-01 (Outfall 007 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.050	2.0	4.6	1	01/04/06	01/05/06	
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.22	1	01/04/06	01/05/06	J
Copper	EPA 200.8	6A04084	0.25	2.0	8.0	1	01/04/06	01/05/06	
Lead	EPA 200.8	6A04084	0.040	1.0	4.4	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A03072	0.050	0.20	0.087	1	01/03/06	01/03/06	J

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 007  
 Report Number: IPA0007

Sampled: 01/01/06  
 Received: 01/01/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0007-01 (Outfall 007 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A01004	0.75	2.5	84	5	01/01/06	01/01/06	
Nitrate/Nitrite-N	EPA 300.0	6A01004	0.080	0.15	0.45	1	01/01/06	01/01/06	
Oil & Grease	EPA 413.1	6A06048	0.90	4.8	2.0	1	01/06/06	01/06/06	J
Sulfate	EPA 300.0	6A01004	0.45	0.50	24	1	01/01/06	01/01/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	440	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05089	10	10	72	1	01/05/06	01/05/06	

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06

Received: 01/01/06

### SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 007 (IPA0007-01) - Water EPA 300.0	2	01/01/2006 10:06	01/01/2006 15:25	01/01/2006 17:30	01/01/2006 19:38

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Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06  
 Received: 01/01/06

## 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: 6A03072 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03072-BLK1)</b>											
Mercury	ND	0.20	0.063	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03072-BS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03072-MS1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	7.95	0.20	0.063	ug/l	8.00	ND	99	70-130			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03072-MSD1)</b>											
						<b>Source: IOL2617-01</b>					
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130	1	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
						<b>Source: IOL2694-49</b>					
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

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 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06  
 Received: 01/01/06

**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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

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MWH-Pasadena/Boeing  
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06  
 Received: 01/01/06

## 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: 6A01004 Extracted: 01/01/06</b>											
<b>Blank Analyzed: 01/01/2006 (6A01004-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/01/2006 (6A01004-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			M-3
Sulfate	9.56	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 01/01/2006 (6A01004-MS1)</b>											
						<b>Source: IPA0003-01</b>					
Sulfate	14.4	0.50	0.45	mg/l	10.0	5.1	93	80-120			
<b>Matrix Spike Dup Analyzed: 01/01/2006 (6A01004-MSD1)</b>											
						<b>Source: IPA0003-01</b>					
Sulfate	14.8	0.50	0.45	mg/l	10.0	5.1	97	80-120	3	20	
<b>Batch: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1)</b>											
						<b>Source: IPA0005-01</b>					
Total Dissolved Solids	981	10	10	mg/l		980			0	10	
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05089-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

Del Mar Analytical, Irvine  
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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 007  Report Number: IPA0007	Sampled: 01/01/06 Received: 01/01/06
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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: 6A05089 Extracted: 01/05/06</b>											
<b>LCS Analyzed: 01/05/2006 (6A05089-BS1)</b>											
Total Suspended Solids	979	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05089-DUP1)</b>											
						<b>Source: IPA0012-01</b>					
Total Suspended Solids	458	10	10	mg/l		350			27	10	R-3
<b>Batch: 6A06048 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	

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Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06  
Received: 01/01/06

**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
IPA0007-01	413.1 Oil and Grease	Oil & Grease	mg/l	2.00	4.8	15
IPA0007-01	Antimony-200.8	Antimony	ug/l	4.60	2.0	6.00
IPA0007-01	Cadmium-200.8	Cadmium	ug/l	0.22	1.0	4.00
IPA0007-01	Chloride - 300.0	Chloride	mg/l	84	2.5	150
IPA0007-01	Copper-200.8	Copper	ug/l	8.00	2.0	14
IPA0007-01	Mercury - 245.1	Mercury	ug/l	0.087	0.20	0.20
IPA0007-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.45	0.15	10.00
IPA0007-01	Sulfate-300.0	Sulfate	mg/l	24	0.50	250
IPA0007-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	440	10	850

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPA0007

Sampled: 01/01/06

Received: 01/01/06

### 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.
- 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Project Manager

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Report Number: IPA0007

Sampled: 01/01/06

Received: 01/01/06

### Certification Summary

#### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).

#### Subcontracted Laboratories

**Alta 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: IPA0007-01

Analysis Performed: EDD + Level 4  
Samples: IPA0007-01

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
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 Del Mar Analytical.

IPA0007

**CHAIN OF CUSTODY FORM**

Version 02/17/05

**Client Name/Address:**  
 MWH-Pasadena  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
**Project Manager:** Bronwyn Kelly  
**Sampler:** R. F. Barnes

**Project:**  
 Boeing-SSFL NPDES  
 Routine Outfall 007  
 Stormwater at Building 100  
**Phone Number:**  
 (626) 568-6691  
**Fax Number:**  
 (626) 568-6515

**ANALYSIS REQUIRED**

Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	ANALYSIS REQUIRED						Field readings: Temp = 56.3 pH = 7.47	Comments
						Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS			
Outfall 007	W	Poly-1L	1	HNO3	1A	X							
Outfall 007-Dup	W	Poly-1L	1	HNO3	1B	X							
Outfall 007	W	Glass-Amber	2	None	2A, 2B		X						
Outfall 007	W	Glass-Amber	2	HCl	3A, 3B			X					
Outfall 007	W	Poly-500 ml	2	None	4A, 4B				X				
Outfall 007	W	Poly-500 ml	2	None	5A, 5B					X			

**Relinquished By:** [Signature] Date/Time: 11/06/06 13:25  
**Received By:** [Signature] Date/Time: 01/01/06 13:25

**Relinquished By:** [Signature] Date/Time: 11/06/06 15:25  
**Received By:** [Signature] Date/Time: 11/06 1525

**Turn around Time (check):**  
 24 Hours \_\_\_\_\_ 5 Days \_\_\_\_\_  
 48 Hours \_\_\_\_\_ 10 Days \_\_\_\_\_  
 72 Hours \_\_\_\_\_ Normal \_\_\_\_\_  
 Perchlorate Only 72 Hours \_\_\_\_\_  
 Metals Only 72 Hours \_\_\_\_\_  
 Sample Integrity: (Check)  On Ice:  3C



January 17, 2006

**Alta Project I.D.: 27134**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0007". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*





**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

**Alta Lab. ID**

**Client Sample ID**

27134-001

IPA0007-01

## SECTION II

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06		
				Date Analyzed DB-225:	NA		
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	0.000000671		13C-2,3,7,8-TCDD	84.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000560		13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149		13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147		13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145		13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		13C-OCDD	40.1	17 - 157	
OCDD	ND	0.00000535		13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.00000546		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885		13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511		13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518		13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522		13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675		13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		13C-OCDF	49.6	17 - 157	
OCDF	ND	0.00000360		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000671					
Total PeCDD	ND	0.000000560					
Total HxCDD	ND	0.00000147					
Total HpCDD	ND	0.00000146					
Total TCDF	ND	0.00000546					
Total PeCDF	ND	0.000000997					
Total HxCDF	ND	0.000000553					
Total HpCDF	ND	0.000000692					
<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: JMH

Approved By: Martha M. Maier 17-Jan-2006 13:35

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.2	25 - 164
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 17-Jan-2006 13:35

Sample ID: IPA0007-01		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27134-001		
Project:	IPA0007	Sample Size:	1.00 L	QC Batch No.:	7632		
Date Collected:	1-Jan-06			Date Analyzed DB-5:	12-Jan-06		
Time Collected:	1006			Date Analyzed DB-225:	NA		
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	0.000000703	0.000000703	13C-2,3,7,8-TCDD	69.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000984	0.000000984	13C-1,2,3,7,8-PeCDD	67.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000156	0.00000156	13C-1,2,3,4,7,8-HxCDD	57.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000158	0.00000158	13C-1,2,3,6,7,8-HxCDD	55.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000153	0.00000153	13C-1,2,3,4,6,7,8-HpCDD	51.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000303			13C-OCDD	35.2	17 - 157	
OCDD	0.000223			13C-2,3,7,8-TCDF	68.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000101	0.00000101	13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000123	0.00000123	13C-2,3,4,7,8-PeCDF	62.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000113	0.00000113	13C-1,2,3,4,7,8-HxCDF	53.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000132	0.00000132	13C-1,2,3,6,7,8-HxCDF	53.3	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000131	0.00000131	13C-2,3,4,6,7,8-HxCDF	53.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000143	0.00000143	13C-1,2,3,7,8,9-HxCDF	54.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000194	0.00000194	13C-1,2,3,4,6,7,8-HpCDF	45.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000540			13C-1,2,3,4,7,8,9-HpCDF	48.3	26 - 138	J
1,2,3,4,7,8,9-HpCDF	ND	0.00000283	0.00000283	13C-OCDF	37.1	17 - 157	
OCDF	0.0000190			CRS 37Cl-2,3,7,8-TCDD	86.3	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000703	0.000000703				
Total PeCDD	ND	0.000000984	0.000000984				
Total HxCDD	0.00000816						
Total HpCDD	0.00000618						
Total TCDF	ND	0.00000101	0.00000101				
Total PeCDF	ND	0.00000118	0.00000118				
Total HxCDF	0.00000215						
Total HpCDF	0.00000100						
<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: DMS

Approved By: Martha M. Maier 17-Jan-2006 13:35

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

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

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

**CERTIFICATIONS**

<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





17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046  
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-8596 Fax (619) 505-9689  
 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPA0007

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 2em; margin-top: 10px;">27134</div> <div style="text-align: right; font-size: 2em; margin-top: 10px;">0.9°C</div>

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

Analysis	Expiration	Sampled	Comments
Sample ID: IPA0007-01	Water	01/01/06 10:06	Instant Notification
1613-Dioxin-HR-Alta	01/08/06 10:06		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	01/29/06 10:06		Excel EDD email to pm, Include Std logs for Lvl IV

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received On Ice:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received at (temp):	_____	

Released By: 1/3/06 Date Time Received By: 1/4/06 0935 Date Time

Released By: \_\_\_\_\_ Date Time Received By: \_\_\_\_\_ Date Time  
 Project 27134 Page 10 of 280

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27134

Samples Arrival:	Date/Time 1/4/06 0935	Initials: PSB	Location: WR-2
Logged In:	Date/Time 1/4/06 1527	Initials: PSB	Location: WR-2
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C	0.9	Time: 0940	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk #	7924 7903 4161		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
		<input checked="" type="radio"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 26**

Outfall 007, January 01, 2006  
AMEC Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4MT7  
 Task Order 1261.001D.01  
 SDG No. IPA0007

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer P. Meeks

Analysis/Method Metals

Date: February 3, 2006

Reviewer's Signature

*P. Meeks*

<b>ACTION ITEMS<sup>a</sup></b>	
<b>Case Narrative</b>	
<b>Deficiencies</b>	
<b>2. Out of Scope</b>	
<b>Analyses</b>	
<b>3. Analyses Not Conducted</b>	
<b>4. Missing Hardcopy</b>	
<b>Deliverables</b>	
<b>5. Incorrect Hardcopy</b>	
<b>Deliverables</b>	
<b>6. Deviations from Analysis</b>	
<b>Protocol, e.g.,</b>	<u>Analytes detected below the reporting limit were qualified as estimated.</u>
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 007

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0007

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0007  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 3, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 007	IPA0007-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No qualifications were required.



## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead or antimony, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No

transcription errors or calculation errors were noted. Cadmium and mercury detected below the reporting limit were qualified as estimated, "J," and annotated with "DNQ," in accordance with the requirements of the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 007 Report Number: IPA0007	Sampled: 01/01/06 Received: 01/01/06
--	---	---

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0007-01 (Outfall 007 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.050	2.0	4.6	1	01/04/06	01/05/06	Raw Qual
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.22	1	01/04/06	01/05/06	JJ DNG
Copper	EPA 200.8	6A04084	0.25	2.0	8.0	1	01/04/06	01/05/06	
Lead	EPA 200.8	6A04084	0.040	1.0	4.4	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A03072	0.050	0.20	0.087	1	01/03/06	01/03/06	JJ DNG

LEVEL IV

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF6  
 Task Order 1261.001D.01  
 SDG No. IPA0007  
 No. of Analyses 1

Laboratory Alta  
 Reviewer K. Shadowlight  
 Analysis/Method Dioxin/Furan by Method 1613

Date: <u>February 10, 2006</u>
Reviewer's Signature <i>K. Shadowlight</i>

<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative Deficiencies</b>	
<b>2. Out of Scope Analyses</b>	
<b>3. Analyses Not Conducted</b>	
<b>4. Missing Hardcopy Deliverables</b>	
<b>5. Incorrect Hardcopy Deliverables</b>	
<b>6. Deviations from Analysis Protocol, e.g.,</b>	<b>Detects below the laboratory lower calibration level were qualified as estimated.</b>
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 007

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA0007

Prepared by  
MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA0007  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 10, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 007	IPA0007-01	27134-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however no sample custody seals were present. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

#### 2.2.2 Mass Spectrometer Performance



The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No qualifications were required.

Sample ID: IPA0007-01		Outfall 007		EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27134-001		
Project:	IPA0007	Sample Size:	1.00 L	QC Batch No.:	7632		
Date Collected:	1-Jan-06			Date Analyzed DB-5:	12-Jan-06		
Time Collected:	1006			Date Analyzed DB-225:	NA		
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	0.00000703		IS 13C-2,3,7,8-TCDD	69.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000984		13C-1,2,3,7,8-PeCDD	67.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0000156		13C-1,2,3,4,7,8-HxCDD	57.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0000158		13C-1,2,3,6,7,8-HxCDD	55.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0000153		13C-1,2,3,4,6,7,8-HpCDD	51.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000303			13C-OCDD	35.2	17 - 157	
OCDD	0.000223			13C-2,3,7,8-TCDF	68.1	24 - 169	
2,3,7,8-TCDF	ND	0.0000101		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.0000123		13C-2,3,4,7,8-PeCDF	62.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.0000113		13C-1,2,3,4,7,8-HxCDF	53.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.0000132		13C-1,2,3,6,7,8-HxCDF	53.3	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.0000131		13C-2,3,4,6,7,8-HxCDF	53.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.0000143		13C-1,2,3,7,8,9-HxCDF	54.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0000194		13C-1,2,3,4,6,7,8-HpCDF	45.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000540		J	13C-1,2,3,4,7,8,9-HpCDF	48.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.0000283		13C-OCDF	37.1	17 - 157	
OCDF	0.0000190		J	CRS 37Cl-2,3,7,8-TCDD	86.3	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000703					
Total PeCDD	ND	0.00000984					
Total HxCDD	0.0000816						
Total HpCDD	0.0000618						
Total TCDF	ND	0.0000101					
Total PeCDF	ND	0.0000118					
Total HxCDF	0.0000215						
Total HpCDF	0.0000100						

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

Analyst: DMS  
Approved By: Martha M. Maier 17-Jan-2006 13:35

*Level III*

# **APPENDIX G**

## **Section 27**

Outfall 008, January 01, 2006

Del Mar Analytical Laboratory Report



**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 008

Sampled: 01/01/06  
Received: 01/01/06  
Issued: 01/16/06 14:43

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.*

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

**SAMPLE CROSS REFERENCE**

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

LABORATORY ID	CLIENT ID	MATRIX
IPA0004-01	Outfall 008	Water

Reviewed By:

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0004-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.050	2.0	0.77	1	01/04/06	01/05/06	B, J
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.14	1	01/04/06	01/05/06	J
Copper	EPA 200.8	6A04084	0.25	2.0	12	1	01/04/06	01/05/06	
Lead	EPA 200.8	6A04084	0.040	1.0	20	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A04080	0.050	0.20	ND	1	01/04/06	01/04/06	

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0004-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A01004	0.15	0.50	2.9	1	01/01/06	01/01/06	
Nitrate/Nitrite-N	EPA 300.0	6A01004	0.072	0.26	4.9	1	01/01/06	01/01/06	
Oil & Grease	EPA 413.1	6A06048	0.91	4.9	ND	1	01/06/06	01/06/06	
Sulfate	EPA 300.0	6A01004	0.45	0.50	9.3	1	01/01/06	01/01/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	210	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05089	10	10	220	1	01/05/06	01/05/06	
<b>Sample ID: IPA0004-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	6A03076	0.80	4.0	ND	1	01/03/06	01/03/06	

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Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

**SHORT HOLD TIME DETAIL REPORT**

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 008 (IPA0004-01) - Water EPA 300.0	2	01/01/2006 10:18	01/01/2006 15:25	01/01/2006 17:30	01/01/2006 18:56

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06  
 Received: 01/01/06

**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: 6A04080 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04080-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 01/04/2006 (6A04080-BS1)</b>											
Mercury	8.40	0.20	0.050	ug/l	8.00		105	85-115			
<b>Matrix Spike Analyzed: 01/04/2006 (6A04080-MS1) Source: IPA0079-01</b>											
Mercury	8.03	0.20	0.050	ug/l	8.00	ND	100	70-130			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A04080-MSD1) Source: IPA0079-01</b>											
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1) Source: IOL2694-49</b>											
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008  
Report Number: IPA0004

Sampled: 01/01/06  
Received: 01/01/06

**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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

## 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: 6A01004 Extracted: 01/01/06</b>											
<b>Blank Analyzed: 01/01/2006 (6A01004-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/01/2006 (6A01004-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			M-3
Sulfate	9.56	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 01/01/2006 (6A01004-MS1) Source: IPA0003-01</b>											
Sulfate	14.4	0.50	0.45	mg/l	10.0	5.1	93	80-120			
<b>Matrix Spike Dup Analyzed: 01/01/2006 (6A01004-MSD1) Source: IPA0003-01</b>											
Sulfate	14.8	0.50	0.45	mg/l	10.0	5.1	97	80-120	3	20	
<b>Batch: 6A03076 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03076-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03076-BS1)</b>											
Perchlorate	49.4	4.0	0.80	ug/l	50.0		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03076-MS1) Source: IPA0022-18</b>											
Perchlorate	50.5	4.0	0.80	ug/l	50.0	ND	101	80-120			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03076-MSD1) Source: IPA0022-18</b>											
Perchlorate	50.2	4.0	0.80	ug/l	50.0	ND	100	80-120	1	20	

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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# Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

## 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: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1)</b>											
Total Dissolved Solids	981	10	10	mg/l		980			0	10	
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05089-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/05/2006 (6A05089-BS1)</b>											
Total Suspended Solids	979	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05089-DUP1)</b>											
Total Suspended Solids	458	10	10	mg/l		350			27	10	R-3
<b>Batch: 6A06048 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008  
Report Number: IPA0004

Sampled: 01/01/06  
Received: 01/01/06

**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: 6A06048 Extracted: 01/06/06</b>											
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008  
Report Number: IPA0004

Sampled: 01/01/06  
Received: 01/01/06

**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
IPA0004-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.78	4.9	15
IPA0004-01	Chloride - 300.0	Chloride	mg/l	2.90	0.50	150
IPA0004-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	4.90	0.26	8.00
IPA0004-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPA0004-01	Sulfate-300.0	Sulfate	mg/l	9.30	0.50	300
IPA0004-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	210	10	950

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Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPA0004

Sampled: 01/01/06

Received: 01/01/06

### 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008  
Report Number: IPA0004

Sampled: 01/01/06  
Received: 01/01/06

**Certification Summary**

**Del Mar Analytical, Irvine**

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

**Subcontracted Laboratories**

**Alta 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: IPA0004-01

Analysis Performed: EDD + Level 4  
Samples: IPA0004-01

**Del Mar Analytical, Irvine**  
Amy Windham For Michele Chamberlin  
Project Manager

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**CHAIN OF CUSTODY FORM**

Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED		Field readings:				
Del Mar Analytical MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 008 Stormwater at Happy Valley		ANALYSIS REQUIRED		Temp = 58.0 pH = 7.57				
Project Manager: Bronwyn Kelly Sampler: R BARNACK		Phone Number: (626) 568-6891 Fax Number: (626) 568-6515		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg		Comments				
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil & Grease (EPA 413.1)	C, S, SO4, NO3+NO2-N, Perchlorate	TDS, TSS	TCDD (and all congeners)
Outfall 008	W	Poly-1L	1	1-1-06 10:18	HNO3	1A				
Outfall 008-Dup	W	Poly-1L	1		HNO3	1B				
Outfall 008	W	Glass-Amber	2		HCl	3A, 3B	X			
Outfall 008	W	Poly-500 ml	2		None	4A, 4B	X			
Outfall 008	W	Poly-500 ml	2		None	5A, 5B		X		
Outfall 008	W	Glass-Amber	2	1-1-06 10:18	None	6A, 6B				X
Relinquished By				Date/Time: 1-1-06 13:15	Received By		Date/Time: 2/6/06 13:15	Turn around Time: (check)		
Relinquished By				Date/Time: 1-1-06 15:25	Received By			24 Hours		
Relinquished By				Date/Time:	Received By			48 Hours		
				Date/Time:	Received By			72 Hours		
				Date/Time:	Received By			Perchlorate Only 72 Hours		
				Date/Time:	Received By			Metals Only 72 Hours		
				Date/Time:	Received By			Sample Integrity: (Check)		
				Date/Time:	Received By			Intact		
				Date/Time:	Received By			On Ice		



January 17, 2006

**Alta Project I.D.: 27136**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0004". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

Alta Lab. ID

Client Sample ID

27136-001

IPA0004-01

**SECTION II**

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06		
				Date Analyzed DB-225:	NA		
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	0.000000671		13C-2,3,7,8-TCDD	84.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000560		13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149		13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147		13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145		13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		13C-OCDD	40.1	17 - 157	
OCDD	ND	0.00000535		13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.000000546		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885		13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511		13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518		13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522		13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675		13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		13C-OCDF	49.6	17 - 157	
OCDF	ND	0.00000360		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000671					
Total PeCDD	ND	0.000000560					
Total HxCDD	ND	0.00000147					
Total HpCDD	ND	0.00000146					
Total TCDF	ND	0.000000546					
Total PeCDF	ND	0.000000997					
Total HxCDF	ND	0.000000553					
Total HpCDF	ND	0.000000692					
<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: JMH

Approved By: Martha M. Maier 17-Jan-2006 14:38

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.2	25 - 164
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 17-Jan-2006 14:38

**EPA Method 1613**

**Sample ID: IPA0004-01**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27136-001		
Project:	IPA0004	Sample Size:	1.00 L	QC Batch No.:	7632		
Date Collected:	1-Jan-06			Date Analyzed DB-5:	12-Jan-06		
Time Collected:	1018			Date Analyzed DB-225:	NA		
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	0.00000804		IS 13C-2,3,7,8-TCDD	73.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000909		13C-1,2,3,7,8-PeCDD	77.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0000121		13C-1,2,3,4,7,8-HxCDD	78.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0000130		13C-1,2,3,6,7,8-HxCDD	73.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0000123		13C-1,2,3,4,6,7,8-HpCDD	76.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000598			13C-OCDD	51.4	17 - 157	
OCDD	0.0000327			13C-2,3,7,8-TCDF	74.9	24 - 169	
2,3,7,8-TCDF	ND	0.0000156		13C-1,2,3,7,8-PeCDF	78.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.0000161		13C-2,3,4,7,8-PeCDF	79.0	21 - 178	
2,3,4,7,8-PeCDF	ND	0.0000136		13C-1,2,3,4,7,8-HxCDF	74.7	26 - 152	
1,2,3,4,7,8-HxCDF	0.0000117			13C-1,2,3,6,7,8-HxCDF	75.8	26 - 123	
1,2,3,6,7,8-HxCDF	0.00000815			13C-2,3,4,6,7,8-HxCDF	78.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000909		13C-1,2,3,7,8,9-HxCDF	78.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0000135		13C-1,2,3,4,6,7,8-HpCDF	67.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000463			13C-1,2,3,4,7,8,9-HpCDF	77.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.0000179		13C-OCDF	59.9	17 - 157	
OCDF	0.0000103			CRS 37Cl-2,3,7,8-TCDD	77.5	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000804					
Total PeCDD	ND	0.00000909					
Total HxCDD	ND	0.0000130	0.00000310				
Total HpCDD	0.0000134						
Total TCDF	ND	0.0000156					
Total PeCDF	ND	0.0000148					
Total HxCDF	0.00000472						
Total HpCDF	0.00000463						

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

Analyst: JMH  
Approved By: Martha M. Maier 17-Jan-2006 14:38

**APPENDIX**



## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<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



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 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

### SUBCONTRACT ORDER - PROJECT # IPA0004

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone : (916) 933-1640 Fax: (916) 673-0106  <i>27136</i> <i>0.7°C</i>

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

Analysis	Expiration	Comments
Sample ID: IPA0004-01 Water	Sampled: 01/01/06 10:18	Instant Notification
1613-Dioxin-HR-Alta	01/08/06 10:18	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	01/29/06 10:18	Excel EDD email to pm, Include Std logs for Lvl IV

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp):	_____

Released By: *[Signature]* Date: *1/3/06* Received By: *Letitia D. Benedict* Date: *1/4/06* Time: *0935*

Released By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27136

Samples Arrival:	Date/Time 1/4/06 0935	Initials: BBB	Location: WR-2
Logged In:	Date/Time 1/4/06 1/5/06 077	Initials: BBB	Location: WR-2
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> Cal
	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C	0.2	Time: 0945	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk # 7924 7903 4183	✓		
Sample Container Intact?			
Sample Custody Seals Intact?		✓	✓
Chain of Custody / Sample Documentation Present?			
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			None
Shipping Container	Alta	Client	Retain
		Return	Dispose

Comments:

# **APPENDIX G**

## **Section 28**

Outfall 008, January 01, 2006  
AMEC Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4MT13  
 Task Order 1261.0010.01  
 SDG No. 1PA0004

No. of Analyses 1

Laboratory DeMar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: February 17, 2006  
 Reviewer's Signature  
P. Meeks

ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	Qualifications were assigned for the following:
Protocol, e.g.,	① Blank detect
Holding Times	② Detect below the reporting limit
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 008

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0004

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0004  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 17, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.



**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 008	IPA0004-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

Antimony was detected in method blank 6A04084-BLK1 at 0.162 µg/L; therefore, antimony detected in Outfall 008 was qualified as an estimated nondetect, "UJ." The remaining method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No further qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for antimony or lead, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## **2.11 SAMPLE RESULT VERIFICATION**

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Cadmium detected below the reporting limit was qualified as estimated, "J," and denoted with "DNQ," in accordance with the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 796-3820 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 008 Report Number: IPA0004	Sampled: 01/01/06 Received: 01/01/06
--	---	---

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0004-01 (Outfall 008 - Water)									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.050	2.0	0.77	1	01/04/06	01/05/06	UJ B, J
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.14	1	01/04/06	01/05/06	J J
Copper	EPA 200.8	6A04084	0.25	2.0	12	1	01/04/06	01/05/06	
Lead	EPA 200.8	6A04084	0.040	1.0	20	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A04080	0.050	0.20	ND	1	01/04/06	01/04/06	U

LEVEL IV

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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IPA0004 <Page 2 of 12>

# **APPENDIX G**

## **Section 29**

Outfall 009, January 01, 2006

Del Mar Analytical Laboratory Report



# Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

## LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project: Routine Outfall 009

Sampled: 01/01/06  
 Received: 01/01/06  
 Issued: 01/16/06 14:26

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. 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 3°C, on ice and with chain of custody documentation.

**HOLDING TIMES:** All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical 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**  
 IPA0006-01

**CLIENT ID**  
 Outfall 009

**MATRIX**  
 Water

Reviewed By:

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0006-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04084	0.050	2.0	<b>0.86</b>	1	01/04/06	01/05/06	B, J
Cadmium	EPA 200.8	6A04084	0.025	1.0	<b>0.043</b>	1	01/04/06	01/05/06	J
Copper	EPA 200.8	6A04084	0.25	2.0	<b>3.0</b>	1	01/04/06	01/05/06	B
Lead	EPA 200.8	6A04084	0.040	1.0	<b>0.78</b>	1	01/04/06	01/05/06	J
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06  
 Received: 01/01/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0006-01 (Outfall 009 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A01004	0.15	0.50	27	1	01/01/06	01/01/06	
Nitrate/Nitrite-N	EPA 300.0	6A01004	0.080	0.15	2.0	1	01/01/06	01/01/06	
Oil & Grease	EPA 413.1	6A06048	0.90	4.8	2.7	1	01/06/06	01/06/06	J
Sulfate	EPA 300.0	6A01004	0.90	1.0	72	2	01/01/06	01/01/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	340	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05089	10	10	ND	1	01/05/06	01/05/06	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

**SHORT HOLD TIME DETAIL REPORT**

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 (IPA0006-01) - Water EPA 300.0	2	01/01/2006 10:41	01/01/2006 15:25	01/01/2006 17:30	01/01/2006 19:24

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06  
 Received: 01/01/06

## 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: 6A03072 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03072-BLK1)</b>											
Mercury	ND	0.20	0.063	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03072-BS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03072-MS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00	ND	99	70-130			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03072-MSD1)</b>											
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130	1	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## 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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## 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: 6A01004 Extracted: 01/01/06</b>											
<b>Blank Analyzed: 01/01/2006 (6A01004-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/01/2006 (6A01004-BS1)</b>											
Chloride	4.88	0.50	0.15	mg/l	5.00		98	90-110			M-3
Sulfate	9.56	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 01/01/2006 (6A01004-MS1)</b>											
					<b>Source: IPA0003-01</b>						
Sulfate	14.4	0.50	0.45	mg/l	10.0	5.1	93	80-120			
<b>Matrix Spike Dup Analyzed: 01/01/2006 (6A01004-MSD1)</b>											
					<b>Source: IPA0003-01</b>						
Sulfate	14.8	0.50	0.45	mg/l	10.0	5.1	97	80-120	3	20	
<b>Batch: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1)</b>											
					<b>Source: IPA0005-01</b>						
Total Dissolved Solids	981	10	10	mg/l		980			0	10	
<b>Batch: 6A05089 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05089-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009  
 Report Number: IPA0006

Sampled: 01/01/06  
 Received: 01/01/06

**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: 6A05089 Extracted: 01/05/06</b>											
<b>LCS Analyzed: 01/05/2006 (6A05089-BS1)</b>											
Total Suspended Solids	979	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05089-DUP1)</b>											
						<b>Source: IPA0012-01</b>					
Total Suspended Solids	458	10	10	mg/l		350			27	10	R-3
<b>Batch: 6A06048 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	

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Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## 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
IPA0006-01	413.1 Oil and Grease	Oil & Grease	mg/l	2.70	4.8	15
IPA0006-01	Chloride - 300.0	Chloride	mg/l	27	0.50	150
IPA0006-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	2.00	0.15	10.00
IPA0006-01	Sulfate-300.0	Sulfate	mg/l	72	1.0	250
IPA0006-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	340	10	850

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Amy Windham For Michele Chamberlin  
Project Manager

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Project ID: Routine Outfall 009

Report Number: IPA0006

Sampled: 01/01/06

Received: 01/01/06

## Certification Summary

### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmlabs.com](http://www.dmlabs.com).*

### Subcontracted Laboratories

**Alta 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: IPA0006-01

Analysis Performed: EDD + Level 4  
 Samples: IPA0006-01

**Del Mar Analytical, Irvine**  
 Amy Windham For Michele Chamberlin  
 Project Manager

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January 16, 2006

**Alta Project I.D.: 27138**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0006". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

Alta Lab. ID

Client Sample ID

27138-001

IPA0006

**SECTION II**

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06		
				Date Analyzed DB-225:	NA		
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	0.000000671		IS 13C-2,3,7,8-TCDD	84.6	23 - 164	
1,2,3,7,8-PeCDD	ND	0.000000560		13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149		13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147		13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145		13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		13C-OCDD	40.1	17 - 157	
OCDD	ND	0.00000535		13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.000000546		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885		13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511		13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518		13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522		13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675		13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		13C-OCDF	49.6	17 - 157	
OCDF	ND	0.00000360		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000671					
Total PeCDD	ND	0.000000560					
Total HxCDD	ND	0.00000147					
Total HpCDD	ND	0.00000146					
Total TCDF	ND	0.000000546					
Total PeCDF	ND	0.000000997					
Total HxCDF	ND	0.000000553					
Total HpCDF	ND	0.000000692					

**Footnotes**

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

Analyst: JMH      Approved By: Martha M. Maier      16-Jan-2006 11:56

OPR Results		EPA Method 1613				
Matrix	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-1,2,3,4,7,8-HxCDD	66.2	25 - 104
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH  
 Approved By: Martha M. Maier  
 16-Jan-2006 11:56

EPA Method 1613

Sample ID: IPA0006

Client Data		Sample Data		Laboratory Data			
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample	27138-001		
Project	IPA0006	Sample Size	0.917 L	QC Batch No.	7632		
Date Collected	1-Jan-06			Date Analyzed DB-5	12-Jan-06		
Time Collected	1041			Date Analyzed DB-225	NA		
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	0.00000598		IS 13C-2,3,7,8-TCDD	74.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000847		13C-1,2,3,7,8-PeCDD	76.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000183		13C-1,2,3,4,7,8-HxCDD	78.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000187		13C-1,2,3,6,7,8-HxCDD	74.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000181		13C-1,2,3,4,6,7,8-HpCDD	76.2	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000800		J	13C-OCDD	52.3	17 - 157	
OCDD	0.0000577			13C-2,3,7,8-TCDF	73.9	24 - 169	
2,3,7,8-TCDF	ND	0.00000576		13C-1,2,3,7,8-PeCDF	77.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000918		13C-2,3,4,7,8-PeCDF	79.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000788		13C-1,2,3,4,7,8-HxCDF	74.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000888		13C-1,2,3,6,7,8-HxCDF	72.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000867		13C-2,3,4,6,7,8-HxCDF	76.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000900		13C-1,2,3,7,8,9-HxCDF	77.6	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000124		13C-1,2,3,4,6,7,8-HpCDF	68.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000270		J	13C-1,2,3,4,7,8,9-HpCDF	77.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000123		13C-OCDF	59.9	17 - 157	
OCDF	0.0000138		J	CRS 37Cl-2,3,7,8-TCDD	81.6	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.00000598					
Total PeCDD	ND	0.00000847					
Total HxCDD	ND	0.00000184					
Total HpCDD	0.0000174						
Total TCDF	ND	0.00000576					
Total PeCDF	ND	0.00000851					
Total HxCDF	ND	0.00000965					
Total HpCDF	0.00000731						

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

Analyst: JMH  
Approved By: Martha M. Maier  
16-Jan-2006 11:56



**APPENDIX**

## DATA QUALIFIERS & ABBREVIATIONS

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

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

**CERTIFICATIONS**

<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



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 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3620 Fax (702) 796-3621

**SUBCONTRACT ORDER - PROJECT # IPA0006**

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone : (916) 933-1640 Fax: (916) 673-0106  <i>27138</i>  <i>0.7°C</i>

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

Analysis	Expiration	Comments
<b>Sample ID: IPA0006-01</b> <b>Water</b> <b>Sampled: 01/01/06 10:41</b> 1613-Dioxin-HR-Alta    01/08/06 10:41 EDD + Level 4    01/29/06 10:41		<b>Instant Notification</b> J flags, 17 congeners, no TEQ, ug/L, sub=Alta Excel EDD email to pm, include Std logs for Lvl IV
<b>Containers Supplied:</b> 1 L Amber (IPA0006-01C) 1 L Amber (IPA0006-01D)		

**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 Property:  Yes  No     
 Samples Received at (temp): \_\_\_\_\_

Released By: *[Signature]*    Date: *1/3/06*    Time: \_\_\_\_\_   
 Received By: *Bettina G. Benedict*    Date: *1/4/06*    Time: *0925*

Released By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27138

Samples Arrival	Date/Time 1/4/06 0935	Initials: BAB	Location: WR-2
Logged In:	Date/Time 1/5/06 0734	Initials: BAB	Location: WR-2
Delivered By:	<u>FedEx</u>	UPS	Cal
		DHL	Hand Delivered
		Other	
Preservation:	<u>Ice</u>	Blue Ice	Dry Ice
		None	
Temp °C	0.7	Time: 0945	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk #	792479034183		
Sample Container Intact?	✓		
Sample Custody Seals Intact?		✓	✓
Chain of Custody / Sample Documentation Present?		✓	
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?			<u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain
			<u>Return</u>
			Dispose

Comments:

# **APPENDIX G**

## **Section 30**

Outfall 009, January 01, 2006

AMEC Data Validation Reports





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 009

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA0006

Prepared by  
MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014



## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA0006  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 10, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 009	IPA0006-01	27138-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however no sample custody seals were present. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

#### 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on

the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No qualifications were required.

Client Data		Sample Data		Laboratory Data		EPA Method 1613	
Name	Project	Matrix	Aqueous	Lab Sample	Date Received	Date Analyzed	Qualifiers
Del Mar Analytical, Irvine <td>IPA0006 <td>Sample Size <td>0.917 L <td>27138-001 <td>4-Jan-06 <td>8-Jan-06 <td></td> </td></td></td></td></td></td>	IPA0006 <td>Sample Size <td>0.917 L <td>27138-001 <td>4-Jan-06 <td>8-Jan-06 <td></td> </td></td></td></td></td>	Sample Size <td>0.917 L <td>27138-001 <td>4-Jan-06 <td>8-Jan-06 <td></td> </td></td></td></td>	0.917 L <td>27138-001 <td>4-Jan-06 <td>8-Jan-06 <td></td> </td></td></td>	27138-001 <td>4-Jan-06 <td>8-Jan-06 <td></td> </td></td>	4-Jan-06 <td>8-Jan-06 <td></td> </td>	8-Jan-06 <td></td>	
IPA0006	1-Jan-06	1041		7632 <td>12-Jan-06 <td>NA <td></td> </td></td>	12-Jan-06 <td>NA <td></td> </td>	NA <td></td>	
Date Collected	Time Collected	DL <sup>a</sup>	EMPC <sup>b</sup>	Date Analyzed DBI-5	Labeled Standard	%R	LCL-UCL <sup>d</sup>
2,3,7,8-TCDD	ND	0.00000598		IS	13C-2,3,7,8-TCDD	74.6	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000847			13C-1,2,3,7,8-PeCDD	76.1	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000183			13C-1,2,3,4,7,8-HxCDD	78.1	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000187			13C-1,2,3,6,7,8-HxCDD	74.3	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000181			13C-1,2,3,4,6,7,8-HpCDD	76.2	23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000800		J		13C-OCDD	52.3	17 - 157
OCDD	0.0000577				13C-2,3,7,8-TCDF	73.9	24 - 169
2,3,7,8-TCDF	ND	0.00000576			13C-1,2,3,7,8-PeCDF	77.5	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000918			13C-2,3,4,7,8-PeCDF	79.8	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000788			13C-1,2,3,4,7,8-HxCDF	74.9	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000888			13C-1,2,3,6,7,8-HxCDF	72.7	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000867			13C-2,3,4,6,7,8-HxCDF	76.7	28 - 136
1,2,3,7,8,9-HxCDF	ND	0.00000900			13C-1,2,3,7,8,9-HxCDF	77.6	29 - 147
2,3,4,6,7,8,9-HpCDF	ND	0.00000124			13C-1,2,3,4,6,7,8-HpCDF	68.1	28 - 143
1,2,3,7,8,9-HpCDF	0.00000270		J		13C-1,2,3,4,7,8,9-HpCDF	77.4	26 - 138
1,2,3,4,6,7,8,9-HpCDF	ND	0.00000123			13C-OCDF	59.9	17 - 157
OCDF	0.0000138		J		CRS 37C1-2,3,7,8-TCDD	81.6	35 - 197
Totals					Footnotes		
Total TCDD	ND	0.00000598		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000847		b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000184		c. Method detection limit.			
Total HpCDD	0.0000174			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000576					
Total PeCDF	ND	0.00000851					
Total HxCDF	ND	0.000000965					
Total HpCDF	0.00000731						

IPA0006 Outfall 009

Reliance  
Qual Code

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J

Approved By: Martha M. Maier 16-Jan-2006 11:56

Level III

Analyst: JMH

Project 27138

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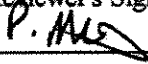
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4MT6  
 Task Order 1261.001D.01  
 SDG No. IPA0006

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: February 3, 2006  
 Reviewer's Signature  


<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative Deficiencies</b>	_____
<b>2. Out of Scope Analyses</b>	_____
<b>3. Analyses Not Conducted</b>	_____
<b>4. Missing Hardcopy Deliverables</b>	_____
<b>5. Incorrect Hardcopy Deliverables</b>	_____
<b>6. Deviations from Analysis Protocol, e.g.,</b>	<u>Analytes detected below the reporting limit were qualified as estimated.</u>
Holding Times	_____
GC/MS Tune/Inst. Performance	_____
Calibration	_____
Method blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification	_____
Quantitation	_____
System Performance	_____
<b>COMMENTS<sup>b</sup></b>	_____
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 009

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0006

Prepared by

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



## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0006  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 3, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0006-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead or antimony, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No

transcription errors or calculation errors were noted. Antimony, cadmium, and, lead detected below the reporting limit were qualified as estimated, "J," and annotated with "DNQ," in accordance with the requirements of the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4867 FAX (909) 370-1048  
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8506 FAX (858) 505-9689  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 009 Report Number: IPA0006	Sampled: 01/01/06 Received: 01/01/06
--	---	---

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers		
									Rev	Qual	Qual
Sample ID: IPA0006-01 (Outfall 009 - Water)											
Reporting Units: ug/l											
Antimony	EPA 200.8	6A04084	0.050	2.0	0.86	1	01/04/06	01/05/06	J	B, J	DNQ
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.043	1	01/04/06	01/05/06	J	J	DNQ
Copper	EPA 200.8	6A04084	0.25	2.0	3.0	1	01/04/06	01/05/06		B	
Lead	EPA 200.8	6A04084	0.040	1.0	0.78	1	01/04/06	01/05/06	J	J	DNQ
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06		U	

LEVEL IV

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 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 Del Mar Analytical.*

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## **APPENDIX G**

### **Section 31**

Outfall 009, January 14, 2006

Del Mar Analytical Laboratory Report



### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 009

Sampled: 01/14/06  
Received: 01/15/06  
Issued: 02/04/06 16:48

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.*

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

### SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IPA1191-01	Outfall 009	Water

Reviewed By:

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager





17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06  
 Received: 01/15/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA1191-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A16092	0.050	2.0	0.54	1	01/16/06	01/17/06	J
Cadmium	EPA 200.8	6A16092	0.025	1.0	0.048	1	01/16/06	01/17/06	J
Copper	EPA 200.8	6A16092	0.25	2.0	3.1	1	01/16/06	01/17/06	
Lead	EPA 200.8	6A16092	0.040	1.0	0.50	1	01/16/06	01/17/06	J
Mercury	EPA 245.1	6A17070	0.050	0.20	ND	1	01/17/06	01/17/06	

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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# Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA1191-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A15017	1.5	5.0	46	10	01/15/06	01/15/06	M-3
Nitrate/Nitrite-N	EPA 300.0	6A15017	0.080	0.10	0.13	1	01/15/06	01/15/06	
Oil & Grease	EPA 413.1	6A17048	0.90	4.8	ND	1	01/17/06	01/17/06	
Sulfate	EPA 300.0	6A15017	4.5	5.0	130	10	01/15/06	01/15/06	M-3
Total Dissolved Solids	SM2540C	6A19093	10	10	570	1	01/19/06	01/19/06	
Total Suspended Solids	EPA 160.2	6A17118	10	10	ND	1	01/17/06	01/17/06	

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 009  Report Number: IPA1191	Sampled: 01/14/06 Received: 01/15/06
--	---	---

## SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 009 (IPA1191-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	01/14/2006 10:15	01/15/2006 16:00	01/15/2006 17:00	01/15/2006 18:50

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 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

## 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: 6A16092 Extracted: 01/16/06</b>											
<b>Blank Analyzed: 01/17/2006 (6A16092-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/17/2006 (6A16092-BS1)</b>											
Antimony	79.1	2.0	0.050	ug/l	80.0		99	85-115			
Cadmium	80.9	1.0	0.025	ug/l	80.0		101	85-115			
Copper	79.1	2.0	0.25	ug/l	80.0		99	85-115			
Lead	79.0	1.0	0.040	ug/l	80.0		99	85-115			
<b>Matrix Spike Analyzed: 01/17/2006 (6A16092-MS1)</b>						<b>Source: IPA0831-01</b>					
Antimony	81.3	2.0	0.050	ug/l	80.0	0.51	101	70-130			
Cadmium	77.1	1.0	0.025	ug/l	80.0	0.084	96	70-130			
Copper	78.4	2.0	0.25	ug/l	80.0	4.4	92	70-130			
Lead	78.4	1.0	0.040	ug/l	80.0	0.75	97	70-130			
<b>Matrix Spike Analyzed: 01/17/2006 (6A16092-MS2)</b>						<b>Source: IPA1191-01</b>					
Antimony	83.2	2.0	0.050	ug/l	80.0	0.54	103	70-130			
Cadmium	79.0	1.0	0.025	ug/l	80.0	0.048	99	70-130			
Copper	76.9	2.0	0.25	ug/l	80.0	3.1	92	70-130			
Lead	77.3	1.0	0.040	ug/l	80.0	0.50	96	70-130			
<b>Matrix Spike Dup Analyzed: 01/17/2006 (6A16092-MSD1)</b>						<b>Source: IPA0831-01</b>					
Antimony	82.8	2.0	0.050	ug/l	80.0	0.51	103	70-130	2	20	
Cadmium	78.2	1.0	0.025	ug/l	80.0	0.084	98	70-130	1	20	
Copper	78.8	2.0	0.25	ug/l	80.0	4.4	93	70-130	1	20	
Lead	78.7	1.0	0.040	ug/l	80.0	0.75	97	70-130	0	20	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06  
 Received: 01/15/06

## 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: 6A17070 Extracted: 01/17/06</b>											
<b>Blank Analyzed: 01/17/2006 (6A17070-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 01/17/2006 (6A17070-BS1)</b>											
Mercury	8.14	0.20	0.050	ug/l	8.00		102	85-115			
<b>Matrix Spike Analyzed: 01/17/2006 (6A17070-MS1)</b>											
Mercury	8.07	0.20	0.050	ug/l	8.00	ND	101	70-130			
<b>Matrix Spike Dup Analyzed: 01/17/2006 (6A17070-MSD1)</b>											
Mercury	8.12	0.20	0.050	ug/l	8.00	ND	102	70-130	1	20	

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MWH-Pasadena/Boeing  
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 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

## 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: 6A15017 Extracted: 01/15/06</u></b>											
<b>Blank Analyzed: 01/15/2006 (6A15017-BLK1)</b>											
Chloride	ND	0.50	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.10	0.080	mg/l							
Sulfate	ND	0.50	0.45	mg/l							
<b>LCS Analyzed: 01/15/2006 (6A15017-BS1)</b>											
Chloride	4.95	0.50	0.15	mg/l	5.00		99	90-110			M-3
Sulfate	9.80	0.50	0.45	mg/l	10.0		98	90-110			M-3
<b><u>Batch: 6A17048 Extracted: 01/17/06</u></b>											
<b>Blank Analyzed: 01/17/2006 (6A17048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/17/2006 (6A17048-BS1)</b>											
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80	65-120			M-NRI
<b>LCS Dup Analyzed: 01/17/2006 (6A17048-BSD1)</b>											
Oil & Grease	17.0	5.0	0.94	mg/l	20.0		85	65-120	6	20	
<b><u>Batch: 6A17118 Extracted: 01/17/06</u></b>											
<b>Blank Analyzed: 01/17/2006 (6A17118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/17/2006 (6A17118-BS1)</b>											
Total Suspended Solids	950	10	10	mg/l	1000		95	85-115			

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 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A17118 Extracted: 01/17/06</b>											
<b>Duplicate Analyzed: 01/17/2006 (6A17118-DUP1)</b>											
Total Suspended Solids	ND	10	10	mg/l		ND				10	
<b>Batch: 6A19093 Extracted: 01/19/06</b>											
<b>Blank Analyzed: 01/19/2006 (6A19093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/19/2006 (6A19093-BS1)</b>											
Total Dissolved Solids	1050	10	10	mg/l	1000		105	90-110			
<b>Duplicate Analyzed: 01/19/2006 (6A19093-DUP1)</b>											
Total Dissolved Solids	660	10	10	mg/l		650			2	10	

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Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

### 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
IPA1191-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.86	4.8	15
IPA1191-01	Chloride - 300.0	Chloride	mg/l	46	5.0	150
IPA1191-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.13	0.10	10.00
IPA1191-01	Sulfate-300.0	Sulfate	mg/l	130	5.0	250
IPA1191-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	570	10	850

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MWH-Pasadena/Boeing  
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Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06  
Received: 01/15/06

### 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.
- 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).
- M-NR1** 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

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

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Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06

Received: 01/15/06

**Certification Summary**

**Del Mar Analytical, Irvine**

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

**Subcontracted Laboratories**

**Alta 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: IPA1191-01

Analysis Performed: EDD + Level 4

Samples: IPA1191-01

**Del Mar Analytical, Irvine**

Michele Chamberlin

Project Manager

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26, 2006

Project I.D.: 27210

Hele Chamberlin  
Analytical, Irvine  
Merian Avenue, Suite 100  
CA 92614

Hi Chamberlin,

Here are the results for the one aqueous sample received at Alta Analytical Laboratory on January 19, 2006 under your Project Name "IPA1191". This sample was extracted and analyzed using EPA Method 1631 for tetra-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 Chain of Custody, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current policies, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

M. Maier  
Manager of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Alta Analytical Laboratory Inc.**

1104 Windfield Way  
El Dorado Hills, CA 95762

FAX (916) 673-0106  
(916) 933-1640

Page 1 of 229

NPDES - 722

**Section I: Sample Inventory Report**

**Date Received: 1/17/2006**

**Alta Lab. ID**

**Client Sample ID**

27210-001

IPA1191-01

**SECTION II**

Method Blank		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7686	Lab Sample:	0-MB001	
Sample Size:	1.00 L	Date Extracted:	22-Jan-06	Date Analyzed DB-5:	24-Jan-06	
				Date Analyzed DB-225:	NA	
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	0.00000125		IS 13C-2,3,7,8-TCDD	64.8	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000167		13C-1,2,3,7,8-PeCDD	64.5	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000336		13C-1,2,3,4,7,8-HxCDD	59.5	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000330		13C-1,2,3,6,7,8-HxCDD	61.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000322		13C-1,2,3,4,6,7,8-HpCDD	58.2	23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000569		J	13C-OCDD	33.9	17 - 157
OCDD	0.0000474		J	13C-2,3,7,8-TCDF	66.4	24 - 169
2,3,7,8-TCDF	ND	0.00000106		13C-1,2,3,7,8-PeCDF	70.3	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000139		13C-2,3,4,7,8-PeCDF	73.0	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000121		13C-1,2,3,4,7,8-HxCDF	59.7	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000123		13C-1,2,3,6,7,8-HxCDF	57.8	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000114		13C-2,3,4,6,7,8-HxCDF	61.4	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000120		13C-1,2,3,7,8,9-HxCDF	62.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000176		13C-1,2,3,4,6,7,8-HpCDF	53.4	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000230		13C-1,2,3,4,7,8,9-HpCDF	57.4	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000246		13C-OCDF	38.9	17 - 157
OCDF	ND	0.00000535		CRS 37Cl-2,3,7,8-TCDD	83.3	35 - 197
<b>Totals</b>				<b>Footnotes</b>		
Total TCDD	ND	0.00000125		a. Sample specific estimated detection limit.		
Total PeCDD	ND	0.00000167		b. Estimated maximum possible concentration.		
Total HxCDD	ND	0.00000329		c. Method detection limit.		
Total HpCDD	0.00000569			d. Lower control limit - upper control limit.		
Total TCDF	ND	0.00000106				
Total PeCDF	ND	0.00000130				
Total HxCDF	ND	0.00000132				
Total HpCDF	ND	0.00000238				

Analyst: DMS

Approved By: Martha M. Maier 26-Jan-2006 08:20

**EPA Method 1613**

**OPR Results**

Matrix: Aqueous		QC Batch No.: 7686	Lab Sample: 0-OPR001
Sample Size: 1.00 L		Date Extracted: 22-Jan-06	Date Analyzed DB-5: 24-Jan-06
		Date Analyzed DB-225: NA	
Analyte	Spike Conc. (ng/mL)	OPR Limits	Labeled Standard
2,3,7,8-TCDD	10.0	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD
1,2,3,7,8-PeCDD	50.0	35 - 71	13C-1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD	50.0	35 - 82	13C-1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD	50.0	38 - 67	13C-1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD	50.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD
1,2,3,4,6,7,8-HpCDD	50.0	35 - 70	13C-OCDD
OCDD	100	78 - 144	13C-2,3,7,8-TCDF
2,3,7,8-TCDF	10.0	7.5 - 15.8	13C-1,2,3,7,8-PeCDF
1,2,3,7,8-PeCDF	50.0	40 - 67	13C-2,3,4,7,8-PeCDF
2,3,4,7,8-PeCDF	50.0	34 - 80	13C-1,2,3,4,7,8-HxCDF
1,2,3,4,7,8-HxCDF	50.0	36 - 67	13C-1,2,3,6,7,8-HxCDF
1,2,3,6,7,8-HxCDF	50.0	42 - 65	13C-2,3,4,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF	50.0	35 - 78	13C-1,2,3,7,8,9-HxCDF
1,2,3,7,8,9-HxCDF	50.0	39 - 65	13C-1,2,3,4,6,7,8-HpCDF
1,2,3,4,6,7,8-HpCDF	50.0	41 - 61	13C-1,2,3,4,7,8,9-HpCDF
1,2,3,4,7,8,9-HpCDF	50.0	39 - 69	13C-OCDF
OCDF	100	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD
			%R
			LCL-UCL
			64.1
			25 - 164
			66.4
			25 - 181
			61.4
			32 - 141
			62.8
			28 - 130
			57.3
			23 - 140
			36.7
			17 - 157
			66.8
			24 - 169
			69.9
			24 - 185
			74.6
			21 - 178
			60.7
			26 - 152
			60.4
			26 - 123
			64.7
			28 - 136
			62.5
			29 - 147
			54.0
			28 - 143
			58.8
			26 - 138
			41.9
			17 - 157
			81.2
			35 - 197

Analyst: DMS

Approved By: Martha M. Maier 26-Jan-2006 08:20



**Sample ID: IPA1191-01** **EPA Method 1613**

**Client Data**  
 Name: Del Mar Analytical, Irvine  
 Project: IPA1191  
 Date Collected: 14-Jan-06  
 Time Collected: 1015

**Laboratory Data**  
 Lab Sample: 27210-001  
 QC Batch No.: 7686  
 Date Analyzed DB-5: 24-Jan-06  
 Date Received: 17-Jan-06  
 Date Extracted: 22-Jan-06  
 Date Analyzed DB-225: NA

<b>Sample Data</b>		<b>Sample Data</b>		<b>Labeled Standard</b>		<b>%R LCL-UCL<sup>d</sup> Qualifiers</b>	
<b>Analyte</b>	<b>Conc. (ug/L)</b>	<b>DL<sup>a</sup></b>	<b>EMPC<sup>b</sup></b>	<b>Matrix:</b>	<b>Aqueous</b>	<b>%R</b>	<b>LCL-UCL<sup>d</sup> Qualifiers</b>
2,3,7,8-TCDD	ND	0.00000109				71.3	25 - 164
1,2,3,7,8-PeCDD	ND	0.00000131				74.1	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000198				72.2	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000211				74.0	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000199				72.4	23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000793					43.7	17 - 157
OCDD	0.0000896					72.4	24 - 169
2,3,7,8-TCDF	ND	0.00000933				79.3	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000142				79.9	21 - 178
2,3,4,7,8-PeCDF	ND	0.00000132				74.2	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000795				71.8	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000762				74.1	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000827				73.5	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000114				66.9	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000191				73.5	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000181				50.8	17 - 157
OCDF	0.00000508					90.6	35 - 197

**Totals**

Total TCDD	ND	0.00000109					
Total PeCDD	ND	0.00000131					
Total HxCDD	ND	0.00000203					
Total HpCDD	0.0000186						
Total TCDF	ND	0.00000933					
Total PeCDF	ND	0.00000137					
Total HxCDF	ND	0.00000871					
Total HpCDF	ND	0.00000186					

**Footnotes**

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

Analyst: DMS  
 Approved By: Martha M. Maier  
 Date: 26-Jan-2006 08:20

## APPENDIX

## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<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



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046  
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-8598 Fax (619) 505-9689  
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

## SUBCONTRACT ORDER - PROJECT # IPA1191

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone : (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 2em; font-family: cursive;">             27210              0.9°C           </div>

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

Analysis	Expiration	Comments
Sample ID: IPA1191-01 Water	Sampled: 01/14/06 10:15	Instant Notification
1613-Dioxin-HR-Alta	01/21/06 10:15	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	02/11/06 10:15	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPA1191-01C)		
1 L Amber (IPA1191-01D)		

### 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): \_\_\_\_\_

Released By:     
 Date: 1/16/06     
 Time: 1700     
 Received By: Bettina J. Benedict     
 Date: 1/17/06     
 Time: 0840

Released By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27210

Samples Arrival:	Date/Time 1/17/06 0840	Initials: BBB	Location: WR-2
Logged In:	Date/Time 1/17/06 1420	Initials: BBB	Location: WR-2
Delivered By:	<u>FedEx</u> UPS	Cal	DHL Hand Delivered Other
Preservation:	<u>Ice</u> Blue Ice	Dry Ice	None
Temp °C	0.9°C	Time: 0900	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk #	7924 8983 9854		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?	COC	Sample Container	<u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain <u>Return</u> Dispose

Comments:

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27210

Samples Arrival:	Date/Time 1/17/06 0840	Initials: BBB	Location: WR-2
Logged In:	Date/Time 1/17/06 1420	Initials: BBB	Location: WR-2
Delivered By:	<u>FedEx</u>	UPS	Cal
		DHL	Hand Delivered
			Other
Preservation:	<u>Ice</u>	Blue Ice	Dry Ice
			None
Temp °C	0.9°C	Time: 0900	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk #	7924 8983 9854		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container <u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain <u>Return</u> Dispose

Comments:

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF27  
 Task Order 1261.001D.01  
 SDG No. IPA1191

No. of Analyses 1

Laboratory Alta  
 Reviewer K. Shadowlight  
 Analysis/Method Dioxin/Furan by Method 1613

Date: February 25, 2006
Reviewer's Signature <i>K. Shadowlight</i>

ACTION ITEMS <sup>a</sup>	
Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Method blank contamination
Holding Times	Detects below the laboratory lower calibration level were qualified as estimated.
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 009

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA1191

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA1191  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 25, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 009	IPA1191-01	27210-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 1°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however no sample custody seals were present. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within one year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 01/12/2006 on instrument VG-7. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7686-MB001) was extracted and analyzed with the sample in this SDG. Target compounds 1,2,3,4,6,7,8-HpCDD and OCDD were reported at concentrations below the laboratory lower calibration level in the method blank. Target compounds 1,2,3,4,6,7,8-HpCDD and OCDD were also reported in the site sample; therefore, the detects for HpCDD and OCDD were qualified as estimated nondetects, "UJ," at the levels of contamination in the site sample. As a portion of total HpCDD was qualified for method blank contamination the result for total HpCDD was qualified as estimated, "J," in the site sample. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review

of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

Client Data		Sample Data		Laboratory Data				
Sample ID: <b>IPA1191-01</b>	<i>Outfall 009</i>	Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 27210-001	Date Received: 17-Jan-06			
Project: IPA1191		Date Collected: 14-Jan-06	Sample Size: 1.01 L	QC Batch No.: 7686	Date Extracted: 22-Jan-06			
Time Collected: 1015				Date Analyzed DB-5: 24-Jan-06	Date Analyzed DB-225: NA			
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	0.00000109		13C-2,3,7,8-TCDD	71.3	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000131		13C-1,2,3,7,8-PeCDD	74.1	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000198		13C-1,2,3,4,7,8-HxCDD	72.2	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000211		13C-1,2,3,6,7,8-HxCDD	74.0	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000199		13C-1,2,3,4,6,7,8-HpCDD	72.4	23 - 140		
1,2,3,4,6,7,8-HpCDD	0.00000793			13C-OCDD	43.7	17 - 157		
OCDD	0.0000896			13C-2,3,7,8-TCDF	72.4	24 - 169		
2,3,7,8-TCDF	ND	0.00000933		13C-1,2,3,7,8-PeCDF	79.3	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000142		13C-2,3,4,7,8-PeCDF	79.9	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000132		13C-1,2,3,4,7,8-HxCDF	74.2	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000795		13C-1,2,3,6,7,8-HxCDF	71.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000762		13C-2,3,4,6,7,8-HxCDF	74.1	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000827		13C-1,2,3,7,8,9-HxCDF	73.5	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000114		13C-1,2,3,4,6,7,8-HpCDF	66.9	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.00000191		13C-1,2,3,4,7,8,9-HpCDF	73.5	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000181		13C-OCDF	50.8	17 - 157		
OCDF	0.00000508			<b>CRS</b> 37C1-2,3,7,8-TCDD	90.6	35 - 197		
<b>Totals</b>								
Total TCDD	ND	0.00000109						a. Sample specific estimated detection limit.
Total PeCDD	ND	0.00000131						b. Estimated maximum possible concentration.
Total HxCDD	ND	0.00000203						c. Method detection limit.
Total HpCDD	0.0000186							d. Lower control limit - upper control limit.
Total TCDF	ND	0.000000933						
Total PeCDF	ND	0.00000137						
Total HxCDF	ND	0.000000871						
Total HpCDF	ND	0.00000186						

Analyst: DMS *level III* Approved By: Martha M. Maier 26-Jan-2006 08:20

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4MT30  
 Task Order 1261.001D.01  
 SDG No. IPA1191

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: February 27, 2006  
 Reviewer's Signature  


<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis	
Protocol, e.g.,	Qualifications applied for detects below the reporting limit and blank detects.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	





# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 009

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA1191

Prepared by

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

## 1. INTRODUCTION

Task Order Title: Topanga Fire Surface Samples  
MEC<sup>x</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA1191  
Project Manager: P. Costa  
Matrix: Sediment  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 27, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for ICP and ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA1191-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28 days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120%. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. No qualifications were required.

### 2.4 BLANKS

Cadmium was reported in method blank 6A16092-BLK1 at -0.028 µg/L; therefore, cadmium detected Outfall 009 was qualified as estimated, "J." No further qualifications were required.

*DATA VALIDATION REPORT*

---

## **2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)**

No ICSA and ICSAB analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## **2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES**

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## **2.7 LABORATORY DUPLICATES**

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## **2.8 MATRIX SPIKES**

Matrix spike analyses were performed on Outfall 009 for the ICP-MS analytes only. All recoveries were within the laboratory-established control limits of 70-130%. No mercury matrix spike analyses were performed association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Mercury method accuracy was evaluated based on LCS results. No qualifications were required.

## **2.9 ICP/MS AND ICP SERIAL DILUTION**

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## **2.10 INTERNAL STANDARDS PERFORMANCE**

For the target analytes analyzed by ICP-MS, the internal standards were within the method-specified control limits of 60-125%. No qualifications were required.

## **2.11 SAMPLE RESULT VERIFICATION**

A Level IV review was performed for the samples in this data package. Calculations were verified and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit

Project: NPDES  
SDG: IPA1191  
Analysis: Metals

*DATA VALIDATION REPORT*

---

were qualified as estimated, "J," and denoted with "DNQ," in accordance with the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPA1191

Sampled: 01/14/06  
 Received: 01/15/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IPA1191-01 (Outfall 009 - Water)											
Reporting Units: ug/l											
Antimony	EPA 200.8	6A16092	0.050	2.0	0.54	1	01/16/06	01/17/06	J J	J J	DNA
Cadmium	EPA 200.8	6A16092	0.025	1.0	0.048	1	01/16/06	01/17/06	↓ J	↓ J	B, ↓
Copper	EPA 200.8	6A16092	0.25	2.0	3.1	1	01/16/06	01/17/06	J J	J J	DNA
Lead	EPA 200.8	6A16092	0.040	1.0	0.50	1	01/16/06	01/17/06	J J	J J	DNA
Mercury	EPA 245.1	6A17070	0.050	0.20	ND	1	01/17/06	01/17/06	U	U	

Am 2/27/06

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

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## **APPENDIX G**

### **Section 32**

Outfall 009, January 14, 2006

AMEC Data Validation Reports



## **APPENDIX G**

### **Section 33**

Outfall 009, January 03, 2006

Del Mar Analytical Laboratory Report



LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: LARWQCB Sample Splits  
Outfall 009

Sampled: 01/03/06  
Received: 01/03/06  
Issued: 01/31/06 10:36

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. 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 5°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 Del Mar Analytical 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.
- ADDITIONAL INFORMATION: The analysis of EPA 413.1 was not performed due to insufficient sample volume.

LABORATORY ID	CLIENT ID	MATRIX
IPA0102-01	009 Split	Water

Reviewed By:

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager



Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
Outfall 009  
Report Number: IPA0102

Sampled: 01/03/06  
Received: 01/03/06

## CORRECTIVE ACTION REPORT

Department: Extractions  
Method: EPA 625  
QC Batch: 6A08028

Date: 01/16/2006  
Matrix: Water

### Identification and Definition of Problem:

The result for Dibenz(a,h)anthracene in the Method Blank for the batch was above the laboratory reporting limit.

### Determination of the Cause of the Problem:

A definitive cause for the QC failure has not been determined.

### Corrective Action Taken:

All positive results for Dibenz(a,h)anthracene are potentially biased high and can be considered estimates only.

Quality Assurance Approval:

Dave Dawes

Date: 01/19/2006 11:41 AM

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

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NPDES - 753



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water)</b>									
Reporting Units: ug/l									
Benzene	EPA 624	6A03022	0.28	2.0	ND	1	01/03/06	01/04/06	
Bromodichloromethane	EPA 624	6A03022	0.30	2.0	ND	1	01/03/06	01/04/06	
Bromoform	EPA 624	6A03022	0.32	5.0	ND	1	01/03/06	01/04/06	
Bromomethane	EPA 624	6A03022	0.42	5.0	ND	1	01/03/06	01/04/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6A03022	1.2	5.0	ND	1	01/03/06	01/04/06	
Carbon tetrachloride	EPA 624	6A03022	0.28	5.0	ND	1	01/03/06	01/04/06	
Chlorobenzene	EPA 624	6A03022	0.36	2.0	ND	1	01/03/06	01/04/06	
Chloroethane	EPA 624	6A03022	0.33	5.0	ND	1	01/03/06	01/04/06	
Chloroform	EPA 624	6A03022	0.33	2.0	ND	1	01/03/06	01/04/06	
Chloromethane	EPA 624	6A03022	0.30	5.0	ND	1	01/03/06	01/04/06	
Dibromochloromethane	EPA 624	6A03022	0.28	2.0	ND	1	01/03/06	01/04/06	
1,2-Dichlorobenzene	EPA 624	6A03022	0.32	2.0	ND	1	01/03/06	01/04/06	
1,3-Dichlorobenzene	EPA 624	6A03022	0.35	2.0	ND	1	01/03/06	01/04/06	
1,4-Dichlorobenzene	EPA 624	6A03022	0.37	2.0	ND	1	01/03/06	01/04/06	
1,1-Dichloroethane	EPA 624	6A03022	0.27	2.0	ND	1	01/03/06	01/04/06	
1,2-Dichloroethane	EPA 624	6A03022	0.28	2.0	ND	1	01/03/06	01/04/06	
1,1-Dichloroethene	EPA 624	6A03022	0.32	3.0	ND	1	01/03/06	01/04/06	
trans-1,2-Dichloroethene	EPA 624	6A03022	0.27	2.0	ND	1	01/03/06	01/04/06	
1,2-Dichloropropane	EPA 624	6A03022	0.35	2.0	ND	1	01/03/06	01/04/06	
cis-1,3-Dichloropropene	EPA 624	6A03022	0.22	2.0	ND	1	01/03/06	01/04/06	
trans-1,3-Dichloropropene	EPA 624	6A03022	0.32	2.0	ND	1	01/03/06	01/04/06	
Ethylbenzene	EPA 624	6A03022	0.25	2.0	ND	1	01/03/06	01/04/06	
Methylene chloride	EPA 624	6A03022	0.51	5.0	ND	1	01/03/06	01/04/06	
1,1,2,2-Tetrachloroethane	EPA 624	6A03022	0.24	2.0	ND	1	01/03/06	01/04/06	L
Tetrachloroethene	EPA 624	6A03022	0.32	2.0	ND	1	01/03/06	01/04/06	
Toluene	EPA 624	6A03022	0.36	2.0	ND	1	01/03/06	01/04/06	
1,1,1-Trichloroethane	EPA 624	6A03022	0.30	2.0	ND	1	01/03/06	01/04/06	
1,1,2-Trichloroethane	EPA 624	6A03022	0.30	2.0	ND	1	01/03/06	01/04/06	
Trichloroethene	EPA 624	6A03022	0.26	5.0	ND	1	01/03/06	01/04/06	
Trichlorofluoromethane	EPA 624	6A03022	0.34	5.0	ND	1	01/03/06	01/04/06	
Vinyl chloride	EPA 624	6A03022	0.26	5.0	ND	1	01/03/06	01/04/06	
Xylenes, Total	EPA 624	6A03022	0.52	4.0	ND	1	01/03/06	01/04/06	
Surrogate: Dibromofluoromethane (80-120%)					109 %				
Surrogate: Toluene-d8 (80-120%)					109 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					102 %				

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	6A03022	N/A	2.5	ND	1	01/03/06	01/04/06	
Cyclohexane	EPA 624 (MOD.)	6A03022	N/A	2.5	ND	1	01/03/06	01/04/06	

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 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
Outfall 009  
Report Number: IPA0102

Sampled: 01/03/06  
Received: 01/03/06

**SEMI-VOL ORGANICS by GC/MS-CHEMICAL IONIZATION (EPA 3520C/1625C-CI MOD)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
Reporting Units: ug/l									
N-Nitrosodimethylamine	EPA 1625C-CI Mod	6A08026	0.00019	0.0019	0.00045	0.943	01/08/06	01/10/06	B, J

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Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Acenaphthene	EPA 625	6A08028	0.10	0.50	ND	1	01/08/06	01/11/06	
Acenaphthylene	EPA 625	6A08028	0.10	0.50	ND	1	01/08/06	01/11/06	
Aniline	EPA 625	6A08028	2.9	10	ND	1	01/08/06	01/11/06	
Anthracene	EPA 625	6A08028	0.083	0.50	ND	1	01/08/06	01/11/06	
Benzidine	EPA 625	6A08028	2.4	5.0	ND	1	01/08/06	01/11/06	C
<b>Benzoic acid</b>	EPA 625	6A08028	3.7	20	<b>4.9</b>	1	01/08/06	01/11/06	A-01, J
<b>Benzo(a)anthracene</b>	EPA 625	6A08028	0.038	5.0	<b>0.32</b>	1	01/08/06	01/11/06	J
Benzo(a)pyrene	EPA 625	6A08028	0.14	2.0	ND	1	01/08/06	01/11/06	
Benzo(b)fluoranthene	EPA 625	6A08028	0.050	2.0	ND	1	01/08/06	01/11/06	
Benzo(g,h,i)perylene	EPA 625	6A08028	0.059	5.0	ND	1	01/08/06	01/11/06	
Benzo(k)fluoranthene	EPA 625	6A08028	0.053	0.50	ND	1	01/08/06	01/11/06	
Benzyl alcohol	EPA 625	6A08028	0.21	5.0	ND	1	01/08/06	01/11/06	
Bis(2-chloroethoxy)methane	EPA 625	6A08028	0.072	0.50	ND	1	01/08/06	01/11/06	
Bis(2-chloroethyl)ether	EPA 625	6A08028	0.084	0.50	ND	1	01/08/06	01/11/06	
Bis(2-chloroisopropyl)ether	EPA 625	6A08028	0.11	0.50	ND	1	01/08/06	01/11/06	
<b>Bis(2-ethylhexyl)phthalate</b>	EPA 625	6A08028	1.1	5.0	<b>2.4</b>	1	01/08/06	01/11/06	B, J
4-Bromophenyl phenyl ether	EPA 625	6A08028	0.12	1.0	ND	1	01/08/06	01/11/06	
<b>Butyl benzyl phthalate</b>	EPA 625	6A08028	0.34	5.0	<b>1.3</b>	1	01/08/06	01/11/06	B, J
4-Chloroaniline	EPA 625	6A08028	0.20	2.0	ND	1	01/08/06	01/11/06	
2-Chloronaphthalene	EPA 625	6A08028	0.059	0.50	ND	1	01/08/06	01/11/06	
4-Chloro-3-methylphenol	EPA 625	6A08028	0.34	2.0	ND	1	01/08/06	01/11/06	
4-Chlorophenyl phenyl ether	EPA 625	6A08028	0.056	0.50	ND	1	01/08/06	01/11/06	
2-Chlorophenol	EPA 625	6A08028	0.12	1.0	ND	1	01/08/06	01/11/06	
Chrysene	EPA 625	6A08028	0.072	0.50	ND	1	01/08/06	01/11/06	
<b>Dibenz(a,h)anthracene</b>	EPA 625	6A08028	0.083	0.50	<b>0.60</b>	1	01/08/06	01/11/06	B
Dibenzofuran	EPA 625	6A08028	0.075	0.50	ND	1	01/08/06	01/11/06	
Di-n-butyl phthalate	EPA 625	6A08028	0.26	2.0	ND	1	01/08/06	01/11/06	
1,2-Dichlorobenzene	EPA 625	6A08028	0.11	0.50	ND	1	01/08/06	01/11/06	
1,3-Dichlorobenzene	EPA 625	6A08028	0.13	0.50	ND	1	01/08/06	01/11/06	
1,4-Dichlorobenzene	EPA 625	6A08028	0.050	0.50	ND	1	01/08/06	01/11/06	
3,3-Dichlorobenzidine	EPA 625	6A08028	0.93	5.0	ND	1	01/08/06	01/11/06	
2,4-Dichlorophenol	EPA 625	6A08028	0.21	2.0	ND	1	01/08/06	01/11/06	
<b>Diethyl phthalate</b>	EPA 625	6A08028	0.12	1.0	<b>0.62</b>	1	01/08/06	01/11/06	B, J
2,4-Dimethylphenol	EPA 625	6A08028	0.31	2.0	ND	1	01/08/06	01/11/06	
Dimethyl phthalate	EPA 625	6A08028	0.081	0.50	ND	1	01/08/06	01/11/06	
4,6-Dinitro-2-methylphenol	EPA 625	6A08028	0.38	5.0	ND	1	01/08/06	01/11/06	
2,4-Dinitrophenol	EPA 625	6A08028	2.7	5.0	ND	1	01/08/06	01/11/06	
2,4-Dinitrotoluene	EPA 625	6A08028	0.23	5.0	ND	1	01/08/06	01/11/06	
2,6-Dinitrotoluene	EPA 625	6A08028	0.24	5.0	ND	1	01/08/06	01/11/06	
Di-n-octyl phthalate	EPA 625	6A08028	0.17	5.0	ND	1	01/08/06	01/11/06	
1,2-Diphenylhydrazine/Azobenzene	EPA 625	6A08028	0.087	1.0	ND	1	01/08/06	01/11/06	

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Fluoranthene	EPA 625	6A08028	0.089	0.50	ND	1	01/08/06	01/11/06	
Fluorene	EPA 625	6A08028	0.075	0.50	ND	1	01/08/06	01/11/06	
Hexachlorobenzene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	
Hexachlorobutadiene	EPA 625	6A08028	0.38	2.0	ND	1	01/08/06	01/11/06	
Hexachlorocyclopentadiene	EPA 625	6A08028	1.8	5.0	ND	1	01/08/06	01/11/06	
Hexachloroethane	EPA 625	6A08028	0.51	3.0	ND	1	01/08/06	01/11/06	
Indeno(1,2,3-cd)pyrene	EPA 625	6A08028	0.19	2.0	ND	1	01/08/06	01/11/06	
Isophorone	EPA 625	6A08028	0.059	1.0	ND	1	01/08/06	01/11/06	C
2-Methylnaphthalene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	
2-Methylphenol	EPA 625	6A08028	0.28	2.0	ND	1	01/08/06	01/11/06	
4-Methylphenol	EPA 625	6A08028	0.20	5.0	ND	1	01/08/06	01/11/06	
Naphthalene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	
2-Nitroaniline	EPA 625	6A08028	0.18	5.0	ND	1	01/08/06	01/11/06	
3-Nitroaniline	EPA 625	6A08028	0.35	5.0	ND	1	01/08/06	01/11/06	
4-Nitroaniline	EPA 625	6A08028	0.49	5.0	ND	1	01/08/06	01/11/06	
Nitrobenzene	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	
2-Nitrophenol	EPA 625	6A08028	0.23	2.0	ND	1	01/08/06	01/11/06	
4-Nitrophenol	EPA 625	6A08028	0.73	5.0	ND	1	01/08/06	01/11/06	
N-Nitrosodimethylamine	EPA 625	6A08028	0.22	2.0	ND	1	01/08/06	01/11/06	
N-Nitroso-di-n-propylamine	EPA 625	6A08028	0.18	2.0	ND	1	01/08/06	01/11/06	
N-Nitrosodiphenylamine	EPA 625	6A08028	0.077	1.0	ND	1	01/08/06	01/11/06	
Pentachlorophenol	EPA 625	6A08028	0.78	2.0	ND	1	01/08/06	01/11/06	
Phenanthrene	EPA 625	6A08028	0.071	0.50	ND	1	01/08/06	01/11/06	
Phenol	EPA 625	6A08028	0.14	1.0	ND	1	01/08/06	01/11/06	
Pyrene	EPA 625	6A08028	0.059	0.50	ND	1	01/08/06	01/11/06	
1,2,4-Trichlorobenzene	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	
2,4,5-Trichlorophenol	EPA 625	6A08028	0.075	2.0	ND	1	01/08/06	01/11/06	
2,4,6-Trichlorophenol	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	
Surrogate: 2-Fluorophenol (35-120%)					60 %				
Surrogate: Phenol-d6 (45-120%)					71 %				
Surrogate: 2,4,6-Tribromophenol (50-125%)					78 %				
Surrogate: Nitrobenzene-d5 (45-120%)					72 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					71 %				
Surrogate: Terphenyl-d14 (45-135%)					75 %				

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Aroclor 1016	EPA 608	6A06049	0.20	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1221	EPA 608	6A06049	0.10	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1232	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1242	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1248	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1254	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1260	EPA 608	6A06049	0.40	1.0	ND	1	01/06/06	01/06/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					85 %				

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## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
Reporting Units: mg/l									
Barium	EPA 200.8	6A04091	0.00015	0.0010	<b>0.041</b>	1	01/04/06	01/06/06	
Boron	EPA 200.7	6A04092	0.0080	0.050	<b>0.12</b>	1	01/04/06	01/05/06	
Calcium	EPA 200.7	6A04092	0.040	0.10	<b>39</b>	1	01/04/06	01/05/06	
Magnesium	EPA 200.7	6A04092	0.0070	0.020	<b>11</b>	1	01/04/06	01/05/06	

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## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont.									
Reporting Units: ug/l									
Antimony	EPA 200.8	6A04091	0.050	2.0	1.0	1	01/04/06	01/06/06	J, B
Arsenic	EPA 200.8	6A04091	0.50	1.0	1.8	1	01/04/06	01/06/06	
Beryllium	EPA 200.8	6A04091	0.075	0.50	0.085	1	01/04/06	01/09/06	J
Cadmium	EPA 200.8	6A04091	0.025	1.0	ND	1	01/04/06	01/06/06	
Chromium	EPA 200.7	6A04092	0.68	5.0	1.4	1	01/04/06	01/05/06	J
Cobalt	EPA 200.8	6A04091	0.035	1.0	0.27	1	01/04/06	01/06/06	J
Copper	EPA 200.8	6A04091	0.25	1.0	3.2	1	01/04/06	01/06/06	
Lead	EPA 200.8	6A04091	0.040	1.0	0.51	1	01/04/06	01/06/06	J
Mercury	EPA 245.1	6A04080	0.050	0.20	ND	1	01/04/06	01/04/06	
Molybdenum	EPA 200.8	6A04091	0.15	2.0	0.75	1	01/04/06	01/06/06	B, J
Nickel	EPA 200.8	6A04091	0.35	2.0	2.3	1	01/04/06	01/06/06	B
Selenium	EPA 200.8	6A04091	0.30	2.0	0.30	1	01/04/06	01/06/06	J
Silver	EPA 200.8	6A09086	0.025	1.0	ND	1	01/09/06	01/09/06	
Thallium	EPA 200.8	6A04091	0.15	1.0	ND	1	01/04/06	01/06/06	
Vanadium	EPA 200.8	6A04091	0.70	2.0	1.5	1	01/04/06	01/06/06	J
Zinc	EPA 200.8	6A04091	1.0	10	6.5	1	01/04/06	01/06/06	J

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 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

### INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Ammonia-N (Distilled)	EPA 350.2	6A05098	0.30	0.50	ND	1	01/05/06	01/05/06	
Biochemical Oxygen Demand	EPA 405.1	6A04062	0.59	2.0	<b>0.90</b>	1	01/04/06	01/09/06	J
Fluoride	EPA 300.0	6A03051	0.10	0.50	<b>0.29</b>	1	01/03/06	01/03/06	J, B
Hardness (as CaCO3)	SM2340B	6A04092	1.0	1.0	<b>140</b>	1	01/04/06	01/05/06	
Nitrate/Nitrite-N	EPA 300.0	6A03051	0.072	0.26	<b>2.7</b>	1	01/03/06	01/03/06	
Sulfate	EPA 300.0	6A03051	0.18	0.50	<b>52</b>	1	01/03/06	01/03/06	
Surfactants (MBAS)	SM5540-C	6A03114	0.044	0.10	ND	1	01/03/06	01/03/06	
Total Dissolved Solids	SM2540C	6A04107	10	10	<b>260</b>	1	01/04/06	01/04/06	
Total Organic Carbon	EPA 415.1	6A06094	0.25	1.0	<b>9.1</b>	1	01/06/06	01/06/06	
Total Suspended Solids	EPA 160.2	6A06118	10	10	ND	1	01/06/06	01/06/06	

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 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
<b>Reporting Units: ml/hr</b>									
Total Settleable Solids	EPA 160.5	6A04072	0.10	0.10	ND	1	01/04/06	01/04/06	

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 Outfall 009  
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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6A06111	2.2	5.0	3.4	1	01/06/06	01/09/06	J
Perchlorate	EPA 314.0	6A04078	0.80	4.0	ND	1	01/04/06	01/04/06	

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 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0102-01 (009 Split - Water) - cont.</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6A04105	1.0	1.0	420	1	01/04/06	01/04/06	

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Sampled: 01/03/06  
Received: 01/03/06

**SHORT HOLD TIME DETAIL REPORT**

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
<b>Sample ID: 009 Split (IPA0102-01) - Water</b>					
EPA 160.5	2	01/03/2006 13:25	01/03/2006 18:00	01/04/2006 09:18	01/04/2006 10:30
EPA 300.0	2	01/03/2006 13:25	01/03/2006 18:00	01/03/2006 20:30	01/03/2006 21:35
EPA 405.1	2	01/03/2006 13:25	01/03/2006 18:00	01/04/2006 10:15	01/09/2006 16:00
SM5540-C	2	01/03/2006 13:25	01/03/2006 18:00	01/03/2006 21:20	01/03/2006 22:46

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 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03022-BLK1)</b>											
Benzene	ND	2.0	0.28	ug/l							
Benzene	ND	1.0	0.28	ug/l							
Bromodichloromethane	ND	2.0	0.30	ug/l							
Bromoform	ND	5.0	0.32	ug/l							
Bromomethane	ND	5.0	0.42	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l							
Carbon tetrachloride	ND	0.50	0.28	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chlorobenzene	ND	2.0	0.36	ug/l							
Chloroethane	ND	5.0	0.33	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
Chloromethane	ND	5.0	0.30	ug/l							
Dibromochloromethane	ND	2.0	0.28	ug/l							
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l							
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l							
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,2-Dichloroethane	ND	0.50	0.28	ug/l							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	5.0	0.42	ug/l							
1,1-Dichloroethene	ND	3.0	0.42	ug/l							
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l							
1,2-Dichloropropane	ND	2.0	0.35	ug/l							
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l							
trans-1,3-Dichloropropene	ND	2.0	0.32	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Methylene chloride	ND	5.0	0.51	ug/l							
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
Toluene	ND	2.0	0.36	ug/l							

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>										
<b>Blank Analyzed: 01/03/2006 (6A03022-BLK1)</b>										
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	2.0	0.26	ug/l						
Trichloroethene	ND	5.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	0.50	0.26	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l						
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120		
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120		
Surrogate: Toluene-d8	26.6			ug/l	25.0		106	80-120		
Surrogate: Toluene-d8	26.6			ug/l	25.0		106	80-120		
Surrogate: 4-Bromofluorobenzene	25.7			ug/l	25.0		103	80-120		
Surrogate: 4-Bromofluorobenzene	25.7			ug/l	25.0		103	80-120		
<b>LCS Analyzed: 01/03/2006 (6A03022-BS1)</b>										
Benzene	23.2	1.0	0.28	ug/l	25.0		93	65-120		
Benzene	23.2	2.0	0.28	ug/l	25.0		93	70-120		
Bromodichloromethane	25.4	2.0	0.30	ug/l	25.0		102	65-135		
Bromoform	25.5	5.0	0.32	ug/l	25.0		102	50-130		
Bromomethane	21.8	5.0	0.42	ug/l	25.0		87	60-140		
Carbon tetrachloride	24.8	5.0	0.28	ug/l	25.0		99	70-140		
Carbon tetrachloride	24.8	0.50	0.28	ug/l	25.0		99	65-140		
Chlorobenzene	24.4	2.0	0.36	ug/l	25.0		98	70-125		
Chloroethane	21.6	5.0	0.33	ug/l	25.0		86	55-140		
Chloroform	23.6	2.0	0.33	ug/l	25.0		94	75-130		
Chloroform	23.6	2.0	0.33	ug/l	25.0		94	65-130		
Chloromethane	17.6	5.0	0.30	ug/l	25.0		70	40-140		
Dibromochloromethane	27.4	2.0	0.28	ug/l	25.0		110	65-140		
1,2-Dichlorobenzene	26.4	2.0	0.32	ug/l	25.0		106	70-120		
1,3-Dichlorobenzene	25.0	2.0	0.35	ug/l	25.0		100	70-125		

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>LCS Analyzed: 01/03/2006 (6A03022-BS1)</b>											
1,4-Dichlorobenzene	23.5	2.0	0.37	ug/l	25.0		94	70-125			
1,1-Dichloroethane	23.0	2.0	0.27	ug/l	25.0		92	65-130			
1,1-Dichloroethane	23.0	2.0	0.27	ug/l	25.0		92	70-135			
1,2-Dichloroethane	25.9	0.50	0.28	ug/l	25.0		104	60-140			
1,2-Dichloroethane	25.9	2.0	0.28	ug/l	25.0		104	60-150			
1,1-Dichloroethene	22.4	5.0	0.42	ug/l	25.0		90	70-130			
1,1-Dichloroethene	22.4	3.0	0.32	ug/l	25.0		90	75-135			
trans-1,2-Dichloroethene	23.5	2.0	0.27	ug/l	25.0		94	65-130			
1,2-Dichloropropane	24.5	2.0	0.35	ug/l	25.0		98	65-125			
cis-1,3-Dichloropropene	26.4	2.0	0.22	ug/l	25.0		106	70-130			
trans-1,3-Dichloropropene	28.2	2.0	0.32	ug/l	25.0		113	65-130			
Ethylbenzene	25.0	2.0	0.25	ug/l	25.0		100	80-120			
Ethylbenzene	25.0	2.0	0.25	ug/l	25.0		100	70-125			
Methylene chloride	20.9	5.0	0.51	ug/l	25.0		84	60-130			
1,1,2,2-Tetrachloroethane	33.2	2.0	0.24	ug/l	25.0		133	55-130			L
Tetrachloroethene	24.2	2.0	0.32	ug/l	25.0		97	75-125			
Tetrachloroethene	24.2	2.0	0.32	ug/l	25.0		97	65-125			
Toluene	24.4	2.0	0.36	ug/l	25.0		98	75-120			
Toluene	24.4	2.0	0.36	ug/l	25.0		98	70-125			
1,1,1-Trichloroethane	23.3	2.0	0.30	ug/l	25.0		93	75-140			
1,1,1-Trichloroethane	23.3	2.0	0.30	ug/l	25.0		93	65-135			
1,1,2-Trichloroethane	26.4	2.0	0.30	ug/l	25.0		106	65-125			
1,1,2-Trichloroethane	26.4	2.0	0.30	ug/l	25.0		106	70-125			
Trichloroethene	25.2	5.0	0.26	ug/l	25.0		101	80-120			
Trichloroethene	25.2	2.0	0.26	ug/l	25.0		101	70-125			
Trichlorofluoromethane	20.4	5.0	0.34	ug/l	25.0		82	60-140			
Trichlorofluoromethane	20.4	5.0	0.34	ug/l	25.0		82	65-145			
Vinyl chloride	18.8	0.50	0.26	ug/l	25.0		75	50-130			
Vinyl chloride	18.8	5.0	0.26	ug/l	25.0		75	50-130			
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120			
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>Matrix Spike Analyzed: 01/04/2006 (6A03022-MS1)</b>						<b>Source: IOL2210-06</b>					
Benzene	23.0	2.0	0.28	ug/l	25.0	0.78	89	70-120			
Benzene	23.0	1.0	0.28	ug/l	25.0	0.78	89	60-125			
Bromodichloromethane	24.9	2.0	0.30	ug/l	25.0	ND	100	65-135			
Bromoform	25.0	5.0	0.32	ug/l	25.0	ND	100	50-135			
Bromomethane	21.4	5.0	0.42	ug/l	25.0	ND	86	50-145			
Carbon tetrachloride	23.9	0.50	0.28	ug/l	25.0	ND	96	65-140			
Carbon tetrachloride	23.9	5.0	0.28	ug/l	25.0	ND	96	70-145			
Chlorobenzene	24.4	2.0	0.36	ug/l	25.0	ND	98	70-125			
Chloroethane	21.7	5.0	0.33	ug/l	25.0	ND	87	50-140			
Chloroform	24.1	2.0	0.33	ug/l	25.0	ND	96	70-135			
Chloroform	24.1	2.0	0.33	ug/l	25.0	ND	96	65-135			
Chloromethane	17.7	5.0	0.30	ug/l	25.0	ND	71	35-140			
Dibromochloromethane	26.5	2.0	0.28	ug/l	25.0	ND	106	60-140			
1,2-Dichlorobenzene	25.1	2.0	0.32	ug/l	25.0	ND	100	70-125			
1,3-Dichlorobenzene	24.6	2.0	0.35	ug/l	25.0	ND	98	70-125			
1,4-Dichlorobenzene	23.0	2.0	0.37	ug/l	25.0	ND	92	70-125			
1,1-Dichloroethane	23.1	2.0	0.27	ug/l	25.0	ND	92	65-135			
1,1-Dichloroethane	23.1	2.0	0.27	ug/l	25.0	ND	92	60-130			
1,2-Dichloroethane	26.3	2.0	0.28	ug/l	25.0	ND	105	60-150			
1,2-Dichloroethane	26.3	0.50	0.28	ug/l	25.0	ND	105	60-140			
1,1-Dichloroethene	22.4	5.0	0.42	ug/l	25.0	ND	90	60-135			
1,1-Dichloroethene	22.4	3.0	0.32	ug/l	25.0	ND	90	65-140			
trans-1,2-Dichloroethene	23.7	2.0	0.27	ug/l	25.0	ND	95	60-135			
1,2-Dichloropropane	24.3	2.0	0.35	ug/l	25.0	ND	97	60-125			
cis-1,3-Dichloropropene	25.3	2.0	0.22	ug/l	25.0	ND	101	65-135			
trans-1,3-Dichloropropene	26.9	2.0	0.32	ug/l	25.0	ND	108	65-140			
Ethylbenzene	38.3	2.0	0.25	ug/l	25.0	16	89	70-130			
Ethylbenzene	38.3	2.0	0.25	ug/l	25.0	16	89	65-130			
Methylene chloride	21.6	5.0	0.51	ug/l	25.0	ND	86	55-130			
1,1,2,2-Tetrachloroethane	35.0	2.0	0.24	ug/l	25.0	ND	140	55-140			
Tetrachloroethene	23.3	2.0	0.32	ug/l	25.0	ND	93	70-130			
Tetrachloroethene	23.3	2.0	0.32	ug/l	25.0	ND	93	60-130			
Toluene	23.6	2.0	0.36	ug/l	25.0	ND	94	70-120			
Toluene	23.6	2.0	0.36	ug/l	25.0	ND	94	65-125			
1,1,1-Trichloroethane	23.8	2.0	0.30	ug/l	25.0	ND	95	65-140			

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 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>Matrix Spike Analyzed: 01/04/2006 (6A03022-MS1)</b>						<b>Source: IOL2210-06</b>					
1,1,1-Trichloroethane	23.8	2.0	0.30	ug/l	25.0	ND	95	75-140			
1,1,2-Trichloroethane	26.8	2.0	0.30	ug/l	25.0	ND	107	60-135			
1,1,2-Trichloroethane	26.8	2.0	0.30	ug/l	25.0	ND	107	60-130			
Trichloroethene	23.8	2.0	0.26	ug/l	25.0	ND	95	60-125			
Trichloroethene	23.8	5.0	0.26	ug/l	25.0	ND	95	70-125			
Trichlorofluoromethane	21.0	5.0	0.34	ug/l	25.0	ND	84	55-145			
Trichlorofluoromethane	21.0	5.0	0.34	ug/l	25.0	ND	84	55-145			
Vinyl chloride	18.7	0.50	0.26	ug/l	25.0	ND	75	40-135			
Vinyl chloride	18.7	5.0	0.26	ug/l	25.0	ND	75	40-135			
Surrogate: Dibromofluoromethane	27.5			ug/l	25.0		110	80-120			
Surrogate: Dibromofluoromethane	27.5			ug/l	25.0		110	80-120			
Surrogate: Toluene-d8	26.7			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.7			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	26.3			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	26.3			ug/l	25.0		105	80-120			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A03022-MSD1)</b>						<b>Source: IOL2210-06</b>					
Benzene	20.1	2.0	0.28	ug/l	25.0	0.78	77	70-120	13	20	
Benzene	20.1	1.0	0.28	ug/l	25.0	0.78	77	60-125	13	20	
Bromodichloromethane	21.1	2.0	0.30	ug/l	25.0	ND	84	65-135	17	20	
Bromoform	22.0	5.0	0.32	ug/l	25.0	ND	88	50-135	13	25	
Bromomethane	17.7	5.0	0.42	ug/l	25.0	ND	71	50-145	19	25	
Carbon tetrachloride	20.4	0.50	0.28	ug/l	25.0	ND	82	65-140	16	25	
Carbon tetrachloride	20.4	5.0	0.28	ug/l	25.0	ND	82	70-145	16	25	
Chlorobenzene	21.4	2.0	0.36	ug/l	25.0	ND	86	70-125	13	20	
Chloroethane	18.5	5.0	0.33	ug/l	25.0	ND	74	50-140	16	25	
Chloroform	19.7	2.0	0.33	ug/l	25.0	ND	79	70-135	20	20	
Chloroform	19.7	2.0	0.33	ug/l	25.0	ND	79	65-135	20	20	
Chloromethane	14.4	5.0	0.30	ug/l	25.0	ND	58	35-140	21	25	
Dibromochloromethane	23.6	2.0	0.28	ug/l	25.0	ND	94	60-140	12	25	
1,2-Dichlorobenzene	21.6	2.0	0.32	ug/l	25.0	ND	86	70-125	15	20	
1,3-Dichlorobenzene	21.0	2.0	0.35	ug/l	25.0	ND	84	70-125	16	20	
1,4-Dichlorobenzene	20.2	2.0	0.37	ug/l	25.0	ND	81	70-125	13	20	
1,1-Dichloroethane	19.2	2.0	0.27	ug/l	25.0	ND	77	65-135	18	20	
1,1-Dichloroethane	19.2	2.0	0.27	ug/l	25.0	ND	77	60-130	18	20	
1,2-Dichloroethane	22.1	2.0	0.28	ug/l	25.0	ND	88	60-150	17	20	

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 Project Manager

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 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A03022-MSD1)</b>						<b>Source: IOL2210-06</b>					
1,2-Dichloroethane	22.1	0.50	0.28	ug/l	25.0	ND	88	60-140	17	20	
1,1-Dichloroethane	18.8	3.0	0.32	ug/l	25.0	ND	75	65-140	17	20	
1,1-Dichloroethane	18.8	5.0	0.42	ug/l	25.0	ND	75	60-135	17	20	
trans-1,2-Dichloroethene	19.4	2.0	0.27	ug/l	25.0	ND	78	60-135	20	20	
1,2-Dichloropropane	20.7	2.0	0.35	ug/l	25.0	ND	83	60-125	16	20	
cis-1,3-Dichloropropene	21.7	2.0	0.22	ug/l	25.0	ND	87	65-135	15	20	
trans-1,3-Dichloropropene	23.0	2.0	0.32	ug/l	25.0	ND	92	65-140	16	25	
Ethylbenzene	35.6	2.0	0.25	ug/l	25.0	16	78	70-130	7	20	
Ethylbenzene	35.6	2.0	0.25	ug/l	25.0	16	78	65-130	7	20	
Methylene chloride	16.3	5.0	0.51	ug/l	25.0	ND	65	55-130	28	20	R
1,1,2,2-Tetrachloroethane	30.7	2.0	0.24	ug/l	25.0	ND	123	55-140	13	30	
Tetrachloroethene	20.7	2.0	0.32	ug/l	25.0	ND	83	70-130	12	20	
Tetrachloroethene	20.7	2.0	0.32	ug/l	25.0	ND	83	60-130	12	20	
Toluene	20.5	2.0	0.36	ug/l	25.0	ND	82	65-125	14	20	
Toluene	20.5	2.0	0.36	ug/l	25.0	ND	82	70-120	14	20	
1,1,1-Trichloroethane	19.7	2.0	0.30	ug/l	25.0	ND	79	75-140	19	20	
1,1,1-Trichloroethane	19.7	2.0	0.30	ug/l	25.0	ND	79	65-140	19	20	
1,1,2-Trichloroethane	23.0	2.0	0.30	ug/l	25.0	ND	92	60-135	15	25	
1,1,2-Trichloroethane	23.0	2.0	0.30	ug/l	25.0	ND	92	60-130	15	25	
Trichloroethene	20.3	5.0	0.26	ug/l	25.0	ND	81	70-125	16	20	
Trichloroethene	20.3	2.0	0.26	ug/l	25.0	ND	81	60-125	16	20	
Trichlorofluoromethane	17.3	5.0	0.34	ug/l	25.0	ND	69	55-145	19	25	
Trichlorofluoromethane	17.3	5.0	0.34	ug/l	25.0	ND	69	55-145	19	25	
Vinyl chloride	15.7	5.0	0.26	ug/l	25.0	ND	63	40-135	17	30	
Vinyl chloride	15.7	0.50	0.26	ug/l	25.0	ND	63	40-135	17	30	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120			
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	26.5			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	26.5			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	26.7			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	26.7			ug/l	25.0		107	80-120			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Result	Reporting			Spike Level	Source		%REC		RPD Limit	Data Qualifiers
		Limit	MDL	Units		Result	%REC	RPD			
<b>Batch: 6A03022 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03022-BLK1)</b>											
1,2-Dichloro-1,1,2-trifluoroethane	ND	2.5	N/A	ug/l							
Cyclohexane	ND	2.5	N/A	ug/l							

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 Received: 01/03/06

### METHOD BLANK/QC DATA

### SEMI-VOL ORGANICS by GC/MS-CHEMICAL IONIZATION (EPA 3520C/1625C-CI MOD)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08026 Extracted: 01/08/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A08026-BLK1)</b>											
N-Nitrosodimethylamine	0.000730	0.0020	0.00020	ug/l							J
<b>LCS Analyzed: 01/09/2006 (6A08026-BS1)</b>											
N-Nitrosodimethylamine	0.0105	0.0020	0.00020	ug/l	0.0100		105	70-130			M-NR1
<b>LCS Analyzed: 01/09/2006 (6A08026-BS2)</b>											
N-Nitrosodimethylamine	0.00226	0.0020	0.00020	ug/l	0.00200		113	70-130			
<b>LCS Dup Analyzed: 01/09/2006 (6A08026-BSD1)</b>											
N-Nitrosodimethylamine	0.0112	0.0020	0.00020	ug/l	0.0100		112	70-130	6	20	

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 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08028 Extracted: 01/08/06</b>											
<b>Blank Analyzed: 01/11/2006 (6A08028-BLK1)</b>											
Acenaphthene	ND	0.50	0.10	ug/l							
Acenaphthylene	ND	0.50	0.10	ug/l							
Aniline	ND	10	2.9	ug/l							
Anthracene	ND	0.50	0.083	ug/l							
Benztidine	ND	5.0	2.4	ug/l							
Benzoic acid	ND	20	3.7	ug/l							
Benzo(a)anthracene	ND	5.0	0.038	ug/l							
Benzo(a)pyrene	ND	2.0	0.14	ug/l							
Benzo(b)fluoranthene	ND	2.0	0.050	ug/l							
Benzo(g,h,i)perylene	ND	5.0	0.059	ug/l							
Benzo(k)fluoranthene	ND	0.50	0.053	ug/l							
Benzyl alcohol	ND	5.0	0.21	ug/l							
Bis(2-chloroethoxy)methane	ND	0.50	0.072	ug/l							
Bis(2-chloroethyl)ether	ND	0.50	0.084	ug/l							
Bis(2-chloroisopropyl)ether	ND	0.50	0.11	ug/l							
Bis(2-ethylhexyl)phthalate	2.00	5.0	1.1	ug/l							J
4-Bromophenyl phenyl ether	ND	1.0	0.12	ug/l							
Butyl benzyl phthalate	0.780	5.0	0.34	ug/l							J
4-Chloroaniline	ND	2.0	0.20	ug/l							
2-Chloronaphthalene	ND	0.50	0.059	ug/l							
4-Chloro-3-methylphenol	ND	2.0	0.34	ug/l							
4-Chlorophenyl phenyl ether	ND	0.50	0.056	ug/l							
2-Chlorophenol	ND	1.0	0.12	ug/l							
Chrysene	ND	0.50	0.072	ug/l							
Dibenz(a,h)anthracene	0.540	0.50	0.083	ug/l							B
Dibenzofuran	ND	0.50	0.075	ug/l							
Di-n-butyl phthalate	ND	2.0	0.26	ug/l							
1,2-Dichlorobenzene	ND	0.50	0.11	ug/l							
1,3-Dichlorobenzene	ND	0.50	0.13	ug/l							
1,4-Dichlorobenzene	ND	0.50	0.050	ug/l							
3,3-Dichlorobenzidine	ND	5.0	0.93	ug/l							
2,4-Dichlorophenol	ND	2.0	0.21	ug/l							
Diethyl phthalate	0.540	1.0	0.12	ug/l							J
2,4-Dimethylphenol	ND	2.0	0.31	ug/l							
Dimethyl phthalate	ND	0.50	0.081	ug/l							

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Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**ACID & BASE/NEUTRALS BY GC/MS (EPA 625)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08028 Extracted: 01/08/06</b>										
<b>Blank Analyzed: 01/11/2006 (6A08028-BLK1)</b>										
4,6-Dinitro-2-methylphenol	ND	5.0	0.38	ug/l						
2,4-Dinitrophenol	ND	5.0	2.7	ug/l						
2,4-Dinitrotoluene	ND	5.0	0.23	ug/l						
2,6-Dinitrotoluene	ND	5.0	0.24	ug/l						
Di-n-octyl phthalate	ND	5.0	0.17	ug/l						
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	0.087	ug/l						
Fluoranthene	ND	0.50	0.089	ug/l						
Fluorene	ND	0.50	0.075	ug/l						
Hexachlorobenzene	ND	1.0	0.13	ug/l						
Hexachlorobutadiene	ND	2.0	0.38	ug/l						
Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l						
Hexachloroethane	ND	3.0	0.51	ug/l						
Indeno(1,2,3-cd)pyrene	ND	2.0	0.19	ug/l						
Isophorone	ND	1.0	0.059	ug/l						
2-Methylnaphthalene	ND	1.0	0.13	ug/l						
2-Methylphenol	ND	2.0	0.28	ug/l						
4-Methylphenol	ND	5.0	0.20	ug/l						
Naphthalene	ND	1.0	0.13	ug/l						
2-Nitroaniline	ND	5.0	0.18	ug/l						
3-Nitroaniline	ND	5.0	0.35	ug/l						
4-Nitroaniline	ND	5.0	0.49	ug/l						
Nitrobenzene	ND	1.0	0.10	ug/l						
2-Nitrophenol	ND	2.0	0.23	ug/l						
4-Nitrophenol	ND	5.0	0.73	ug/l						
N-Nitrosodimethylamine	ND	2.0	0.22	ug/l						
N-Nitroso-di-n-propylamine	ND	2.0	0.18	ug/l						
N-Nitrosodiphenylamine	ND	1.0	0.077	ug/l						
Pentachlorophenol	ND	2.0	0.78	ug/l						
Phenanthrene	ND	0.50	0.071	ug/l						
Phenol	ND	1.0	0.14	ug/l						
Pyrene	ND	0.50	0.059	ug/l						
1,2,4-Trichlorobenzene	ND	1.0	0.10	ug/l						
2,4,5-Trichlorophenol	ND	2.0	0.075	ug/l						
2,4,6-Trichlorophenol	ND	1.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	11.4			ug/l	20.0		57	35-120		

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 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting			Spike Level	Source		%REC		RPD	Limit	Data Qualifiers
		Limit	MDL	Units		Result	%REC	Limits	RPD			
<b>Batch: 6A08028 Extracted: 01/08/06</b>												
<b>Blank Analyzed: 01/11/2006 (6A08028-BLK1)</b>												
Surrogate: Phenol-d6	12.6			ug/l	20.0			63	45-120			
Surrogate: 2,4,6-Tribromophenol	16.1			ug/l	20.0			80	50-125			
Surrogate: Nitrobenzene-d5	6.18			ug/l	10.0			62	45-120			
Surrogate: 2-Fluorobiphenyl	6.58			ug/l	10.0			66	45-120			
Surrogate: Terphenyl-d14	6.96			ug/l	10.0			70	45-135			
<b>LCS Analyzed: 01/11/2006 (6A08028-BS1)</b>												
Acenaphthene	7.62	0.50	0.10	ug/l	10.0			76	55-120			
Acenaphthylene	8.16	0.50	0.10	ug/l	10.0			82	55-120			
Aniline	6.36	1.0	2.9	ug/l	10.0			64	30-120			J
Anthracene	8.30	0.50	0.083	ug/l	10.0			83	60-120			
Benzidine	5.88	5.0	2.4	ug/l	10.0			59	20-180			
Benzoic acid	10.6	20	3.7	ug/l	10.0			106	30-125			J
Benzo(a)anthracene	8.58	5.0	0.038	ug/l	10.0			86	65-120			
Benzo(a)pyrene	8.80	2.0	0.14	ug/l	10.0			88	55-125			
Benzo(b)fluoranthene	8.38	2.0	0.050	ug/l	10.0			84	50-125			
Benzo(g,h,i)perylene	9.46	5.0	0.059	ug/l	10.0			95	35-160			
Benzo(k)fluoranthene	8.12	0.50	0.053	ug/l	10.0			81	50-125			
Benzyl alcohol	7.22	5.0	0.21	ug/l	10.0			72	40-130			
Bis(2-chloroethoxy)methane	7.22	0.50	0.072	ug/l	10.0			72	55-120			
Bis(2-chloroethyl)ether	6.66	0.50	0.084	ug/l	10.0			67	50-120			
Bis(2-chloroisopropyl)ether	6.98	0.50	0.11	ug/l	10.0			70	50-120			
Bis(2-ethylhexyl)phthalate	9.58	5.0	1.1	ug/l	10.0			96	65-125			
4-Bromophenyl phenyl ether	7.60	1.0	0.12	ug/l	10.0			76	55-125			
Butyl benzyl phthalate	9.00	5.0	0.34	ug/l	10.0			90	60-125			
4-Chloroaniline	6.32	2.0	0.20	ug/l	10.0			63	55-120			
2-Chloronaphthalene	7.04	0.50	0.059	ug/l	10.0			70	60-120			
4-Chloro-3-methylphenol	8.36	2.0	0.34	ug/l	10.0			84	60-120			
4-Chlorophenyl phenyl ether	7.82	0.50	0.056	ug/l	10.0			78	55-120			
2-Chlorophenol	6.94	1.0	0.12	ug/l	10.0			69	45-120			
Chrysene	8.28	0.50	0.072	ug/l	10.0			83	65-120			
Dibenz(a,h)anthracene	7.56	0.50	0.083	ug/l	10.0			76	40-160			
Dibenzofuran	7.32	0.50	0.075	ug/l	10.0			73	60-120			
Di-n-butyl phthalate	9.48	2.0	0.26	ug/l	10.0			95	65-125			
1,2-Dichlorobenzene	5.76	0.50	0.11	ug/l	10.0			58	40-120			
1,3-Dichlorobenzene	5.40	0.50	0.13	ug/l	10.0			54	40-120			

M-NRI

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Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting			Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
		Limit	MDL	Units							
<b>Batch: 6A08028 Extracted: 01/08/06</b>											
<b>LCS Analyzed: 01/11/2006 (6A08028-BS1)</b>											<b>M-NR1</b>
1,4-Dichlorobenzene	5.62	0.50	0.050	ug/l	10.0		56	40-120			
3,3-Dichlorobenzidine	9.16	5.0	0.93	ug/l	10.0		92	50-170			
2,4-Dichlorophenol	7.34	2.0	0.21	ug/l	10.0		73	55-120			
Diethyl phthalate	7.20	1.0	0.12	ug/l	10.0		72	60-120			
2,4-Dimethylphenol	4.88	2.0	0.31	ug/l	10.0		49	35-120			
Dimethyl phthalate	4.10	0.50	0.081	ug/l	10.0		41	30-120			
4,6-Dinitro-2-methylphenol	8.54	5.0	0.38	ug/l	10.0		85	55-120			
2,4-Dinitrophenol	9.22	5.0	2.7	ug/l	10.0		92	40-140			
2,4-Dinitrotoluene	7.76	5.0	0.23	ug/l	10.0		78	60-140			
2,6-Dinitrotoluene	8.26	5.0	0.24	ug/l	10.0		83	65-125			
Di-n-octyl phthalate	10.2	5.0	0.17	ug/l	10.0		102	60-130			
1,2-Diphenylhydrazine/Azobenzene	7.44	1.0	0.087	ug/l	10.0		74	60-120			
Fluoranthene	8.92	0.50	0.089	ug/l	10.0		89	55-125			
Fluorene	7.88	0.50	0.075	ug/l	10.0		79	60-120			
Hexachlorobenzene	7.38	1.0	0.13	ug/l	10.0		74	50-120			
Hexachlorobutadiene	6.14	2.0	0.38	ug/l	10.0		61	45-120			
Hexachlorocyclopentadiene	3.96	5.0	1.8	ug/l	10.0		40	10-130			J
Hexachloroethane	5.34	3.0	0.51	ug/l	10.0		53	40-120			
Indeno(1,2,3-cd)pyrene	8.50	2.0	0.19	ug/l	10.0		85	35-150			
Isophorone	9.18	1.0	0.059	ug/l	10.0		92	55-120			
2-Methylnaphthalene	7.38	1.0	0.13	ug/l	10.0		74	50-120			
2-Methylphenol	6.76	2.0	0.28	ug/l	10.0		68	45-120			
4-Methylphenol	6.82	5.0	0.20	ug/l	10.0		68	45-120			
Naphthalene	6.60	1.0	0.13	ug/l	10.0		66	50-120			
2-Nitroaniline	7.70	5.0	0.18	ug/l	10.0		77	60-130			
3-Nitroaniline	7.36	5.0	0.35	ug/l	10.0		74	50-140			
4-Nitroaniline	8.04	5.0	0.49	ug/l	10.0		80	45-160			
Nitrobenzene	6.98	1.0	0.10	ug/l	10.0		70	50-120			
2-Nitrophenol	7.08	2.0	0.23	ug/l	10.0		71	55-120			
4-Nitrophenol	9.56	5.0	0.73	ug/l	10.0		96	50-135			
N-Nitrosodimethylamine	6.32	2.0	0.22	ug/l	10.0		63	40-120			
N-Nitroso-di-n-propylamine	7.88	2.0	0.18	ug/l	10.0		79	50-120			
N-Nitrosodiphenylamine	7.88	1.0	0.077	ug/l	10.0		79	60-120			
Pentachlorophenol	10.1	2.0	0.78	ug/l	10.0		101	50-125			
Phenanthrene	8.00	0.50	0.071	ug/l	10.0		80	55-120			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08028 Extracted: 01/08/06</b>											
<b>LCS Analyzed: 01/11/2006 (6A08028-BS1)</b>											<b>M-NR1</b>
Phenol	7.36	1.0	0.14	ug/l	10.0		74	45-120			
Pyrene	7.84	0.50	0.059	ug/l	10.0		78	50-120			
1,2,4-Trichlorobenzene	6.28	1.0	0.10	ug/l	10.0		63	50-120			
2,4,5-Trichlorophenol	8.02	2.0	0.075	ug/l	10.0		80	60-120			
2,4,6-Trichlorophenol	8.10	1.0	0.10	ug/l	10.0		81	60-120			
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0		64	35-120			
Surrogate: Phenol-d6	14.1			ug/l	20.0		70	45-120			
Surrogate: 2,4,6-Tribromophenol	15.9			ug/l	20.0		80	50-125			
Surrogate: Nitrobenzene-d5	6.86			ug/l	10.0		69	45-120			
Surrogate: 2-Fluorobiphenyl	7.26			ug/l	10.0		73	45-120			
Surrogate: Terphenyl-d14	7.12			ug/l	10.0		71	45-135			
<b>LCS Dup Analyzed: 01/11/2006 (6A08028-BSD1)</b>											
Acenaphthene	6.82	0.50	0.10	ug/l	10.0		68	55-120	11	20	
Acenaphthylene	7.30	0.50	0.10	ug/l	10.0		73	55-120	11	20	
Aniline	6.06	10	2.9	ug/l	10.0		61	30-120	5	25	J
Anthracene	7.74	0.50	0.083	ug/l	10.0		77	60-120	7	20	
Benzidine	6.62	5.0	2.4	ug/l	10.0		66	20-180	12	35	
Benzoic acid	12.3	20	3.7	ug/l	10.0		123	30-125	15	30	J
Benzo(a)anthracene	8.12	5.0	0.038	ug/l	10.0		81	65-120	6	20	
Benzo(a)pyrene	8.48	2.0	0.14	ug/l	10.0		85	55-125	4	25	
Benzo(b)fluoranthene	7.98	2.0	0.050	ug/l	10.0		80	50-125	5	25	
Benzo(g,h,i)perylene	8.62	5.0	0.059	ug/l	10.0		86	35-160	9	25	
Benzo(k)fluoranthene	7.52	0.50	0.053	ug/l	10.0		75	50-125	8	20	
Benzyl alcohol	6.50	5.0	0.21	ug/l	10.0		65	40-130	10	20	
Bis(2-chloroethoxy)methane	6.66	0.50	0.072	ug/l	10.0		67	55-120	8	20	
Bis(2-chloroethyl)ether	6.02	0.50	0.084	ug/l	10.0		60	50-120	10	20	
Bis(2-chloroisopropyl)ether	6.28	0.50	0.11	ug/l	10.0		63	50-120	11	20	
Bis(2-ethylhexyl)phthalate	10.0	5.0	1.1	ug/l	10.0		100	65-125	4	20	
4-Bromophenyl phenyl ether	7.00	1.0	0.12	ug/l	10.0		70	55-125	8	25	
Butyl benzyl phthalate	8.88	5.0	0.34	ug/l	10.0		89	60-125	1	20	
4-Chloroaniline	5.86	2.0	0.20	ug/l	10.0		59	55-120	8	25	
2-Chloronaphthalene	6.34	0.50	0.059	ug/l	10.0		63	60-120	10	20	
4-Chloro-3-methylphenol	8.06	2.0	0.34	ug/l	10.0		81	60-120	4	25	
4-Chlorophenyl phenyl ether	7.12	0.50	0.056	ug/l	10.0		71	55-120	9	20	
2-Chlorophenol	6.44	1.0	0.12	ug/l	10.0		64	45-120	7	25	

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 Project Manager

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 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**ACID & BASE/NEUTRALS BY GC/MS (EPA 625)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08028 Extracted: 01/08/06</b>											
<b>LCS Dup Analyzed: 01/11/2006 (6A08028-BSD1)</b>											
Chrysene	7.84	0.50	0.072	ug/l	10.0		78	65-120	5	20	
Dibenz(a,h)anthracene	6.78	0.50	0.083	ug/l	10.0		68	40-160	11	25	
Dibenzofuran	6.54	0.50	0.075	ug/l	10.0		65	60-120	11	20	
Di-n-butyl phthalate	9.28	2.0	0.26	ug/l	10.0		93	65-125	2	20	
1,2-Dichlorobenzene	5.20	0.50	0.11	ug/l	10.0		52	40-120	10	25	
1,3-Dichlorobenzene	5.12	0.50	0.13	ug/l	10.0		51	40-120	5	25	
1,4-Dichlorobenzene	5.34	0.50	0.050	ug/l	10.0		53	40-120	5	25	
3,3-Dichlorobenzidine	8.84	5.0	0.93	ug/l	10.0		88	50-170	4	25	
2,4-Dichlorophenol	6.80	2.0	0.21	ug/l	10.0		68	55-120	8	20	
Diethyl phthalate	6.46	1.0	0.12	ug/l	10.0		65	60-120	11	20	
2,4-Dimethylphenol	5.44	2.0	0.31	ug/l	10.0		54	35-120	11	25	
Dimethyl phthalate	3.92	0.50	0.081	ug/l	10.0		39	30-120	4	20	
4,6-Dinitro-2-methylphenol	8.40	5.0	0.38	ug/l	10.0		84	55-120	2	25	
2,4-Dinitrophenol	9.02	5.0	2.7	ug/l	10.0		90	40-140	2	25	
2,4-Dinitrotoluene	7.16	5.0	0.23	ug/l	10.0		72	60-140	8	20	
2,6-Dinitrotoluene	7.20	5.0	0.24	ug/l	10.0		72	65-125	14	20	
Di-n-octyl phthalate	9.94	5.0	0.17	ug/l	10.0		99	60-130	3	20	
1,2-Diphenylhydrazine/Azobenzene	6.82	1.0	0.087	ug/l	10.0		68	60-120	9	25	
Fluoranthene	8.84	0.50	0.089	ug/l	10.0		88	55-125	1	20	
Fluorene	7.16	0.50	0.075	ug/l	10.0		72	60-120	10	20	
Hexachlorobenzene	6.98	1.0	0.13	ug/l	10.0		70	50-120	6	20	
Hexachlorobutadiene	5.58	2.0	0.38	ug/l	10.0		56	45-120	10	25	
Hexachlorocyclopentadiene	4.76	5.0	1.8	ug/l	10.0		48	10-130	18	30	J
Hexachloroethane	5.06	3.0	0.51	ug/l	10.0		51	40-120	5	25	
Indeno(1,2,3-cd)pyrene	8.14	2.0	0.19	ug/l	10.0		81	35-150	4	25	
Isophorone	8.24	1.0	0.059	ug/l	10.0		82	55-120	11	20	
2-Methylnaphthalene	6.68	1.0	0.13	ug/l	10.0		67	50-120	10	20	
2-Methylphenol	6.22	2.0	0.28	ug/l	10.0		62	45-120	8	20	
4-Methylphenol	6.32	5.0	0.20	ug/l	10.0		63	45-120	8	20	
Naphthalene	5.98	1.0	0.13	ug/l	10.0		60	50-120	10	20	
2-Nitroaniline	7.30	5.0	0.18	ug/l	10.0		73	60-130	5	20	
3-Nitroaniline	6.70	5.0	0.35	ug/l	10.0		67	50-140	9	25	
4-Nitroaniline	7.40	5.0	0.49	ug/l	10.0		74	45-160	8	20	
Nitrobenzene	6.30	1.0	0.10	ug/l	10.0		63	50-120	10	25	
2-Nitrophenol	6.74	2.0	0.23	ug/l	10.0		67	55-120	5	25	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A08028 Extracted: 01/08/06</b>											
<b>LCS Dup Analyzed: 01/11/2006 (6A08028-BSD1)</b>											
4-Nitrophenol	9.36	5.0	0.73	ug/l	10.0		94	50-135	2	25	
N-Nitrosodimethylamine	6.08	2.0	0.22	ug/l	10.0		61	40-120	4	20	
N-Nitroso-di-n-propylamine	6.96	2.0	0.18	ug/l	10.0		70	50-120	12	20	
N-Nitrosodiphenylamine	7.36	1.0	0.077	ug/l	10.0		74	60-120	7	20	
Pentachlorophenol	10.5	2.0	0.78	ug/l	10.0		105	50-125	4	25	
Phenanthrene	7.44	0.50	0.071	ug/l	10.0		74	55-120	7	20	
Phenol	6.74	1.0	0.14	ug/l	10.0		67	45-120	9	25	
Pyrene	7.38	0.50	0.059	ug/l	10.0		74	50-120	6	25	
1,2,4-Trichlorobenzene	5.70	1.0	0.10	ug/l	10.0		57	50-120	10	20	
2,4,5-Trichlorophenol	7.76	2.0	0.075	ug/l	10.0		78	60-120	3	20	
2,4,6-Trichlorophenol	7.98	1.0	0.10	ug/l	10.0		80	60-120	1	20	
Surrogate: 2-Fluorophenol	12.5			ug/l	20.0		62	35-120			
Surrogate: Phenol-d6	12.8			ug/l	20.0		64	45-120			
Surrogate: 2,4,6-Tribromophenol	15.8			ug/l	20.0		79	50-125			
Surrogate: Nitrobenzene-d5	6.34			ug/l	10.0		63	45-120			
Surrogate: 2-Fluorobiphenyl	6.40			ug/l	10.0		64	45-120			
Surrogate: Terphenyl-d14	6.68			ug/l	10.0		67	45-135			

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Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### TOTAL PCBS (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A06049 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06049-BLK1)</b>											
Aroclor 1016	ND	1.0	0.20	ug/l							
Aroclor 1221	ND	1.0	0.10	ug/l							
Aroclor 1232	ND	1.0	0.25	ug/l							
Aroclor 1242	ND	1.0	0.25	ug/l							
Aroclor 1248	ND	1.0	0.25	ug/l							
Aroclor 1254	ND	1.0	0.25	ug/l							
Aroclor 1260	ND	1.0	0.40	ug/l							
Surrogate: Decachlorobiphenyl	0.468			ug/l	0.500		94	45-120			
<b>LCS Analyzed: 01/06/2006 (6A06049-BS2)</b>											
Aroclor 1016	3.96	1.0	0.20	ug/l	4.00		99	45-115			M-NR1
Aroclor 1260	3.95	1.0	0.40	ug/l	4.00		99	55-115			
Surrogate: Decachlorobiphenyl	0.451			ug/l	0.500		90	45-120			
<b>LCS Dup Analyzed: 01/06/2006 (6A06049-BSD2)</b>											
Aroclor 1016	3.70	1.0	0.20	ug/l	4.00		92	45-115	7	30	
Aroclor 1260	3.82	1.0	0.40	ug/l	4.00		96	55-115	3	25	
Surrogate: Decachlorobiphenyl	0.441			ug/l	0.500		88	45-120			

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Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
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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: 6A04080 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04080-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 01/04/2006 (6A04080-BS1)</b>											
Mercury	8.40	0.20	0.050	ug/l	8.00		105	85-115			
<b>Matrix Spike Analyzed: 01/04/2006 (6A04080-MS1)</b>											
Mercury	8.03	0.20	0.050	ug/l	8.00	ND	100	70-130			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A04080-MSD1)</b>											
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6A04091 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006-01/06/2006 (6A04091-BLK1)</b>											
Antimony	0.242	2.0	0.18	ug/l							J
Arsenic	ND	1.0	0.50	ug/l							
Barium	0.000310	0.0010	0.00015	mg/l							J
Beryllium	ND	0.50	0.075	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Cobalt	ND	1.0	0.035	ug/l							
Copper	ND	1.0	0.25	ug/l							
Lead	ND	1.0	0.13	ug/l							
Molybdenum	0.394	2.0	0.15	ug/l							J
Nickel	1.06	2.0	0.35	ug/l							J
Selenium	ND	2.0	0.36	ug/l							
Thallium	0.0800	1.0	0.075	ug/l							J
Vanadium	ND	2.0	0.70	ug/l							
Zinc	ND	10	1.0	ug/l							

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 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## 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: 6A04091 Extracted: 01/04/06</b>											
<b>LCS Analyzed: 01/05/2006 (6A04091-BS1)</b>											
Antimony	86.9	2.0	0.18	ug/l	80.0		109	85-115			
Arsenic	84.2	1.0	0.50	ug/l	80.0		105	85-115			
Barium	0.0840	0.0010	0.00015	mg/l	0.0800		105	85-115			
Beryllium	79.6	0.50	0.075	ug/l	80.0		100	85-115			
Cadmium	83.4	1.0	0.015	ug/l	80.0		104	85-115			
Cobalt	88.5	1.0	0.035	ug/l	80.0		111	85-115			
Copper	90.3	1.0	0.25	ug/l	80.0		113	85-115			
Lead	86.8	1.0	0.13	ug/l	80.0		108	85-115			
Molybdenum	81.0	2.0	0.15	ug/l	80.0		101	85-115			
Nickel	88.7	2.0	0.35	ug/l	80.0		111	85-115			
Selenium	79.3	2.0	0.36	ug/l	80.0		99	85-115			
Thallium	87.3	1.0	0.075	ug/l	80.0		109	85-115			
Vanadium	81.7	2.0	0.70	ug/l	80.0		102	85-115			
Zinc	87.7	10	1.0	ug/l	80.0		110	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04091-MS1)</b>											
						<b>Source: IPA0032-01</b>					
Antimony	74.7	2.0	0.18	ug/l	80.0	0.24	93	70-130			
Arsenic	70.8	1.0	0.50	ug/l	80.0	ND	88	70-130			
Barium	0.0797	0.0010	0.00015	mg/l	0.0800	0.0060	92	70-130			
Beryllium	65.4	0.50	0.075	ug/l	80.0	ND	82	70-130			
Cadmium	70.2	1.0	0.015	ug/l	80.0	ND	88	70-130			
Cobalt	73.6	1.0	0.035	ug/l	80.0	0.25	92	70-130			
Copper	79.6	1.0	0.25	ug/l	80.0	7.7	90	70-130			
Lead	73.1	1.0	0.13	ug/l	80.0	4.1	86	70-130			
Molybdenum	71.4	2.0	0.15	ug/l	80.0	0.46	89	70-130			
Nickel	70.5	2.0	0.35	ug/l	80.0	ND	88	70-130			
Selenium	65.4	2.0	0.36	ug/l	80.0	1.1	80	70-130			
Thallium	70.0	1.0	0.075	ug/l	80.0	ND	88	70-130			
Vanadium	72.1	2.0	0.70	ug/l	80.0	0.76	89	70-130			
Zinc	769	10	1.0	ug/l	80.0	730	49	70-130			M-HA

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## 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: 6A04091 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04091-MS2)</b>						<b>Source: IPA0101-01</b>					
Antimony	84.1	2.0	0.18	ug/l	80.0	0.64	104	70-130			
Arsenic	81.2	1.0	0.50	ug/l	80.0	1.9	99	70-130			
Barium	0.133	0.0010	0.00015	mg/l	0.0800	0.048	106	70-130			
Beryllium	77.9	0.50	0.075	ug/l	80.0	ND	97	70-130			
Cadmium	79.0	1.0	0.015	ug/l	80.0	0.034	99	70-130			
Cobalt	82.3	1.0	0.035	ug/l	80.0	0.39	102	70-130			
Copper	84.1	1.0	0.25	ug/l	80.0	8.5	94	70-130			
Lead	79.7	1.0	0.13	ug/l	80.0	0.50	99	70-130			
Molybdenum	82.2	2.0	0.15	ug/l	80.0	2.9	99	70-130			
Nickel	81.5	2.0	0.35	ug/l	80.0	0.80	101	70-130			
Selenium	77.1	2.0	0.36	ug/l	80.0	0.77	95	70-130			
Thallium	80.0	1.0	0.075	ug/l	80.0	ND	100	70-130			
Vanadium	82.7	2.0	0.70	ug/l	80.0	2.3	100	70-130			
Zinc	87.3	10	1.0	ug/l	80.0	9.7	97	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04091-MSD1)</b>						<b>Source: IPA0032-01</b>					
Antimony	85.3	2.0	0.18	ug/l	80.0	0.24	106	70-130	13	20	
Arsenic	80.8	1.0	0.50	ug/l	80.0	ND	101	70-130	13	20	
Barium	0.0914	0.0010	0.00015	mg/l	0.0800	0.0060	107	70-130	14	20	
Beryllium	75.9	0.50	0.075	ug/l	80.0	ND	95	70-130	15	20	
Cadmium	79.0	1.0	0.015	ug/l	80.0	ND	99	70-130	12	20	
Cobalt	83.3	1.0	0.035	ug/l	80.0	0.25	104	70-130	12	20	
Copper	87.5	1.0	0.25	ug/l	80.0	7.7	100	70-130	9	20	
Lead	83.3	1.0	0.13	ug/l	80.0	4.1	99	70-130	13	20	
Molybdenum	81.4	2.0	0.15	ug/l	80.0	0.46	101	70-130	13	20	
Nickel	79.3	2.0	0.35	ug/l	80.0	ND	99	70-130	12	20	
Selenium	74.6	2.0	0.36	ug/l	80.0	1.1	92	70-130	13	20	
Thallium	79.9	1.0	0.075	ug/l	80.0	ND	100	70-130	13	20	
Vanadium	84.2	2.0	0.70	ug/l	80.0	0.76	104	70-130	15	20	
Zinc	795	10	1.0	ug/l	80.0	730	81	70-130	3	20	M-HA

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**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: 6A04092 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04092-BLK1)</b>											
Boron	ND	0.050	0.0080	mg/l							
Calcium	ND	0.10	0.040	mg/l							
Chromium	1.63	5.0	0.68	ug/l							J
Magnesium	0.00930	0.020	0.0070	mg/l							J
<b>LCS Analyzed: 01/05/2006 (6A04092-BS1)</b>											
Boron	0.469	0.050	0.0080	mg/l	0.500	0.090	99	85-115			
Calcium	2.54	0.10	0.040	mg/l	2.50	65	100	85-115			
Chromium	510	5.0	0.68	ug/l	500	1.8	101	85-115			
Magnesium	2.51	0.020	0.0070	mg/l	2.50	18	80	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04092-MS1) Source: IPA0101-01</b>											
Boron	0.586	0.050	0.0080	mg/l	0.500	0.090	99	70-130			
Calcium	67.5	0.10	0.040	mg/l	2.50	65	100	70-130			
Chromium	505	5.0	0.68	ug/l	500	1.8	101	70-130			
Magnesium	20.0	0.020	0.0070	mg/l	2.50	18	80	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04092-MSD1) Source: IPA0101-01</b>											
Boron	0.599	0.050	0.0080	mg/l	0.500	0.090	102	70-130	2	20	
Calcium	68.2	0.10	0.040	mg/l	2.50	65	128	70-130	1	20	
Magnesium	20.4	0.020	0.0070	mg/l	2.50	18	96	70-130	2	20	
<b>Batch: 6A09086 Extracted: 01/09/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A09086-BLK1)</b>											
Silver	ND	1.0	0.089	ug/l							

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
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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: 6A09086 Extracted: 01/09/06</b>											
<b>LCS Analyzed: 01/09/2006 (6A09086-BS1)</b>											
Silver	76.4	1.0	0.089	ug/l	80.0		96	85-115			
<b>Matrix Spike Analyzed: 01/09/2006 (6A09086-MS1)</b>											
						<b>Source: IPA0492-04</b>					
Silver	72.8	1.0	0.089	ug/l	80.0	ND	91	70-130			
<b>Matrix Spike Analyzed: 01/09/2006 (6A09086-MS2)</b>											
						<b>Source: IPA0451-01</b>					
Silver	76.2	1.0	0.089	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Dup Analyzed: 01/09/2006 (6A09086-MSD1)</b>											
						<b>Source: IPA0492-04</b>					
Silver	74.0	1.0	0.089	ug/l	80.0	ND	92	70-130	2	20	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**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: 6A03051 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03051-BLK1)</b>											
Fluoride	0.198	0.50	0.10	mg/l							J
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03051-BS1)</b>											
Fluoride	4.76	0.50	0.10	mg/l	5.00		95	90-110			
Sulfate	9.83	0.50	0.18	mg/l	10.0		98	90-110			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03051-MS1) Source: IPA0036-01</b>											
Fluoride	50.8	5.0	1.0	mg/l	50.0	1.7	98	80-120			
Sulfate	342	5.0	1.8	mg/l	100	240	102	80-120			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03051-MSD1) Source: IPA0036-01</b>											
Fluoride	53.2	5.0	1.0	mg/l	50.0	1.7	103	80-120	5	20	
Sulfate	345	5.0	1.8	mg/l	100	240	105	80-120	1	20	
<b>Batch: 6A03114 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03114-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03114-BS1)</b>											
Surfactants (MBAS)	0.275	0.10	0.044	mg/l	0.250		110	90-110			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03114-MS1) Source: IPA0017-01</b>											
Surfactants (MBAS)	0.377	0.10	0.044	mg/l	0.250	0.096	112	50-125			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## 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: 6A03114 Extracted: 01/03/06</b>											
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03114-MSD1)</b>						<b>Source: IPA0017-01</b>					
Surfactants (MBAS)	0.342	0.10	0.044	mg/l	0.250	0.096	98	50-125	10	20	
<b>Batch: 6A04062 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A04062-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
<b>LCS Analyzed: 01/09/2006 (6A04062-BS1)</b>											
Biochemical Oxygen Demand	216	100	30	mg/l	198		109	85-115			
<b>LCS Dup Analyzed: 01/09/2006 (6A04062-BSD1)</b>											
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115	8	20	
<b>Batch: 6A04078 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04078-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 01/04/2006 (6A04078-BS1)</b>											
Perchlorate	45.3	4.0	0.80	ug/l	50.0		91	85-115			
<b>Matrix Spike Analyzed: 01/04/2006 (6A04078-MS1)</b>						<b>Source: IPA0121-01</b>					
Perchlorate	48.9	4.0	0.80	ug/l	50.0	5.5	87	80-120			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A04078-MSD1)</b>						<b>Source: IPA0121-01</b>					
Perchlorate	51.8	4.0	0.80	ug/l	50.0	5.5	93	80-120	6	20	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**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: 6A04092 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04092-BLK1)</b>											
Hardness (as CaCO3)	ND	1.0	1.0	mg/l							
<b>Batch: 6A04105 Extracted: 01/04/06</b>											
<b>Duplicate Analyzed: 01/04/2006 (6A04105-DUP1)</b>											
Specific Conductance	839	1.0	1.0	umhos/cm		810			4	5	
<b>Batch: 6A04107 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04107-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/04/2006 (6A04107-BS1)</b>											
Total Dissolved Solids	996	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/04/2006 (6A04107-DUP1)</b>											
Total Dissolved Solids	956	10	10	mg/l		920			4	10	
<b>Batch: 6A05098 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05098-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 01/05/2006 (6A05098-BS1)</b>											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			

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 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## 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: 6A05098 Extracted: 01/05/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A05098-MS1)</b>						<b>Source: IOL2366-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	ND	115	70-120			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A05098-MSD1)</b>						<b>Source: IOL2366-01</b>					
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	ND	112	70-120	3	15	
<b>Batch: 6A06094 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06094-BLK1)</b>											
Total Organic Carbon	ND	1.0	0.25	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06094-BS1)</b>											
Total Organic Carbon	9.66	1.0	0.25	mg/l	10.0		97	90-110			
<b>Matrix Spike Analyzed: 01/06/2006 (6A06094-MS1)</b>						<b>Source: IPA0097-06</b>					
Total Organic Carbon	10.0	1.0	0.25	mg/l	5.00	5.7	86	80-120			
<b>Matrix Spike Dup Analyzed: 01/06/2006 (6A06094-MSD1)</b>						<b>Source: IPA0097-06</b>					
Total Organic Carbon	10.1	1.0	0.25	mg/l	5.00	5.7	88	80-120	1	20	
<b>Batch: 6A06111 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A06111-BLK1)</b>											
Total Cyanide	ND	5.0	2.2	ug/l							
<b>LCS Analyzed: 01/09/2006 (6A06111-BS1)</b>											
Total Cyanide	183	5.0	2.2	ug/l	200		92	90-110			

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
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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: 6A06111 Extracted: 01/06/06</b>											
<b>Matrix Spike Analyzed: 01/09/2006 (6A06111-MS1)</b>						<b>Source: IPA0102-01</b>					
Total Cyanide	211	5.0	2.2	ug/l	200	3.4	104	70-115			
<b>Matrix Spike Dup Analyzed: 01/09/2006 (6A06111-MSD1)</b>						<b>Source: IPA0102-01</b>					
Total Cyanide	213	5.0	2.2	ug/l	200	3.4	105	70-115	1	15	
<b>Batch: 6A06118 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06118-BS1)</b>											
Total Suspended Solids	980	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/06/2006 (6A06118-DUP1)</b>						<b>Source: IPA0396-01</b>					
Total Suspended Solids	188	10	10	mg/l		180			4	10	

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

## 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
IPA0102-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPA0102-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0.21	5.0	5.00
IPA0102-01	625+NDMA, LL	2,4,6-Trichlorophenol	ug/l	0	1.0	6.50
IPA0102-01	625+NDMA, LL	2,4-Dinitrotoluene	ug/l	0	5.0	9.10
IPA0102-01	625+NDMA, LL	Bis(2-ethylhexyl)phthalate	ug/l	2.40	5.0	4.00
IPA0102-01	625+NDMA, LL	N-Nitrosodimethylamine	ug/l	0	2.0	8.10
IPA0102-01	625+NDMA, LL	Pentachlorophenol	ug/l	0.20	2.0	8.20
IPA0102-01	Antimony-200.8	Antimony	ug/l	1.00	2.0	6.00
IPA0102-01	Arsenic-200.8	Arsenic	ug/l	1.80	1.0	50
IPA0102-01	Barium-200.8	Barium	mg/l	0.041	0.0010	1.00
IPA0102-01	Beryllium-200.8	Beryllium	ug/l	0.085	0.50	4.00
IPA0102-01	BOD	Biochemical Oxygen Demand	mg/l	0.90	2.0	20
IPA0102-01	Boron-200.7	Boron	mg/l	0.12	0.050	1.00
IPA0102-01	Cadmium-200.8	Cadmium	ug/l	0.013	1.0	4.00
IPA0102-01	Chromium-200.7	Chromium	ug/l	1.40	5.0	8.10
IPA0102-01	Copper-200.8, 1ppb	Copper	ug/l	3.20	1.0	14
IPA0102-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	3.40	5.0	4.30
IPA0102-01	Fluoride-300.0	Fluoride	mg/l	0.29	0.50	1.60
IPA0102-01	Lead-200.8	Lead	ug/l	0.51	1.0	2.60
IPA0102-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.042	0.10	0.50
IPA0102-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPA0102-01	NDMA-1625C Mod	N-Nitrosodimethylamine	ug/l	0.00045	0.0019	8.10
IPA0102-01	Nickel-200.8	Nickel	ug/l	2.30	2.0	35
IPA0102-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	2.70	0.26	10.00
IPA0102-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPA0102-01	Selenium-200.8	Selenium	ug/l	0.30	2.0	4.10
IPA0102-01	Settleable Solids	Total Settleable Solids	ml/l/hr	0	0.10	0.100
IPA0102-01	Silver-200.8	Silver	ug/l	0	1.0	2.00
IPA0102-01	Sulfate-300.0	Sulfate	mg/l	52	0.50	250
IPA0102-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	260	10	850
IPA0102-01	Thallium-200.8	Thallium	ug/l	0.0030	1.0	2.00
IPA0102-01	TSS - EPA 160.2	Total Suspended Solids	mg/l	7.00	10	15
IPA0102-01	Zinc-200.8,LOW	Zinc	ug/l	6.50	10	54

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
Outfall 009  
Report Number: IPA0102

Sampled: 01/03/06  
Received: 01/03/06

### DATA QUALIFIERS AND DEFINITIONS

- A-01** Calibration Verification recovery was above the method control limit for this analyte.
- B** Analyte was detected in the associated Method Blank.
- C** Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- L** Laboratory Control Sample recovery was above the method control limits. Analyte not detected, data not impacted.
- M-HA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R** The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

### ADDITIONAL COMMENTS

**For TICs:**

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

**For 1,2-Diphenylhydrazine:**

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
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 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

### Certification Summary

#### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
Calculation	Water	X	X
EDD + Level 4	Water		
EPA 120.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 1625C-CI Mod	Water		
EPA 200.7	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 415.1	Water	X	X
EPA 608	Water	X	X
EPA 624 (MOD.)	Water		X
EPA 624	Water	X	X
EPA 625	Water	X	X
EPA 900.0	Water		
EPA 905.0	Water		
EPA 906.0	Water		
SM2340B	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).

#### Subcontracted Laboratories

##### Eberline Services

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gross Alpha  
 Samples: IPA0102-01

Analysis Performed: Gross Beta  
 Samples: IPA0102-01

Analysis Performed: Level 4 + EDD  
 Samples: IPA0102-01

Analysis Performed: Radium, Combined  
 Samples: IPA0102-01

Analysis Performed: Strontium 90

##### Del Mar Analytical, Irvine

Michele Chamberlin  
 Project Manager

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# Del Mar Analytical

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
Outfall 009  
Report Number: IPA0102

Sampled: 01/03/06  
Received: 01/03/06

## Eberline Services

2030 Wright Avenue - Richmond, CA 94804

Samples: IPA0102-01

Analysis Performed: Tritium

Samples: IPA0102-01

**Del Mar Analytical, Irvine**  
Michele Chamberlin  
Project Manager

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# CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

<b>Client Name/Address:</b> MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		<b>Project:</b> Boeing INVOICER SPLIT SAMPLE -009 SPLIT SAMPLE		<b>Address, (City, State, ZIP)</b> TIS, Seattle, WA 98108		<b>ANALYSIS REQUIRED</b> NITRATE-NITRATE-N (See BOD, TOC, etc.) BOD, TOC VOC OIL & GREASE CAN METALS, CH TIS, Seattle, WA 98108		<b>Comments</b> TEMP = 53.8 PH = 6.76	
<b>Del Mar Contact:</b> Michele Harper <b>Project Manager:</b> R. Bunyu		<b>Phone Number:</b> (626) 568-6691 <b>Fax Number:</b> (626) 568-6515		<b>Turn around Time: (check)</b> 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Perchlorate Only 72 Hours _____		<b>Metals Only 72 Hours</b> _____ <b>Sample Integrity (Check)</b> _____ Intact <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>			
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Received By	Date/Time	
009 SPLIT	W	POLY	1	1/30/06 1330			AS Pearce	1/30/06 1525	
009 SPLIT		POLY	2						
009 SPLIT		Amber	1						
009 SPLIT		WAS	3						
009 SPLIT		Poly	1						
009 SPLIT		Amber	1						
009 SPLIT		Poly	1						
009 SPLIT		Amber	1						
009 SPLIT		Wal	2						
009 SPLIT		Poly 500	1						
009 SPLIT		Poly 500	1						
009 SPLIT		Poly 500	1						
009 SPLIT		Poly 500	1						



**EBERLINE**  
SERVICES

March 21, 2006

Ms. Michele Chamberlin  
Project Manager  
Del Mar Analytical  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Reference: Del Mar Analytical Project No. IPA0102  
Eberline Services NELAP Cert #01120CA (exp. 01/31/07)  
Eberline Services Report R601023-8640

Dear Ms. Chamberlin:

Enclosed are Sr-90 reanalysis results for one water sample received as the above referenced Del Mar Analytical project. Results were originally reported on January 30, 2006. Only the Sr-90 results are changed, all other results are as reported January 30. The batch QC LCS, blank analysis, and sample duplicate analysis results were within the limits defined in Eberline Services Quality Control Procedures Manual. Analyses that involve the yielding of an analytical tracer or carrier, such as Sr-90, do not require a matrix spike analysis to be performed. The reported gross alpha/gross beta QC sample results are not relevant to this report.

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

Regards,

Melissa Mannion  
Senior Program Manager

*MCM/njv*

*Enclosure: Report*

Analytical Services  
2030 Wright Avenue  
P.O. Box 4040  
Richmond, California 94804-0040  
(510) 235-2633 Fax (510) 235-0438  
Toll Free (800) 847-5487  
[www.eberlineservices.com](http://www.eberlineservices.com)

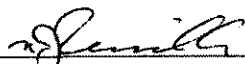


# Eberline Services

## ANALYSIS RESULTS

SDG <u>8640</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R601023-11</u>	Contract <u>PROJECT# IPA0102</u>
Received Date <u>01/05/06</u>	Matrix <u>WATER</u>

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>
IPA0102-01	8640-001	01/03/06	01/20/06	GrossAlpha	0.888 ± 0.61	pCi/L	0.888
			01/20/06	Gross Beta	3.15 ± 0.69	pCi/L	0.976
			01/21/06	Ra-228	0.293 ± 0.28	pCi/L	0.684
			01/17/06	H-3	-43.1 ± 110	pCi/L	182
			01/20/06	Ra-226	0.191 ± 0.33	pCi/L	0.569
			03/08/06	Sr-90	0.206 ± 0.30	pCi/L	0.590

Certified by   
Report Date 03/21/06  
Page 1

# Eberline Services

## QC RESULTS

SDG <u>8653</u>	Client <u>DEL MAR ANAL</u>
Work Order <u>R602147-11</u>	Contract <u>PROJECT# IPB1818</u>
Received Date <u>02/21/06</u>	Matrix <u>WATER</u>

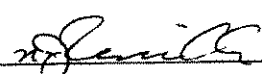
Lab	Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
<u>LCS</u>							
	8653-002	GrossAlpha	9.32 ± 0.63	pCi/Smpl	10.2	0.306	91% recovery
		Gross Beta	9.96 ± 0.37	pCi/Smpl	9.83	0.271	101% recovery
		Sr-90	11.2 ± 0.61	pCi/Smpl	10.8	0.229	104% recovery
<u>BLANK</u>							
	8653-003	GrossAlpha	-0.408 ± 0.18	pCi/Smpl	NA	0.376	<MDA
		Gross Beta	0.080 ± 0.24	pCi/Smpl	NA	0.414	<MDA
		Sr-90	-0.073 ± 0.16	pCi/Smpl	NA	0.418	<MDA

<u>DUPLICATES</u>			
Sample ID	Nuclide	Results ± 2σ	MDA
8653-004	GrossAlpha	0.122 ± 0.53	0.893
	Gross Beta	6.92 ± 0.71	0.869
	Sr-90	0.358 ± 0.39	0.771

<u>ORIGINALS</u>					
Sample ID	Results ± 2σ	MDA	3σ	RPD (Tot)	Eval
8653-001	0.735 ± 0.45	0.587	143	249	satis.
	7.03 ± 0.74	0.906	2	48	satis.
	0.317 ± 0.31	0.594	-	0	satis.

<u>SPIKED SAMPLE</u>			
Sample ID	Nuclide	Results ± 2σ	MDA
8653-005	GrossAlpha	74.0 ± 2.9	0.626
	Gross Beta	66.0 ± 1.7	0.891

<u>ORIGINAL SAMPLE</u>					
Sample ID	Results ± 2σ	MDA	Added	%Recv	
8653-001	0.735 ± 0.45	0.587	71.4	103	
	7.03 ± 0.74	0.906	65.5	90	

Certified by 

Report Date 03/21/06

Page 2

JAN 10 2006 11:42AM

DEL-MAR ANALYTICAL

NO. 9214 P. 3



17461 Dorian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228  
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 5830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0643 Fax (480) 785-0651  
 2820 E. Sunset Rd., Suite 35, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-9021

### SUBCONTRACT ORDER - PROJECT # IPA0102

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Dorian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Eberline Services 2030 Wright Avenue Richmond, CA 94804 Phone: (510) 235-2633 Fax: (510) 235-0438

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

Analysis	Expiration	Comments
Sample ID: IPA0102-01 Water	Sampled: 01/03/06 13:25	
Gross Alpha-O	01/03/07 13:25	900.0, IF RESULT>15 pCi/L, run Radium 226 & 228
Gross Beta-O	01/03/07 13:25	900.0, IF RESULT>50 pCi/L, run Radium 226 & 228
Level 4 + EDD-OUT	01/31/06 13:25	**LEVEL IV QC, ACCESS 7 EDD**
Radium, Combined-O	01/03/07 13:25	HOLD for Gross Alpha/Beta result, EPA 903.1 & 904.0
Strontium 90-O	01/03/07 13:25	905.0
Tritium-O	01/03/07 13:25	906
Containers Supplied: 1 gal Poly (IPA0102-01M) 1 gal Poly (IPA0102-01N)		

*off hold + analyze  
MC 1/10/06*

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sample labels/DOC agree:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received On Icon:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received at (temp):	_____	

Released By: *Ch-Ch* Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: *Alex Keleny* Date: 01/05/06 Time: 09:20

Released By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



**RICHMOND, CA LABORATORY**  
SAMPLE RECEIPT CHECKLIST

Client: DEL MAR City IRVINE State CA  
 Date/Time received 01/05/06 9:22 CoC No. #IPAC102  
 Container I.D. No. Box 15710 Requested TAT (Days) STD 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 []
6. Number of samples in shipping container: 1 Sample Matrix W
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 \_\_\_\_\_ Preservative \_\_\_\_\_
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_
14. Was P.M. notified of any anomalies? Yes [] No [ ] Date \_\_\_\_\_
15. Inspected by MFM Date: 01/05/06 Time: 10:00

Customer Sample No.	com	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

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



## **APPENDIX G**

### **Section 34**

Outfall 009, January 03, 2006

AMEC Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4MT31  
 Task Order 1261.0010.01  
 SDG No. 1PA0102

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: P. Meeks  
 Reviewer's Signature  
P. Meeks

<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: <u>① Detects and negative results in the blanks</u> <u>② Detects below the reporting limit</u>
<b>COMMENTS<sup>b</sup></b>	_____

<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.  
<sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 009  
LARWQCB Sample Splits

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0102

Prepared by

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



## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>x</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 18, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for ICP and ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.7, 200.8, and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	200.7, 200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP and ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP and ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

DATA VALIDATION REPORT

**2.4 BLANKS**

There were detects and negative results in the method blanks and CCBs associated with the sample in this SDG:

Blank Detect	Affected Samples	Qualification
Chromium was detected in method blank 6A04092-BLK1 at 1.63 µg/L.	Outfall 009 Split	Chromium detected in the sample was qualified as estimated, "UJ."
Antimony was detected in method blank 6A04091-BLK1 at 0.242.	Outfall 009 Split	Antimony detected in the sample was qualified as estimated, "UJ."
Nickel was detected in method blank 6A04091-BLK1 at 1.06 µg/L.	Outfall 009 Split	Nickel detected in the sample was qualified as estimated, "UJ."
Arsenic was detected in a bracketing CCB (01/06/06) at 0.581 µg/L.	Outfall 009 Split	Arsenic detected in the sample was qualified as estimated, "UJ."
Silver was reported in a CCB (01/09/06) at -0.767 µg/L.	Outfall 009 Split	Nondetected silver in the sample was qualified as estimated, "UJ."

The laboratory reported molybdenum as detected in method blank 6A04091-BLK1 at 0.394 µg/L; however, the method blank was not analyzed the same day that Outfall 009 Split was analyzed. The day Outfall 009 Split was analyzed, molybdenum was reported in both bracketing CCBs (01/06/06) at -0.334 and -0.356 µg/L, and was reported in the method blank at -0.519 µg/L. As the negative molybdenum results more accurately reflect the instrument conditions on the day Outfall 009 was analyzed, the reviewer qualified molybdenum detected in Outfall 009 Split as estimated, "J." No further qualifications were required.

**2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)**

ICSA and ICSAB analyses were included in the raw data for the ICP and ICP-MS analyses. For the ICP and ICP-MS analyses, all recoveries were acceptable. For the ICP-MS analyses there were some unspiked analytes detected in the ICSA and ICSAB; however, as none were detected above the applicable reporting limits, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

**2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES**

The ICP, ICP-MS, and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No matrix spike analyses were performed for the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Analytes detected below the reporting limit were qualified as estimated, "J," and denoted with "DNQ," in accordance with the NPDES permit. No further qualifications were required.

## 2.12 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### 2.12.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

**2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Raw Qual	Raw Code
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: ug/l										
Antimony	EPA 200.8	6A04091	0.050	2.0	1.0	1	01/04/06	01/06/06	U J, B	B
Arsenic	EPA 200.8	6A04091	0.50	1.0	1.8	1	01/04/06	01/06/06	U J	B
Beryllium	EPA 200.8	6A04091	0.075	0.50	0.085	1	01/04/06	01/09/06	J J	DNQ
Cadmium	EPA 200.8	6A04091	0.025	1.0	ND	1	01/04/06	01/06/06	U	
Chromium	EPA 200.7	6A04092	0.68	5.0	1.4	1	01/04/06	01/05/06	U J	B
Cobalt	EPA 200.8	6A04091	0.035	1.0	0.27	1	01/04/06	01/06/06	J J	DNQ
Copper	EPA 200.8	6A04091	0.25	1.0	3.2	1	01/04/06	01/06/06		
Lead	EPA 200.8	6A04091	0.040	1.0	0.51	1	01/04/06	01/06/06	J J	DNQ
Mercury	EPA 245.1	6A04080	0.050	0.20	ND	1	01/04/06	01/04/06	U	
Molybdenum	EPA 200.8	6A04091	0.15	2.0	0.75	1	01/04/06	01/06/06	U J, B	B, DNQ
Nickel	EPA 200.8	6A04091	0.35	2.0	2.3	1	01/04/06	01/06/06	U J, B	B
Selenium	EPA 200.8	6A04091	0.30	2.0	0.30	1	01/04/06	01/06/06	J J	DNQ
Silver	EPA 200.8	6A09086	0.025	1.0	ND	1	01/09/06	01/09/06	U J	B
Thallium	EPA 200.8	6A04091	0.15	1.0	ND	1	01/04/06	01/06/06	U	
Vanadium	EPA 200.8	6A04091	0.70	2.0	1.5	1	01/04/06	01/06/06	J J	DNQ
Zinc	EPA 200.8	6A04091	1.0	10	6.5	1	01/04/06	01/06/06	J J	DNQ

**LEVEL IV**

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Bocing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont.									
Reporting Units: mg/l									
Barium	EPA 200.8	6A04091	0.00015	0.0010	0.041	1	01/04/06	01/06/06	AW Qual
Boron	EPA 200.7	6A04092	0.0080	0.050	0.12	1	01/04/06	01/05/06	AW Qual
Calcium	EPA 200.7	6A04092	0.040	0.10	39	1	01/04/06	01/05/06	AW Qual
Magnesium	EPA 200.7	6A04092	0.0070	0.020	11	1	01/04/06	01/05/06	AW Qual

**LEVEL IV**

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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IPA0102 <Page 9 of 45>







# DATA VALIDATION REPORT

NPDES Monitoring Program  
Outfall 009  
LARWQCB Split Samples

ANALYSIS: NDMA

SAMPLE DELIVERY GROUP IPA0102

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: NDMA  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: February 18, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Levels C and D Semivolatile Organics (DVP-3, Rev. 2)*, *EPA Method 1625C*, and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	1625C

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C at 5°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the analysis presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was extracted within seven days of collection and analyzed within 40 days of extraction. No qualifications were required.

### 2.2 GC/MS TUNING

Tuning is not applicable for this analysis. No qualifications were required.

### 2.3 CALIBRATION

One nine-point initial calibration analyzed 01/03/06 was associated with the samples in this SDG. The %RSD for NDMA was ≤35%, and the ion abundance ratios were within the control limits. An initial calibration verification (ICV) was analyzed following the initial calibration, with a recovery for NDMA within the QC limits of 80-120%. The continuing calibration associated with the sample analyses also had a recovery within the QC limits of 80-120%. No qualifications were required.

### 2.4 BLANKS

One method blank (6A08026-BLK1) was extracted and analyzed with this SDG. Target compound NDMA was detected between the MDL and the reporting limit, at a concentration of 0.00078 µg/L. NDMA was also detected in the site sample between the MDL and the reporting

limit. The sample result was qualified as a nondetect, "U," at the reporting limit. Review of the method blank raw data indicated no false positive. No further qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (6A08026-BS1/BSD1) and one low-level blank spike (6A08026-BS2) were extracted and analyzed with this SDG. All recoveries were within the QC limits of 70-130%. The RPD for the BS/BSD pair was within the QC limit of  $\leq 20\%$ . The recoveries were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision was based on the blank spike and blank spike/blank spike duplicate results. No qualifications were required.

## 2.7 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:

### 2.7.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.7.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.8 INTERNAL STANDARDS PERFORMANCE

The labeled internal standard area count was within the control limits of 20-150% of the internal standard area of the associated continuing calibration standard. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for target compound NDMA by EPA Method 1625C. Review of the sample chromatogram, retention time, and ion profiles indicated no problems with target compound identification. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limit was supported by the low point of the initial calibration and the laboratory MDL. Results were reported in  $\mu\text{g/L}$  (ppb). No qualifications were required.



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MWH-Pasadena/Boeing Project ID: LARWQCB Sample Splits  
300 North Lake Avenue, Suite 1200 Outfall 009  
Pasadena, CA 91101 Report Number: IPA0102 Sampled: 01/03/06  
Attention: Bronwyn Kelly Received: 01/03/06

SEMI-VOL ORGANICS by GC/MS-CHEMICAL IONIZATION (EPA 3520C/1625C-CI MOD)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Extracted Date	Analyzed Date	Data	Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont.										
Reporting Units: ug/l										
N-Nitrosodimethylamine	EPA 1625C-CI Mod6A08026	0.00019	0.0019	ND	0.00045	0.943	01/08/06	01/10/06	u	B, J B

WAC  
02-14-06

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

Level III

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MEC<sup>x</sup>  
 12289 East Vassar Drive  
 Aurora, CO 80014

Package ID B4PP4  
 Task Order 1261.001D.01  
 SDG No. IPA0102

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer K. Shadowlight  
 Analysis/Method PCBs by Method 608

Date: February 17, 2006  
 Reviewer's Signature  


<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative Deficiencies</b>	
<b>2. Out of Scope Analyses</b>	
<b>3. Analyses Not Conducted</b>	
<b>4. Missing Hardcopy Deliverables</b>	
<b>5. Incorrect Hardcopy Deliverables</b>	
<b>6. Deviations from Analysis</b>	
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	<b>Acceptable as reviewed.</b>
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Outfall 009  
LARWQCB Split Samples

ANALYSIS: PCBs

SAMPLE DELIVERY GROUP: IPA0102

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>x</sup> Project Number: 1261.001.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: PCBs  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 17, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Volatile Organics (DVP-4, Rev. 2)*, *EPA Method 608*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	608

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C, at 5°C. According to the case narrative for this SDG, the sample was received intact and on ice. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the sample was couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

### 2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for PCBs, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are ±0.10 minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

### 2.3 CALIBRATION

#### 2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

#### 2.3.2 Initial Calibration

There was one initial calibration dated 12/23/05 associated with site sample in this SDG. The initial calibration consisted of six point calibrations for Aroclor 1016 and Aroclor 1260 on two analytical columns. The  $r^2$  values of the individual Aroclor peaks for Aroclor 1016 and Aroclor

DATA VALIDATION REPORT

1260 were  $\geq 0.995$  on the primary column (Channel A) and the average %RSDs of the individual Aroclor peaks were  $\leq 10\%$  on the secondary column (Channel B). As there were no Aroclors detected in the sample and all results were reported from Channel A, the secondary column was not further evaluated. An ICV was analyzed immediately following the initial calibration and the %Ds for Aroclor 1016 and Aroclor 1260 were within the QC limits of  $\leq 15\%$  on the primary analytical column. A representative number of  $r^2$  values and ICV %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

### 2.3.3 Continuing Calibration

Sample Outfall 009 was bracketed by two continuing calibrations. The %Ds for Aroclor 1016 and Aroclor 1260 were within the Method QC limit of  $\leq 15\%$  for both calibrations. The %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

## 2.4 BLANKS

### 2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of the analytical sequence. There was no evidence of cross-contamination in the instrument blank or sample. No qualifications were necessary.

### 2.4.2 Method Blanks

One water method blank (6A06049-BLK1) was extracted and analyzed with this SDG. There were no target compounds detected in the method blank. Review of the chromatograms for both channels showed no false negative. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (6A06049-BS2/BSD2) was extracted and analyzed with this SDG. The recoveries and RPDs for spiked compounds Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory-established QC limits for the sample in this SDG. The recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision were based on the blank spike/blank spike duplicate results. No qualifications were required.

## 2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchsheets, no cleanups were performed on the water sample. No qualifications were required.

## 2.9 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:

### 2.9.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.9.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for PCBs by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the sample in this SDG. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.



# Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Bocing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splins Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

### TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: ug/l									
Aroclor 1016	EPA 608	6A06049	0.20	1.0	ND	1	01/06/06	01/06/06	<i>See Split</i> <i>Just edit</i> 
Aroclor 1221	EPA 608	6A06049	0.10	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1232	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1242	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1248	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1254	EPA 608	6A06049	0.25	1.0	ND	1	01/06/06	01/06/06	
Aroclor 1260	EPA 608	6A06049	0.40	1.0	ND	1	01/06/06	01/06/06	
Surrogate: Decachlorobiphenyl (45-120%)					85 %				

*Level W*

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: R4SV17  
 Task Order: 1261.001D.01  
 SDG No.: IPA0102

No. of Analyses: 1

Laboratory: Del Mar Analytical

Date: February 18, 2006

Reviewer: L. Calvin

Reviewer's Signature

Analysis/Method: Semivolatiles by Method 625

*L. Calvin*

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: -continuing calibration %D outliers -method blank contamination -detects reported between the MDL and the reporting limit
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Outfall 009  
LARWQCB Split Samples

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP IPA0102

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>x</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Semivolatiles  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: February 18, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MECX Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 625*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	625

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C at 5°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the analysis presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was extracted within seven days of collection and analyzed within 40 days of extraction. No qualifications were required.

### 2.2 GC/MS TUNING

The DFTPP tunes analyzed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 625. No qualifications were required.

### 2.3 CALIBRATION

One initial calibration was associated with the sample, dated 12/22/05. The average RRFs were  $\geq 0.05$  for all target compounds. The %RSDs were  $\leq 35\%$  for all target compounds. The continuing calibration associated with the samples in this SDG was dated 01/11/06. The RRFs for all target compounds were  $\geq 0.05$ . The %Ds exceeded the QC limit of  $\leq 20\%$  for benzidine, benzoic acid, and isophorone. Results for the aforementioned compounds were qualified as estimated, "UJ," for nondetects, and "J," for detects in the site sample of this SDG. A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

## 2.4 BLANKS

One method blank (6A08028-BLK1) was extracted and analyzed with this SDG. Target compounds bis(2-ethylhexyl)phthalate, butylbenzylphthalate, and diethylphthalate were detected between the MDLs and the reporting limits, and dibenz(a,h)anthracene was detected above the reporting limit in the method blank. All of the aforementioned compounds were also detected in the site sample. Results for bis(2-ethylhexyl)phthalate, butylbenzylphthalate, and diethylphthalate were qualified as nondetects, "U," at the reporting limits. The result for dibenz(a,h)anthracene was qualified as an estimated nondetect, "UJ," and the reporting limit was raised to the level of contamination. Review of the method blank raw data indicated no false positives or false negatives. No further qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (6A08028-BS1/BSD1) was extracted and analyzed with this SDG. All recoveries and RPDs were within the laboratory-established QC limits. A representative number of recoveries were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries for the sample were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision was based on the blank spike/blank spike duplicate results. No qualifications were required.

## 2.8 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:

### 2.8.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times for the sample were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for semivolatile target compounds by EPA Method 625. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any detects between the MDL and the reporting limit were qualified as estimated, "J," by the laboratory, and were annotated with the "DNQ" qualifier code by the reviewer. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.



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9464 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-8596 FAX (619) 505-0909
9830 South 31st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0831
2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 730-3630 FAX (702) 798 3621

MWH-Pasadena/Boeing Project ID: LARWQCB Sample Splits
300 North Lake Avenue, Suite 1200 Outfall 009
Pasadena, CA 91101 Report Number: IPA0102
Attention: Bronwyn Kelly Sampled: 01/03/06
Received: 01/03/06

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Table with columns: Analyte, Method, Batch, MDL Limit, Reporting Limit, Sample Result, Dilution Factor, Date Extracted, Date Analyzed, Data Qualifiers. Includes handwritten notes like 'rel. Qual' and 'Qual. Check'.

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

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 9930 South 57th St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0821  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont.									
Reporting Units: ug/l									
Fluoranthene	EPA 625	6A08028	0.089	0.50	ND	1	01/08/06	01/11/06	WJCC
Fluorene	EPA 625	6A08028	0.075	0.50	ND	1	01/08/06	01/11/06	WJCC
1-Hexachlorobenzene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	WJCC
Hexachlorobutadiene	EPA 625	6A08028	0.38	2.0	ND	1	01/08/06	01/11/06	WJCC
Hexachlorocyclopentadiene	EPA 625	6A08028	1.8	5.0	ND	1	01/08/06	01/11/06	WJCC
Hexachloroethane	EPA 625	6A08028	0.51	3.0	ND	1	01/08/06	01/11/06	WJCC
Indeno(1,2,3-cd)pyrene	EPA 625	6A08028	0.19	2.0	ND	1	01/08/06	01/11/06	WJCC
Isophorone	EPA 625	6A08028	0.059	1.0	ND	1	01/08/06	01/11/06	WJCC
2-Methylnaphthalene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	WJCC
2-Methylphenol	EPA 625	6A08028	0.28	2.0	ND	1	01/08/06	01/11/06	WJCC
4-Methylphenol	EPA 625	6A08028	0.20	5.0	ND	1	01/08/06	01/11/06	WJCC
Naphthalene	EPA 625	6A08028	0.13	1.0	ND	1	01/08/06	01/11/06	WJCC
2-Nitroaniline	EPA 625	6A08028	0.18	5.0	ND	1	01/08/06	01/11/06	WJCC
3-Nitroaniline	EPA 625	6A08028	0.35	5.0	ND	1	01/08/06	01/11/06	WJCC
4-Nitroaniline	EPA 625	6A08028	0.49	5.0	ND	1	01/08/06	01/11/06	WJCC
Nitrobenzene	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	WJCC
2-Nitrophenol	EPA 625	6A08028	0.23	2.0	ND	1	01/08/06	01/11/06	WJCC
4-Nitrophenol	EPA 625	6A08028	0.73	5.0	ND	1	01/08/06	01/11/06	WJCC
N-Nitrosodimethylamine	EPA 625	6A08028	0.22	2.0	ND	1	01/08/06	01/11/06	WJCC
N-Nitroso-di-n-propylamine	EPA 625	6A08028	0.18	2.0	ND	1	01/08/06	01/11/06	WJCC
N-Nitrosodiphenylamine	EPA 625	6A08028	0.077	1.0	ND	1	01/08/06	01/11/06	WJCC
Pentachlorophenol	EPA 625	6A08028	0.78	2.0	ND	1	01/08/06	01/11/06	WJCC
Phenanthrene	EPA 625	6A08028	0.071	0.50	ND	1	01/08/06	01/11/06	WJCC
Phenol	EPA 625	6A08028	0.14	1.0	ND	1	01/08/06	01/11/06	WJCC
Pyrene	EPA 625	6A08028	0.059	0.50	ND	1	01/08/06	01/11/06	WJCC
1,2,4-Trichlorobenzene	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	WJCC
2,4,5-Trichlorophenol	EPA 625	6A08028	0.075	2.0	ND	1	01/08/06	01/11/06	WJCC
2,4,6-Trichlorophenol	EPA 625	6A08028	0.10	1.0	ND	1	01/08/06	01/11/06	WJCC
Surrogate: 3-Fluorophenol (35-120%)					60 %				
Surrogate: Phenol-d6 (45-120%)					71 %				
Surrogate: 2,4,6-Tribromophenol (50-125%)					78 %				
Surrogate: Nitrobenzene-d5 (45-120%)					72 %				
Surrogate: 3-Fluorobiphenyl (45-120%)					71 %				
Surrogate: Terphenyl-d14 (45-135%)					75 %				

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

Level IV

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4V018  
 Task Order: 1261.001D.01  
 SDG No.: IPA0102

No. of Analyses: 1

Laboratory: Del Mar Analytical  
 Reviewer: L. Calvin  
 Analysis/Method: Volatiles by Method 624

Date: February 18, 2006  
 Reviewer's Signature: *L. Calvin*

<b>ACTION ITEMS<sup>a</sup></b>	
Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysts Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: -target compounds searched for as TICs were estimated
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	

84V018



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Outfall 009  
LARWQCB Split Samples

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPA0102

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>x</sup> Project Number: 1261.001.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: February 17, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 624*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C, at 5°C. According to the case narrative for this SDG, the sample was received intact, on ice, and properly preserved. Information regarding lack of headspace in the VOA vials was not provided. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the sample was couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was analyzed within 14 days of collection. No qualifications were required.

### 2.2 GC/MS TUNING

The BFB tune performed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 624. No qualifications were required.

### 2.3 CALIBRATION

Two initial calibrations were associated with the sample in this SDG, dated 12/21/05 (Freon 113 only) and 12/29/05 (all remaining target compounds). The average RRFs were ≥0.05 and the %RSDs were ≤35% for all target compounds listed on the sample summary forms. The continuing calibrations associated with the sample in this SDG were dated 01/03/06. The RRFs for all target compounds were ≥0.05 and all %Ds were within the QC limit of ≤20%. A representative number of average RRFs and %RSDs in the initial calibrations and RRFs and %Ds in the continuing calibrations were checked from the raw data, and no calculation or transcription errors were noted. No further qualifications were required.

### 2.4 BLANKS

One method blank (6A03022-BLK1) was analyzed with this SDG. No target compounds were detected in the method blank. Review of the method blank raw data indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (6A03022-BS1) was analyzed with this SDG. The recoveries within the laboratory-established QC limits, with the exception of a recovery above the QC limits for 1,1,2,2-tetrachloroethane. As 1,1,2,2-tetrachloroethane was not detected in the sample of this SDG, no qualification was necessary. Target compounds 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane were not included in the blank spike (see section 2.10). A representative number of recoveries were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory QC limits of 80-120% for this SDG. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy was based on the blank spike results. No qualifications were required.

## 2.8 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:

### 2.8.1 Trip Blanks

There was no trip blank sample associated with the sample in this SDG; however, as there were no sample detects, evaluation of possible trip blank contamination was not necessary. No qualifications were required.

### 2.8.2 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for volatile target compounds by EPA Method 624. For two of the requested target compounds, 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane, only a TIC search was performed. Calibration was performed for 1,2-dichloro-1,1,2-trifluoroethane but was not utilized, and no calibration was performed for cyclohexane. Neither compound was identified in the site sample. Nondetect results for both compounds were qualified as estimated, "UJ," in the site sample. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG; however, a TIC search was performed for two requested target compounds, 1,2-dichloro-1,1,2-trifluoroethane and cyclohexane (see section 2.10). No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.





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MWH-Pasadena/Boeing Project ID: LARWQCB Sample Splits
300 North Lake Avenue, Suite 1200 Outfall 009
Pasadena, CA 91101 Report Number: IPA0102
Attention: Bronwyn Kelly Sampled: 01/03/06
Received: 01/03/06

PURGEABLES BY GC/MS (EPA 624)

Table with columns: Analyte, Method, Batch, MDL Limit, Reporting Limit, Sample Result, Dilution Factor, Date Extracted, Date Analyzed, Data Qualifiers. Includes handwritten notes 'Real Deal' and 'L'.

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

Level IV

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifier
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: ug/l									
1,2-Dichloro-1,1,2-trifluoroethane	EPA 624 (MOD.)	6A03022	N/A	2.5	ND	1	01/03/06	01/04/06	↓
Cyclohexane	EPA 624 (MOD.)	6A03022	N/A	2.5	ND	1	01/03/06	01/04/06	↓

vel  
Qual  
Probe

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

Level IV


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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4WC22  
 Task Order 1261.001D.01  
 SDG No. IPA0102  
 No. of Analyses 1

Laboratory Del Mar - Irvine  
 Reviewer E. Wessling  
 Analysis/Method General Minerals

Date: February 17, 2006  
 Reviewer's Signature 

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: - estimated values between the RL and MDL
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 009  
LARWQCB Splits

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPA0102

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0102  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: February 17, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 120.1, 160.5, 335.2, 350.2, 405.1, and 415.1*, and *Standard Methods for the Examination of Water and Wastewater Method SM5540-C*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 009	IPA0102-01	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All samples were analyzed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For all applicable analyses, the initial calibration correlation coefficients were  $\geq 0.995$  and the ICV and CCV recoveries were within the control limits of 90-110%. No qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses. Raw data was reviewed to verify the blank data. No qualifications were required.

### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The reported LCS recoveries were within the laboratory-established control limits. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

Duplicate analyses were performed on Outfall 009 for total cyanide only. The RPD was less than the laboratory control limit of  $\leq 20\%$ . No qualifications were required.

## 2.6 MATRIX SPIKES

MS/MSD analysis was performed in association with the total cyanide analysis on the Outfall 009 sample. Assessment was made with respect to this criterion for total cyanide only. The total cyanide recoveries were within QC limits (70-115%); therefore, no qualifications were required. Evaluation of method accuracy was based on LCS results for all other analyses. No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Results reported by the laboratory between the MDL and reporting limit were qualified as estimated "J" values and annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.





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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6A05098	0.30	0.50	ND	1	01/05/06	01/05/06	U
Biochemical Oxygen Demand	EPA 405.1	6A04062	0.59	2.0	0.90	1	01/04/06	01/09/06	J J DNA
Fluoride *	EPA 300.0	6A03051	0.10	0.50	0.29	1	01/03/06	01/03/06	J B
Hardness (as CaCO3) *	SM2340B	6A04092	1.0	1.0	140	1	01/04/06	01/05/06	
Nitrate/Nitrite-N *	EPA 300.0	6A03051	0.072	0.26	2.7	1	01/03/06	01/03/06	
Sulfate *	EPA 300.0	6A03051	0.18	0.50	52	1	01/03/06	01/03/06	
Surfactants (MBAS)	SM5540-C	6A03114	0.044	0.10	ND	1	01/03/06	01/03/06	U
Total Dissolved Solids *	SM2540C	6A04107	10	10	260	1	01/04/06	01/04/06	
Total Organic Carbon	EPA 415.1	6A06094	0.25	1.0	9.1	1	01/06/06	01/06/06	
Total Suspended Solids *	EPA 160.2	6A06118	10	10	ND	1	01/06/06	01/06/06	U

\* analysis not validated

# LEVEL IV

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 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	6A04072	0.10	0.10	ND	1	01/04/06	01/04/06	u

*Handwritten notes:*  
 Total Settleable Solids  
 u

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

# LEVEL IV

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: LARWQCB Sample Splits  
 Outfall 009  
 Report Number: IPA0102

Sampled: 01/03/06  
 Received: 01/03/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6A06111	2.2	5.0	3.4	1	01/06/06	01/09/06	JJ
*Perchlorate	EPA 314.0	6A04078	0.80	4.0	ND	1	01/04/06	01/04/06	X

*Handwritten notes:*  
 Row 1: JJ  
 Row 2: X  
 Col 10: JJ, DNG

*\* Analysis not validated*

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

**LEVEL IV**

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: LARWQCB Sample Splits Outfall 009 Report Number: IPA0102	Sampled: 01/03/06 Received: 01/03/06
--	--	---

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0102-01 (009 Split - Water) - cont. Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6A04105	1.0	1.0	420	1	01/04/06	01/04/06	Rev: Good Good case

**LEVEL IV**

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Michele Chamberlin  
Project Manager

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## **APPENDIX G**

### **Section 35**

Outfall 010, January 02, 2006

Del Mar Analytical Laboratory Report



**LABORATORY REPORT**

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Routine Outfall 010

Sampled: 01/02/06  
Received: 01/02/06  
Issued: 01/16/06 14:56

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.*

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

**SAMPLE CROSS REFERENCE**

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

**LABORATORY ID**  
IPA0016-01

**CLIENT ID**  
Outfall 010

**MATRIX**  
Water

Reviewed By:

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06

Received: 01/02/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0016-01 (Outfall 010 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Antimony	EPA 200.8	6A04084	0.050	2.0	0.47	1	01/04/06	01/05/06	B, J
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.042	1	01/04/06	01/05/06	J
Copper	EPA 200.8	6A04084	0.25	2.0	3.2	1	01/04/06	01/05/06	B
Lead	EPA 200.8	6A04084	0.040	1.0	1.1	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	

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 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06

Received: 01/02/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0016-01 (Outfall 010 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6A03053	0.15	0.50	10	1	01/03/06	01/03/06	
Nitrate/Nitrite-N	EPA 300.0	6A03053	0.080	0.15	0.44	1	01/03/06	01/03/06	
Oil & Grease	EPA 413.1	6A06048	0.90	4.8	1.9	1	01/06/06	01/06/06	J
Sulfate	EPA 300.0	6A03053	0.45	0.50	7.2	1	01/03/06	01/03/06	
Total Dissolved Solids	SM2540C	6A03093	10	10	130	1	01/03/06	01/03/06	
Total Suspended Solids	EPA 160.2	6A05110	10	10	21	1	01/05/06	01/05/06	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Routine Outfall 010  Report Number: IPA0016	Sampled: 01/02/06 Received: 01/02/06
--	---	---

## SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 010 (IPA0016-01) - Water EPA 300.0	2	01/02/2006 08:45	01/02/2006 13:30	01/03/2006 09:00	01/03/2006 09:10

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06

Received: 01/02/06

## 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: 6A03072 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03072-BLK1)</b>											
Mercury	ND	0.20	0.063	ug/l							
<b>LCS Analyzed: 01/03/2006 (6A03072-BS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03072-MS1)</b>											
Mercury	7.95	0.20	0.063	ug/l	8.00	ND	99	70-130			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03072-MSD1)</b>											
Mercury	8.00	0.20	0.063	ug/l	8.00	ND	100	70-130	1	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Antimony	0.162	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Antimony	78.5	2.0	0.050	ug/l	80.0		98	85-115			
Cadmium	80.2	1.0	0.025	ug/l	80.0		100	85-115			
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
Antimony	78.2	2.0	0.050	ug/l	80.0	0.26	97	70-130			
Cadmium	76.0	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06  
 Received: 01/02/06

## 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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>						<b>Source: IOL2694-50</b>					
Antimony	80.0	2.0	0.050	ug/l	80.0	0.094	100	70-130			
Cadmium	76.2	1.0	0.025	ug/l	80.0	ND	95	70-130			
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Antimony	76.7	2.0	0.050	ug/l	80.0	0.26	96	70-130	2	20	
Cadmium	76.1	1.0	0.025	ug/l	80.0	ND	95	70-130	0	20	
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06  
 Received: 01/02/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03053 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03053-BLK1)</b>											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.15	0.080	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03053-BS1)</b>											
Chloride	4.97	0.50	0.26	mg/l	5.00		99	90-110			
Sulfate	10.2	0.50	0.18	mg/l	10.0		102	90-110			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03053-MS1) Source: IPA0016-01</b>											
Chloride	15.1	0.50	0.26	mg/l	5.00	10	102	80-120			
Sulfate	17.5	0.50	0.18	mg/l	10.0	7.2	103	80-120			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03053-MSD1) Source: IPA0016-01</b>											
Chloride	15.1	0.50	0.26	mg/l	5.00	10	102	80-120	0	20	
Sulfate	17.4	0.50	0.18	mg/l	10.0	7.2	102	80-120	1	20	
<b>Batch: 6A03093 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03093-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03093-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/03/2006 (6A03093-DUP1) Source: IPA0005-01</b>											
Total Dissolved Solids	981	10	10	mg/l		980			0	10	

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 Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06

Received: 01/02/06

## 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: 6A05110 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05110-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/05/2006 (6A05110-BS1)</b>											
Total Suspended Solids	965	10	10	mg/l	1000		96	85-115			
<b>Duplicate Analyzed: 01/05/2006 (6A05110-DUP1)</b>											
Total Suspended Solids	382	10	10	mg/l		380			1	10	
<b>Batch: 6A06048 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06048-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06048-BS1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/06/2006 (6A06048-BSD1)</b>											
Oil & Grease	19.6	5.0	0.94	mg/l	20.0		98	65-120	2	20	

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing Project ID: Routine Outfall 010  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101 Report Number: IPA0016  
Attention: Bronwyn Kelly Sampled: 01/02/06  
Received: 01/02/06

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
IPA0016-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.90	4.8	15
IPA0016-01	Chloride - 300.0	Chloride	mg/l	10.00	0.50	150
IPA0016-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.44	0.15	10.00
IPA0016-01	Sulfate-300.0	Sulfate	mg/l	7.20	0.50	250
IPA0016-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	130	10	850

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Amy Windham For Michele Chamberlin  
Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06  
Received: 01/02/06

### 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-NR1** 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

Del Mar Analytical, Irvine  
Amy Windham For Michele Chamberlin  
Project Manager

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# Del Mar Analytical

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010  
 Report Number: IPA0016

Sampled: 01/02/06  
 Received: 01/02/06

## Certification Summary

### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

### Subcontracted Laboratories

**Alta 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: IPA0016-01

Analysis Performed: EDD + Level 4  
 Samples: IPA0016-01

**Del Mar Analytical, Irvine**  
 Amy Windham For Michele Chamberlin  
 Project Manager

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IPA 0016

**CHAIN OF CUSTODY FORM**

Version 02/17/05

ANALYSIS REQUIRED

Client Name/Address: <b>MWH-Pasadena</b> 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Project: <b>Boeing-SSFL NPDES                  Routine Outfall 010</b> Stormwater at Building 203		Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg		TCDD (and all congeners)		Oil & Grease (EPA 413.1)		CH <sub>3</sub> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N TDS, TSS		Field readings: Temp = 55.6 pH = 6.85	
Project Manager: Bronwyn Kelly		Phone Number: (626) 568-8691		Fax Number: (626) 568-6515		Preservative		Sampling Date/Time 01-22-06		Bottle #		Comments	
Sample Description Outfall 010	Sample Matrix W	Container Type Poly-1L	# of Cont. 1	HNO <sub>3</sub>	1A	X	X	X	X	X	X	X	X
Outfall 010-Dup	W	Poly-1L	1	HNO <sub>3</sub>	1B	X	X	X	X	X	X	X	X
Outfall 010	W	Glass-Amber	2	None	2A, 2B	X	X	X	X	X	X	X	X
Outfall 010	W	Glass-Amber	2	HCl	3A, 3B	X	X	X	X	X	X	X	X
Outfall 010	W	Poly-500 ml	2	None	4A, 4B	X	X	X	X	X	X	X	X
Outfall 010	W	Poly-500 ml	2	None	5A, 5B	X	X	X	X	X	X	X	X
Relinquished By <i>Bronwyn Kelly</i>	Date/Time: 01-22-06 11:15	Received By <i>Bronwyn Kelly</i>	Date/Time: 01/22/06 12:00	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____		Perchlorate Only 72 Hours _____		Metals Only 72 Hours _____		Sample Integrity (Check) On Ice: <input checked="" type="checkbox"/>		46	
Relinquished By <i>Bronwyn Kelly</i>	Date/Time: 01/22/06 13:30	Received By <i>[Signature]</i>	Date/Time: 12/06 1330	Relinquished By <i>[Signature]</i>		Date/Time: 12/06 1330		Relinquished By <i>[Signature]</i>		Date/Time: 12/06 1330		Relinquished By <i>[Signature]</i>	



January 17, 2006

**Alta Project I.D.: 27128**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 04, 2006 under your Project Name "IPA0016". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/4/2006**

Alta Lab. ID

Client Sample ID

27128-001

IPA0016-01

**SECTION II**

Method Blank		EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06
				Date Analyzed DB-225:	NA
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	%R	LCL-UCL <sup>d</sup> Qualifiers
IS					
2,3,7,8-TCDD	ND	0.000000671		84.0	25 - 164
1,2,3,7,8-PeCDD	ND	0.000000560		78.7	25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000149		81.9	32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000147		74.4	28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000145		75.6	23 - 140
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		40.1	17 - 157
OCDD	ND	0.00000535		82.6	24 - 169
2,3,7,8-TCDF	ND	0.000000546		65.3	24 - 185
1,2,3,7,8-PeCDF	ND	0.00000112		71.3	21 - 178
2,3,4,7,8-PeCDF	ND	0.000000885		73.7	26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000511		70.0	26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000518		78.0	28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000522		79.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000675		64.7	28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		76.3	26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		49.6	17 - 157
OCDF	ND	0.00000360		88.7	35 - 197
<b>Totals</b>					
Total TCDD	ND	0.000000671			
Total PeCDD	ND	0.000000560			
Total HxCDD	ND	0.00000147			
Total HpCDD	ND	0.00000146			
Total TCDF	ND	0.000000546			
Total PeCDF	ND	0.000000997			
Total HxCDF	ND	0.000000553			
Total HpCDF	ND	0.000000692			
<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: JMH

Approved By: Martha M. Maier 17-Jan-2006 11:16

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.2	25 - 164
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 17-Jan-2006 11:16

Sample ID: IPA0016-01		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27128-001
Project:	IPA0016	Sample Size:	1.02 L	QC Batch No.:	7632
Date Collected:	2-Jan-06			Date Analyzed DB-5:	11-Jan-06
Time Collected:	0845			Date Analyzed DB-225:	NA
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	0.000000711		IS 13C-2,3,7,8-TCDD	76.4 25 - 164
1,2,3,7,8-PeCDD	ND	0.00000111		13C-1,2,3,7,8-PeCDD	80.8 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000178		13C-1,2,3,4,7,8-HxCDD	80.3 32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000188		13C-1,2,3,6,7,8-HxCDD	76.6 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000179		13C-1,2,3,4,6,7,8-HpCDD	81.9 23 - 140
1,2,3,4,6,7,8-HpCDD	0.0000518			13C-OCDD	60.1 17 - 157
OCDD	0.000485			13C-2,3,7,8-TCDF	75.6 24 - 169
2,3,7,8-TCDF	ND	0.000000965		13C-1,2,3,7,8-PeCDF	74.3 24 - 185
1,2,3,7,8-PeCDF	ND	0.00000219		13C-2,3,4,7,8-PeCDF	74.0 21 - 178
2,3,4,7,8-PeCDF	ND	0.00000189		13C-1,2,3,4,7,8-HxCDF	75.4 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.00000136		13C-1,2,3,6,7,8-HxCDF	71.3 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.00000136		13C-2,3,4,6,7,8-HxCDF	77.8 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.00000146		13C-1,2,3,7,8,9-HxCDF	80.6 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.00000195		13C-1,2,3,4,6,7,8-HpCDF	73.2 28 - 143
1,2,3,4,6,7,8-HpCDF	0.0000158		J	13C-1,2,3,4,7,8,9-HpCDF	81.4 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.00000770		13C-OCDF	67.0 17 - 157
OCDF	0.000154			CRS 37Cl-2,3,7,8-TCDD	78.3 35 - 197
<b>Totals</b>					
Total TCDD	ND	0.000000711			
Total PeCDD	ND	0.00000104			
Total HxCDD	0.00000640				
Total HpCDD	0.000112				
Total TCDF	ND	0.000000967			
Total PeCDF	ND	0.00000204			
Total HxCDF	ND	0.00000152			
Total HpCDF	0.0000409				
<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: JMH  
 Approved By: Martha M. Maier  
 17-Jan-2006 11:16

**APPENDIX**



## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<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



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 9630 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 796-3820 Fax (702) 796-3821

## SUBCONTRACT ORDER - PROJECT # IPA0016

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB <div style="text-align: right; font-size: 2em; font-weight: bold;">27128</div> 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 2em; font-weight: bold;">OC</div>

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

Analysis	Expiration	Comments
Sample ID: IPA0016-01 Water	Sampled: 01/02/06 08:45	Instant Notification
1613-Dioxin-HR-Alta	01/09/06 08:45	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	01/30/06 08:45	Excel EDD email to pm, include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPA0016-01C)		
1 L Amber (IPA0016-01D)		

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp):	_____

Released By: Date: 1/3/06 Time: \_\_\_\_\_ Received By: Date: 1/4/06 Time: 0935

Released By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27128

Samples Arrival:	Date/Time 01/04/06 0935	Initials: BIB	Location: WR-2			
Logged In:	Date/Time 1/4/06 1421	Initials: BIB	Location: WR-2			
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> Cal	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice	<input type="radio"/> None		
Temp °C	0°	Time:	0950		Thermometer ID:	DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk #	7924 7903 4172		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	Sample Container
			<input checked="" type="radio"/> None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
			<input checked="" type="radio"/> Return
			<input type="radio"/> Dispose

Comments:



# **APPENDIX G**

## **Section 36**

Outfall 010, January 02, 2006  
AMEC Data Validation Reports


**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4MT4  
 Task Order 1261.001D.01  
 SDG No. IPA0016

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: February 3, 2006  
 Reviewer's Signature  


<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualification applied for antimony detected in the method blank. Analytes detected below the reporting limit were qualified as estimated.
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 010

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0016

Prepared by

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



## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0016  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 3, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 010	IPA0016-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

Antimony was detected in method blank 6A03072-BLK1 at 0.162 µg/L; therefore, antimony detected in Outfall 010 was qualified as an estimated nondetect, "UJ." The remaining method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No further qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Antimony and lead, which are not present in the ICSA or ICSAB, were detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead or antimony, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

## 2.11 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No

Project: NPDES  
SDG: IPA0016  
Analysis: Metals

*DATA VALIDATION REPORT*

---

transcription errors or calculation errors were noted. Cadmium detected below the reporting limit was qualified as estimated, "J," and annotated with "DNQ," in accordance with the requirements of the NPDES permit. No further qualifications were required.

## **2.12 FIELD QC SAMPLES**

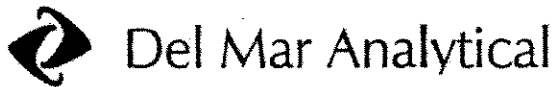
Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689  
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IPA0016

Sampled: 01/02/06

Received: 01/02/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Qual Code
Sample ID: IPA0016-01 (Outfall 010 - Water)											
Reporting Units: ug/l											
Antimony	EPA 200.8	6A04084	0.050	2.0	0.47	1	01/04/06	01/05/06	UJ B, J		B
Cadmium	EPA 200.8	6A04084	0.025	1.0	0.042	1	01/04/06	01/05/06	J J		DNA
Copper	EPA 200.8	6A04084	0.25	2.0	3.2	1	01/04/06	01/05/06	B		
Lead	EPA 200.8	6A04084	0.040	1.0	1.1	1	01/04/06	01/05/06			
Mercury	EPA 245.1	6A03072	0.050	0.20	ND	1	01/03/06	01/03/06	U		

LEVEL IV

Del Mar Analytical, Irvine  
 Amy Windham For Michele Chamberlin  
 Project Manager

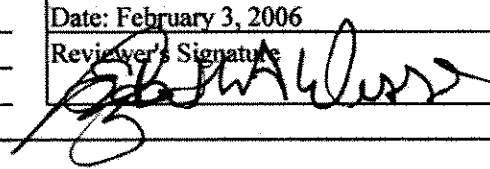
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4DF4  
 Task Order 1261.001.01  
 SDG No. IPA0016

No. of Analyses 1

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxins/Furans by 1613

Date: February 3, 2006  
 Reviewer's Signature 

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: --estimated values between the RL and the MDL
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 010

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPA0016

Prepared by  
MEC<sup>x</sup>, LLC  
12269 East Vassar Drive  
Aurora, CO 80014



## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA0016  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: February 2, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Sample ID	Laboratory ID (Del Mar)	Laboratory ID (Alfa)	Matrix	COC Method
Outfall 010	IPA0016-01	27128-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was shipped to Alta for dioxin/furan analysis and was received within the temperature limits of 4°C ±2°C or slightly below. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however not sample custody seals were present. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

#### 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG. No qualification was required.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No qualifications were required.

**EPA Method 1613**

Sample ID: **IPA0016-01** *Outfall 010*

Client Data  
 Name: Del Mar Analytical, Irvine  
 Project: IPA0016  
 Date Collected: 2-Jan-06  
 Time Collected: 0845

Laboratory Data  
 Lab Sample: 27128-001  
 QC Batch No.: 7632  
 Date Analyzed DB-5: 11-Jan-06

Date Received: 4-Jan-06  
 Date Extracted: 8-Jan-06  
 Date Analyzed DB-225: NA

Sample Data		Laboratory Data	
Matrix	Aqueous	Lab Sample	Date Received
Sample Size	1.02 L	QC Batch No.	Date Extracted
DL <sup>a</sup>	EMPC <sup>b</sup>	Date Analyzed DB-5	Date Analyzed DB-225
Analyte	Conc. (ug/L)	Labeled Standard	%R LCL-UCL <sup>d</sup> Qualifiers
2,3,7,8-TCDD	ND	IS 13C-2,3,7,8-TCDD	76.4 25 - 164
1,2,3,7,8-PeCDD	ND	13C-1,2,3,7,8-PeCDD	80.8 25 - 181
1,2,3,4,7,8-HxCDD	ND	13C-1,2,3,4,7,8-HxCDD	80.3 32 - 141
1,2,3,6,7,8-HxCDD	ND	13C-1,2,3,6,7,8-HxCDD	76.6 28 - 130
1,2,3,7,8,9-HxCDD	ND	13C-1,2,3,4,6,7,8-HpCDD	81.9 23 - 140
1,2,3,4,6,7,8-HpCDD	0.0000518	13C-OCDD	60.1 17 - 157
OCDD	0.000485	13C-2,3,7,8-TCDF	75.6 24 - 169
2,3,7,8-TCDF	ND	13C-1,2,3,7,8-PeCDF	74.3 24 - 185
1,2,3,7,8-PeCDF	ND	13C-2,3,4,7,8-PeCDF	74.0 21 - 178
2,3,4,7,8-PeCDF	ND	13C-1,2,3,4,7,8-HxCDF	75.4 26 - 152
1,2,3,4,7,8-HxCDF	ND	13C-1,2,3,6,7,8-HxCDF	71.3 26 - 123
1,2,3,6,7,8-HxCDF	ND	13C-2,3,4,6,7,8-HxCDF	77.8 28 - 136
2,3,4,6,7,8-HxCDF	ND	13C-1,2,3,7,8,9-HxCDF	80.6 29 - 147
1,2,3,7,8,9-HxCDF	ND	13C-1,2,3,4,6,7,8-HpCDF	73.2 28 - 143
1,2,3,4,6,7,8-HpCDF	0.0000158	13C-1,2,3,4,7,8,9-HpCDF	81.4 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	13C-OCDF	67.0 17 - 157
OCDF	0.000154	CRS 37Cl-2,3,7,8-TCDD	78.3 35 - 197

Totals		Footnotes	
Total TCDD	ND	a. Sample specific estimated detection limit.	
Total PeCDD	ND	b. Estimated maximum possible concentration.	
Total HxCDD	0.00000640	c. Method detection limit.	
Total HpCDD	0.000112	d. Lower control limit - upper control limit.	
Total TCDF	ND		
Total PeCDF	ND		
Total HxCDF	ND		
Total HpCDF	0.0000409		

Analyst: JMH  
 Approved By: Martha M. Maier  
 17-Jan-2006 11:16

**LEVEL IV**

Project 27128

## **APPENDIX G**

### **Section 37**

Outfall 011, January 03, 2006

Del Mar Analytical Laboratory Report



LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project: Quarterly Outfall 011

Sampled: 01/03/06  
Received: 01/03/06  
Issued: 01/26/06 14:44

NELAP #01108CA California ELAP#1197 CSDLAC #10117

*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 Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. 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 9°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 Del Mar Analytical 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.  
ADDITIONAL INFORMATION: Insufficient sample volume was used in the dilutions for the BOD analysis. The result reported is an estimated value of the concentration.

<b>LABORATORY ID</b>	<b>CLIENT ID</b>	<b>MATRIX</b>
IPA0103-01	Outfall 011	Water

Reviewed By:

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager





Del Mar Analytical

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
Received: 01/03/06

**CORRECTIVE ACTION REPORT**

Department: Extractions

Date: 01/18/2006

Method: EPA 625

Matrix: Water

QC Batch: 6A09061

**Identification and Definition of Problem:**

The percent recovery for the "L2"-qualified analytes in the Blank Spike Duplicate sample was below QC acceptance limits.

**Determination of the Cause of the Problem:**

A definitive cause for the QC failure has not been determined.

**Corrective Action Taken:**

All results reported for affected analytes are potentially biased low and can be considered estimates only.

Quality Assurance Approval:

Thong Vu

Date: 01/24/2006 05:18 PM

Del Mar Analytical, Irvine  
Michele Chamberlin  
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 Del Mar Analytical.*



# Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6A05005	0.28	2.0	ND	1	01/05/06	01/05/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6A05005	1.2	5.0	ND	1	01/05/06	01/05/06	
Carbon tetrachloride	EPA 624	6A05005	0.28	5.0	ND	1	01/05/06	01/05/06	
Chloroform	EPA 624	6A05005	0.33	2.0	ND	1	01/05/06	01/05/06	
1,1-Dichloroethane	EPA 624	6A05005	0.27	2.0	ND	1	01/05/06	01/05/06	
1,2-Dichloroethane	EPA 624	6A05005	0.28	2.0	ND	1	01/05/06	01/05/06	
1,1-Dichloroethene	EPA 624	6A05005	0.42	3.0	ND	1	01/05/06	01/05/06	
Ethylbenzene	EPA 624	6A05005	0.25	2.0	ND	1	01/05/06	01/05/06	
Tetrachloroethene	EPA 624	6A05005	0.32	2.0	ND	1	01/05/06	01/05/06	
Toluene	EPA 624	6A05005	0.36	2.0	ND	1	01/05/06	01/05/06	
1,1,1-Trichloroethane	EPA 624	6A05005	0.30	2.0	ND	1	01/05/06	01/05/06	
1,1,2-Trichloroethane	EPA 624	6A05005	0.30	2.0	ND	1	01/05/06	01/05/06	
Trichloroethene	EPA 624	6A05005	0.26	5.0	ND	1	01/05/06	01/05/06	
Trichlorofluoromethane	EPA 624	6A05005	0.34	5.0	ND	1	01/05/06	01/05/06	
Vinyl chloride	EPA 624	6A05005	0.26	5.0	ND	1	01/05/06	01/05/06	
Xylenes, Total	EPA 624	6A05005	0.52	4.0	ND	1	01/05/06	01/05/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					<i>110 %</i>				
<i>Surrogate: Toluene-d8 (80-120%)</i>					<i>103 %</i>				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					<i>104 %</i>				

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Bis(2-ethylhexyl)phthalate	EPA 625	6A09061	1.1	5.0	2.2	1	01/09/06	01/12/06	B, J
2,4-Dinitrotoluene	EPA 625	6A09061	0.23	9.0	ND	1	01/09/06	01/12/06	L2
N-Nitrosodimethylamine	EPA 625	6A09061	0.22	8.0	ND	1	01/09/06	01/12/06	
Pentachlorophenol	EPA 625	6A09061	0.78	8.0	ND	1	01/09/06	01/12/06	L2
2,4,6-Trichlorophenol	EPA 625	6A09061	0.10	6.0	ND	1	01/09/06	01/12/06	
Surrogate: 2-Fluorophenol (30-120%)					61 %				
Surrogate: Phenol-d6 (35-120%)					73 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					84 %				
Surrogate: Nitrobenzene-d5 (45-120%)					81 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					74 %				

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Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
Reporting Units: ug/l									
alpha-BHC	EPA 608	6A07025	0.00095	0.0095	ND	0.952	01/07/06	01/09/06	
Surrogate: Decachlorobiphenyl (45-120%)					69 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					57 %				

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**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
Reporting Units: ug/l									
Copper	EPA 200.8	6A04084	0.49	2.0	8.3	1	01/04/06	01/05/06	
Lead	EPA 200.8	6A04084	0.13	1.0	8.8	1	01/04/06	01/05/06	
Mercury	EPA 245.1	6A04080	0.063	0.20	ND	1	01/04/06	01/04/06	

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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Ammonia-N (Distilled)	EPA 350.2	6A05098	0.30	0.50	ND	1	01/05/06	01/05/06	
Biochemical Oxygen Demand	EPA 405.1	6A05070	0.59	2.0	2.7	1	01/05/06	01/10/06	K
Chloride	EPA 300.0	6A03051	0.26	0.50	24	1	01/03/06	01/03/06	
Total Cyanide	EPA 335.2	6A06111	0.0022	0.0050	ND	1	01/06/06	01/09/06	
Nitrate/Nitrite-N	EPA 300.0	6A03051	0.080	0.15	1.5	1	01/03/06	01/03/06	
Oil & Grease	EPA 413.1	6A09050	0.99	5.3	2.7	1	01/09/06	01/09/06	J
Sulfate	EPA 300.0	6A03051	0.18	0.50	41	1	01/03/06	01/03/06	
Surfactants (MBAS)	EPA 425.1	6A03114	0.044	0.10	ND	1	01/03/06	01/03/06	
Total Dissolved Solids	EPA 160.1	6A04107	10	10	220	1	01/04/06	01/04/06	
Total Suspended Solids	EPA 160.2	6A06118	10	10	48	1	01/06/06	01/06/06	

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Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	6A04072	0.10	0.10	0.50	1	01/04/06	01/04/06	

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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
<b>Reporting Units: NTU</b>									
Turbidity	EPA 180.1	6A04071	0.20	5.0	72	5	01/04/06	01/04/06	

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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Perchlorate	EPA 314.0	6A04078	0.80	4.0	ND	1	01/04/06	01/04/06	

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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6A04105	1.0	1.0	380	1	01/04/06	01/04/06	

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Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

**SHORT HOLD TIME DETAIL REPORT**

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
<b>Sample ID: Outfall 011 (IPA0103-01) - Water</b>					
EPA 160.5	2	01/03/2006 08:45	01/03/2006 18:00	01/04/2006 09:18	01/04/2006 10:30
EPA 180.1	2	01/03/2006 08:45	01/03/2006 18:00	01/04/2006 14:30	01/04/2006 16:00
EPA 300.0	2	01/03/2006 08:45	01/03/2006 18:00	01/03/2006 20:30	01/03/2006 21:51
EPA 405.1	2	01/03/2006 08:45	01/03/2006 18:00	01/05/2006 08:15	01/10/2006 08:30
EPA 425.1	2	01/03/2006 08:45	01/03/2006 18:00	01/03/2006 21:20	01/03/2006 22:46

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Sampled: 01/03/06  
 Received: 01/03/06

**METHOD BLANK/QC DATA**

**PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A05005 Extracted: 01/05/06</b>										
<b>Blank Analyzed: 01/05/2006 (6A05005-BLK1)</b>										
Benzene	ND	2.0	0.28	ug/l						
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l						
Carbon tetrachloride	ND	5.0	0.28	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	2.0	0.28	ug/l						
1,1-Dichloroethene	ND	3.0	0.42	ug/l						
Ethylbenzene	ND	2.0	0.25	ug/l						
Tetrachloroethene	ND	2.0	0.32	ug/l						
Toluene	ND	2.0	0.36	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	5.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120		
Surrogate: Toluene-d8	25.8			ug/l	25.0		103	80-120		
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		101	80-120		

**LCS Analyzed: 01/05/2006 (6A05005-BS1)**

Benzene	24.6	2.0	0.28	ug/l	25.0		98	65-120		
Carbon tetrachloride	25.1	5.0	0.28	ug/l	25.0		100	65-140		
Chloroform	24.2	2.0	0.33	ug/l	25.0		97	65-130		
1,1-Dichloroethane	24.4	2.0	0.27	ug/l	25.0		98	65-130		
1,2-Dichloroethane	23.3	2.0	0.28	ug/l	25.0		93	60-140		
1,1-Dichloroethene	23.8	3.0	0.42	ug/l	25.0		95	70-130		
Ethylbenzene	25.9	2.0	0.25	ug/l	25.0		104	70-125		
Tetrachloroethene	24.3	2.0	0.32	ug/l	25.0		97	65-125		
Toluene	24.1	2.0	0.36	ug/l	25.0		96	70-125		
1,1,1-Trichloroethane	24.5	2.0	0.30	ug/l	25.0		98	65-135		
1,1,2-Trichloroethane	22.1	2.0	0.30	ug/l	25.0		88	65-125		
Trichloroethene	25.4	5.0	0.26	ug/l	25.0		102	70-125		
Trichlorofluoromethane	20.5	5.0	0.34	ug/l	25.0		82	60-140		
Vinyl chloride	19.4	5.0	0.26	ug/l	25.0		78	50-130		
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120		

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Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A05005 Extracted: 01/05/06</b>											
<b>LCS Analyzed: 01/05/2006 (6A05005-BS1)</b>											
Surrogate: Toluene-d8	26.0			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.9			ug/l	25.0		104	80-120			
<b>Matrix Spike Analyzed: 01/05/2006 (6A05005-MS1) Source: IPA0009-01</b>											
Benzene	22.4	2.0	0.28	ug/l	25.0	ND	90	60-125			
Carbon tetrachloride	23.5	5.0	0.28	ug/l	25.0	ND	94	65-140			
Chloroform	23.1	2.0	0.33	ug/l	25.0	ND	92	65-135			
1,1-Dichloroethane	23.0	2.0	0.27	ug/l	25.0	ND	92	60-130			
1,2-Dichloroethane	21.2	2.0	0.28	ug/l	25.0	ND	85	60-140			
1,1-Dichloroethene	22.2	3.0	0.42	ug/l	25.0	ND	89	60-135			
Ethylbenzene	24.6	2.0	0.25	ug/l	25.0	ND	98	65-130			
Tetrachloroethene	22.5	2.0	0.32	ug/l	25.0	ND	90	60-130			
Toluene	22.1	2.0	0.36	ug/l	25.0	ND	88	65-125			
1,1,1-Trichloroethane	23.6	2.0	0.30	ug/l	25.0	ND	94	65-140			
1,1,2-Trichloroethane	19.7	2.0	0.30	ug/l	25.0	ND	79	60-130			
Trichloroethene	22.7	5.0	0.26	ug/l	25.0	ND	91	60-125			
Trichlorofluoromethane	20.0	5.0	0.34	ug/l	25.0	ND	80	55-145			
Vinyl chloride	18.3	5.0	0.26	ug/l	25.0	ND	73	40-135			
Surrogate: Dibromofluoromethane	27.3			ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	26.1			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	26.8			ug/l	25.0		107	80-120			
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A05005-MSD1) Source: IPA0009-01</b>											
Benzene	22.0	2.0	0.28	ug/l	25.0	ND	88	60-125	2	20	
Carbon tetrachloride	22.4	5.0	0.28	ug/l	25.0	ND	90	65-140	5	25	
Chloroform	22.0	2.0	0.33	ug/l	25.0	ND	88	65-135	5	20	
1,1-Dichloroethane	22.0	2.0	0.27	ug/l	25.0	ND	88	60-130	4	20	
1,2-Dichloroethane	20.5	2.0	0.28	ug/l	25.0	ND	82	60-140	3	20	
1,1-Dichloroethene	21.5	3.0	0.42	ug/l	25.0	ND	86	60-135	3	20	
Ethylbenzene	23.5	2.0	0.25	ug/l	25.0	ND	94	65-130	5	20	
Tetrachloroethene	21.7	2.0	0.32	ug/l	25.0	ND	87	60-130	4	20	
Toluene	21.9	2.0	0.36	ug/l	25.0	ND	88	65-125	1	20	
1,1,1-Trichloroethane	22.2	2.0	0.30	ug/l	25.0	ND	89	65-140	6	20	
1,1,2-Trichloroethane	20.1	2.0	0.30	ug/l	25.0	ND	80	60-130	2	25	
Trichloroethene	21.6	5.0	0.26	ug/l	25.0	ND	86	60-125	5	20	
Trichlorofluoromethane	18.4	5.0	0.34	ug/l	25.0	ND	74	55-145	8	25	

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## METHOD BLANK/QC DATA

### PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A05005 Extracted: 01/05/06</b>											
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A05005-MSD1)</b>						<b>Source: IPA0009-01</b>					
Vinyl chloride	17.3	5.0	0.26	ug/l	25.0	ND	69	40-135	6	30	
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	26.2			ug/l	25.0		105	80-120			

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Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
 Received: 01/03/06

## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting		Spike	Source	%REC		RPD	RPD	Limit	Data
		Limit	MDL			Units	Level				
<b>Batch: 6A09061 Extracted: 01/09/06</b>											
<b>Blank Analyzed: 01/11/2006 (6A09061-BLK1)</b>											
Bis(2-ethylhexyl)phthalate	2.20	5.0	1.1	ug/l							J
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	12.7			ug/l	20.0		64			30-120	
Surrogate: Phenol-d6	15.4			ug/l	20.0		77			35-120	
Surrogate: 2,4,6-Tribromophenol	17.5			ug/l	20.0		88			45-120	
Surrogate: Nitrobenzene-d5	8.74			ug/l	10.0		87			45-120	
Surrogate: 2-Fluorobiphenyl	8.20			ug/l	10.0		82			45-120	
Surrogate: Terphenyl-d14	7.84			ug/l	10.0		78			45-120	
<b>LCS Analyzed: 01/11/2006 (6A09061-BS1)</b>											
Bis(2-ethylhexyl)phthalate	9.16	5.0	1.1	ug/l	10.0		92			60-130	
2,4-Dinitrotoluene	7.54	9.0	0.23	ug/l	10.0		75			60-120	J
N-Nitrosodimethylamine	6.72	8.0	0.22	ug/l	10.0		67			40-120	J
Pentachlorophenol	10.3	8.0	0.78	ug/l	10.0		103			50-120	
2,4,6-Trichlorophenol	7.32	6.0	0.10	ug/l	10.0		73			60-120	
Surrogate: 2-Fluorophenol	11.7			ug/l	20.0		58			30-120	
Surrogate: Phenol-d6	13.8			ug/l	20.0		69			35-120	
Surrogate: 2,4,6-Tribromophenol	16.3			ug/l	20.0		82			45-120	
Surrogate: Nitrobenzene-d5	7.76			ug/l	10.0		78			45-120	
Surrogate: 2-Fluorobiphenyl	7.22			ug/l	10.0		72			45-120	
Surrogate: Terphenyl-d14	6.74			ug/l	10.0		67			45-120	
<b>LCS Dup Analyzed: 01/11/2006 (6A09061-BSD1)</b>											
Bis(2-ethylhexyl)phthalate	7.56	5.0	1.1	ug/l	10.0		76		19	20	
2,4-Dinitrotoluene	5.86	9.0	0.23	ug/l	10.0		59		25	20	J, R-2, L2
N-Nitrosodimethylamine	5.38	8.0	0.22	ug/l	10.0		54		22	20	J, R-7
Pentachlorophenol	3.02	8.0	0.78	ug/l	10.0		30		109	25	J, L2, R-2
2,4,6-Trichlorophenol	6.24	6.0	0.10	ug/l	10.0		62		16	20	
Surrogate: 2-Fluorophenol	9.70			ug/l	20.0		48			30-120	
Surrogate: Phenol-d6	11.4			ug/l	20.0		57			35-120	
Surrogate: 2,4,6-Tribromophenol	14.0			ug/l	20.0		70			45-120	
Surrogate: Nitrobenzene-d5	6.04			ug/l	10.0		60			45-120	
Surrogate: 2-Fluorobiphenyl	5.76			ug/l	10.0		58			45-120	

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011  Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
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## METHOD BLANK/QC DATA

### ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A09061 Extracted: 01/09/06</b>											
<b>LCS Dup Analyzed: 01/11/2006 (6A09061-BSD1)</b>											
Surrogate: Terphenyl-d14	5.30			ug/l	10.0		53	45-120			

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## METHOD BLANK/QC DATA

### ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A07025 Extracted: 01/07/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A07025-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.435			ug/l	0.500		87	45-120			
Surrogate: Tetrachloro-m-xylene	0.373			ug/l	0.500		75	35-115			
<b>LCS Analyzed: 01/09/2006 (6A07025-BS1)</b>											
alpha-BHC	0.433	0.010	0.0010	ug/l	0.500		87	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.446			ug/l	0.500		89	45-120			
Surrogate: Tetrachloro-m-xylene	0.369			ug/l	0.500		74	35-115			
<b>LCS Dup Analyzed: 01/09/2006 (6A07025-BSD1)</b>											
alpha-BHC	0.426	0.010	0.0010	ug/l	0.500		85	45-120	2	30	
Surrogate: Decachlorobiphenyl	0.460			ug/l	0.500		92	45-120			
Surrogate: Tetrachloro-m-xylene	0.373			ug/l	0.500		75	35-115			

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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: 6A04080 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04080-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 01/04/2006 (6A04080-BS1)</b>											
Mercury	8.40	0.20	0.050	ug/l	8.00		105	85-115			
<b>Matrix Spike Analyzed: 01/04/2006 (6A04080-MS1)</b>											
						<b>Source: IPA0079-01</b>					
Mercury	8.03	0.20	0.050	ug/l	8.00	ND	100	70-130			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A04080-MSD1)</b>											
						<b>Source: IPA0079-01</b>					
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6A04084 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A04084-BLK1)</b>											
Copper	0.321	2.0	0.25	ug/l							J
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 01/05/2006 (6A04084-BS1)</b>											
Copper	80.8	2.0	0.25	ug/l	80.0		101	85-115			
Lead	78.3	1.0	0.040	ug/l	80.0		98	85-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS1)</b>											
						<b>Source: IOL2694-49</b>					
Copper	102	2.0	0.25	ug/l	80.0	23	99	70-130			
Lead	84.3	1.0	0.040	ug/l	80.0	2.7	102	70-130			
<b>Matrix Spike Analyzed: 01/05/2006 (6A04084-MS2)</b>											
						<b>Source: IOL2694-50</b>					
Copper	101	2.0	0.25	ug/l	80.0	18	104	70-130			
Lead	87.5	1.0	0.040	ug/l	80.0	1.8	107	70-130			

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Report Number: IPA0103

Sampled: 01/03/06  
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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: 6A04084 Extracted: 01/04/06</b>											
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A04084-MSD1)</b>						<b>Source: IOL2694-49</b>					
Copper	101	2.0	0.25	ug/l	80.0	23	98	70-130	1	20	
Lead	83.9	1.0	0.040	ug/l	80.0	2.7	102	70-130	1	20	

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### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6A03051 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03051-BLK1)</b>											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03051-BS1)</b>											
Chloride	4.91	0.50	0.26	mg/l	5.00		98	90-110			M-3
Sulfate	9.83	0.50	0.18	mg/l	10.0		98	90-110			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03051-MS1) Source: IPA0036-01</b>											
Sulfate	342	5.0	1.8	mg/l	100	240	102	80-120			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03051-MSD1) Source: IPA0036-01</b>											
Sulfate	345	5.0	1.8	mg/l	100	240	105	80-120	1	20	
<b>Batch: 6A03114 Extracted: 01/03/06</b>											
<b>Blank Analyzed: 01/03/2006 (6A03114-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 01/03/2006 (6A03114-BS1)</b>											
Surfactants (MBAS)	0.275	0.10	0.044	mg/l	0.250		110	90-110			
<b>Matrix Spike Analyzed: 01/03/2006 (6A03114-MS1) Source: IPA0017-01</b>											
Surfactants (MBAS)	0.377	0.10	0.044	mg/l	0.250	0.096	112	50-125			
<b>Matrix Spike Dup Analyzed: 01/03/2006 (6A03114-MSD1) Source: IPA0017-01</b>											
Surfactants (MBAS)	0.342	0.10	0.044	mg/l	0.250	0.096	98	50-125	10	20	

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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: 6A04071 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04071-BLK1)</b>											
Turbidity	ND	1.0	0.040	NTU							
<b>Duplicate Analyzed: 01/04/2006 (6A04071-DUP1) Source: IPA0017-01</b>											
Turbidity	55.5	5.0	0.20	NTU		56			1	20	
<b>Batch: 6A04078 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04078-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 01/04/2006 (6A04078-BS1)</b>											
Perchlorate	45.3	4.0	0.80	ug/l	50.0		91	85-115			
<b>Matrix Spike Analyzed: 01/04/2006 (6A04078-MS1) Source: IPA0121-01</b>											
Perchlorate	48.9	4.0	0.80	ug/l	50.0	5.5	87	80-120			
<b>Matrix Spike Dup Analyzed: 01/04/2006 (6A04078-MSD1) Source: IPA0121-01</b>											
Perchlorate	51.8	4.0	0.80	ug/l	50.0	5.5	93	80-120	6	20	
<b>Batch: 6A04105 Extracted: 01/04/06</b>											
<b>Duplicate Analyzed: 01/04/2006 (6A04105-DUP1) Source: IPA0118-01</b>											
Specific Conductance	839	1.0	1.0	umhos/cm		810			4	5	
<b>Batch: 6A04107 Extracted: 01/04/06</b>											
<b>Blank Analyzed: 01/04/2006 (6A04107-BLK1)</b>											
Total Dissolved Solids	ND	10	10	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>Batch: 6A04107 Extracted: 01/04/06</b>											
<b>LCS Analyzed: 01/04/2006 (6A04107-BS1)</b>											
Total Dissolved Solids	996	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 01/04/2006 (6A04107-DUP1)</b>											
						<b>Source: IPA0094-06</b>					
Total Dissolved Solids	956	10	10	mg/l		920			4	10	
<b>Batch: 6A05070 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/10/2006 (6A05070-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
<b>LCS Analyzed: 01/10/2006 (6A05070-BS1)</b>											
Biochemical Oxygen Demand	212	100	30	mg/l	198		107	85-115			
<b>LCS Dup Analyzed: 01/10/2006 (6A05070-BSD1)</b>											
Biochemical Oxygen Demand	208	100	30	mg/l	198		105	85-115	2	20	
<b>Batch: 6A05098 Extracted: 01/05/06</b>											
<b>Blank Analyzed: 01/05/2006 (6A05098-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 01/05/2006 (6A05098-BS1)</b>											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
<b>Matrix Spike Analyzed: 01/05/2006 (6A05098-MS1)</b>											
						<b>Source: IOL2366-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	ND	115	70-120			

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011  
 Report Number: IPA0103

Sampled: 01/03/06  
 Received: 01/03/06

## 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: 6A05098 Extracted: 01/05/06</b>											
<b>Matrix Spike Dup Analyzed: 01/05/2006 (6A05098-MSD1)</b>						<b>Source: IOL2366-01</b>					
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	ND	112	70-120	3	15	
<b>Batch: 6A06111 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A06111-BLK1)</b>											
Total Cyanide	ND	0.0050	0.0022	mg/l							
<b>LCS Analyzed: 01/09/2006 (6A06111-BS1)</b>											
Total Cyanide	0.183	0.0050	0.0022	mg/l	0.200		92	90-110			
<b>Matrix Spike Analyzed: 01/09/2006 (6A06111-MS1)</b>						<b>Source: IPA0102-01</b>					
Total Cyanide	0.211	0.0050	0.0022	mg/l	0.200	0.0034	104	70-115			
<b>Matrix Spike Dup Analyzed: 01/09/2006 (6A06111-MSD1)</b>						<b>Source: IPA0102-01</b>					
Total Cyanide	0.213	0.0050	0.0022	mg/l	0.200	0.0034	105	70-115	1	15	
<b>Batch: 6A06118 Extracted: 01/06/06</b>											
<b>Blank Analyzed: 01/06/2006 (6A06118-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 01/06/2006 (6A06118-BS1)</b>											
Total Suspended Solids	980	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 01/06/2006 (6A06118-DUP1)</b>						<b>Source: IPA0396-01</b>					
Total Suspended Solids	188	10	10	mg/l		180			4	10	

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 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## 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: 6A09050 Extracted: 01/09/06</b>											
<b>Blank Analyzed: 01/09/2006 (6A09050-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 01/09/2006 (6A09050-BS1)</b>											
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96	65-120			M-NR1
<b>LCS Dup Analyzed: 01/09/2006 (6A09050-BSD1)</b>											
Oil & Grease	19.0	5.0	0.94	mg/l	20.0		95	65-120	1	20	

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 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
Received: 01/03/06

### 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.
- K** The sample dilutions set-up for the BOD analysis did not meet the oxygen depletion criteria of at least 2 mg/l. Therefore the reported result is an estimated value only.
- L2** Laboratory Control Sample recovery was below method control limits.
- 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).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R-2** The RPD exceeded the method control limit.
- R-7** LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06

Received: 01/03/06

## Certification Summary

### Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Water		
EDD + Level 4	Water		
EPA 120.1	Water	X	X
EPA 160.1	Water	X	X
EPA 160.2	Water	X	X
EPA 160.5	Water	X	X
EPA 180.1	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	N/A	X
EPA 335.2	Water	X	X
EPA 350.2	Water		X
EPA 405.1	Water	X	X
EPA 413.1	Water	X	X
EPA 425.1	Water	X	X
EPA 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at [www.dmalabs.com](http://www.dmalabs.com).*

### Subcontracted Laboratories

**Alta 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: IPA0103-01

Analysis Performed: EDD + Level 4

Samples: IPA0103-01

**Del Mar Analytical, Irvine**

Michele Chamberlin

Project Manager

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January 17, 2006

**Alta Project I.D.: 27141**

Ms. Michele Chamberlin  
Del Mar Analytical, Irvine  
17461 Derian Avenue, Suite 100  
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on January 05, 2006 under your Project Name "IPA0103". 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, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at [mmaier@altalab.com](mailto:mmaier@altalab.com). Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier  
Director of HRMS Services



*Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.*



**Section I: Sample Inventory Report**

**Date Received: 1/5/2006**

Alta Lab. ID

Client Sample ID

27141-001

IPA0103-01

**SECTION II**

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06		
				Date Analyzed DB-225:	NA		
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	0.000000671		IS 13C-2,3,7,8-TCDD	84.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000560		13C-1,2,3,7,8-PeCDD	78.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000149		13C-1,2,3,4,7,8-HxCDD	81.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000147		13C-1,2,3,6,7,8-HxCDD	74.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000145		13C-1,2,3,4,6,7,8-HpCDD	75.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000146		13C-OCDD	40.1	17 - 157	
OCDD	ND	0.00000535		13C-2,3,7,8-TCDF	82.6	24 - 169	
2,3,7,8-TCDF	ND	0.00000546		13C-1,2,3,7,8-PeCDF	65.3	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	71.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000885		13C-1,2,3,4,7,8-HxCDF	73.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000511		13C-1,2,3,6,7,8-HxCDF	70.0	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000518		13C-2,3,4,6,7,8-HxCDF	78.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000522		13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000675		13C-1,2,3,4,6,7,8-HpCDF	64.7	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000764		13C-1,2,3,4,7,8,9-HpCDF	76.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000622		13C-OCDF	49.6	17 - 157	
OCDF	ND	0.00000360		CRS 37Cl-2,3,7,8-TCDD	88.7	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000671					
Total PeCDD	ND	0.000000560					
Total HxCDD	ND	0.00000147					
Total HpCDD	ND	0.00000146					
Total TCDF	ND	0.00000546					
Total PeCDF	ND	0.000000997					
Total HxCDF	ND	0.000000553					
Total HpCDF	ND	0.000000692					
<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: JMH

Approved By:

Martha M. Maier

17-Jan-2006 09:11

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7632	Lab Sample:	0-OPR001	
Sample Size:	1.00 L	Date Extracted:	8-Jan-06	Date Analyzed DB-5:	11-Jan-06	
				Date Analyzed DB-225:	NA	
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	10.0	8.44	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	66.2	25 - 164
1,2,3,7,8-PeCDD	50.0	48.8	35 - 71	13C-1,2,3,7,8-PeCDD	70.5	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.8	35 - 82	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141
1,2,3,6,7,8-HxCDD	50.0	46.7	38 - 67	13C-1,2,3,6,7,8-HxCDD	65.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	48.7	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	70.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	47.2	35 - 70	13C-OCDD	49.9	17 - 157
OCDD	100	95.4	78 - 144	13C-2,3,7,8-TCDF	62.9	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	63.1	24 - 185
1,2,3,7,8-PeCDF	50.0	46.6	40 - 67	13C-2,3,4,7,8-PeCDF	64.2	21 - 178
2,3,4,7,8-PeCDF	50.0	48.4	34 - 80	13C-1,2,3,4,7,8-HxCDF	65.4	26 - 152
1,2,3,4,7,8-HxCDF	50.0	47.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	67.9	28 - 136
2,3,4,6,7,8-HxCDF	50.0	47.3	35 - 78	13C-1,2,3,7,8,9-HxCDF	70.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	47.3	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	63.1	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	48.5	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	70.1	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	48.4	39 - 69	13C-OCDF	56.4	17 - 157
OCDF	100	97.7	63 - 170	CRS 37Cl-2,3,7,8-TCDD	81.7	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 17-Jan-2006 09:11



Sample ID: IPA0103-01		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27141-001		
Project:	IPA0103	Sample Size:	1.00 L	QC Batch No.:	7632		
Date Collected:	3-Jan-06			Date Analyzed DB-5:	12-Jan-06		
Time Collected:	0845			Date Analyzed DB-225:	NA		
Analyte	Conc. (ug/L)	DL <sup>a</sup>	EMPC <sup>b</sup>	Qualifiers	%R	LCL-UCI <sup>d</sup>	Qualifiers
2,3,7,8-TCDD	ND	0.000000964			79.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000144			80.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND		0.00000139	J	82.2	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000441				75.2	28 - 130	
1,2,3,7,8,9-HxCDD	0.00000313			J	78.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.000100				48.2	17 - 157	
OCDD	0.000949				79.1	24 - 169	
2,3,7,8-TCDF	ND	0.000000981			81.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000138			82.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000126			77.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000104			76.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000978			78.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000107			80.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000139			70.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000183			J	79.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.00000230			J	57.3	17 - 157	
OCDF	0.0000761				85.2	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000964					
Total PeCDD	ND	0.00000144					
Total HxCDD	0.0000328		0.00000356				
Total HpCDD	0.000210						
Total TCDF	ND	0.000000981					
Total PeCDF	0.00000227		0.00000426				
Total HxCDF	0.0000146		0.0000162				
Total HpCDF	0.00000615						
<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: JMH

Approved By: Martha M. Maier 17-Jan-2006 09:11

**APPENDIX**

## DATA QUALIFIERS & ABBREVIATIONS

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

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

## CERTIFICATIONS

<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



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 9830 South 61st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851  
 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPA0103

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106 <div style="text-align: right; font-size: 2em; margin-top: 10px;">27/41</div> <div style="text-align: right; font-size: 2em; margin-top: 10px;">OC</div>

Standard TAT is requested unless specific due date is requested ⇒ Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Analysis	Expiration	Sampled:	Comments
Sample ID: IPA0103-01 Water		01/03/06 08:45	
1613-Dioxin-HR-Alta	01/10/06 08:45		J flags, 17 congeners, no TEQ, ng/L, sub=Alta
EDD + Level 4	01/31/06 08:45		Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>			
1 L Amber (IPA0103-01G)			
1 L Amber (IPA0103-01H)			

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received On Ice::	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received at (temp):	_____	

~~1.4.06 1:00~~ *Bethuna J. Benedict* 1/5/06 0905

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27141

Samples Arrival:	Date/Time <u>1/5/06 0905</u>	Initials: <u>BBB</u>	Location: <u>WR-2</u>
Logged In:	Date/Time <u>1/5/06 1045</u>	Initials: <u>BBB</u>	Location: <u>WR-2</u>
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> Cal
	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
	<input type="radio"/> None		
Temp °C	<u>0°</u>	Time: <u>0915</u>	Thermometer ID: DT-20

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk # <u>7924 8032 4184</u>	✓		
Sample Container Intact?			✓
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented?		COC	<input checked="" type="radio"/> None
Shipping Container	Alta	<input checked="" type="radio"/> Client	<input checked="" type="radio"/> Return
		Retain	Dispose

Comments:

# **APPENDIX G**

## **Section 38**

Outfall 011, January 03, 2006  
AMEC Data Validation Reports







# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 011

ANALYSIS: PESTICIDES

SAMPLE DELIVERY GROUP: IPA0103

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>X</sup> Project Number: 1261.001.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Pesticides  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 16, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Volatile Organics (DVP-4, Rev. 2)*, *EPA Method 608*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	608

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory above the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $9^{\circ}\text{C}$ . Due to the nonvolatile nature of the analyte, no qualification was required for the elevated temperature. According to the case narrative for this SDG, the sample was received intact and on ice. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the sample was couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was extracted within seven days of sample collection and analyzed within 40 days of extraction. No qualifications were required.

### 2.2 PESTICIDES INSTRUMENT PERFORMANCE

No resolution check standards or breakdown check standards are required by Method 608 for pesticides, and according to the raw data provided, a resolution check standard was not analyzed by the laboratory. The laboratory did analyze a breakdown check standard with the breakdown for individual components (4,4-DDT and endrin)  $\leq 20\%$  and for the total  $\leq 30\%$ , as suggested in the National Functional Guidelines. A review of the raw data indicated that the analytical run time was of sufficient length to provide adequate standard separation. The two analytical columns used in the analyses were within the guidelines specified in the methods.

According to the laboratory SOP and the initial calibration raw data, the retention time windows are  $\pm 0.10$  minutes for both surrogates and target compound calibration standards. A review of the raw data indicated that the laboratory retention time criteria were met for the surrogates and pesticide calibration standards. No qualifications were required.

### 2.3 CALIBRATION

#### 2.3.1 Analytical Sequence

Based on the data provided, the analytical sequences were in accordance with the requirements of Method 608. No qualifications were required.

### 2.3.2 Initial Calibration

There was one initial calibration dated 12/29/05 associated with site sample in this SDG. The initial calibration consisted of six point calibrations for all pesticide target compounds on two analytical columns. The laboratory provided an overlay of the sample chromatogram and the pesticide standard for identification purposes. For this SDG, alpha-BHC was the only target compound of interest. The %RSD for alpha-BHC was within the EPA Method 608 QC limit of  $\leq 10\%$  on the primary analytical column (Channel A) and the  $r^2$  value was  $\geq 0.995$  on the secondary column (Channel B). As alpha-BHC was not detected in the sample and all results were reported from Channel A, the secondary column was not further evaluated. An ICV was analyzed immediately following the initial calibration and the %D for target compound alpha-BHC was within the QC limits of  $\leq 15\%$  on the primary analytical column. The %RSD and ICV %D were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

### 2.3.3 Continuing Calibration

Sample Outfall 011 was bracketed by two continuing calibrations. The %Ds for alpha-BHC were within the Method QC limit of  $\leq 15\%$  for both calibrations. The %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

## 2.4 BLANKS

### 2.4.1 Instrument Blanks

An instrument blank was analyzed at the beginning of the analytical sequence. There was no evidence of cross-contamination in the instrument blank or sample. No qualifications were necessary.

### 2.4.2 Method Blanks

One water method blank (6A07025-BLK1) was extracted and analyzed with this SDG. Target compound alpha-BHC was not detected in the method blank. Review of the chromatograms for both channels showed no false negative. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (6A07025-BS1/BSD1) was extracted and analyzed with this SDG. The recoveries for alpha-BHC were within the laboratory-established QC limits and the RPD was  $\leq 30\%$ . The recoveries and RPD for alpha-BHC were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory-established QC limits for the sample in this SDG. The recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision were based on the blank spike/blank spike duplicate results. No qualifications were required.

## 2.8 SAMPLE CLEANUP PERFORMANCE

According to the laboratory extraction benchesheets, no cleanups were performed on the water sample. No qualifications were required.

## 2.9 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:

### 2.9.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.9.2 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for pesticide target compound alpha-BHC by EPA Method 608. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for the sample in this SDG. No qualifications were required.

Project: NPDES  
SDG: IPA0103  
Analysis: Pesticides

DATA VALIDATION REPORT

**2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS**

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.



# Del Mar Analytical

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
--	---	---

## ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	6A07025	0.00095	0.0095	ND	0.952	01/07/06	01/09/06	u
Surrogate: Decachlorobiphenyl (45-120%)					69 %				
Surrogate: Tetrachloro-m-xylene (35-115%)					57 %				

Reg  
Qual  
Code

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

Level IV

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4MT14  
 Task Order 1261.001D.01  
 SDG No. 1PA0103

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer P. Meeks  
 Analysis/Method Metals

Date: February 17, 2006  
 Reviewer's Signature  
P. Meeks

ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	<u>Qualifications were assigned for the following:</u>
COMMENTS <sup>b</sup>	<u>Acceptable as reviewed.</u>
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 011

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPA0103

Prepared by

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

Project: NPDES  
SDG: IPA0103  
Analysis: Metals

DATA VALIDATION REPORT

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Metals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: P. Meeks  
Date of Review: February 17, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the MEC<sup>X</sup> *Data Validation Procedure for ICP-MS Metals (DVP-5, Rev. 0)*, *EPA Methods 200.8 and 245.1*, and validation guidelines outlined in the *USEPA CLP National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	200.8, 245.1

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory above the temperature limits of 4°C ±2°C, at 9°C; however, due to the nonvolatile nature of the analytes, no qualifications were required. No sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and analyses presented in this SDG. No sample qualifications were required.

#### 2.1.3 Holding Times

The date of collection recorded on the COC and the dates of analyses recorded in the raw data documented that the sample analyses were performed within the specified holding times of six months for the ICP-MS metals and 28-days for mercury. No qualifications were required.

### 2.2 ICP-MS TUNING

The method-specified tune criteria were met and no qualifications were required.

### 2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for ICP-MS metals and 80-120% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and all recoveries were acceptable. No qualifications were required.

### 2.4 BLANKS

The method blank and CCB results were nondetects at the reporting limit or were at concentrations insufficient to qualify the site sample. No qualifications were required.

## 2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Lead, which is not present in the ICSA or ICSAB, was detected in both the ICSA and the ICSAB; however, as the wastewater method (EPA SW-846 6020) lists no known interferents for lead, no qualifications were required. The recoveries were within the control limits and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS and mercury LCS recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No MS/MSD or laboratory duplicate analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.8 MATRIX SPIKES

No MS/MSD analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was evaluated based on LCS results. No qualifications were required.

## 2.9 ICP/MS AND ICP SERIAL DILUTION

No serial dilution analyses were performed in association with the sample in this SDG; therefore, no assessment was made with respect to this criterion.

## 2.10 INTERNAL STANDARDS PERFORMANCE

For the target compounds analyzed by ICP-MS, the ICP-MS internal standards were within established control limits. No qualifications were required.

Project: NPDES  
SDG: IPA0103  
Analysis: Metals

DATA VALIDATION REPORT

## **2.11 SAMPLE RESULT VERIFICATION**

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

## **2.12 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples.

### **2.12.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.12.2 Field Duplicates**

There were no field duplicate analyses performed in association with the site sample.



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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
--	---	---

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	6A04084	0.49	2.0	8.3	1	01/04/06	01/05/06	Rev Qual
Lead	EPA 200.8	6A04084	0.13	1.0	8.8	1	01/04/06	01/05/06	Qual Code
Mercury	EPA 245.1	6A04080	0.063	0.20	ND	1	01/04/06	01/04/06	U

LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4PC3  
 Task Order 1261.001D.01  
 SDG No. IPA0103

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer K. Shadowlight  
 Analysis/Method Perchlorates by Method 314

Date: February 18, 2006  
 Reviewer's Signature  
*K. Shadowlight*

<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g.,	_____
Holding Times	_____
GC/MS Tune/Inst. Performance	_____
Calibration	_____
Method blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification	_____
Quantitation	_____
System Performance	_____
<b>COMMENTS<sup>b</sup></b>	<u>Acceptable as reviewed.</u>

<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.  
<sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.



# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 011

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPA0103

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>X</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Perchlorate  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 18, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the MEC<sup>X</sup> *Data Validation Procedure for Perchlorate (DVP-14, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 314.0*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	314.0

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . The analysis does not require preservation and no preservation was noted by the field. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and analysis presented in this SDG. As the sample was couriered directly from the site to the laboratory, custody seals were not necessary. No sample qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the date of analysis. The 28-day analytical holding time for perchlorate was met. No qualifications were required.

### 2.2 CALIBRATION

The initial calibration correlation coefficients were  $\geq 0.995$ . The ICV, ICCS, and CCVs had acceptable recoveries within the control limits of 90-110%. The IPC-MA was recovered within the method control limits of 80-120%. No qualifications were required.

### 2.3 BLANKS

There were no detects in the associated method blank or CCBs. Raw data was reviewed to verify the blank data. No qualifications were required.

### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recovery was within the method-established control limits of 85-115%. Raw data was reviewed to verify the values reported for the LCS recovery. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion.

## 2.6 MATRIX SPIKES

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

## 2.7 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample result reported on the Form I was verified against the raw data. No transcription errors or calculation errors were noted. No qualifications were required.

## 2.8 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### 2.8.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no associated field QC samples. No qualifications were required.

### 2.8.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
--	---	---

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	6A04078	0.80	4.0	ND	1	01/04/06	01/04/06	LL

Real Qual. level

level III

Del Mar Analytical, Irvine  
Michele Chamberlin  
Project Manager

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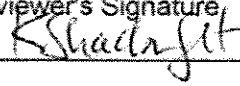
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4SV4  
 Task Order 1261.001D.01  
 SDG No. IPA0103

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer K. Shadowlight  
 Analysis/Method Semivolatiles by Method 625

Date: February 16, 2006  
 Reviewer's Signature  


ACTION ITEMS <sup>a</sup>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Qualification were assigned for the following:
Holding Times	-Method blank contamination
GC/MS Tune/Inst. Performance	-RPD outliers in the BS/BSD
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 011

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP IPA0103

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>x</sup> Project Number: 1261.001.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Semivolatiles  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 16, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the *MECX Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 625*, and the *National Functional Guidelines for Organic Data Review (2194)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	625

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory above the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$  at  $9^{\circ}\text{C}$ . Due to the nonvolatile nature of the analytes, no qualification was required for the elevated temperature. No other sample preservation, handling, or transport problems were noted, and no qualifications were necessary.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the analysis presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was extracted within seven days of collection and analyzed within 40 days of extraction. No qualifications were required.

### 2.2 GC/MS TUNING

The DFTPP tune performed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 625. No qualifications were required.

### 2.3 CALIBRATION

One initial calibration was associated with the sample, dated 12/29/05. The average RRFs were  $\geq 0.05$  for all target compounds. The %RSDs were  $\leq 35\%$  or  $r^2$  values  $\geq 0.995$  for all target compounds listed on the sample summary report. The continuing calibration associated with the sample in this SDG was dated 01/05/06. The RRFs for all target compounds were  $\geq 0.05$  and the %Ds were  $\leq 20\%$ . A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

## 2.4 BLANKS

One method blank (6A09061-BLK1) was extracted and analyzed with this SDG. Target compounds bis(2-ethylhexyl)phthalate was detected between the MDL and the reporting limit in the method blank. Target compound bis(2-ethylhexyl)phthalate was also detected in the site sample. The result for bis(2-ethylhexyl)phthalate, was qualified as a nondetect, "U," at the reporting limit. Review of the method blank raw data indicated no false positives or false negatives. No further qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (6A09061-BS1/BSD1) was extracted and analyzed with this SDG. The recoveries for 2,4-dinitrotoluene and pentachlorophenol were below QC limits but  $\geq 10\%$  in the blank spike duplicate only. The RPDs for 2,4-dinitrotoluene, n-nitrosodimethylamine, and pentachlorophenol exceeded the QC limit of 20%; therefore, the nondetect results for the aforementioned target compounds were qualified as estimated, "UJ," in the site sample. The remaining recoveries and RPDs were within the laboratory-established QC limits. A representative number of recoveries were calculated from the raw data and no calculation or transcription errors were found. No further qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries for the sample were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy and precision was based on the blank spike/blank spike duplicate results. No qualifications were required.

## 2.8 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:

### 2.8.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times for the sample were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for five semivolatile target compounds by EPA Method 625. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.



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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851  
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
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**ACID & BASE/NEUTRALS BY GC/MS (EPA 625)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	6A09061	1.1	5.0	ND	1	01/09/06	01/12/06	KS B, J
2,4-Dinitrotoluene	EPA 625	6A09061	0.23	9.0	ND	1	01/09/06	01/12/06	LI L2 *5
N-Nitrosodimethylamine	EPA 625	6A09061	0.22	8.0	ND	1	01/09/06	01/12/06	L2 ↓
Pentachlorophenol	EPA 625	6A09061	0.78	8.0	ND	1	01/09/06	01/12/06	u ↓
2,4,6-Trichlorophenol	EPA 625	6A09061	0.10	6.0	ND	1	01/09/06	01/12/06	u ↓
Surrogate: 2-Fluorophenol (30-120%)					61 %				
Surrogate: Phenol-d6 (35-120%)					73 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					84 %				
Surrogate: Nitrobenzene-d5 (45-120%)					81 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					74 %				

level III

KS 02/16/06

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4VO14  
 Task Order 1261.001D.01  
 SDG No. IPA0103

No. of Analyses 1

Laboratory Del Mar Analytical  
 Reviewer K. Shadowlight  
 Analysis/Method Volatiles by Method 624

Date: February 16, 2006  
 Reviewer's Signature  
*K Shadowlight*

<b>ACTION ITEMS<sup>a</sup></b>	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g.,	Sample was received above temperature limits and all results were qualified as estimated.
Holding Times	
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification	
Quantitation	
System Performance	
<b>COMMENTS<sup>b</sup></b>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 011

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPA0103

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
MEC<sup>x</sup> Project Number: 1261.001.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 16, 2006

The samples listed in Table 1 were validated based on the guidelines outlined in the MEC<sup>x</sup> *Data Validation Procedure for Volatile Organics (DVP-2, Rev. 0)*, *EPA Method 624*, and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory above the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $9^{\circ}\text{C}$ . According to the case narrative for this SDG, the sample was received intact, on ice, and properly preserved. Because the sample was shipped via courier direct to the laboratory on ice and received the day of sampling, the sample had not had sufficient time to cool to the appropriate temperature. No qualification was deemed necessary by the reviewer. Information regarding lack of headspace in the VOA vials was not provided. No further qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. As the sample was couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The water sample was analyzed within 14 days of collection. No qualifications were required.

### 2.2 GC/MS TUNING

The BFB tune performed at the beginning of each daily analytical sequence met the abundance criteria specified in EPA Method 624. No qualifications were required.

### 2.3 CALIBRATION

Two initial calibrations were associated with the sample in this SDG, dated 10/19/05 (Freon 113 only) and 12/29/05. The average RRFs were  $\geq 0.05$  for all target compounds. The %RSDs were  $\leq 35\%$  for the target compounds listed on the sample summary forms. The continuing calibration associated with the sample in this SDG was dated 01/05/05. The RRFs for all target compounds were  $\geq 0.05$  and all %Ds were within the QC limit of  $\leq 20\%$ . A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.4 BLANKS

One method blank (6A05005-BLK1) was analyzed with this SDG. No target compounds were detected in the method blank. Review of the method blank raw data indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (6A05005-BS1) was analyzed with this SDG. The recoveries for the blank spike were within the laboratory-established QC limits. A representative number of recoveries were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

## 2.6 SURROGATE RECOVERY

Surrogate recoveries were within the laboratory QC limits of 80-120% for this SDG. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed on the sample of this SDG. Evaluation of method accuracy was based on the blank spike results. No qualifications were required.

## 2.8 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:

### 2.8.1 Trip Blanks

According to a notation on the COC, a trip blank was not received by the laboratory for the sample in this SDG; therefore, possible trip blank contamination could not be assessed by the reviewer. No qualifications were required.

### 2.8.2 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples identified for this SDG. No qualifications were required.

### 2.8.3 Field Duplicates

There were no field duplicate samples identified for this SDG.

## 2.9 INTERNAL STANDARDS PERFORMANCE

The internal standard area counts and retention times were within the control limits established by the continuing calibration standards: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. A representative number of recoveries were checked from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

## 2.10 COMPOUND IDENTIFICATION

The laboratory analyzed for volatile target compounds by EPA Method 624. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification. No qualifications were required.

## 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. No qualifications were required.

## 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs were not reported by the laboratory for this SDG. No qualifications were required.

## 2.13 SYSTEM PERFORMANCE

Review of the raw data indicated no problems with system performance. No qualifications were required.



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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
 Received: 01/03/06

## PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	6A05005	0.28	2.0	ND	1	01/05/06	01/05/06	<div style="display: flex; justify-content: space-between;"> <span>Raw</span> <span>Anal</span> </div> <hr/> <div style="display: flex; justify-content: space-between;"> <span>Raw</span> <span>Anal</span> </div>
Trichlorotrifluoroethane (Freon 113)	EPA 624	6A05005	1.2	5.0	ND	1	01/05/06	01/05/06	
Carbon tetrachloride	EPA 624	6A05005	0.28	5.0	ND	1	01/05/06	01/05/06	
Chloroform	EPA 624	6A05005	0.33	2.0	ND	1	01/05/06	01/05/06	
1,1-Dichloroethane	EPA 624	6A05005	0.27	2.0	ND	1	01/05/06	01/05/06	
1,2-Dichloroethane	EPA 624	6A05005	0.28	2.0	ND	1	01/05/06	01/05/06	
1,1-Dichloroethene	EPA 624	6A05005	0.42	3.0	ND	1	01/05/06	01/05/06	
Ethylbenzene	EPA 624	6A05005	0.25	2.0	ND	1	01/05/06	01/05/06	
Tetrachloroethene	EPA 624	6A05005	0.32	2.0	ND	1	01/05/06	01/05/06	
Toluene	EPA 624	6A05005	0.36	2.0	ND	1	01/05/06	01/05/06	
1,1,1-Trichloroethane	EPA 624	6A05005	0.30	2.0	ND	1	01/05/06	01/05/06	
1,1,2-Trichloroethane	EPA 624	6A05005	0.30	2.0	ND	1	01/05/06	01/05/06	
Trichloroethene	EPA 624	6A05005	0.26	5.0	ND	1	01/05/06	01/05/06	
Trichlorofluoromethane	EPA 624	6A05005	0.34	5.0	ND	1	01/05/06	01/05/06	
Vinyl chloride	EPA 624	6A05005	0.26	5.0	ND	1	01/05/06	01/05/06	
Xylenes, Total	EPA 624	6A05005	0.52	4.0	ND	1	01/05/06	01/05/06	
Surrogate: Dibromofluoromethane (80-120%)					110 %				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					104 %				

# LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

MECX, LLC  
 12260 East Vassar Drive  
 Suite 500  
 Lakewood, CO 80226

Package ID B4WC6  
 Task Order 1261.001D.01  
 SDG No. IPA0103

No. of Analyses 1

Laboratory Del Mar - Irvine  
 Reviewer E. Wessling  
 Analysis/Method General Minerals

Date: February 17, 2006  
 Reviewer's Signature 

ACTION ITEMS*	
1. Case Narrative Deficiencies	
2. Out of Scope Analyses	
3. Analyses Not Conducted	
4. Missing Hardcopy Deliverables	
5. Incorrect Hardcopy Deliverables	
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	Qualifications were assigned for the following: - results between the RL and the MDL were estimated - BOD results did not meet method specific oxygen depletion criterion - CCV for conductivity - negative blank for MBAS
COMMENTS <sup>b</sup>	
<sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements. <sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	





# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 011

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPA0103

Prepared by

MECX, LLC  
12269 East Vassar Drive  
Aurora, CO 80014

## 1. INTRODUCTION

Task Order Title: NPDES Sampling  
MEC<sup>x</sup> Project Number: 1261.001D.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: General Minerals  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: E. Wessling  
Date of Review: February 17, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *USEPA Methods for Chemical Analysis of Water and Wastes Methods 120.1, 160.1, 160.2, 160.5, 180.1, 300.0, 335.2, 350.2, 405.1, and 413.1* and *Standard Methods for the Examination of Water and Wastewater Method SM2550-C*, and validation guidelines outlined in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form Is as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID	Matrix	COC Method
Outfall 011	IPA0103-01	Water	General Minerals

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory above the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ; however the sample was shipped direct to the laboratory on ice and had not yet cooled to the specified temperature. No qualifications were deemed necessary by the reviewer. No preservation problems were noted by the laboratory. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel and accounted for the sample and all analyses presented in this SDG. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All samples were analyzed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For all applicable analyses, the initial calibration correlation coefficients were  $\geq 0.995$  and the ICV and CCV recoveries were within the control limits of 90-110%, with the exception of conductivity. The CCV was below the control limit and the sample result was qualified as estimated, "J." For those methods requiring weight determinations, balance calibration logs were reviewed and found to be acceptable. No further qualifications were required.

### 2.3 BLANKS

There were no detects in the method blanks or CCBs associated with the sample analyses. The blanks in the MBAS analysis associated with sample Outfall 011 demonstrated negative results. The MBAS result for Outfall 011 was therefore qualified as an estimated nondetect, "UJ." Raw data was reviewed to verify the blank data. No further qualifications were required.

DATA VALIDATION REPORT

## **2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES**

The reported LCS recoveries were within the laboratory-established control limits. No LCS recovery was listed for nitrate; however, the reviewer checked the raw data and found that nitrate was spiked into the LCS and was recovered acceptably. No qualifications were required.

## **2.5 LABORATORY DUPLICATES**

No MS/MSD or duplicate analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. No qualifications were required.

## **2.6 MATRIX SPIKES**

No MS/MSD analyses were performed in association with this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of method accuracy was based on LCS results. No qualifications were required.

## **2.7 SAMPLE RESULT VERIFICATION**

A Level IV review was performed for the sample in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. Sample Outfall 011 did not meet the BOD method specified oxygen depletion rate; therefore, the sample result was qualified as estimated, "J." Results reported by the laboratory between the MDL and reporting limit were qualified as estimated, "J," and annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit.

## **2.8 FIELD QC SAMPLES**

Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

### **2.8.1 Field Blanks and Equipment Rinsates**

The sample in this SDG had no associated field QC samples. No qualifications were required.

### **2.8.2 Field Duplicates**

There were no field duplicate pairs associated with this SDG.



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6A05098	0.30	0.50	ND	1	01/05/06	01/05/06	u
Biochemical Oxygen Demand	EPA 405.1	6A05070	0.59	2.0	2.7	1	01/05/06	01/10/06	J X * F
Chloride	EPA 300.0	6A03051	0.26	0.50	24	1	01/03/06	01/03/06	
Total Cyanide	EPA 335.2	6A06111	0.0022	0.0050	ND	1	01/06/06	01/09/06	u
Nitrate/Nitrite-N	EPA 300.0	6A03051	0.080	0.15	1.5	1	01/03/06	01/03/06	
Oil & Grease	EPA 413.1	6A09050	0.99	5.3	2.7	1	01/09/06	01/09/06	J Y DNR
Sulfate	EPA 300.0	6A03051	0.18	0.50	41	1	01/03/06	01/03/06	
Surfactants (MBAS)	EPA 425.1	6A03114	0.044	0.10	ND	1	01/03/06	01/03/06	u J B
Total Dissolved Solids	EPA 160.1	6A04107	10	10	220	1	01/04/06	01/04/06	
Total Suspended Solids	EPA 160.2	6A06118	10	10	48	1	01/06/06	01/06/06	

**LEVEL IV**

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
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### INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	6A04072	0.10	0.10	0.50	1	01/04/06	01/04/06	<i>Pass</i>

# LEVEL IV

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 011

Report Number: IPA0103

Sampled: 01/03/06  
 Received: 01/03/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont.									
Reporting Units: NTU									
Turbidity	EPA 180.1	6A04071	0.20	5.0	72	5	01/04/06	01/04/06	Raw Qual / Anal Code

**LEVEL IV**

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Quarterly Outfall 011 Report Number: IPA0103	Sampled: 01/03/06 Received: 01/03/06
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**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers				
Sample ID: IPA0103-01 (Outfall 011 - Water) - cont. Reporting Units: umhos/cm													
Specific Conductance	EPA 120.1	6A04105	1.0	1.0	380	1	01/04/06	01/04/06	<table border="1"> <tr> <td>Res</td> <td>Qual</td> </tr> <tr> <td>J</td> <td>R</td> </tr> </table>	Res	Qual	J	R
Res	Qual												
J	R												

**LEVEL IV**

Del Mar Analytical, Irvine  
 Michele Chamberlin  
 Project Manager

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# DATA VALIDATION REPORT

## NPDES Monitoring Program Routine Outfall 011

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IPA0103

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001.01  
Sample Delivery Group: IPA0103  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Dioxins/Furans  
QC Level: Level IV  
No. of Samples: 1  
No. of Reanalyses/Dilutions: 0  
Reviewer: K. Shadowlight  
Date of Review: February 14, 2006

The samples listed in Table 1 were 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 for Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

**Table 1. Sample Identification**

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 011	IPA0103-01	27141-001	Water	1613

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical above the temperature limits of 4°C ±2°C; at 9°C. Due to the nonvolatile nature of dioxin/furans, no qualifications were required for the elevated temperature. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at 0°C. As the sample was not noted to be damaged or frozen, no qualifications were required. According to the case narrative and laboratory login sheet, the sample was received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. Custody seals were present on the coolers from Del Mar to Alta; however no sample custody seals were present. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 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 (see section 2.3.2). 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%. No qualifications were required.

## 2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

## 2.3 CALIBRATION

### 2.3.1 Initial Calibration

The initial calibration was analyzed 12/30/2005 on instrument VG-7. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibrations were 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 QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

### 2.3.2 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. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

## 2.4 BLANKS

One method blank (0-7632-MB001) was extracted and analyzed with the sample in this SDG. No compounds were reported in the method blank associated with the site sample. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

## 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (0-7632-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

## 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

## 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

### 2.7.1 Field Blanks and Equipment Rinsates

The sample in this SDG had no field blank or equipment rinsate identified. No qualifications of the site samples were required.

### 2.7.2 Field Duplicates

No field duplicates were identified in association with the sample in this SDG.

## 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

## 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

## 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. Any reported estimated maximum possible concentration (EMPC) was qualified as an estimated nondetect, "UJ." No further qualifications were required.