

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27607

Samples Arrival:	Date/Time 4/18/06 0905	Initials: BBB	Location: WR-2			
			Shelf/Rack: _____			
Logged In:	Date/Time 4/18/06 1455	Initials: BBB	Location: WR-2			
			Shelf/Rack: _____			
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	0.3°C	Time:	0935	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 #	7903 9693 2436		
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 20**

Outfall 005, April 15, 2006

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





# DATA VALIDATION REPORT

NPDES Monitoring Program  
Routine Outfall 005

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD1608

Prepared by

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

## 1. INTRODUCTION

Task Order Title:	NPDES
Contract Task Order:	1261.001D.01
Sample Delivery Group:	IPD1608
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:	July 5, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>X</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines 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	IPD1608-01	27607-001	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 below 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 0.3°C. The sample containers were not noted to be damaged or frozen during transportation; therefore, 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7968-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. 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 (0-7968-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 qualification of the site sample was 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. The detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. An EMPC value for OCDF was qualified as an estimated nondetect, "UJ." No further qualifications were required.

Sample ID: **IPD1608-01** *Outfall 005* EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27607-001	Date Received:	18-Apr-06
Project:	IPD1608	Sample Size:	1.02 L	QC Batch No.:	7968	Date Extracted:	26-Apr-06
Date Collected:	15-Apr-06			Date Analyzed DB-5:	2-May-06	Date Analyzed DB-225:	NA
Time Collected:	0910						

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	0.000000612			<u>IS</u> 13C-2,3,7,8-TCDD	93.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000757			13C-1,2,3,7,8-PeCDD	76.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000121			13C-1,2,3,4,7,8-HxCDD	95.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000177			13C-1,2,3,6,7,8-HxCDD	87.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000167			13C-1,2,3,4,6,7,8-HpCDD	93.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000278				13C-OCDD	71.5	17 - 157	
OCDD	0.000598				13C-2,3,7,8-TCDF	90.0	24 - 169	
2,3,7,8-TCDF	ND	0.000000717			13C-1,2,3,7,8-PeCDF	76.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000919			13C-2,3,4,7,8-PeCDF	72.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000934			13C-1,2,3,4,7,8-HxCDF	106	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000644			13C-1,2,3,6,7,8-HxCDF	103	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000563			13C-2,3,4,6,7,8-HxCDF	100	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000671			13C-1,2,3,7,8,9-HxCDF	94.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000994			13C-1,2,3,4,6,7,8-HpCDF	90.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000191			J	13C-1,2,3,4,7,8,9-HpCDF	93.2	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000926			13C-OCDF	75.8	17 - 157	
OCDF	ND		0.00000410		<u>CRS</u> 37Cl-2,3,7,8-TCDD	102	35 - 197	

Totals				Footnotes	
Total TCDD	ND	0.000000612		a. Sample specific estimated detection limit.	
Total PeCDD	ND	0.00000176		b. Estimated maximum possible concentration.	
Total HxCDD	0.00000276		0.00000483	c. Method detection limit.	
Total HpCDD	0.0000594			d. Lower control limit - upper control limit.	
Total TCDF	ND	0.000000717			
Total PeCDF	ND	0.000000926			
Total HxCDF	0.00000154				
Total HpCDF	0.00000477				

Analyst:

Approved By: William J. Luksemburg 03-May-2006 13:14

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4WC86  
 Task Order: 1261.001D.01  
 SDG No.: IPD1608

No. of Analyses: 1

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

Date: July 5, 2006
Reviewer's Signature <i>P. Meeks</i>

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	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
<b>COMMENTS<sup>b</sup></b>	Acceptable as reviewed.
<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: IPD1608

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: IPD1608  
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: July 5, 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 160.1, 160.2, 300.0, and 413.1*, 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	IPD1608-01	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 below the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $1^{\circ}\text{C}$ ; however, as the sample was not noted to be frozen or damaged, no qualifications were required. 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. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For the analytes determined by method 300.0, the  $r^2$  results were  $\geq 0.995$  and the ICV and CCV results were within the control limits of 90-110%. For Oil and Grease, TDS, and TSS balance calibration logs provided by the laboratory were reviewed and found to be acceptable. 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. The laboratory did not report an LCS recovery for nitrate/nitrite; however, the reviewer checked the raw data and found this result to be acceptable. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in 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 the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of method accuracy was based on the 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 I were verified against the raw data. 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.





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

Project ID: Routine Outfall 005

Report Number: IPD1608

Sampled: 04/15/06

Received: 04/15/06

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1608-01 (Outfall 005 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D15028	0.15	0.50	20	1	04/15/06	04/15/06	Rev Qual
Nitrate/Nitrite-N	EPA 300.0	6D15028	0.80	1.5	22	10	04/15/06	04/15/06	Qual Code
Oil & Grease	EPA 413.1	6D18050	0.89	4.7	ND	1	04/18/06	04/18/06	U
Sulfate	EPA 300.0	6D15028	0.45	0.50	14	1	04/15/06	04/15/06	
Total Dissolved Solids	SM2540C	6D18055	10	10	330	1	04/18/06	04/18/06	
Total Suspended Solids	EPA 160.2	6D20128	10	10	130	1	04/20/06	04/20/06	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

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LEVEL IV

IPD1608 <Page 3 of 11>

## **APPENDIX G**

### **Section 21**

Outfall 006, April 05, 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 006

Sampled: 04/05/06  
Received: 04/05/06  
Issued: 04/30/06 20:57

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**  
IPD0423-01

**CLIENT ID**  
Outfall 006

**MATRIX**  
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 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0423-01 (Outfall 006 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Antimony	EPA 200.8	6D06072	0.050	2.0	<b>0.40</b>	1	04/06/06	04/07/06	J
Cadmium	EPA 200.8	6D06072	0.025	1.0	<b>0.029</b>	1	04/06/06	04/07/06	J
Copper	EPA 200.8	6D06072	0.25	2.0	<b>2.3</b>	1	04/06/06	04/07/06	
Lead	EPA 200.8	6D06072	0.040	1.0	<b>0.62</b>	1	04/06/06	04/07/06	J
Mercury	EPA 245.1	6D06061	0.050	0.20	ND	1	04/06/06	04/06/06	
Thallium	EPA 200.8	6D06072	0.15	1.0	ND	1	04/06/06	04/07/06	

**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: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06  
Received: 04/05/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0423-01 (Outfall 006 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D06048	0.15	0.50	<b>6.1</b>	1	04/06/06	04/06/06	
Nitrate/Nitrite-N	EPA 300.0	6D06048	0.080	0.15	<b>1.2</b>	1	04/06/06	04/06/06	
Oil & Grease	EPA 413.1	6D06049	0.89	4.7	ND	1	04/06/06	04/06/06	
Sulfate	EPA 300.0	6D06048	0.45	0.50	<b>3.3</b>	1	04/06/06	04/06/06	
Total Dissolved Solids	SM2540C	6D06066	10	10	<b>150</b>	1	04/06/06	04/06/06	
Total Suspended Solids	EPA 160.2	6D11091	10	10	ND	1	04/11/06	04/11/06	

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: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 006 (IPD0423-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/05/2006 08:35	04/05/2006 18:50	04/06/2006 09:30	04/06/2006 12:15

**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: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06061 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06061-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06061-BS1)</b>											
Mercury	8.10	0.20	0.050	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06061-MS1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.34	0.20	0.050	ug/l	8.00	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06061-MSD1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006-04/07/2006 (6D06072-BLK1)</b>											
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.075	ug/l							
<b>LCS Analyzed: 04/06/2006-04/07/2006 (6D06072-BS1)</b>											
Antimony	77.5	2.0	0.18	ug/l	80.0		97	85-115			
Cadmium	78.2	1.0	0.015	ug/l	80.0		98	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.3	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	78.4	1.0	0.075	ug/l	80.0		98	85-115			

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 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

## 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: 6D06072 Extracted: 04/06/06</b>											
<b>Matrix Spike Analyzed: 04/06/2006-04/07/2006 (6D06072-MS1)</b>						<b>Source: IPD0061-03</b>					
Antimony	79.1	2.0	0.18	ug/l	80.0	ND	99	70-130			
Cadmium	77.5	1.0	0.015	ug/l	80.0	ND	97	70-130			
Copper	79.0	2.0	0.25	ug/l	80.0	ND	99	70-130			
Lead	80.0	1.0	0.040	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Analyzed: 04/07/2006 (6D06072-MS2)</b>						<b>Source: IPD0061-04</b>					
Antimony	78.7	2.0	0.18	ug/l	80.0	ND	98	70-130			
Cadmium	78.4	1.0	0.015	ug/l	80.0	ND	98	70-130			
Copper	79.2	2.0	0.25	ug/l	80.0	1.3	97	70-130			
Lead	79.5	1.0	0.040	ug/l	80.0	0.060	99	70-130			
Thallium	81.6	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D06072-MSD1)</b>						<b>Source: IPD0061-03</b>					
Antimony	76.9	2.0	0.18	ug/l	80.0	ND	96	70-130	3	20	
Cadmium	76.0	1.0	0.015	ug/l	80.0	ND	95	70-130	2	20	
Copper	76.0	2.0	0.25	ug/l	80.0	ND	95	70-130	4	20	
Lead	77.5	1.0	0.040	ug/l	80.0	ND	97	70-130	3	20	
Thallium	79.2	1.0	0.075	ug/l	80.0	ND	99	70-130	3	20	

**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 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06048 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06048-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: 04/06/2006 (6D06048-BS1)</b>											
Chloride	4.78	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	9.63	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06048-MS1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.5	0.50	0.15	mg/l	5.00	8.7	96	80-120			
Sulfate	33.2	0.50	0.45	mg/l	10.0	23	102	80-120			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06048-MSD1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.7	0.50	0.15	mg/l	5.00	8.7	100	80-120	1	20	
Sulfate	33.9	0.50	0.45	mg/l	10.0	23	109	80-120	2	20	
<b>Batch: 6D06049 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06049-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06049-BS1)</b>											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
<b>LCS Dup Analyzed: 04/06/2006 (6D06049-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	19	20	

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Project Manager



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Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

## 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: 6D06066 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06066-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06066-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/06/2006 (6D06066-DUP1)</b>											
Total Dissolved Solids	156	10	10	mg/l		160			3	10	
<b>Source: IPD0419-01</b>											
<b>Batch: 6D11091 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11091-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/11/2006 (6D11091-BS1)</b>											
Total Suspended Solids	972	10	10	mg/l	1000		97	85-115			
<b>Duplicate Analyzed: 04/11/2006 (6D11091-DUP1)</b>											
Total Suspended Solids	326	10	10	mg/l		340			4	10	
<b>Source: IPD0412-01</b>											

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 Michele Chamberlin  
 Project Manager



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

Project ID: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

## 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
IPD0423-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.094	4.7	15
IPD0423-01	Antimony-200.8	Antimony	ug/l	0.40	2.0	6.00
IPD0423-01	Cadmium-200.8	Cadmium	ug/l	0.029	1.0	4.00
IPD0423-01	Chloride - 300.0	Chloride	mg/l	6.10	0.50	150
IPD0423-01	Copper-200.8	Copper	ug/l	2.30	2.0	14
IPD0423-01	Lead-200.8	Lead	ug/l	0.62	1.0	5.20
IPD0423-01	Mercury - 245.1	Mercury	ug/l	0.019	0.20	0.20
IPD0423-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	1.20	0.15	10.00
IPD0423-01	Sulfate-300.0	Sulfate	mg/l	3.30	0.50	250
IPD0423-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	150	10	850
IPD0423-01	Thallium-200.8	Thallium	ug/l	0.0090	1.0	2.00

**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: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06  
Received: 04/05/06

### 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-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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IPD0423 <Page 10 of 11>



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

Project ID: Routine Outfall 006

Report Number: IPD0423

Sampled: 04/05/06

Received: 04/05/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD0423-01

Analysis Performed: EDD + Level 4

Samples: IPD0423-01

**Del Mar Analytical - Irvine**

Michele Chamberlin

Project Manager

IPD0423

**Del Mar Analytical** Version 03/01/06 **CHAIN OF CUSTODY FORM**

ANALYSIS REQUIRED

Client Name/Address:  
**MWH-Pasadena**  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Project Manager: Bronwyn Kelly  
 Sampler: *BRONWYN K*

Project:  
**Boeing-SSFL NPDES Routine Outfall 006**  
 Stormwater at FSDP-2

Phone Number:  
 (626) 568-6691  
 Fax Number:  
 (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl <sub>2</sub> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N	TDS, TSS	Field readings: Temp = 57° pH = 7.4	Comments
Outfall 006	W	Poly-1L	1	4/5/06 6:35	HNO3	1A	X						
Outfall 006-Dup	W	Poly-1L	1		HNO3	1B	X						
Outfall 006	W	Glass-Amber	2		None	2A, 2B		X					
Outfall 006	W	Glass-Amber	2		HCl	3A, 3B		X					
Outfall 006	W	Poly-500 ml	2		None	4A, 4B		X					
Outfall 006	W	Poly-500 ml	2	4/5/06 6:35	None	5A, 5B			X				

Relinquished By: *Burros, R* Date/Time: 4/5/06 1555  
 Received By: *Bronwyn Kelly* Date/Time: 4-5-06 1555

Relinquished By: *Bronwyn Kelly* Date/Time: 4-5-06 1830  
 Received By: *W. U* Date/Time: 4-5-06 1850

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

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:  *30*

*2040*



April 13, 2006

**Alta Project I.D.: 27563**

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 April 07, 2006 under your Project Name "IPD0423". 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  
HRMS Services Director



*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: 4/7/2006**

Alta Lab. ID

Client Sample ID

27563-001

IPD0423-01



## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	10-Apr-06						
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	0.000000788			<b>IS</b> 13C-2,3,7,8-TCDD	72.2	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000469			13C-1,2,3,7,8-PeCDD	73.0	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000114			13C-1,2,3,4,7,8-HxCDD	75.7	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000120			13C-1,2,3,6,7,8-HxCDD	67.3	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	69.6	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000167			13C-OCDD	44.8	17 - 157		
OCDD	ND	0.0000150			13C-2,3,7,8-TCDF	77.0	24 - 169		
2,3,7,8-TCDF	ND	0.000000832			13C-1,2,3,7,8-PeCDF	72.9	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000866			13C-2,3,4,7,8-PeCDF	77.1	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000754			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000479			13C-1,2,3,6,7,8-HxCDF	66.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000466			13C-2,3,4,6,7,8-HxCDF	70.2	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000465			13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000684			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000806			13C-1,2,3,4,7,8,9-HpCDF	67.5	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000832			13C-OCDF	49.1	17 - 157		
OCDF	ND	0.00000337			<b>CRS</b> 37Cl-2,3,7,8-TCDD	86.2	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000788			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000120			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000116			c. Method detection limit.				
Total HpCDD	ND	0.00000167			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000832							
Total PeCDF	ND	0.000000808							
Total HxCDF	ND	0.000000515							
Total HpCDF	ND	0.000000818							

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:30

NPDES - 534

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	10-Apr-06	Date Analyzed DB-5:	11-Apr-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	9.88	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	72.6	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.8	35 - 71	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	48.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	47.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	76.4	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.2	35 - 70	13C-OCDD	50.8	17 - 157	
OCDD	100	99.7	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169	
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	79.0	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.3	40 - 67	13C-2,3,4,7,8-PeCDF	78.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	45.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.1	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.3	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	46.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	80.4	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	47.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	47.9	39 - 69	13C-OCDF	59.3	17 - 157	
OCDF	100	96.8	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:30

Sample ID: <b>IPD0423-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27563-001	Date Received:	7-Apr-06
Project:	IPD0423		Sample Size:	1.03 L	QC Batch No.:	7918	Date Extracted:	10-Apr-06
Date Collected:	5-Apr-06				Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	0835							
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	0.00000799			<b>IS</b> 13C-2,3,7,8-TCDD	63.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000839			13C-1,2,3,7,8-PeCDD	66.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000785			13C-1,2,3,4,7,8-HxCDD	69.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000796			13C-1,2,3,6,7,8-HxCDD	66.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000763			13C-1,2,3,4,6,7,8-HpCDD	69.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000497			J	13C-OCDD	48.6	17 - 157	
OCDD	0.0000730				13C-2,3,7,8-TCDF	67.4	24 - 169	
2,3,7,8-TCDF	ND	0.00000652			13C-1,2,3,7,8-PeCDF	66.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000786			13C-2,3,4,7,8-PeCDF	68.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000754			13C-1,2,3,4,7,8-HxCDF	68.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000415			13C-1,2,3,6,7,8-HxCDF	65.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000398			13C-2,3,4,6,7,8-HxCDF	68.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000402			13C-1,2,3,7,8,9-HxCDF	66.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000601			13C-1,2,3,4,6,7,8-HpCDF	61.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000775			13C-1,2,3,4,7,8,9-HpCDF	65.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000489			13C-OCDF	54.5	17 - 157	
OCDF	ND	0.0000304			<b>CRS</b> 37Cl-2,3,7,8-TCDD	75.3	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000799			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000839			b. Estimated maximum possible concentration.			
Total HxCDD	0.00000858				c. Method detection limit.			
Total HpCDD	0.0000135				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000652						
Total PeCDF	ND	0.00000769						
Total HxCDF	ND	0.00000652						
Total HpCDF	ND	0.00000370						

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:30

NPDES - 536

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0423

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: 1.5em; font-family: cursive;">             27563              1.0°C           </div>

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

Analysis	Expiration	Comments
<b>Sample ID: IPD0423-01 Water      Sampled: 04/05/06 08:35</b>		
1613-Dioxin-HR-Alta	04/12/06 08:35	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/03/06 08:35	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPD0423-01C)		
1 L Amber (IPD0423-01D)		

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
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):	_____	

	Date	Time		Date	Time
--	------	------	--	------	------



### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27563

Samples Arrival:	Date/Time 4/7/06 0900	Initials: CBB	Location: WR-2
Logged In:	Date/Time 4/10/06 0722	Initials: CBB	Location: WR-2 Shelf/Rack: C-3
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	1.0	Time: 0930	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 # 7914 3658 8280			
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="checkbox"/> Client	Retain
		<input checked="" type="checkbox"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 22**

Outfall 006, April 05, 2006

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

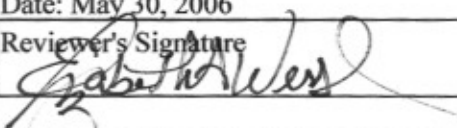
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF78  
 Task Order 1261.001D.01  
 SDG No. IPD0423

No. of Analyses 1

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxin/Furans

Date: May 30, 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: - results between the RL and the MDL were estimated
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: IPD0423

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

## 1. INTRODUCTION

Task Order Title:	NPDES
Contract Task Order:	1261.001D.01
Sample Delivery Group:	IPD0423
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:	May 30, 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 006	IPD0423-01	27563-001	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 1.0°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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7918-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. 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 (0-7918-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 qualification of the site sample was 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. A detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

Sample ID: <b>IPD0423-01</b> <i>Outfall 006</i>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27563-001	Date Received:	7-Apr-06
Project:	IPD0423		Sample Size:	1.03 L	QC Batch No.:	7918	Date Extracted:	10-Apr-06
Date Collected:	5-Apr-06				Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	0835							
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	0.00000799			<b>IS</b> 13C-2,3,7,8-TCDD	63.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000839			13C-1,2,3,7,8-PeCDD	66.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000785			13C-1,2,3,4,7,8-HxCDD	69.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000796			13C-1,2,3,6,7,8-HxCDD	66.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000763			13C-1,2,3,4,6,7,8-HpCDD	69.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000497			J	13C-OCDD	48.6	17 - 157	
OCDD	0.0000730				13C-2,3,7,8-TCDF	67.4	24 - 169	
2,3,7,8-TCDF	ND	0.00000652			13C-1,2,3,7,8-PeCDF	66.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000786			13C-2,3,4,7,8-PeCDF	68.9	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000754			13C-1,2,3,4,7,8-HxCDF	68.9	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000415			13C-1,2,3,6,7,8-HxCDF	65.7	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000398			13C-2,3,4,6,7,8-HxCDF	68.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000402			13C-1,2,3,7,8,9-HxCDF	66.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000601			13C-1,2,3,4,6,7,8-HpCDF	61.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000775			13C-1,2,3,4,7,8,9-HpCDF	65.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000489			13C-OCDF	54.5	17 - 157	
OCDF	ND	0.00000304			<b>CRS</b> 37Cl-2,3,7,8-TCDD	75.3	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000799			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000839			b. Estimated maximum possible concentration.			
Total HxCDD	0.00000858				c. Method detection limit.			
Total HpCDD	0.0000135				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000652						
Total PeCDF	ND	0.00000769						
Total HxCDF	ND	0.00000652						
Total HpCDF	ND	0.00000370						

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:30

LEVEL III

# **APPENDIX G**

## **Section 23**

Outfall 006, April 15, 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 006

Sampled: 04/15/06  
Received: 04/15/06  
Issued: 06/12/06 12:30

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**  
IPD1609-01

**CLIENT ID**  
Outfall 006

**MATRIX**  
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 006

Report Number: IPD1609

Sampled: 04/15/06  
Received: 04/15/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1609-01 (Outfall 006 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Antimony	EPA 200.8	6D20092	0.050	2.0	<b>1.0</b>	1	04/20/06	04/21/06	B, J
Cadmium	EPA 200.8	6D20092	0.025	1.0	<b>0.029</b>	1	04/20/06	04/21/06	J
Copper	EPA 200.8	6D20092	0.25	2.0	<b>0.65</b>	1	04/20/06	04/21/06	J
Lead	EPA 200.8	6D20092	0.040	1.0	<b>0.40</b>	1	04/20/06	04/21/06	J
Mercury	EPA 245.1	6D17063	0.050	0.20	ND	1	04/17/06	04/17/06	
Thallium	EPA 200.8	6D20092	0.15	1.0	ND	1	04/20/06	04/21/06	

**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.*



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

Project ID: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1609-01 (Outfall 006 - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Chloride	EPA 300.0	6D15028	0.15	0.50	7.2	1	04/15/06	04/15/06	
Nitrate/Nitrite-N	EPA 300.0	6D15028	0.080	0.15	1.1	1	04/15/06	04/15/06	
Oil & Grease	EPA 413.1	6D18050	0.89	4.7	ND	1	04/18/06	04/18/06	
Sulfate	EPA 300.0	6D15028	0.45	0.50	7.4	1	04/15/06	04/15/06	
Total Dissolved Solids	SM2540C	6D18055	10	10	140	1	04/18/06	04/18/06	
Total Suspended Solids	EPA 160.2	6D20128	10	10	ND	1	04/20/06	04/20/06	

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: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 006 (IPD1609-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/15/2006 09:20	04/15/2006 15:20	04/15/2006 16:40	04/15/2006 17:19

**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: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D17063 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D17063-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/17/2006 (6D17063-BS1)</b>											
Mercury	8.25	0.20	0.050	ug/l	8.00		103	85-115			
<b>Matrix Spike Analyzed: 04/17/2006 (6D17063-MS1)</b>											
						<b>Source: IPD1477-13</b>					
Mercury	8.39	0.20	0.050	ug/l	8.00	ND	105	70-130			
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17063-MSD1)</b>											
						<b>Source: IPD1477-13</b>					
Mercury	8.52	0.20	0.050	ug/l	8.00	ND	106	70-130	2	20	
<b>Batch: 6D20092 Extracted: 04/20/06</b>											
<b>Blank Analyzed: 04/21/2006 (6D20092-BLK1)</b>											
Antimony	0.101	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 04/21/2006 (6D20092-BS1)</b>											
Antimony	81.3	2.0	0.050	ug/l	80.0		102	85-115			
Cadmium	79.0	1.0	0.025	ug/l	80.0		99	85-115			
Copper	81.7	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.7	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	82.2	1.0	0.15	ug/l	80.0		103	85-115			

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 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

## 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: 6D20092 Extracted: 04/20/06</b>											
<b>Matrix Spike Analyzed: 04/21/2006 (6D20092-MS1)</b>						<b>Source: IPD1586-01</b>					
Antimony	85.4	2.0	0.050	ug/l	80.0	0.12	107	70-130			
Cadmium	77.8	1.0	0.025	ug/l	80.0	0.055	97	70-130			
Copper	83.2	2.0	0.25	ug/l	80.0	7.7	94	70-130			
Lead	78.1	1.0	0.040	ug/l	80.0	0.60	97	70-130			
Thallium	78.1	1.0	0.15	ug/l	80.0	ND	98	70-130			
<b>Matrix Spike Analyzed: 04/21/2006 (6D20092-MS2)</b>						<b>Source: IPD1586-02</b>					
Antimony	82.1	2.0	0.050	ug/l	80.0	0.098	103	70-130			
Cadmium	75.7	1.0	0.025	ug/l	80.0	0.058	95	70-130			
Copper	73.5	2.0	0.25	ug/l	80.0	1.5	90	70-130			
Lead	75.6	1.0	0.040	ug/l	80.0	0.13	94	70-130			
Thallium	76.0	1.0	0.15	ug/l	80.0	0.21	95	70-130			
<b>Matrix Spike Dup Analyzed: 04/21/2006 (6D20092-MSD1)</b>						<b>Source: IPD1586-01</b>					
Antimony	83.9	2.0	0.050	ug/l	80.0	0.12	105	70-130	2	20	
Cadmium	77.5	1.0	0.025	ug/l	80.0	0.055	97	70-130	0	20	
Copper	80.8	2.0	0.25	ug/l	80.0	7.7	91	70-130	3	20	
Lead	76.9	1.0	0.040	ug/l	80.0	0.60	95	70-130	2	20	
Thallium	77.5	1.0	0.15	ug/l	80.0	ND	97	70-130	1	20	

**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 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D15028 Extracted: 04/15/06</b>											
<b>Blank Analyzed: 04/15/2006 (6D15028-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: 04/15/2006 (6D15028-BS1)</b>											
Chloride	4.82	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	10.1	0.50	0.45	mg/l	10.0		101	90-110			
<b>Matrix Spike Analyzed: 04/15/2006 (6D15028-MS1) Source: IPD1578-01</b>											
Chloride	10.4	0.50	0.15	mg/l	5.00	5.1	106	80-120			
Sulfate	18.8	0.50	0.45	mg/l	10.0	7.7	111	80-120			
<b>Matrix Spike Dup Analyzed: 04/15/2006 (6D15028-MSD1) Source: IPD1578-01</b>											
Chloride	10.1	0.50	0.15	mg/l	5.00	5.1	100	80-120	3	20	
Sulfate	18.3	0.50	0.45	mg/l	10.0	7.7	106	80-120	3	20	
<b>Batch: 6D18050 Extracted: 04/18/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D18050-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/18/2006 (6D18050-BS1) M-NR1</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			
<b>LCS Dup Analyzed: 04/18/2006 (6D18050-BSD1)</b>											
Oil & Grease	17.9	5.0	0.94	mg/l	20.0		90	65-120	7	20	

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager



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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

**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: 6D18055 Extracted: 04/18/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D18055-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/18/2006 (6D18055-BS1)</b>											
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 04/18/2006 (6D18055-DUP1)</b>											
Total Dissolved Solids	5080	10	10	mg/l		5100			0	10	
<b>Source: IPD1326-01</b>											
<b>Batch: 6D20128 Extracted: 04/20/06</b>											
<b>Blank Analyzed: 04/20/2006 (6D20128-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/20/2006 (6D20128-BS1)</b>											
Total Suspended Solids	990	10	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 04/20/2006 (6D20128-DUP1)</b>											
Total Suspended Solids	356	10	10	mg/l		350			2	10	
<b>Source: IPD1603-01</b>											

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 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

## 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
IPD1609-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.19	4.7	15
IPD1609-01	Antimony-200.8	Antimony	ug/l	1.00	2.0	6.00
IPD1609-01	Cadmium-200.8	Cadmium	ug/l	0.029	1.0	4.00
IPD1609-01	Chloride - 300.0	Chloride	mg/l	7.20	0.50	150
IPD1609-01	Copper-200.8	Copper	ug/l	0.65	2.0	14
IPD1609-01	Lead-200.8	Lead	ug/l	0.40	1.0	5.20
IPD1609-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPD1609-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	1.10	0.15	10.00
IPD1609-01	Sulfate-300.0	Sulfate	mg/l	7.40	0.50	250
IPD1609-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	140	10	850
IPD1609-01	Thallium-200.8	Thallium	ug/l	0.032	1.0	2.00

**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.*



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

Project ID: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06  
Received: 04/15/06

### 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**  
Michele Chamberlin  
Project Manager

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**NPDES - 561**  
IPD1609 <Page 10 of 11>



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

Project ID: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06

Received: 04/15/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD1609-01

Analysis Performed: EDD + Level 4

Samples: IPD1609-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager

IPD1609

# Del Mar Analytical Version 03/01/06 CHAIN OF CUSTODY FORM

## ANALYSIS REQUIRED

Client Name/Address:  
**MWH-Pasadena**  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101

Project:  
**Boeing-SSFL NPDES  
Routine Outfall 006  
Stormwater at FSDF-2**

Project Manager: **Bronwyn Kelly**

Phone Number:  
(626) 568-6691

Fax Number:  
(626) 568-6515

Sampler: *Serrasi R Amy S*

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED					Comments	
							Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Ti	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS		Field readings:
Outfall 006	W	Poly-1L	1	4/15/06 9:20	HNO3	1A	X					Temp = 57 °C pH = 7.4	
Outfall 006-Dup	W	Poly-1L	1	↓	HNO3	1B	X						
Outfall 006	W	Glass-Amber	2		None	2A, 2B	X						
Outfall 006	W	Glass-Amber	2	↓	HCl	3A, 3B		X					
Outfall 006	W	Poly-500 ml	2		None	4A, 4B		X					
Outfall 006	W	Poly-500 ml	2	4/15/06 9:20	None	5A, 5B			X				

EA  
1630

Relinquished By: *Serrasi R* Date/Time: 4/15/06 1300  
 Received By: *[Signature]* Date/Time: 4-15-06 1300  
 Relinquished By: *[Signature]* Date/Time: 4-25-06 1520  
 Received By: *[Signature]* Date/Time: 4-15-06 1520

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)   
 Intact \_\_\_\_\_ On Ice:  1 °C



May 03, 2006

**Alta Project I.D.: 27608**

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 April 18, 2006 under your Project Name "IPD1609". 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: 4/18/2006**

Alta Lab. ID

Client Sample ID

27608-001

IPD1609-01

## SECTION II

Method Blank		EPA Method 1613						
Matrix:	Aqueous	QC Batch No.:	7968	Lab Sample:	0-MB001			
Sample Size:	1.00 L	Date Extracted:	26-Apr-06	Date Analyzed DB-5:	2-May-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	0.000000767			IS 13C-2,3,7,8-TCDD	77.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000968			13C-1,2,3,7,8-PeCDD	69.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000195			13C-1,2,3,4,7,8-HxCDD	78.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000219			13C-1,2,3,6,7,8-HxCDD	67.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000200			13C-1,2,3,4,6,7,8-HpCDD	62.1	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000273			13C-OCDD	42.7	17 - 157	
OCDD	ND	0.00000703			13C-2,3,7,8-TCDF	77.2	24 - 169	
2,3,7,8-TCDF	ND	0.00000483			13C-1,2,3,7,8-PeCDF	67.2	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000901			13C-2,3,4,7,8-PeCDF	66.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000876			13C-1,2,3,4,7,8-HxCDF	87.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000696			13C-1,2,3,6,7,8-HxCDF	85.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000446			13C-2,3,4,6,7,8-HxCDF	81.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000546			13C-1,2,3,7,8,9-HxCDF	69.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000922			13C-1,2,3,4,6,7,8-HpCDF	60.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000818			13C-1,2,3,4,7,8,9-HpCDF	59.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000869			13C-OCDF	44.2	17 - 157	
OCDF	ND	0.00000249			CRS 37Cl-2,3,7,8-TCDD	89.1	35 - 197	
<b>Totals</b>								
Total TCDD	ND	0.000000767						
Total PeCDD	ND	0.000000968						
Total HxCDD	ND	0.00000205						
Total HpCDD	ND	0.00000273						
Total TCDF	ND	0.000000483						
Total PeCDF	ND	0.000000889						
Total HxCDF	ND	0.000000786						
Total HpCDF	ND	0.000000841						

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

Analyst: Approved By: William J. Luksemburg 03-May-2006 13:14

OPR Results		EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7968	Lab Sample:	0-OPR001	
Sample Size:	1 00 L	Date Extracted:	26-Apr-06	Date Analyzed DB-5:	2-May-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	10.8	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	79.0	25 - 164
1,2,3,7,8-PeCDD	50.0	51.5	35 - 71	13C-1,2,3,7,8-PeCDD	71.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	53.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	79.9	32 - 141
1,2,3,6,7,8-HxCDD	50.0	53.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	51.6	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	63.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	55.1	35 - 70	13C-OCDD	44.0	17 - 157
OCDD	100	105	78 - 144	13C-2,3,7,8-TCDF	78.4	24 - 169
2,3,7,8-TCDF	10.0	10.7	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	65.0	24 - 185
1,2,3,7,8-PeCDF	50.0	54.8	40 - 67	13C-2,3,4,7,8-PeCDF	65.1	21 - 178
2,3,4,7,8-PeCDF	50.0	55.8	34 - 80	13C-1,2,3,4,7,8-HxCDF	87.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	52.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	88.1	26 - 123
1,2,3,6,7,8-HxCDF	50.0	53.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	83.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	52.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	66.3	29 - 147
1,2,3,7,8,9-HxCDF	50.0	52.6	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	62.0	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	53.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	61.6	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	52.5	39 - 69	13C-OCDF	45.7	17 - 157
OCDF	100	110	63 - 170	CRS 37Cl-2,3,7,8-TCDD	95.0	35 - 197

Analyst: MAS

Approved By:

William J. Luksemburg 03-May-2006 13:14

Sample ID: IPD1609-01		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name	Del Mar Analytical, Irvine	Matrix	Aqueous	Lab Sample:	27608-001		
Project	IPD1609	Sample Size:	1.02 L	QC Batch No.:	7968		
Date Collected	15-Apr-06			Date Analyzed DB-5	2-May-06		
Time Collected	0920			Date Analyzed DB-225	NA		
				Date Received:	18-Apr-06		
				Date Extracted:	26-Apr-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	0.000000636		IS 13C-2,3,7,8-TCDD	91.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000488		13C-1,2,3,7,8-PeCDD	82.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000126		13C-1,2,3,4,7,8-HxCDD	93.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000136		13C-1,2,3,6,7,8-HxCDD	82.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000127		13C-1,2,3,4,6,7,8-HpCDD	86.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000248			13C-OCDD	71.0	17 - 157	
OCDD	0.0000371			13C-2,3,7,8-TCDF	89.7	24 - 169	
2,3,7,8-TCDF	ND	0.000000483	J	13C-1,2,3,7,8-PeCDF	75.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000621		13C-2,3,4,7,8-PeCDF	76.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000593		13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000417		13C-1,2,3,6,7,8-HxCDF	99.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000366		13C-2,3,4,6,7,8-HxCDF	97.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000436		13C-1,2,3,7,8,9-HxCDF	92.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000628		13C-1,2,3,4,6,7,8-HpCDF	86.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000601		13C-1,2,3,4,7,8,9-HpCDF	87.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000661		13C-OCDF	73.6	17 - 157	
OCDF	ND	0.00000349		CRS 37CI-2,3,7,8-TCDD	97.6	35 - 197	
Totals				Footnotes			
Total TCDD	ND	0.000000636		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000939		b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000187		c. Method detection limit.			
Total HpCDD	0.00000628			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000483					
Total PeCDF	ND	0.000000607					
Total HxCDF	ND	0.000000450					
Total HpCDF	ND	0.000000629					

Analyst:

Approved By:

William J. Luksemburg

03-May-2006 13:14

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

**SUBCONTRACT ORDER - PROJECT # IPD1609**

<p align="center"><b>SENDING LABORATORY:</b></p> <p>Del Mar Analytical - Irvine          17461 Derian Avenue, Suite 100          Irvine, CA 92614          Phone: (949) 261-1022          Fax: (949) 261-1228          Project Manager: Michele Chamberlin</p>	<p align="center"><b>RECEIVING LABORATORY:</b></p> <p>Alta Analytical - SUB          1104 Windfield Way          El Dorado Hills, CA 95762          Phone : (916) 933-1640          Fax: (916) 673-0106</p> <p align="right" style="font-size: 2em;">27608 0.3°C</p>
--	--

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

Analysis	Expiration	Comments
Sample ID: IPD1609-01 Water	Sampled: 04/15/06 09:20	
1613-Dioxin-HR-Alta	04/22/06 09:20	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/15/06 09:20	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPD1609-01C)		
1 L Amber (IPD1609-01D)		

**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: *Edmund de Krug* Date: 4/17/06 Time: \_\_\_\_\_ Received By: *Bethina G. Benedict* Date: 4/18/06 Time: 0905

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

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27608

Samples Arrival:	Date/Time 4/18/06 0905	Initials: BBB	Location: WR-2
			Shelf/Rack: _____
Logged In:	Date/Time 4/18/06 1500	Initials: BBB	Location: WR-2
			Shelf/Rack: C-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	0.3°C	Time: 0935	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 #	7903 9693 2436		
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 24**

Outfall 006, April 15, 2006

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

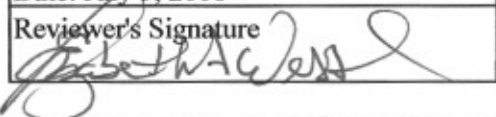
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF102  
 Task Order 1261.001D.01  
 SDG No. IPD1609

No. of Analyses 1

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

Date: July 5, 2006  
 Reviewer's Signature 

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative</b> <b>Deficiencies</b>	_____
2. <b>Out of Scope</b> <b>Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy</b> <b>Deliverables</b>	_____
5. <b>Incorrect Hardcopy</b> <b>Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</b>	Qualifications were assigned for the following:
Holding Times	- the results between the RL and the MDL were estimated
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 006

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD1609

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

## 1. INTRODUCTION

Task Order Title:	NPDES
Contract Task Order:	1261.001D.01
Sample Delivery Group:	IPD1609
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:	July 5, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines 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 006	IPD1609-01	27608-001	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 below the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits at  $0.3^{\circ}\text{C}$ . The sample containers were not noted to be damaged or frozen during transportation; therefore, 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7968-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. 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 (0-7968-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 qualification of the site sample was 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. The detects below the laboratory lower calibration level were qualified as estimated, "J." 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.

Sample ID: <b>IPD1609-01</b> <i>Outfall 006</i>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27608-001	Date Received:	18-Apr-06
Project:	IPD1609		Sample Size:	1.02 L	QC Batch No.:	7968	Date Extracted:	26-Apr-06
Date Collected:	15-Apr-06				Date Analyzed DB-5:	2-May-06	Date Analyzed DB-225:	NA
Time Collected:	0920							
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	0.000000636			<b>IS</b> 13C-2,3,7,8-TCDD	91.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000488			13C-1,2,3,7,8-PeCDD	82.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000126			13C-1,2,3,4,7,8-HxCDD	93.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000136			13C-1,2,3,6,7,8-HxCDD	82.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000127			13C-1,2,3,4,6,7,8-HpCDD	86.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000248			J	13C-OCDD	71.0	17 - 157	
OCDD	0.0000371			J	13C-2,3,7,8-TCDF	89.7	24 - 169	
2,3,7,8-TCDF	ND	0.000000483			13C-1,2,3,7,8-PeCDF	75.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000621			13C-2,3,4,7,8-PeCDF	76.3	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000593			13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000417			13C-1,2,3,6,7,8-HxCDF	99.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000366			13C-2,3,4,6,7,8-HxCDF	97.0	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000436			13C-1,2,3,7,8,9-HxCDF	92.9	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000628			13C-1,2,3,4,6,7,8-HpCDF	86.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000601			13C-1,2,3,4,7,8,9-HpCDF	87.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000661			13C-OCDF	73.6	17 - 157	
OCDF	ND	0.00000349			<b>CRS</b> 37CI-2,3,7,8-TCDD	97.6	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.000000636			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000939			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000187			c. Method detection limit.			
Total HpCDD	0.00000628				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000483						
Total PeCDF	ND	0.000000607						
Total HxCDF	ND	0.000000450						
Total HpCDF	ND	0.000000629						

Analyst:

Approved By: William J. Luksemburg 03-May-2006 13:14

*Level IV*

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4MT86  
 Task Order: 1261.001D.01  
 SDG No.: IPD1609  
 No. of Analyses: 1

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

Date: <u>June 23, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

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.,	Qualifications were applied for reporting limit check standard
Holding Times	Recoveries and detects 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	
<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 006

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPD1609

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: IPD1609  
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: June 23, 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 006	IPD1609-01	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 below the temperature limits of 4°C ±2°C at 1°C; however as the sample was not noted to be frozen or damaged, 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 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 85-115% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. Antimony, cadmium, lead and thallium were recovered above 130% in the 0.2 ppb reporting limit check standard. Cadmium, which was detected below 0.2 ppb, and lead which was detected within 3× the concentration of the 0.2 ppb check standard, were qualified as estimated, "J." Antimony was detected at a concentration greater than 3× the 0.2 ppb check standard and thallium was not detected; therefore, no qualifications were required for these analytes. All other recoveries were considered to be acceptable. No further qualifications were required.



## 2.4 BLANKS

Antimony was detected in the associated method blank, but not at sufficient concentration to qualify the site sample. There were no other detects in the method blanks or CCBs associated with the sample in this SDG. No qualifications were required.

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

ICSA and ICSAB analyses were not 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

All recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No 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 the 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 sample in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. Sample results reported between the MDL and the reporting limit were qualified as estimated detects, "J." These qualifications were annotated with "DNQ" according to the NPDES program specifications. No transcription errors or calculation errors were noted. 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.



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

Project ID: Routine Outfall 006

Report Number: IPD1609

Sampled: 04/15/06  
Received: 04/15/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Raw Qual	Qual Code
Sample ID: IPD1609-01 (Outfall 006 - Water)										
Reporting Units: ug/l										
Antimony	EPA 200.8	6D20092	0.050	2.0	1.0	1	04/20/06	04/21/06	J B, J	DNA
Cadmium	EPA 200.8	6D20092	0.025	1.0	0.029	1	04/20/06	04/21/06	J	↓, *3
Copper	EPA 200.8	6D20092	0.25	2.0	0.65	1	04/20/06	04/21/06	J	↓, *3
Lead	EPA 200.8	6D20092	0.040	1.0	0.40	1	04/20/06	04/21/06	J	↓, *3
Mercury	EPA 245.1	6D17063	0.050	0.20	ND	1	04/17/06	04/17/06		
Thallium	EPA 200.8	6D20092	0.15	1.0	ND	1	04/20/06	04/21/06	U	

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

LEVEL IV

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.

## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID: B4WC66  
 Task Order: 1261.001D.01  
 SDG No.: IPD1609

No. of Analyses: 1

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

Date: July 5, 2006
Reviewer's Signature <i>P. Meeks</i>

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	_____
<b>COMMENTS<sup>b</sup></b>	Acceptable as reviewed.
<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 006

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPD1609

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: IPD1609  
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: July 5, 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 160.1, 160.2, 300.0, and 413.1*, 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 006	IPD1609-01	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 below the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , at  $1^{\circ}\text{C}$ ; however, as the sample was not noted to be frozen or damaged, no qualifications were required. 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. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For the analytes determined by method 300.0, the  $r^2$  results were  $\geq 0.995$  and the ICV and CCV results were within the control limits of 90-110%. For Oil and Grease, TDS, and TSS balance calibration logs provided by the laboratory were reviewed and found to be acceptable. 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. The laboratory did not report an LCS recovery for nitrate/nitrite; however, the reviewer checked the raw data and found this result to be acceptable. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in 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 the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of method accuracy was based on the 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 I were verified against the raw data. The reviewer was not able to exactly reproduce the chloride, nitrate/nitrite, or sulfate results; however, as the difference between the calculated results and reported results were less than 5%, the reviewer considered the reported results to be acceptable. 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.



# Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 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 006  Report Number: IPD1609	Sampled: 04/15/06 Received: 04/15/06
--	---	---

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1609-01 (Outfall 006 - Water) - cont.									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D15028	0.15	0.50	7.2	1	04/15/06	04/15/06	u
Nitrate/Nitrite-N	EPA 300.0	6D15028	0.080	0.15	1.1	1	04/15/06	04/15/06	u
Oil & Grease	EPA 413.1	6D18050	0.89	4.7	ND	1	04/18/06	04/18/06	u
Sulfate	EPA 300.0	6D15028	0.45	0.50	7.4	1	04/15/06	04/15/06	u
Total Dissolved Solids	SM2540C	6D18055	10	10	140	1	04/18/06	04/18/06	u
Total Suspended Solids	EPA 160.2	6D20128	10	10	ND	1	04/20/06	04/20/06	u

Raw Qual	Qual Code
u	
u	
u	
u	
u	
u	

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

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LEVEL IV  
 IPD1609 <Page 3 of 11>  
 NPDES - 598

# **APPENDIX G**

## **Section 25**

Outfall 007, April 05, 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: 04/05/06  
Received: 04/05/06  
Issued: 05/07/06 17:21

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**  
IPD0424-01

**CLIENT ID**  
Outfall 007

**MATRIX**  
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 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0424-01 (Outfall 007 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D06072	0.050	2.0	<b>1.1</b>	1	04/06/06	04/07/06	J
Cadmium	EPA 200.8	6D06072	0.025	1.0	<b>0.38</b>	1	04/06/06	04/07/06	J
Copper	EPA 200.8	6D06072	0.25	2.0	<b>25</b>	1	04/06/06	04/07/06	
Lead	EPA 200.8	6D06072	0.040	1.0	<b>18</b>	1	04/06/06	04/07/06	
Mercury	EPA 245.1	6D06061	0.050	0.20	<b>0.058</b>	1	04/06/06	04/06/06	J
Thallium	EPA 200.8	6D06072	0.15	1.0	<b>0.34</b>	1	04/06/06	04/07/06	J
<b>Sample ID: IPD0424-01RE1 (Outfall 007 - Water)</b>									
Reporting Units: ug/l									
Copper	EPA 200.8	6E01070	0.25	2.0	<b>20</b>	1	05/01/06	05/02/06	
Lead	EPA 200.8	6E01070	0.040	1.0	<b>25</b>	1	05/01/06	05/02/06	

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Michele Chamberlin  
Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06  
Received: 04/05/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0424-01 (Outfall 007 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D06048	0.15	0.50	<b>3.2</b>	1	04/06/06	04/06/06	
Nitrate/Nitrite-N	EPA 300.0	6D06048	0.080	0.15	<b>0.15</b>	1	04/06/06	04/06/06	
Oil & Grease	EPA 413.1	6D06049	0.90	4.8	ND	1	04/06/06	04/06/06	
Sulfate	EPA 300.0	6D06048	0.45	0.50	<b>2.3</b>	1	04/06/06	04/06/06	
Total Dissolved Solids	SM2540C	6D06066	10	10	<b>130</b>	1	04/06/06	04/06/06	
Total Suspended Solids	EPA 160.2	6D11091	10	10	<b>360</b>	1	04/11/06	04/11/06	

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Michele Chamberlin  
Project Manager

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06  
Received: 04/05/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 007 (IPD0424-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/05/2006 08:55	04/05/2006 18:50	04/06/2006 09:30	04/06/2006 12:30

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Michele Chamberlin  
Project Manager



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

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06061 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06061-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06061-BS1)</b>											
Mercury	8.10	0.20	0.050	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06061-MS1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.34	0.20	0.050	ug/l	8.00	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06061-MSD1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006-04/07/2006 (6D06072-BLK1)</b>											
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.075	ug/l							
<b>LCS Analyzed: 04/06/2006-04/07/2006 (6D06072-BS1)</b>											
Antimony	77.5	2.0	0.18	ug/l	80.0		97	85-115			
Cadmium	78.2	1.0	0.015	ug/l	80.0		98	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.3	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	78.4	1.0	0.075	ug/l	80.0		98	85-115			

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Michele Chamberlin  
Project Manager





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

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

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: 6D06072 Extracted: 04/06/06</b>											
<b>Matrix Spike Analyzed: 04/06/2006-04/07/2006 (6D06072-MS1)</b>						<b>Source: IPD0061-03</b>					
Antimony	79.1	2.0	0.18	ug/l	80.0	ND	99	70-130			
Cadmium	77.5	1.0	0.015	ug/l	80.0	ND	97	70-130			
Copper	79.0	2.0	0.25	ug/l	80.0	ND	99	70-130			
Lead	80.0	1.0	0.040	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Analyzed: 04/07/2006 (6D06072-MS2)</b>						<b>Source: IPD0061-04</b>					
Antimony	78.7	2.0	0.18	ug/l	80.0	ND	98	70-130			
Cadmium	78.4	1.0	0.015	ug/l	80.0	ND	98	70-130			
Copper	79.2	2.0	0.25	ug/l	80.0	1.3	97	70-130			
Lead	79.5	1.0	0.040	ug/l	80.0	0.060	99	70-130			
Thallium	81.6	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D06072-MSD1)</b>						<b>Source: IPD0061-03</b>					
Antimony	76.9	2.0	0.18	ug/l	80.0	ND	96	70-130	3	20	
Cadmium	76.0	1.0	0.015	ug/l	80.0	ND	95	70-130	2	20	
Copper	76.0	2.0	0.25	ug/l	80.0	ND	95	70-130	4	20	
Lead	77.5	1.0	0.040	ug/l	80.0	ND	97	70-130	3	20	
Thallium	79.2	1.0	0.075	ug/l	80.0	ND	99	70-130	3	20	
<b>Batch: 6E01070 Extracted: 05/01/06</b>											
<b>Blank Analyzed: 05/02/2006 (6E01070-BLK1)</b>											
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 05/02/2006 (6E01070-BS1)</b>											
Copper	85.7	2.0	0.25	ug/l	80.0		107	85-115			
Lead	90.7	1.0	0.040	ug/l	80.0		113	85-115			

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Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
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Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

## 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: 6E01070 Extracted: 05/01/06</b>											
<b>Matrix Spike Analyzed: 05/02/2006 (6E01070-MS1)</b>						<b>Source: IPD2699-01</b>					
Copper	97.9	2.0	0.25	ug/l	80.0	21	96	70-130			
Lead	92.2	1.0	0.040	ug/l	80.0	6.1	108	70-130			
<b>Matrix Spike Dup Analyzed: 05/02/2006 (6E01070-MSD1)</b>						<b>Source: IPD2699-01</b>					
Copper	97.8	2.0	0.25	ug/l	80.0	21	96	70-130	0	20	
Lead	91.1	1.0	0.040	ug/l	80.0	6.1	106	70-130	1	20	

**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 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06048 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06048-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: 04/06/2006 (6D06048-BS1)</b>											
Chloride	4.78	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	9.63	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06048-MS1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.5	0.50	0.15	mg/l	5.00	8.7	96	80-120			
Sulfate	33.2	0.50	0.45	mg/l	10.0	23	102	80-120			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06048-MSD1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.7	0.50	0.15	mg/l	5.00	8.7	100	80-120	1	20	
Sulfate	33.9	0.50	0.45	mg/l	10.0	23	109	80-120	2	20	
<b>Batch: 6D06049 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06049-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06049-BS1)</b>											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
<b>LCS Dup Analyzed: 04/06/2006 (6D06049-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	19	20	

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Michele Chamberlin  
Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
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Received: 04/05/06

**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: 6D06066 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06066-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06066-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/06/2006 (6D06066-DUP1)</b>											
Total Dissolved Solids	156	10	10	mg/l		Source: IPD0419-01 160			3	10	
<b>Batch: 6D11091 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11091-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/11/2006 (6D11091-BS1)</b>											
Total Suspended Solids	972	10	10	mg/l	1000		97	85-115			
<b>Duplicate Analyzed: 04/11/2006 (6D11091-DUP1)</b>											
Total Suspended Solids	326	10	10	mg/l		Source: IPD0412-01 340			4	10	

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Michele Chamberlin  
Project Manager



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

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

## 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
IPD0424-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.096	4.8	15
IPD0424-01	Antimony-200.8	Antimony	ug/l	1.10	2.0	6.00
IPD0424-01	Cadmium-200.8	Cadmium	ug/l	0.38	1.0	4.00
IPD0424-01	Chloride - 300.0	Chloride	mg/l	3.20	0.50	150
<b>IPD0424-01</b>	<b>Copper-200.8</b>	<b>Copper</b>	<b>ug/l</b>	<b>25</b>	<b>2.0</b>	<b>14</b>
<b>IPD0424-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>18</b>	<b>1.0</b>	<b>5.20</b>
IPD0424-01	Mercury - 245.1	Mercury	ug/l	0.058	0.20	0.20
IPD0424-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.15	0.15	10.00
IPD0424-01	Sulfate-300.0	Sulfate	mg/l	2.30	0.50	250
IPD0424-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	130	10	850
IPD0424-01	Thallium-200.8	Thallium	ug/l	0.34	1.0	2.00
<b>IPD0424-01RE1</b>	<b>Copper-200.8</b>	<b>Copper</b>	<b>ug/l</b>	<b>20</b>	<b>2.0</b>	<b>14</b>
<b>IPD0424-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>25</b>	<b>1.0</b>	<b>5.20</b>

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
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Project ID: Routine Outfall 007

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### 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-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

*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.*

**NPDES - 610**  
IPD0424 <Page 11 of 12>



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

Project ID: Routine Outfall 007

Report Number: IPD0424

Sampled: 04/05/06

Received: 04/05/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD0424-01

Analysis Performed: EDD + Level 4

Samples: IPD0424-01

**Del Mar Analytical - Irvine**

Michele Chamberlin

Project Manager







April 13, 2006

**Alta Project I.D.: 27564**

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 April 07, 2006 under your Project Name "IPD0424". 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  
HRMS Services Director



*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: 4/7/2006**

**Alta Lab. ID**

**Client Sample ID**

27564-001

IPD0424-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	10-Apr-06						
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	0.000000788			<b>IS</b> 13C-2,3,7,8-TCDD	72.2	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000469			13C-1,2,3,7,8-PeCDD	73.0	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000114			13C-1,2,3,4,7,8-HxCDD	75.7	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000120			13C-1,2,3,6,7,8-HxCDD	67.3	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	69.6	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000167			13C-OCDD	44.8	17 - 157		
OCDD	ND	0.0000150			13C-2,3,7,8-TCDF	77.0	24 - 169		
2,3,7,8-TCDF	ND	0.000000832			13C-1,2,3,7,8-PeCDF	72.9	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000866			13C-2,3,4,7,8-PeCDF	77.1	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000754			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000479			13C-1,2,3,6,7,8-HxCDF	66.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000466			13C-2,3,4,6,7,8-HxCDF	70.2	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000465			13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000684			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000806			13C-1,2,3,4,7,8,9-HpCDF	67.5	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000832			13C-OCDF	49.1	17 - 157		
OCDF	ND	0.00000337			<b>CRS</b> 37Cl-2,3,7,8-TCDD	86.2	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000788			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000120			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000116			c. Method detection limit.				
Total HpCDD	ND	0.00000167			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000832							
Total PeCDF	ND	0.000000808							
Total HxCDF	ND	0.000000515							
Total HpCDF	ND	0.000000818							

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

NPDES - 616

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	10-Apr-06	Date Analyzed DB-5:	11-Apr-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	9.88	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	72.6	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.8	35 - 71	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	48.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	47.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	76.4	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.2	35 - 70	13C-OCDD	50.8	17 - 157	
OCDD	100	99.7	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169	
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	79.0	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.3	40 - 67	13C-2,3,4,7,8-PeCDF	78.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	45.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.1	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.3	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	46.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	80.4	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	47.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	47.9	39 - 69	13C-OCDF	59.3	17 - 157	
OCDF	100	96.8	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

**Sample ID: IPD0424-01** **EPA Method 1613**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27564-001	Date Received:	7-Apr-06
Project:	IPD0424	Sample Size:	1.03 L	QC Batch No.:	7918	Date Extracted:	10-Apr-06
Date Collected:	5-Apr-06			Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	0855						

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	0.000000977			<b>IS</b> 13C-2,3,7,8-TCDD	60.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000164			13C-1,2,3,7,8-PeCDD	60.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000235			13C-1,2,3,4,7,8-HxCDD	59.4	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000283			J	13C-1,2,3,6,7,8-HxCDD	56.5	28 - 130	
1,2,3,7,8,9-HxCDD	0.00000285			J	13C-1,2,3,4,6,7,8-HpCDD	58.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000693				13C-OCDD	43.3	17 - 157	
OCDD	0.000758				13C-2,3,7,8-TCDF	61.5	24 - 169	
2,3,7,8-TCDF	ND	0.000000879			13C-1,2,3,7,8-PeCDF	60.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000105			13C-2,3,4,7,8-PeCDF	62.0	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000966			13C-1,2,3,4,7,8-HxCDF	57.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000110			13C-1,2,3,6,7,8-HxCDF	52.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000120			13C-2,3,4,6,7,8-HxCDF	58.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000110			13C-1,2,3,7,8,9-HxCDF	57.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000159			13C-1,2,3,4,6,7,8-HpCDF	52.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000621			J	13C-1,2,3,4,7,8,9-HpCDF	57.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000142			13C-OCDF	47.7	17 - 157	
OCDF	0.0000150			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	80.1	35 - 197	

<b>Totals</b>				<b>Footnotes</b>			
Total TCDD	ND	0.000000977		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000164		b. Estimated maximum possible concentration.			
Total HxCDD	0.0000226			c. Method detection limit.			
Total HpCDD	0.000187			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000879					
Total PeCDF	ND		0.00000119				
Total HxCDF	0.00000593						
Total HpCDF	0.00000621		0.0000151				

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

**NPDES - 618**

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0424

<p style="text-align: center;"><b>SENDING LABORATORY:</b></p> <p>Del Mar Analytical - Irvine        17461 Derian Avenue. Suite 100        Irvine, CA 92614        Phone: (949) 261-1022        Fax: (949) 261-1228        Project Manager: Michele Chamberlin</p>	<p style="text-align: center;"><b>RECEIVING LABORATORY:</b></p> <p>Alta Analytical - SUB <span style="float: right; font-size: 1.5em;">27564</span>        1104 Windfield Way        El Dorado Hills, CA 95762        Phone : (916) 933-1640        Fax: (916) 673-0106 <span style="float: right; font-size: 1.5em;">1.1°C</span></p>
---	--

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

Analysis	Expiration	Comments
<b>Sample ID: IPD0424-01</b> Water	<b>Sampled: 04/05/06 08:55</b>	<b>Instant Notification</b>
1613-Dioxin-HR-Alta	04/12/06 08:55	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/03/06 08:55	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPD0424-01C)		
1 L Amber (IPD0424-01D)		

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
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):	_____	

*Col. A*
*Bethmich. Benedict*
4/7/06
0900

---

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

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27564

Samples Arrival:	Date/Time 4/7/06 0900	Initials: UBB	Location: WR-2			
			Shelf/Rack: _____			
Logged In:	Date/Time 4/10/06 0733	Initials: UBB	Location: WR-2			
			Shelf/Rack: C-3			
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	1.1°C	Time:	0942	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 #	7914 3658 8291				
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, April 05, 2006

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

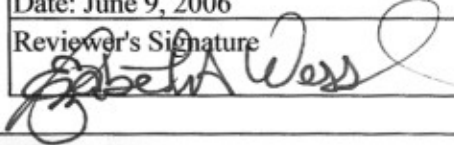
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF86  
 Task Order 1261.001D.01  
 SDG No. IPD0424

No. of Analyses 1

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

Date: June 9, 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: - results between the RL and the MDL were estimated - EMPC values for total furans were estimated nondetects.
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 007

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD0424

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD0424  
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: June 9, 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	IPD0424-01	27564-001	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 1.1°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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7918-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. 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 (0-7918-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 qualification of the site sample was 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. Detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. An EMPC value for total PeCDF was qualified as an estimated nondetect, "UJ." No further qualifications were required.

Sample ID: **IPD0424-01** *Outfall 007* **EPA Method 1613**

Client Data	Sample Data	Laboratory Data	
Name: Del Mar Analytical, Irvine	Matrix: Aqueous	Lab Sample: 27564-001	Date Received: 7-Apr-06
Project: IPD0424	Sample Size: 1.03 L	QC Batch No.: 7918	Date Extracted: 10-Apr-06
Date Collected: 5-Apr-06		Date Analyzed DB-5: 11-Apr-06	Date Analyzed DB-225: NA
Time Collected: 0855			

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	0.000000977			<b>IS</b> 13C-2,3,7,8-TCDD	60.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000164			13C-1,2,3,7,8-PeCDD	60.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000235			13C-1,2,3,4,7,8-HxCDD	59.4	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000283			J	13C-1,2,3,6,7,8-HxCDD	56.5	28 - 130	
1,2,3,7,8,9-HxCDD	0.00000285			J	13C-1,2,3,4,6,7,8-HpCDD	58.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000693				13C-OCDD	43.3	17 - 157	
OCDD	0.000758				13C-2,3,7,8-TCDF	61.5	24 - 169	
2,3,7,8-TCDF	ND	0.000000879			13C-1,2,3,7,8-PeCDF	60.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000105			13C-2,3,4,7,8-PeCDF	62.0	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000966			13C-1,2,3,4,7,8-HxCDF	57.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000110			13C-1,2,3,6,7,8-HxCDF	52.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000120			13C-2,3,4,6,7,8-HxCDF	58.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000110			13C-1,2,3,7,8,9-HxCDF	57.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000159			13C-1,2,3,4,6,7,8-HpCDF	52.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000621			J	13C-1,2,3,4,7,8,9-HpCDF	57.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000142			13C-OCDF	47.7	17 - 157	
OCDF	0.0000150			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	80.1	35 - 197	

Totals					Footnotes			
Total TCDD	ND	0.000000977			a. Sample specific estimated detection limit. b. Estimated maximum possible concentration. c. Method detection limit. d. Lower control limit - upper control limit.			
Total PeCDD	ND	0.00000164						
Total HxCDD	0.0000226							
Total HpCDD	0.000187							
Total TCDF	ND	0.000000879						
Total PeCDF	ND		0.00000119					
Total HxCDF	0.00000593							
Total HpCDF	0.00000621		0.0000151					

Analyst: MAS Approved By: William J. Luksemburg 13-Apr-2006 07:31

*Level IV*

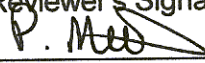
## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID: B4MT67  
 Task Order: 1261.001D.01  
 SDG No.: IPD0424

No. of Analyses: 1

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

Date: June 5, 2006  
 Reviewer's Signature  


ACTION ITEMS <sup>a</sup>	
1. <b>Case Narrative Deficiencies</b>	_____
2. <b>Out of Scope Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy Deliverables</b>	_____
5. <b>Incorrect Hardcopy Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</b>	Qualifications were applied for detects below the reporting limit. Reanalysis result rejected in favor of original result.
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>	
<p><sup>a</sup> Subcontracted analytical laboratory is not meeting contract and/or method requirements.</p> <p><sup>b</sup> Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.</p>	



# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 007

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPD0424

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: IPD0424  
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: June 5, 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 Method 200.8, 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	IPD0424-01	Water	200.8



## 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. Outfall 007 was reanalyzed for copper lead. As the laboratory did not append the MWH IDs for the reanalyses with "RE1," the reviewer added this information to the Form I. 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. 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. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and the recoveries were considered to be acceptable. No qualifications were required.

## 2.4 BLANKS

There were no detects in the associated method blanks or CCBs associated with the sample in this SDG. The raw method blank data from which antimony, cadmium, and thallium were reported analyses was not provided by the laboratory; therefore, the reviewer was not able to confirm these results. No qualifications were required.

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

ICSA and ICSAB analyses were performed for the copper and lead reanalyses only. Copper, which is not spiked into the ICSA solution, was detected above the reporting limit in the ICSA. The reviewer checked the sample analysis for the presence of known interferent. No interferences were noted at concentrations that would require sample qualification. All recoveries were acceptable. No qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP-MS recoveries were within the laboratory-established control limits of 85-115%. The raw blank spike data from which antimony, cadmium, and thallium were reported analyses was not provided by the laboratory; therefore, the reviewer was not able to confirm these results. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No 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 or matrix spike 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 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 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. Analytes detected below the reporting limit were qualified as estimated, "J," and denoted with a qualification code of "DNQ," in accordance with the NPDES permit.

Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 007 for copper and lead. As the reanalyses yielded results similar to the original results, the reanalyses, Outfall 007 RE1, were rejected, "R," in favor of the original results. 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

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
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: IPD0424

Sampled: 04/05/06  
Received: 04/05/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers		
									Raw Qual	Qual Code	
Sample ID: IPD0424-01 (Outfall 007 - Water)											
Reporting Units: ug/l											
Antimony	EPA 200.8	6D06072	0.050	2.0	1.1	1	04/06/06	04/07/06	J	J	DNG
Cadmium	EPA 200.8	6D06072	0.025	1.0	0.38	1	04/06/06	04/07/06	↓	J	↓
Copper	EPA 200.8	6D06072	0.25	2.0	25	1	04/06/06	04/07/06			
Lead	EPA 200.8	6D06072	0.040	1.0	18	1	04/06/06	04/07/06			
Mercury	EPA 245.1	6D06061	0.050	0.20	0.058	1	04/06/06	04/06/06	*	J	
Thallium	EPA 200.8	6D06072	0.15	1.0	0.34	1	04/06/06	04/07/06	J	J	DNG
Sample ID: IPD0424-01RE1 (Outfall 007 - Water) Outfall 007 RE1											
Reporting Units: ug/l											
Copper	EPA 200.8	6E01070	0.25	2.0	20	1	05/01/06	05/02/06	R		D
Lead	EPA 200.8	6E01070	0.040	1.0	25	1	05/01/06	05/02/06	R		D

\* Analysis not validated

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

LEVEL IV

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## **APPENDIX G**

### **Section 27**

Outfall 008, April 05, 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: 04/05/06  
Received: 04/05/06  
Issued: 04/30/06 21:03

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**  
IPD0425-01

**CLIENT ID**  
Outfall 008

**MATRIX**  
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 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0425-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D06072	0.050	2.0	<b>0.31</b>	1	04/06/06	04/07/06	J
Cadmium	EPA 200.8	6D06072	0.025	1.0	<b>0.045</b>	1	04/06/06	04/07/06	J
Copper	EPA 200.8	6D06072	0.25	2.0	<b>3.4</b>	1	04/06/06	04/07/06	
Lead	EPA 200.8	6D06072	0.040	1.0	<b>3.0</b>	1	04/06/06	04/07/06	
Mercury	EPA 245.1	6D06061	0.050	0.20	ND	1	04/06/06	04/06/06	
Thallium	EPA 200.8	6D06072	0.15	1.0	ND	1	04/06/06	04/07/06	

**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 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0425-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D06048	0.15	0.50	<b>6.8</b>	1	04/06/06	04/06/06	
Nitrate/Nitrite-N	EPA 300.0	6D06048	0.080	0.15	<b>3.9</b>	1	04/06/06	04/06/06	
Oil & Grease	EPA 413.1	6D06049	0.90	4.8	<b>1.1</b>	1	04/06/06	04/06/06	J
Sulfate	EPA 300.0	6D06048	0.45	0.50	<b>14</b>	1	04/06/06	04/06/06	
Total Dissolved Solids	SM2540C	6D06066	10	10	<b>170</b>	1	04/06/06	04/06/06	
Total Suspended Solids	EPA 160.2	6D11091	10	10	<b>46</b>	1	04/11/06	04/11/06	
<b>Sample ID: IPD0425-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	6D07070	0.80	4.0	<b>1.4</b>	1	04/07/06	04/07/06	B, J

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: Routine Outfall 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 008 (IPD0425-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/05/2006 08:48	04/05/2006 18:50	04/06/2006 09:30	04/06/2006 12:45

**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: Routine Outfall 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06061 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06061-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06061-BS1)</b>											
Mercury	8.10	0.20	0.050	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06061-MS1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.34	0.20	0.050	ug/l	8.00	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06061-MSD1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006-04/07/2006 (6D06072-BLK1)</b>											
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.075	ug/l							
<b>LCS Analyzed: 04/06/2006-04/07/2006 (6D06072-BS1)</b>											
Antimony	77.5	2.0	0.18	ug/l	80.0		97	85-115			
Cadmium	78.2	1.0	0.015	ug/l	80.0		98	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.3	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	78.4	1.0	0.075	ug/l	80.0		98	85-115			

**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 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## 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: 6D06072 Extracted: 04/06/06</b>											
<b>Matrix Spike Analyzed: 04/06/2006-04/07/2006 (6D06072-MS1)</b>						<b>Source: IPD0061-03</b>					
Antimony	79.1	2.0	0.18	ug/l	80.0	ND	99	70-130			
Cadmium	77.5	1.0	0.015	ug/l	80.0	ND	97	70-130			
Copper	79.0	2.0	0.25	ug/l	80.0	ND	99	70-130			
Lead	80.0	1.0	0.040	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Analyzed: 04/07/2006 (6D06072-MS2)</b>						<b>Source: IPD0061-04</b>					
Antimony	78.7	2.0	0.18	ug/l	80.0	ND	98	70-130			
Cadmium	78.4	1.0	0.015	ug/l	80.0	ND	98	70-130			
Copper	79.2	2.0	0.25	ug/l	80.0	1.3	97	70-130			
Lead	79.5	1.0	0.040	ug/l	80.0	0.060	99	70-130			
Thallium	81.6	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D06072-MSD1)</b>						<b>Source: IPD0061-03</b>					
Antimony	76.9	2.0	0.18	ug/l	80.0	ND	96	70-130	3	20	
Cadmium	76.0	1.0	0.015	ug/l	80.0	ND	95	70-130	2	20	
Copper	76.0	2.0	0.25	ug/l	80.0	ND	95	70-130	4	20	
Lead	77.5	1.0	0.040	ug/l	80.0	ND	97	70-130	3	20	
Thallium	79.2	1.0	0.075	ug/l	80.0	ND	99	70-130	3	20	

**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 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06048 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06048-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: 04/06/2006 (6D06048-BS1)</b>											
Chloride	4.78	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	9.63	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06048-MS1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.5	0.50	0.15	mg/l	5.00	8.7	96	80-120			
Sulfate	33.2	0.50	0.45	mg/l	10.0	23	102	80-120			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06048-MSD1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.7	0.50	0.15	mg/l	5.00	8.7	100	80-120	1	20	
Sulfate	33.9	0.50	0.45	mg/l	10.0	23	109	80-120	2	20	
<b>Batch: 6D06049 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06049-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06049-BS1)</b>											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
<b>LCS Dup Analyzed: 04/06/2006 (6D06049-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	19	20	

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Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06066 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06066-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06066-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/06/2006 (6D06066-DUP1)</b>											
Total Dissolved Solids	156	10	10	mg/l		160			3	10	
<b>Batch: 6D07070 Extracted: 04/07/06</b>											
<b>Blank Analyzed: 04/07/2006 (6D07070-BLK1)</b>											
Perchlorate	0.920	4.0	0.80	ug/l							J
<b>LCS Analyzed: 04/07/2006 (6D07070-BS1)</b>											
Perchlorate	47.7	4.0	0.80	ug/l	50.0		95	85-115			
<b>Matrix Spike Analyzed: 04/07/2006 (6D07070-MS1)</b>											
Perchlorate	52.5	4.0	0.80	ug/l	50.0	1.8	101	80-120			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D07070-MSD1)</b>											
Perchlorate	50.6	4.0	0.80	ug/l	50.0	1.8	98	80-120	4	20	
<b>Batch: 6D11091 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11091-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager



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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

**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: 6D11091 Extracted: 04/11/06</b>											
<b>LCS Analyzed: 04/11/2006 (6D11091-BS1)</b>											
Total Suspended Solids	972	10	10	mg/l	1000		97	85-115			
<b>Duplicate Analyzed: 04/11/2006 (6D11091-DUP1)</b>											
Total Suspended Solids	326	10	10	mg/l		340			4	10	

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Project Manager

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 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## 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
IPD0425-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.10	4.8	15
IPD0425-01	Antimony-200.8	Antimony	ug/l	0.31	2.0	6.00
IPD0425-01	Cadmium-200.8	Cadmium	ug/l	0.045	1.0	4.00
IPD0425-01	Chloride - 300.0	Chloride	mg/l	6.80	0.50	150
IPD0425-01	Copper-200.8	Copper	ug/l	3.40	2.0	14
IPD0425-01	Lead-200.8	Lead	ug/l	3.00	1.0	5.20
IPD0425-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPD0425-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	3.90	0.15	8.00
IPD0425-01	Perchlorate 314.0	Perchlorate	ug/l	1.40	4.0	6.00
IPD0425-01	Sulfate-300.0	Sulfate	mg/l	14	0.50	300
IPD0425-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	170	10	950
IPD0425-01	Thallium-200.8	Thallium	ug/l	0.017	1.0	2.00

**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 008

Report Number: IPD0425

Sampled: 04/05/06  
Received: 04/05/06

### 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

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Michele Chamberlin  
Project Manager

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IPD0425 <Page 11 of 12>





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

Project ID: Routine Outfall 008

Report Number: IPD0425

Sampled: 04/05/06

Received: 04/05/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD0425-01

Analysis Performed: EDD + Level 4  
 Samples: IPD0425-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager

Del Mar Analytical Version 03/01/06 CHAIN OF CUSTODY FORM

**Client Name/Address:**  
 MWH-Pasadena  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101

**Project:**  
 Boeing-SSFL NPDES  
 Routine Outfall 008  
 Stormwater at Happy Valley

**Project Manager:** Bronwyn Kelly

**Phone Number:** (626) 568-6691  
**Fax Number:** (626) 568-6515

**Sampler:** Rick [Signature]

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED						Field readings: Temp = 57.5 pH = 7.1	Comments
							Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	Oil & Grease (EPA 413.1)	Cr, SO4, NO3+NO2-N, Perchlorate	TDS, TSS	TCDD (and all congeners)			
Outfall 008	W	Poly-1L	1	4-5-06 1850	HNO3	1A	X							
Outfall 008-Dup	W	Poly-1L	1	4-5-06 1850	HNO3	1B	X							
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	4-5-06 1850	None	5A, 5B		X						
Outfall 008	W	Glass-Amber	2	4-5-06 1850	None	6A, 6B		X						

Relinquished By: [Signature] Date/Time: 4-5-06 1555  
 Received By: [Signature] Date/Time: 4-5-06 1555

Relinquished By: [Signature] Date/Time: 4-5-06 1850  
 Received By: [Signature] Date/Time: 4-5-06 1850

Relinquished By: [Signature] Date/Time: \_\_\_\_\_  
 Received By: [Signature] Date/Time: \_\_\_\_\_

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:  30

(20)  
2040



April 13, 2006

**Alta Project I.D.: 27565**

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 April 07, 2006 under your Project Name "IPD0425". 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  
HRMS Services Director



*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: 4/7/2006**

**Alta Lab. ID**

**Client Sample ID**

27565-001

IPD0425-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	10-Apr-06						
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	0.000000788			<b>IS</b> 13C-2,3,7,8-TCDD	72.2	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000469			13C-1,2,3,7,8-PeCDD	73.0	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000114			13C-1,2,3,4,7,8-HxCDD	75.7	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000120			13C-1,2,3,6,7,8-HxCDD	67.3	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	69.6	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000167			13C-OCDD	44.8	17 - 157		
OCDD	ND	0.0000150			13C-2,3,7,8-TCDF	77.0	24 - 169		
2,3,7,8-TCDF	ND	0.000000832			13C-1,2,3,7,8-PeCDF	72.9	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000866			13C-2,3,4,7,8-PeCDF	77.1	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000754			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000479			13C-1,2,3,6,7,8-HxCDF	66.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000466			13C-2,3,4,6,7,8-HxCDF	70.2	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000465			13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000684			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000806			13C-1,2,3,4,7,8,9-HpCDF	67.5	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000832			13C-OCDF	49.1	17 - 157		
OCDF	ND	0.00000337			<b>CRS</b> 37Cl-2,3,7,8-TCDD	86.2	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000788			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000120			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000116			c. Method detection limit.				
Total HpCDD	ND	0.00000167			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000832							
Total PeCDF	ND	0.000000808							
Total HxCDF	ND	0.000000515							
Total HpCDF	ND	0.000000818							

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 08:14

NPDES - 658

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	10-Apr-06	Date Analyzed DB-5:	11-Apr-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	9.88	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	72.6	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.8	35 - 71	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	48.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	47.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	76.4	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.2	35 - 70	13C-OCDD	50.8	17 - 157	
OCDD	100	99.7	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169	
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	79.0	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.3	40 - 67	13C-2,3,4,7,8-PeCDF	78.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	45.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.1	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.3	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	46.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	80.4	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	47.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	47.9	39 - 69	13C-OCDF	59.3	17 - 157	
OCDF	100	96.8	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

Sample ID: <b>IPD0425-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27565-001	Date Received:	7-Apr-06
Project:	IPD0425		Sample Size:	1.02 L	QC Batch No.:	7918	Date Extracted:	10-Apr-06
Date Collected:	5-Apr-06				Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	0848							
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	0.000000665			<b>IS</b> 13C-2,3,7,8-TCDD	62.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000636			13C-1,2,3,7,8-PeCDD	62.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000121			13C-1,2,3,4,7,8-HxCDD	67.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000124			13C-1,2,3,6,7,8-HxCDD	64.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000118			13C-1,2,3,4,6,7,8-HpCDD	69.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000323			J	13C-OCDD	50.0	17 - 157	
OCDD	0.0000366			J	13C-2,3,7,8-TCDF	63.9	24 - 169	
2,3,7,8-TCDF	ND	0.000000736			13C-1,2,3,7,8-PeCDF	66.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000665			13C-2,3,4,7,8-PeCDF	66.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000661			13C-1,2,3,4,7,8-HxCDF	68.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000430			13C-1,2,3,6,7,8-HxCDF	62.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000444			13C-2,3,4,6,7,8-HxCDF	63.8	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000476			13C-1,2,3,7,8,9-HxCDF	65.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000683			13C-1,2,3,4,6,7,8-HpCDF	59.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000324			13C-1,2,3,4,7,8,9-HpCDF	64.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000567			13C-OCDF	54.9	17 - 157	
OCDF	0.00000311			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.4	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.000000665			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000636			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000164			c. Method detection limit.			
Total HpCDD	0.00000768				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000736						
Total PeCDF	ND	0.000000663						
Total HxCDF	0.000000642							
Total HpCDF	ND	0.00000326						

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

NPDES - 660



## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

**SUBCONTRACT ORDER - PROJECT # IPD0425**

**SENDING 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

**RECEIVING LABORATORY:**

Alta Analytical - SUB  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 Phone : (916) 933-1640  
 Fax: (916) 673-0106

27565  
1.1°C

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

Analysis	Expiration	Comments
----------	------------	----------

<b>Sample ID: IPD0425-01</b>	<b>Water</b>	<b>Sampled: 04/05/06 08:48</b>	<b>Instant Notification</b>
1613-Dioxin-HR-Alta	04/12/06 08:48		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/03/06 08:48		Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
 1 L Amber (IPD0425-01C)  
 1 L Amber (IPD0425-01D)

**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 *Chamberlin* Date \_\_\_\_\_ Time \_\_\_\_\_ Received By *Bethanna R. Benedict* Date *4/7/06* Time *0900*

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

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27565

Samples Arrival:	Date/Time 4/7/06 0900	Initials: BBB	Location: WR-2
			Shelf/Rack: _____
Logged In:	Date/Time 4/10/06 0748	Initials: BBB	Location: WR-2
			Shelf/Rack: C-3
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	1.1°C	Time: 0942	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 # 7914 3658 8291	✓		
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?			<input checked="" type="radio"/> None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
		<input checked="" type="radio"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 28**

Outfall 008, April 05, 2006

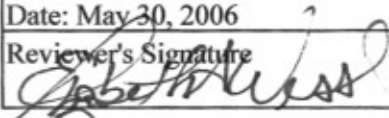
MEC<sup>X</sup> Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF80  
 Task Order 1261.001D.01  
 SDG No. IPD0425

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxin/Furans

No. of Analyses 1  
 Date: May 30, 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>	Qualifications were assigned for the following: - results between the RL and the MDL were 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 008

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD0425

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



## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD0425  
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: May 30, 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 008	IPD0425-01	27565-001	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 1.1°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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7918-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. 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 (0-7918-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 qualification of the site sample was 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." 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.



# **APPENDIX G**

## **Section 29**

Outfall 008, April 15, 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: 04/15/06  
Received: 04/15/06  
Issued: 06/12/06 12:39

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 1°C, on ice and with chain of custody documentation.
- HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the 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.

<b>LABORATORY ID</b>	<b>CLIENT ID</b>	<b>MATRIX</b>
IPD1610-01	Outfall 008	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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1610-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D20092	0.050	2.0	<b>0.48</b>	1	04/20/06	04/21/06	B, J
Cadmium	EPA 200.8	6D20092	0.025	1.0	<b>0.16</b>	1	04/20/06	04/21/06	J
Copper	EPA 200.8	6D20092	0.25	2.0	<b>7.6</b>	1	04/20/06	04/21/06	
Lead	EPA 200.8	6D20092	0.040	1.0	<b>18</b>	1	04/20/06	04/21/06	
Mercury	EPA 245.1	6D17063	0.050	0.20	ND	1	04/17/06	04/17/06	
Thallium	EPA 200.8	6D20092	0.15	1.0	ND	1	04/20/06	04/21/06	
<b>Sample ID: IPD1610-01RE1 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Lead	EPA 200.8	6D24081	0.040	1.0	<b>18</b>	1	04/24/06	04/27/06	

**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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1610-01 (Outfall 008 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D15028	0.15	0.50	<b>6.1</b>	1	04/15/06	04/15/06	
Nitrate/Nitrite-N	EPA 300.0	6D15028	0.080	0.15	<b>2.8</b>	1	04/15/06	04/15/06	
Oil & Grease	EPA 413.1	6D18050	0.89	4.7	ND	1	04/18/06	04/18/06	
Sulfate	EPA 300.0	6D15028	0.45	0.50	<b>14</b>	1	04/15/06	04/15/06	
Total Dissolved Solids	SM2540C	6D18055	10	10	<b>140</b>	1	04/18/06	04/18/06	
Total Suspended Solids	EPA 160.2	6D20128	10	10	<b>130</b>	1	04/20/06	04/20/06	
<b>Sample ID: IPD1610-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	6D20070	0.80	4.0	ND	1	04/20/06	04/20/06	

**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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 008 (IPD1610-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/15/2006 10:15	04/15/2006 15:20	04/15/2006 16:40	04/15/2006 17:31

**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.*



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

Project ID: Routine Outfall 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## 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: 6D17063 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D17063-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/17/2006 (6D17063-BS1)</b>											
Mercury	8.25	0.20	0.050	ug/l	8.00		103	85-115			
<b>Matrix Spike Analyzed: 04/17/2006 (6D17063-MS1)</b>											
						<b>Source: IPD1477-13</b>					
Mercury	8.39	0.20	0.050	ug/l	8.00	ND	105	70-130			
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17063-MSD1)</b>											
						<b>Source: IPD1477-13</b>					
Mercury	8.52	0.20	0.050	ug/l	8.00	ND	106	70-130	2	20	
<b>Batch: 6D20092 Extracted: 04/20/06</b>											
<b>Blank Analyzed: 04/21/2006 (6D20092-BLK1)</b>											
Antimony	0.101	2.0	0.050	ug/l							J
Cadmium	ND	1.0	0.025	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 04/21/2006 (6D20092-BS1)</b>											
Antimony	81.3	2.0	0.050	ug/l	80.0		102	85-115			
Cadmium	79.0	1.0	0.025	ug/l	80.0		99	85-115			
Copper	81.7	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.7	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	82.2	1.0	0.15	ug/l	80.0		103	85-115			

**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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

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: 6D20092 Extracted: 04/20/06</b>											
<b>Matrix Spike Analyzed: 04/21/2006 (6D20092-MS1)</b>						<b>Source: IPD1586-01</b>					
Antimony	85.4	2.0	0.050	ug/l	80.0	0.12	107	70-130			
Cadmium	77.8	1.0	0.025	ug/l	80.0	0.055	97	70-130			
Copper	83.2	2.0	0.25	ug/l	80.0	7.7	94	70-130			
Lead	78.1	1.0	0.040	ug/l	80.0	0.60	97	70-130			
Thallium	78.1	1.0	0.15	ug/l	80.0	ND	98	70-130			
<b>Matrix Spike Analyzed: 04/21/2006 (6D20092-MS2)</b>						<b>Source: IPD1586-02</b>					
Antimony	82.1	2.0	0.050	ug/l	80.0	0.098	103	70-130			
Cadmium	75.7	1.0	0.025	ug/l	80.0	0.058	95	70-130			
Copper	73.5	2.0	0.25	ug/l	80.0	1.5	90	70-130			
Lead	75.6	1.0	0.040	ug/l	80.0	0.13	94	70-130			
Thallium	76.0	1.0	0.15	ug/l	80.0	0.21	95	70-130			
<b>Matrix Spike Dup Analyzed: 04/21/2006 (6D20092-MSD1)</b>						<b>Source: IPD1586-01</b>					
Antimony	83.9	2.0	0.050	ug/l	80.0	0.12	105	70-130	2	20	
Cadmium	77.5	1.0	0.025	ug/l	80.0	0.055	97	70-130	0	20	
Copper	80.8	2.0	0.25	ug/l	80.0	7.7	91	70-130	3	20	
Lead	76.9	1.0	0.040	ug/l	80.0	0.60	95	70-130	2	20	
Thallium	77.5	1.0	0.15	ug/l	80.0	ND	97	70-130	1	20	
<b>Batch: 6D24081 Extracted: 04/24/06</b>											
<b>Blank Analyzed: 04/27/2006 (6D24081-BLK1)</b>											
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 04/27/2006 (6D24081-BS1)</b>											
Lead	83.3	1.0	0.040	ug/l	80.0		104	85-115			

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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## 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: 6D24081 Extracted: 04/24/06</b>											
<b>Matrix Spike Analyzed: 04/27/2006 (6D24081-MS1)</b>						<b>Source: IPD1905-01</b>					
Lead	80.7	1.0	0.040	ug/l	80.0	0.11	101	70-130			
<b>Matrix Spike Analyzed: 04/27/2006 (6D24081-MS2)</b>						<b>Source: IPD1905-02</b>					
Lead	80.6	1.0	0.040	ug/l	80.0	0.098	101	70-130			
<b>Matrix Spike Dup Analyzed: 04/27/2006 (6D24081-MSD1)</b>						<b>Source: IPD1905-01</b>					
Lead	82.3	1.0	0.040	ug/l	80.0	0.11	103	70-130	2	20	

**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: Routine Outfall 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

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: 6D15028 Extracted: 04/15/06</b>											
<b>Blank Analyzed: 04/15/2006 (6D15028-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: 04/15/2006 (6D15028-BS1)</b>											
Chloride	4.82	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	10.1	0.50	0.45	mg/l	10.0		101	90-110			
<b>Matrix Spike Analyzed: 04/15/2006 (6D15028-MS1) Source: IPD1578-01</b>											
Chloride	10.4	0.50	0.15	mg/l	5.00	5.1	106	80-120			
Sulfate	18.8	0.50	0.45	mg/l	10.0	7.7	111	80-120			
<b>Matrix Spike Dup Analyzed: 04/15/2006 (6D15028-MSD1) Source: IPD1578-01</b>											
Chloride	10.1	0.50	0.15	mg/l	5.00	5.1	100	80-120	3	20	
Sulfate	18.3	0.50	0.45	mg/l	10.0	7.7	106	80-120	3	20	
<b>Batch: 6D18050 Extracted: 04/18/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D18050-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/18/2006 (6D18050-BS1) M-NR1</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120			
<b>LCS Dup Analyzed: 04/18/2006 (6D18050-BSD1)</b>											
Oil & Grease	17.9	5.0	0.94	mg/l	20.0		90	65-120	7	20	

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Michele Chamberlin  
Project Manager



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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

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: 6D18055 Extracted: 04/18/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D18055-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/18/2006 (6D18055-BS1)</b>											
Total Dissolved Solids	990	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 04/18/2006 (6D18055-DUP1)</b>											
Total Dissolved Solids	5080	10	10	mg/l		5100			0	10	
<b>Source: IPD1326-01</b>											
<b>Batch: 6D20070 Extracted: 04/20/06</b>											
<b>Blank Analyzed: 04/20/2006 (6D20070-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 04/20/2006 (6D20070-BS1)</b>											
Perchlorate	50.7	4.0	0.80	ug/l	50.0		101	85-115			
<b>Matrix Spike Analyzed: 04/20/2006 (6D20070-MS1)</b>											
Perchlorate	51.1	4.0	0.80	ug/l	50.0	2.9	96	80-120			
<b>Source: IPD1967-01</b>											
<b>Matrix Spike Dup Analyzed: 04/20/2006 (6D20070-MSD1)</b>											
Perchlorate	53.2	4.0	0.80	ug/l	50.0	2.9	101	80-120	4	20	
<b>Source: IPD1967-01</b>											
<b>Batch: 6D20128 Extracted: 04/20/06</b>											
<b>Blank Analyzed: 04/20/2006 (6D20128-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							

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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D20128 Extracted: 04/20/06</b>											
<b>LCS Analyzed: 04/20/2006 (6D20128-BS1)</b>											
Total Suspended Solids	990	10	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 04/20/2006 (6D20128-DUP1)</b>											
Total Suspended Solids	356	10	10	mg/l		350			2	10	

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 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## 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
IPD1610-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.19	4.7	15
IPD1610-01	Antimony-200.8	Antimony	ug/l	0.48	2.0	6.00
IPD1610-01	Cadmium-200.8	Cadmium	ug/l	0.16	1.0	4.00
IPD1610-01	Chloride - 300.0	Chloride	mg/l	6.10	0.50	150
IPD1610-01	Copper-200.8	Copper	ug/l	7.60	2.0	14
<b>IPD1610-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>18</b>	<b>1.0</b>	<b>5.20</b>
IPD1610-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPD1610-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	2.80	0.15	8.00
IPD1610-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPD1610-01	Sulfate-300.0	Sulfate	mg/l	14	0.50	300
IPD1610-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	140	10	950
IPD1610-01	Thallium-200.8	Thallium	ug/l	0.068	1.0	2.00
<b>IPD1610-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>18</b>	<b>1.0</b>	<b>5.20</b>

**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 008

Report Number: IPD1610

Sampled: 04/15/06  
Received: 04/15/06

### 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**  
Michele Chamberlin  
Project Manager

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**NPDES - 687**  
IPD1610 <Page 12 of 13>



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

Project ID: Routine Outfall 008

Report Number: IPD1610

Sampled: 04/15/06

Received: 04/15/06

## 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 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.testamericainc.com](http://www.testamericainc.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: IPD1610-01

Analysis Performed: EDD + Level 4  
 Samples: IPD1610-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager

# Del Mar Analytical CHAIN OF CUSTODY FORM

Version 03/01/06

DPD160

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

**Project:**  
 Boeing-SSFL NPDES  
**Routine Outfall 008**  
 Stormwater at Happy Valley

**Phone Number:**  
 (626) 568-6691  
**Fax Number:**  
 (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED						Field readings: Temp = 58° pH = 6.7	Comments
							Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	Oil & Grease (EPA 413.1)	C <sub>1</sub> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, Perchlorate	TDS, TSS	TCDD (and all congeners)			
Outfall 008	W	Poly-1L	1	4/15/06 10:15	HNO3	1A	X							
Outfall 008-Dup	W	Poly-1L	1		HNO3	1B	X							
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	4/15/06 10:15	None	6A, 6B			X					EX 1670

**Relinquished By:** *Barbara Kelly* Date/Time: 4/15/06 13:00  
**Received By:** *Judy* Date/Time: 4/15/06 13:00

**Relinquished By:** *Judy* Date/Time: 4/15/06 15:20  
**Received By:** *Edward Ruiz* Date/Time: 4/15/06 15:20

**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)  
 Intact  On Ice:



May 03, 2006

**Alta Project I.D.: 27609**

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 April 18, 2006 under your Project Name "IPD1610". 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 NEELAC 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: 4/18/2006**

Alta Lab. ID

Client Sample ID

27609-001

IPD1610-01

## SECTION II



Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7968	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	26-Apr-06	Date Analyzed DB-5:	2-May-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	0.000000767		13C-2,3,7,8-TCDD	77.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000968		13C-1,2,3,7,8-PeCDD	69.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000195		13C-1,2,3,4,7,8-HxCDD	78.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000219		13C-1,2,3,6,7,8-HxCDD	67.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000200		13C-1,2,3,4,6,7,8-HpCDD	62.1	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000273		13C-OCDD	42.7	17 - 157	
OCDD	ND	0.00000703		13C-2,3,7,8-TCDF	77.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000483		13C-1,2,3,7,8-PeCDF	67.2	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000901		13C-2,3,4,7,8-PeCDF	66.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000876		13C-1,2,3,4,7,8-HxCDF	87.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000696		13C-1,2,3,6,7,8-HxCDF	85.4	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000446		13C-2,3,4,6,7,8-HxCDF	81.4	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000546		13C-1,2,3,7,8,9-HxCDF	69.8	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000922		13C-1,2,3,4,6,7,8-HpCDF	60.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000818		13C-1,2,3,4,7,8,9-HpCDF	59.6	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000869		13C-OCDF	44.2	17 - 157	
OCDF	ND	0.00000249		CRS 37Cl-2,3,7,8-TCDD	89.1	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000767					
Total PeCDD	ND	0.000000968					
Total HxCDD	ND	0.00000205					
Total HpCDD	ND	0.00000273					
Total TCDF	ND	0.000000483					
Total PeCDF	ND	0.000000889					
Total HxCDF	ND	0.000000786					
Total HpCDF	ND	0.000000841					
<b>Footnotes</b>							
a. Sample specific estimated detection limit.							
b. Estimated maximum possible concentration.							
c. Method detection limit.							
d. Lower control limit - upper control limit.							

Analyst: MAS

Approved By: William J. Luksemburg 03-May-2006 13:13

OPR Results		EPA Method 1613				
Matrix	Aqueous	QC Batch No.:	7968	Lab Sample:	0-OPR001	
Sample Size	1.00 L	Date Extracted	26-Apr-06	Date Analyzed DB-5:	2-May-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	10.8	6.7 - 15.8	<u>IS</u> 13C-2,3,7,8-TCDD	79.0	25 - 164
1,2,3,7,8-PeCDD	50.0	51.5	35 - 71	13C-1,2,3,7,8-PeCDD	71.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	53.1	35 - 82	13C-1,2,3,4,7,8-HxCDD	79.9	32 - 141
1,2,3,6,7,8-HxCDD	50.0	53.0	38 - 67	13C-1,2,3,6,7,8-HxCDD	66.6	28 - 130
1,2,3,7,8,9-HxCDD	50.0	51.6	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	63.6	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	55.1	35 - 70	13C-OCDD	44.0	17 - 157
OCDD	100	105	78 - 144	13C-2,3,7,8-TCDF	78.4	24 - 169
2,3,7,8-TCDF	10.0	10.7	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	65.0	24 - 185
1,2,3,7,8-PeCDF	50.0	54.8	40 - 67	13C-2,3,4,7,8-PeCDF	65.1	21 - 178
2,3,4,7,8-PeCDF	50.0	55.8	34 - 80	13C-1,2,3,4,7,8-HxCDF	87.5	26 - 152
1,2,3,4,7,8-HxCDF	50.0	52.6	36 - 67	13C-1,2,3,6,7,8-HxCDF	88.1	26 - 123
1,2,3,6,7,8-HxCDF	50.0	53.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	83.1	28 - 136
2,3,4,6,7,8-HxCDF	50.0	52.2	35 - 78	13C-1,2,3,7,8,9-HxCDF	66.3	29 - 147
1,2,3,7,8,9-HxCDF	50.0	52.6	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	62.0	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	53.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	61.6	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	52.5	39 - 69	13C-OCDF	45.7	17 - 157
OCDF	100	110	63 - 170	<u>CRS</u> 37Cl-2,3,7,8-TCDD	95.0	35 - 197

Analyst: MAS

Approved By:

William J. Luksemburg 03-May-2006 13:13

Sample ID: IPD1610-01		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name: Del Mar Analytical, Irvine Project: IPD1610 Date Collected: 15-Apr-06 Time Collected: 1015	Matrix: Aqueous Sample Size: 1.01 L	DL <sup>a</sup>	EMPC <sup>b</sup>	Labeled Standard	%R LCL-UCL <sup>d</sup> Qualifiers
2,3,7,8-TCDD	ND	0.000000792		IS 13C-2,3,7,8-TCDD	84.8 25 - 164
1,2,3,7,8-PeCDD	ND	0.000000953		13C-1,2,3,7,8-PeCDD	67.9 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.00000198		13C-1,2,3,4,7,8-HxCDD	89.4 32 - 141
1,2,3,6,7,8-HxCDD	ND	0.00000208		13C-1,2,3,6,7,8-HxCDD	80.9 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.00000196		13C-1,2,3,4,6,7,8-HpCDD	84.3 23 - 140
1,2,3,4,6,7,8-HpCDD	0.00000640			13C-OCDD	67.8 17 - 157
OCDD	0.0000367		J	13C-2,3,7,8-TCDF	84.7 24 - 169
2,3,7,8-TCDF	ND	0.000000749		13C-1,2,3,7,8-PeCDF	71.7 24 - 185
1,2,3,7,8-PeCDF	ND	0.00000108		13C-2,3,4,7,8-PeCDF	66.6 21 - 178
2,3,4,7,8-PeCDF	ND	0.00000107		13C-1,2,3,4,7,8-HxCDF	97.8 26 - 152
1,2,3,4,7,8-HxCDF	ND	0.000000968		13C-1,2,3,6,7,8-HxCDF	95.2 26 - 123
1,2,3,6,7,8-HxCDF	ND	0.000000921		13C-2,3,4,6,7,8-HxCDF	93.1 28 - 136
2,3,4,6,7,8-HxCDF	ND	0.000000733		13C-1,2,3,7,8,9-HxCDF	89.2 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.000000959		13C-1,2,3,4,6,7,8-HpCDF	83.9 28 - 143
1,2,3,4,6,7,8-HpCDF	ND	0.00000163		13C-1,2,3,4,7,8,9-HpCDF	86.5 26 - 138
1,2,3,4,7,8,9-HpCDF	ND	0.000000474		13C-OCDF	71.6 17 - 157
OCDF	0.00000304		J	CRS 37Cl-2,3,7,8-TCDD	96.2 35 - 197
<b>Totals</b>					
Total TCDD	ND	0.000000873		<b>Footnotes</b>	
Total PeCDD	ND	0.000000953		a. Sample specific estimated detection limit.	
Total HxCDD	0.00000242			b. Estimated maximum possible concentration.	
Total HpCDD	0.0000154			c. Method detection limit.	
Total TCDF	ND	0.00000163		d. Lower control limit - upper control limit.	
Total PeCDF	0.000000902				
Total HxCDF	0.00000138		0.00000172		
Total HpCDF	ND		0.00000163		

Analyst:

Approved By: William J. Luksemburg 03-May-2006 13:13

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

**SUBCONTRACT ORDER - PROJECT # IPD1610**

<p><b>SENDING LABORATORY:</b>          Del Mar Analytical - Irvine          17461 Derian Avenue, Suite 100          Irvine, CA 92614          Phone: (949) 261-1022          Fax: (949) 261-1228          Project Manager: Michele Chamberlin</p>	<p><b>RECEIVING LABORATORY:</b>          Alta Analytical - SUB          1104 Windfield Way          El Dorado Hills, CA 95762          Phone : (916) 933-1640          Fax: (916) 673-0106</p> <p style="font-size: 2em; margin-left: 200px;">27609 0.3°C</p>
---	---

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

Analysis	Expiration	Comments
Sample ID: IPD1610-01 Water	Sampled: 04/15/06 10:15	Instant Notification
1613-Dioxin-HR-Alta	04/22/06 10:15	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/13/06 10:15	Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
 1 L Amber (IPD1610-01C)  
 1 L Amber (IPD1610-01D)

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
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):	_____	

*Edwarda* \_\_\_\_\_ *4/17/06* \_\_\_\_\_ *Bettina J. Benedict* \_\_\_\_\_ *4/18/06 0905* \_\_\_\_\_  
 Released By Date Time Received By Date Time

Released By Date Time Received By Date Time

Project 27609

**SAMPLE LOG-IN CHECKLIST**

Alta Project #: 27609

Samples Arrival:	Date/Time <u>4/18/06 0905</u>	Initials: <u>UBB</u>	Location: <u>WR-2</u>
Logged In:	Date/Time <u>4/18/06 1502</u>	Initials: <u>UBB</u>	Location: <u>WR-2</u> Shelf/Rack: <u>C-5</u>
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	<u>0.3°C</u>	Time:	<u>0935</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>7903 9693 2436</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	Sample Container	<u>None</u>	
Shipping Container	Alta <u>Client</u>	Retain	<u>Return</u>	Dispose

Comments:



# **APPENDIX G**

## **Section 30**

Outfall 008, April 15, 2006

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

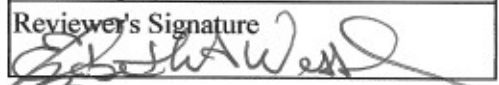
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF101  
 Task Order 1261.001D.01  
 SDG No. IPD1610

No. of Analyses 1

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

Date: July 5, 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: - the results between the RL and the MDL were estimated - the EMPC values were estimated nondetects
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 008

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD1610

Prepared by

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD1610  
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: July 5, 2006

The sample listed in Table 1 was validated based on the guidelines outlined in the *MEC<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines 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 008	IPD1610-01	27609-001	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 below 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 0.3°C. The sample containers were not noted to be damaged or frozen during transportation; therefore, 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7968-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. 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 (0-7968-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 qualification of the site sample was 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. The detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. EMPC values for 1,2,3,4,6,7,8-HpCDF and total HpCDF were qualified as estimated nondetects, "UJ." No further qualifications were required.



Sample ID: **IPD1610-01** *Outfall 008* EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27609-001	Date Received:	18-Apr-06
Project:	IPD1610	Sample Size:	1.01 L	QC Batch No.:	7968	Date Extracted:	26-Apr-06
Date Collected:	15-Apr-06			Date Analyzed DB-5:	2-May-06	Date Analyzed DB-225:	NA
Time Collected:	1015						

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	0.000000792			<b>IS</b> 13C-2,3,7,8-TCDD	84.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000953			13C-1,2,3,7,8-PeCDD	67.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000198			13C-1,2,3,4,7,8-HxCDD	89.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000208			13C-1,2,3,6,7,8-HxCDD	80.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000196			13C-1,2,3,4,6,7,8-HpCDD	84.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.00000640			J	13C-OCDD	67.8	17 - 157	
OCDD	0.0000367			J	13C-2,3,7,8-TCDF	84.7	24 - 169	
2,3,7,8-TCDF	ND	0.000000749			13C-1,2,3,7,8-PeCDF	71.7	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000108			13C-2,3,4,7,8-PeCDF	66.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000107			13C-1,2,3,4,7,8-HxCDF	97.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000968			13C-1,2,3,6,7,8-HxCDF	95.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000921			13C-2,3,4,6,7,8-HxCDF	93.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000733			13C-1,2,3,7,8,9-HxCDF	89.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000959			13C-1,2,3,4,6,7,8-HpCDF	83.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND		0.00000163		13C-1,2,3,4,7,8,9-HpCDF	86.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000474			13C-OCDF	71.6	17 - 157	
OCDF	0.00000304			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	96.2	35 - 197	

Totals				Footnotes			
Total TCDD	ND	0.000000873		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000953		b. Estimated maximum possible concentration.			
Total HxCDD	0.00000242			c. Method detection limit.			
Total HpCDD	0.0000154			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000163					
Total PeCDF	0.000000902						
Total HxCDF	0.00000138		0.00000172				
Total HpCDF	ND		0.00000163				

Analyst:

*Level III*

Approved By: William J. Luksemburg 03-May-2006 13:13

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4MT85  
 Task Order: 1261.001D.01  
 SDG No.: IPD1610  
 No. of Analyses: 1

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

Date: <u>June 23, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

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.,	Qualifications were applied for reporting limit check standard recoveries, method blank detect, and detects below the reporting limit.
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 008

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPD1610

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: IPD1610  
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: June 23, 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 008	IPD1610-01	Water	200.8, 245.1
Outfall 008 RE1	IPD1610-01RE1	Water	200.8

## 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 below the temperature limits of 4°C ±2°C at 1°C; however as the sample was not noted to be frozen or damaged, 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 and accounted for the sample and analyses presented in this SDG. Outfall 008 was reanalyzed for lead. As the laboratory did not append the MWH ID for the reanalysis with "RE1," the reviewer added this information to the Form I. 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 85-115% for mercury. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. Antimony, cadmium, lead, and thallium were recovered above 130% in the 0.2 ppb reporting limit check standard. Cadmium, which was detected below 0.2 ppb, was qualified as estimated, "J." Lead was detected at a concentration greater than 3× the 0.2 ppb check standard and antimony (see section 2.4) and thallium were not detected in Outfall 008; therefore, no qualifications were required for these analytes. All other recoveries were considered to be acceptable. No further qualifications were required.

## 2.4 BLANKS

Antimony was detected in method blank 6D20092-BLK1 at 0.101 µg/L; therefore, antimony detected in Outfall 008 was qualified as an estimated nondetect, "UJ." There were no other detects of sufficient concentration to qualify the site sample. No further qualifications were required.

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

ICSA and ICSAB analyses were not 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

All recoveries were within the laboratory-established control limits of 85-115%. No qualifications were required.

## 2.7 LABORATORY DUPLICATES

No 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 the 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 sample in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. Cadmium detected between the MDL and the reporting limit was qualified as an estimated detect, "J." This detect was annotated as "DNQ" in compliance with the specification in the NPDES permit. No transcription errors or calculation errors were noted.

Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 008 for lead. As the original analysis and the reanalysis yielded the same result, the reviewer chose to reject the reanalysis, "R," Outfall 008 RE1, in favor of the original result. 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

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 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 008

Report Number: IPD1610

Sampled: 04/15/06  
 Received: 04/15/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1610-01 (Outfall 008 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D20092	0.050	2.0	0.48	1	04/20/06	04/21/06	U J B, J
Cadmium	EPA 200.8	6D20092	0.025	1.0	0.16	1	04/20/06	04/21/06	J J
Copper	EPA 200.8	6D20092	0.25	2.0	7.6	1	04/20/06	04/21/06	
Lead	EPA 200.8	6D20092	0.040	1.0	18	1	04/20/06	04/21/06	
Mercury	EPA 245.1	6D17063	0.050	0.20	ND	1	04/17/06	04/17/06	U
Thallium	EPA 200.8	6D20092	0.15	1.0	ND	1	04/20/06	04/21/06	U
<b>Sample ID: IPD1610-01RE1 (Outfall 008 - Water)</b> <i>outfall 008 RE</i>									
Reporting Units: ug/l									
Lead	EPA 200.8	6D24081	0.040	1.0	18	1	04/24/06	04/27/06	R D

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

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.

# **APPENDIX G**

## **Section 31**

Outfall 009, April 04, 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: 04/04/06  
Received: 04/04/06  
Issued: 05/07/06 16:42

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**  
IPD0256-01

**CLIENT ID**  
Outfall 009

**MATRIX**  
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 009

Report Number: IPD0256

Sampled: 04/04/06

Received: 04/04/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0256-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D05074	0.050	2.0	1.2	1	04/05/06	04/05/06	J
Cadmium	EPA 200.8	6D05074	0.025	1.0	1.2	1	04/05/06	04/05/06	
Copper	EPA 200.8	6D05074	0.25	2.0	26	1	04/05/06	04/05/06	
Lead	EPA 200.8	6D05074	0.040	1.0	64	1	04/05/06	04/05/06	
Mercury	EPA 245.1	6D05091	0.050	0.20	0.11	1	04/05/06	04/05/06	J
Thallium	EPA 200.8	6D05074	0.15	1.0	0.41	1	04/05/06	04/05/06	J
<b>Sample ID: IPD0256-01RE1 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Copper	EPA 200.8	6D07127	0.25	2.0	24	1	04/05/06	04/08/06	
Lead	EPA 200.8	6D07127	0.040	1.0	75	1	04/05/06	04/08/06	

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



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Sampled: 04/04/06  
Received: 04/04/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0256-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D04136	0.15	0.50	<b>2.4</b>	1	04/04/06	04/05/06	
Nitrate/Nitrite-N	EPA 300.0	6D04136	0.080	0.15	<b>0.71</b>	1	04/04/06	04/05/06	
Oil & Grease	EPA 413.1	6D05046	0.90	4.8	ND	1	04/05/06	04/05/06	
Sulfate	EPA 300.0	6D04136	0.45	0.50	<b>6.4</b>	1	04/04/06	04/05/06	
Total Dissolved Solids	SM2540C	6D05071	10	10	<b>67</b>	1	04/05/06	04/05/06	
Total Suspended Solids	EPA 160.2	6D07128	10	10	<b>490</b>	1	04/07/06	04/07/06	

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: Routine Outfall 009

Report Number: IPD0256

Sampled: 04/04/06  
Received: 04/04/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 009 (IPD0256-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/04/2006 09:50	04/04/2006 18:05	04/04/2006 20:30	04/05/2006 02:10

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Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPD0256

Sampled: 04/04/06

Received: 04/04/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D05074 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05074-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							
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 04/05/2006 (6D05074-BS1)</b>											
Antimony	82.1	2.0	0.050	ug/l	80.0		103	85-115			
Cadmium	81.4	1.0	0.025	ug/l	80.0		102	85-115			
Copper	81.3	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.4	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	81.3	1.0	0.15	ug/l	80.0		102	85-115			
<b>Matrix Spike Analyzed: 04/05/2006 (6D05074-MS1) Source: IPD0082-01</b>											
Antimony	86.4	2.0	0.050	ug/l	80.0	0.12	108	70-130			
Cadmium	80.4	1.0	0.025	ug/l	80.0	0.12	100	70-130			
Copper	88.8	2.0	0.25	ug/l	80.0	14	94	70-130			
Lead	76.5	1.0	0.040	ug/l	80.0	0.23	95	70-130			
Thallium	76.5	1.0	0.15	ug/l	80.0	ND	96	70-130			
<b>Matrix Spike Analyzed: 04/05/2006 (6D05074-MS2) Source: IPD0289-01</b>											
Antimony	82.4	2.0	0.050	ug/l	80.0	ND	103	70-130			
Cadmium	80.9	1.0	0.025	ug/l	80.0	ND	101	70-130			
Copper	81.6	2.0	0.25	ug/l	80.0	0.61	101	70-130			
Lead	82.9	1.0	0.040	ug/l	80.0	ND	104	70-130			
Thallium	82.7	1.0	0.15	ug/l	80.0	ND	103	70-130			
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D05074-MSD1) Source: IPD0082-01</b>											
Antimony	87.0	2.0	0.050	ug/l	80.0	0.12	109	70-130	1	20	
Cadmium	81.2	1.0	0.025	ug/l	80.0	0.12	101	70-130	1	20	
Copper	89.2	2.0	0.25	ug/l	80.0	14	94	70-130	0	20	
Lead	77.0	1.0	0.040	ug/l	80.0	0.23	96	70-130	1	20	
Thallium	77.3	1.0	0.15	ug/l	80.0	ND	97	70-130	1	20	

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Project Manager



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Sampled: 04/04/06

Received: 04/04/06

## 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: 6D05091 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05091-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/05/2006 (6D05091-BS1)</b>											
Mercury	7.98	0.20	0.050	ug/l	8.00		100	85-115			
<b>Matrix Spike Analyzed: 04/05/2006 (6D05091-MS1)</b>											
Mercury	8.57	0.20	0.050	ug/l	8.00	0.060	106	70-130			
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D05091-MSD1)</b>											
Mercury	8.73	0.20	0.050	ug/l	8.00	0.060	108	70-130	2	20	
<b>Batch: 6D07127 Extracted: 04/07/06</b>											
<b>Blank Analyzed: 04/07/2006 (6D07127-BLK1)</b>											
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 04/07/2006 (6D07127-BS1)</b>											
Copper	90.7	2.0	0.25	ug/l	80.0		113	85-115			
Lead	91.6	1.0	0.040	ug/l	80.0		114	85-115			
<b>Matrix Spike Analyzed: 04/08/2006 (6D07127-MS1)</b>											
Copper	91.5	2.0	0.25	ug/l	80.0	5.6	107	70-130			
Lead	90.3	1.0	0.040	ug/l	80.0	0.24	113	70-130			
<b>Matrix Spike Analyzed: 04/10/2006 (6D07127-MS2)</b>											
Copper	87.3	2.0	0.25	ug/l	80.0	5.3	102	70-130			
Lead	84.9	1.0	0.040	ug/l	80.0	0.15	106	70-130			

**Del Mar Analytical - Irvine**  
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 Project Manager





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Report Number: IPD0256

Sampled: 04/04/06

Received: 04/04/06

## 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: 6D07127 Extracted: 04/07/06</b>											
<b>Matrix Spike Dup Analyzed: 04/08/2006 (6D07127-MSD1)</b>						<b>Source: IPD0703-01</b>					
Copper	93.0	2.0	0.25	ug/l	80.0	5.6	109	70-130	2	20	
Lead	91.9	1.0	0.040	ug/l	80.0	0.24	115	70-130	2	20	

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 Michele Chamberlin  
 Project Manager



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Pasadena, CA 91101  
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Sampled: 04/04/06

Received: 04/04/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D04136 Extracted: 04/04/06</b>											
<b>Blank Analyzed: 04/04/2006 (6D04136-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: 04/04/2006 (6D04136-BS1)</b>											
Chloride	4.76	0.50	0.15	mg/l	5.00		95	90-110			
Sulfate	9.53	0.50	0.45	mg/l	10.0		95	90-110			
<b>Matrix Spike Analyzed: 04/04/2006 (6D04136-MS1)</b>											
						<b>Source: IPD0234-12</b>					
Chloride	109	5.0	1.5	mg/l	50.0	66	86	80-120			
Sulfate	268	5.0	4.5	mg/l	100	180	88	80-120			
<b>Matrix Spike Dup Analyzed: 04/04/2006 (6D04136-MSD1)</b>											
						<b>Source: IPD0234-12</b>					
Chloride	106	5.0	1.5	mg/l	50.0	66	80	80-120	3	20	
Sulfate	258	5.0	4.5	mg/l	100	180	78	80-120	4	20	M2
<b>Batch: 6D05046 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05046-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/05/2006 (6D05046-BS1)</b>											
Oil & Grease	16.4	5.0	0.94	mg/l	20.0		82	65-120			M-NR1
<b>LCS Dup Analyzed: 04/05/2006 (6D05046-BSD1)</b>											
Oil & Grease	16.5	5.0	0.94	mg/l	20.0		82	65-120	1	20	

Del Mar Analytical - Irvine  
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Project Manager



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Sampled: 04/04/06

Received: 04/04/06

## 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: 6D05071 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05071-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/05/2006 (6D05071-BS1)</b>											
Total Dissolved Solids	998	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/05/2006 (6D05071-DUP1)</b>											
Total Dissolved Solids	16.0	10	10	mg/l		Source: IPD0242-01 18			12	10	R-4
<b>Batch: 6D07128 Extracted: 04/07/06</b>											
<b>Blank Analyzed: 04/07/2006 (6D07128-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/07/2006 (6D07128-BS1)</b>											
Total Suspended Solids	975	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 04/07/2006 (6D07128-DUP1)</b>											
Total Suspended Solids	64.0	10	10	mg/l		Source: IPD0270-01 67			5	10	

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## Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IPD0256-01	413.1 Oil and Grease	Oil & Grease	mg/l	0	4.8	15
IPD0256-01	Antimony-200.8	Antimony	ug/l	1.20	2.0	6.00
IPD0256-01	Cadmium-200.8	Cadmium	ug/l	1.20	1.0	4.00
IPD0256-01	Chloride - 300.0	Chloride	mg/l	2.40	0.50	150
<b>IPD0256-01</b>	<b>Copper-200.8</b>	<b>Copper</b>	<b>ug/l</b>	<b>26</b>	<b>2.0</b>	<b>14</b>
<b>IPD0256-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>64</b>	<b>1.0</b>	<b>5.20</b>
IPD0256-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.71	0.15	10.00
IPD0256-01	Sulfate-300.0	Sulfate	mg/l	6.40	0.50	250
IPD0256-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	67	10	850
IPD0256-01	Thallium-200.8	Thallium	ug/l	0.41	1.0	2.00
<b>IPD0256-01RE1</b>	<b>Copper-200.8</b>	<b>Copper</b>	<b>ug/l</b>	<b>24</b>	<b>2.0</b>	<b>14</b>
<b>IPD0256-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>75</b>	<b>1.0</b>	<b>5.20</b>

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### 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. 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-4** Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
- 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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**NPDES - 729**  
IPD0256 <Page 11 of 12>



MWH-Pasadena/Boeing  
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Project ID: Routine Outfall 009

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Sampled: 04/04/06  
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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	Liquid	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.testamericainc.com](http://www.testamericainc.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: IPD0256-01

Analysis Performed: EDD + Level 4  
 Samples: IPD0256-01

### Del Mar Analytical - Irvine

Michele Chamberlin  
 Project Manager





April 12, 2006

**Alta Project I.D.: 27550**

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 April 06, 2006 under your Project Name "IPD0256". 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: 4/6/2006**

**Alta Lab. ID**

**Client Sample ID**

27550-001

IPD0256-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7910	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	9-Apr-06						
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	0.000000628			<b>IS</b> 13C-2,3,7,8-TCDD	74.5	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000450			13C-1,2,3,7,8-PeCDD	71.4	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.000000804			13C-1,2,3,4,7,8-HxCDD	74.6	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.000000867			13C-1,2,3,6,7,8-HxCDD	70.7	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.000000808			13C-1,2,3,4,6,7,8-HpCDD	75.4	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000111			13C-OCDD	55.5	17 - 157		
OCDD	0.00000259			J	13C-2,3,7,8-TCDF	77.3	24 - 169		
2,3,7,8-TCDF	ND	0.000000346			13C-1,2,3,7,8-PeCDF	73.3	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000474			13C-2,3,4,7,8-PeCDF	72.6	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000453			13C-1,2,3,4,7,8-HxCDF	74.5	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000436			13C-1,2,3,6,7,8-HxCDF	66.9	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000334			13C-2,3,4,6,7,8-HxCDF	71.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000326			13C-1,2,3,7,8,9-HxCDF	70.0	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000456			13C-1,2,3,4,6,7,8-HpCDF	66.9	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000395			13C-1,2,3,4,7,8,9-HpCDF	72.4	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000424			13C-OCDF	56.7	17 - 157		
OCDF	ND	0.00000136			<b>CRS</b> 37Cl-2,3,7,8-TCDD	84.0	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000628			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.000000450			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.000000828			c. Method detection limit.				
Total HpCDD	ND	0.00000111			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000346							
Total PeCDF	ND	0.000000463							
Total HxCDF	ND	0.000000473							
Total HpCDF	ND	0.000000408							

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:57

NPDES - 735

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7910	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	9-Apr-06	Date Analyzed DB-5:	10-Apr-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	11.0	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	76.2	25 - 164	
1,2,3,7,8-PeCDD	50.0	53.6	35 - 71	13C-1,2,3,7,8-PeCDD	73.8	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	53.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	79.3	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	53.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	72.2	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	53.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	54.0	35 - 70	13C-OCDD	51.6	17 - 157	
OCDD	100	107	78 - 144	13C-2,3,7,8-TCDF	78.6	24 - 169	
2,3,7,8-TCDF	10.0	10.9	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	74.4	24 - 185	
1,2,3,7,8-PeCDF	50.0	54.1	40 - 67	13C-2,3,4,7,8-PeCDF	75.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	54.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.7	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	53.4	36 - 67	13C-1,2,3,6,7,8-HxCDF	75.6	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	52.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	75.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	51.8	35 - 78	13C-1,2,3,7,8,9-HxCDF	75.1	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	52.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	68.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	52.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	75.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	52.6	39 - 69	13C-OCDF	56.6	17 - 157	
OCDF	100	105	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	87.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:57

Sample ID: <b>IPD0256-01</b>					EPA Method 1613			
Client Data		Sample Data		Laboratory Data				
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27550-001	Date Received:	6-Apr-06	
Project:	IPD0256	Sample Size:	1.02 L	QC Batch No.:	7910	Date Extracted:	9-Apr-06	
Date Collected:	4-Apr-06			Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA	
Time Collected:	0950							
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		0.00000150		<b>IS</b> 13C-2,3,7,8-TCDD	69.9	25 - 164	
1,2,3,7,8-PeCDD	0.00000793			J	13C-1,2,3,7,8-PeCDD	64.6	25 - 181	
1,2,3,4,7,8-HxCDD	0.0000142			J	13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141	
1,2,3,6,7,8-HxCDD	0.0000328				13C-1,2,3,6,7,8-HxCDD	63.1	28 - 130	
1,2,3,7,8,9-HxCDD	0.0000270				13C-1,2,3,4,6,7,8-HpCDD	72.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.000800				13C-OCDD	60.0	17 - 157	
OCDD	0.0103			B	13C-2,3,7,8-TCDF	71.3	24 - 169	
2,3,7,8-TCDF	0.00000967				13C-1,2,3,7,8-PeCDF	66.0	24 - 185	
1,2,3,7,8-PeCDF	0.00000549			J	13C-2,3,4,7,8-PeCDF	66.7	21 - 178	
2,3,4,7,8-PeCDF	0.00000650			J	13C-1,2,3,4,7,8-HxCDF	67.1	26 - 152	
1,2,3,4,7,8-HxCDF	0.00000830			J	13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123	
1,2,3,6,7,8-HxCDF	0.00000703			J	13C-2,3,4,6,7,8-HxCDF	65.1	28 - 136	
2,3,4,6,7,8-HxCDF	0.00000829			J	13C-1,2,3,7,8,9-HxCDF	65.1	29 - 147	
1,2,3,7,8,9-HxCDF	0.00000172			J	13C-1,2,3,4,6,7,8-HpCDF	65.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.000165				13C-1,2,3,4,7,8,9-HpCDF	67.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.0000119			J	13C-OCDF	59.4	17 - 157	
OCDF	0.000853				<b>CRS</b> 37Cl-2,3,7,8-TCDD	89.1	35 - 197	
Totals					Footnotes			
Total TCDD	0.0000163		0.0000222		a. Sample specific estimated detection limit.			
Total PeCDD	0.0000449		0.0000545		b. Estimated maximum possible concentration.			
Total HxCDD	0.000276				c. Method detection limit.			
Total HpCDD	0.00184				d. Lower control limit - upper control limit.			
Total TCDF	0.0000768		0.0000830					
Total PeCDF	0.0000781							
Total HxCDF	0.000163		0.000165					
Total HpCDF	0.000528							

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:57

NPDES - 737

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0256

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: 1.5em; margin-top: 10px;">             27550              1.8°C           </div>

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

Analysis	Expiration	Sampled:	Comments
Sample ID: IPD0256-01 Water		04/04/06 09:50	Instant Notification
1613-Dioxin-HR-Alta	04/11/06 09:50		J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/02/06 09:50		Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>			
1 L Amber (IPD0256-01C)			
1 L Amber (IPD0256-01D)			

**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: 4/15/06 Time: \_\_\_\_\_ Received By: Bethmaria G. Benedict Date: 4/6/06 Time: 0850

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

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27550

Samples Arrival:	Date/Time <u>4/6/06 0850</u>	Initials: <u>VB/B</u>	Location: <u>WR-2</u> Shelf/Rack: _____
Logged In:	Date/Time <u>4/6/06 1003</u>	Initials: <u>VB/B</u>	Location: <u>WR-2</u> Shelf/Rack: <u>C-3</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>1.8°C</u>	Time: <u>0900</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>7920 6313 8160</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?			None
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
		<input checked="" type="radio"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 32**

Outfall 009, April 04, 2006

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

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF92  
 Task Order 1261.001D.01  
 SDG No. IPD0256  
 No. of Analyses 1

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

Date: June 5, 2006  
 Reviewer's Signature  
*K. Shadowlight*

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>Any EMPC was qualified as an estimated nondetect.</b>
GC/MS Tune/Inst. Performance	<b>Unconfirmed detect for 2,3,7,8-TCDF was qualified as estimated.</b>
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 009

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD0256

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD0256  
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: June 5, 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	IPD0256-01	27550-001	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 at 2°C. 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7910-MB001) was extracted and analyzed with the sample in this SDG. Target compound OCDD was detected in the method blank at a concentration below the laboratory calibration level. OCDD was also detected in the site sample; however, the detect in the sample exceeded five times the concentration reported in the method blank and required no qualification. There were no other target compounds detected in the method blank. 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 (0-7910-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 qualification of the site sample was 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. A confirmation analysis for the 2,3,7,8-TCDF detect in sample Outfall 009 was not performed by the laboratory as required by Method 1613; therefore,

detect in sample Outfall 009 was not performed by the laboratory as required by Method 1613; therefore, the detect for 2,3,7,8-TCDF was qualified as estimated, "J," in the site sample. Any detects below the laboratory lower calibration level were qualified as estimated, "J." 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**

Sample ID: **IPD0256-01** Outfall 009

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27550-001		
Project:	IPD0256	Sample Size:	1.02 L	QC Batch No.:	7910		
Date Collected:	4-Apr-06			Date Analyzed DB-5:	11-Apr-06		
Time Collected:	0950			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		0.00000150	13C-2,3,7,8-TCDD	69.9	25 - 164	
1,2,3,7,8-PeCDD	0.00000793			13C-1,2,3,7,8-PeCDD	64.6	25 - 181	J
1,2,3,4,7,8-HxCDD	0.0000142			13C-1,2,3,4,7,8-HxCDD	68.7	32 - 141	J
1,2,3,6,7,8-HxCDD	0.0000328			13C-1,2,3,6,7,8-HxCDD	63.1	28 - 130	
1,2,3,7,8,9-HxCDD	0.0000270			13C-1,2,3,4,6,7,8-HpCDD	72.8	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.000800			13C-OCDD	60.0	17 - 157	
OCDD	0.0103			13C-2,3,7,8-TCDF	71.3	24 - 169	
2,3,7,8-TCDF	0.00000967			13C-1,2,3,7,8-PeCDF	66.0	24 - 185	
1,2,3,7,8-PeCDF	0.00000549			13C-2,3,4,7,8-PeCDF	66.7	21 - 178	
2,3,4,7,8-PeCDF	0.00000650			13C-1,2,3,4,7,8-HxCDF	67.1	26 - 152	
1,2,3,4,7,8-HxCDF	0.00000830			13C-1,2,3,6,7,8-HxCDF	60.0	26 - 123	
1,2,3,6,7,8-HxCDF	0.00000703			13C-2,3,4,6,7,8-HxCDF	65.1	28 - 136	
2,3,4,6,7,8-HxCDF	0.00000829			13C-1,2,3,7,8,9-HxCDF	65.1	29 - 147	
1,2,3,7,8,9-HxCDF	0.0000172			13C-1,2,3,4,6,7,8-HpCDF	65.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.000165			13C-1,2,3,4,7,8,9-HpCDF	67.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.0000119			13C-OCDF	59.4	17 - 157	
OCDF	0.000853			CRS 37Cl-2,3,7,8-TCDD	89.1	35 - 197	
<b>Totals</b>							
Total TCDD	0.0000163		0.0000222				
Total PeCDD	0.0000449		0.0000545				
Total HxCDD	0.000276						
Total HpCDD	0.00184						
Total TCDF	0.0000768		0.0000830				
Total PeCDF	0.0000781						
Total HxCDF	0.000163		0.000165				
Total HpCDF	0.000528						

**Footnotes**

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

Approved By: William J. Luksemburg 12-Apr-2006 09:57

*Level IV*

Analyst: MAS

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4MT83  
Task Order: 1261.001D.01  
SDG No.: IPD0256

No. of Analyses: 1

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

Date: June 6, 2006  
Reviewer's Signature  
*P. Meeks*

<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>	Reanalysis rejected in favor of original result and qualifications were Applied for detects below the reporting limit.
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 IPD0256

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: IPD0256  
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: June 6, 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 Method 200.8, 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	IPD0256-01	Water	200.8



## 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. Outfall 009 was reanalyzed for copper and lead. As the laboratory did not append the MWH ID for the reanalyses with "RE1," the reviewer added this information to the Form I. 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. 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. The laboratory analyzed reporting limit check standards in association with the sample in this SDG. Lead was not recovered in the 0.2 ppb check standard; however, as lead was detected in Outfall 009 at a concentration significantly above the reporting limit, no qualifications were required. All other recoveries were considered to be acceptable. No qualifications were required.

## 2.4 BLANKS

There were no detects in the method blanks or CCBs associated with the sample in this SDG. No qualifications were required.

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

ICSA and ICSAB analyses were performed in association with the sample in this SDG. Copper, which is not spiked into the ICSA solution, was detected above the reporting limit in the ICSA. The reviewer checked the sample analysis for the presence of known interferents. None were noted at concentrations that would require sample qualification. All recoveries were acceptable and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

## 2.7 LABORATORY DUPLICATES

No 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

MS/MSD analyses were performed on Outfall 002 for the ICP-MS analytes. All recoveries and both RPDs were within the laboratory established control limits. 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 sample in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted.

Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 002 for copper and lead. As the reanalyses yielded results similar to the original results, the reanalyses, Outfall 002 RE1, were rejected, "R," in favor of the original results. 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.

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

Project ID: Routine Outfall 009  
 Report Number: IPD0256

Sampled: 04/04/06  
 Received: 04/04/06

### METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Rev Qual	Qual Code
<b>Sample ID: IPD0256-01 (Outfall 009 - Water)</b>										
Reporting Units: ug/l										
Antimony	EPA 200.8	6D05074	0.050	2.0	1.2	1	04/05/06	04/05/06	J J	DNQ
Cadmium	EPA 200.8	6D05074	0.025	1.0	1.2	1	04/05/06	04/05/06		
Copper	EPA 200.8	6D05074	0.25	2.0	26	1	04/05/06	04/05/06		
Lead	EPA 200.8	6D05074	0.040	1.0	64	1	04/05/06	04/05/06		
Mercury	EPA 245.1	6D05091	0.050	0.20	0.11	1	04/05/06	04/05/06	* J	
Thallium	EPA 200.8	6D05074	0.15	1.0	0.41	1	04/05/06	04/05/06	J J	DNQ
<b>Sample ID: IPD0256-01RE1 (Outfall 009 - Water) Outfall 009 RE1</b>										
Reporting Units: ug/l										
Copper	EPA 200.8	6D07127	0.25	2.0	24	1	04/05/06	04/08/06	R R	D
Lead	EPA 200.8	6D07127	0.040	1.0	75	1	04/05/06	04/08/06	R R	D

\* Analysis not validated

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager

LEVEL IV

# **APPENDIX G**

## **Section 33**

Outfall 009, April 11, 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: 04/11/06  
Received: 04/12/06  
Issued: 05/10/06 19:42

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**  
IPD1230-01

**CLIENT ID**  
Outfall 009

**MATRIX**  
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 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1230-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D13067	0.050	2.0	<b>0.77</b>	1	04/13/06	04/15/06	J
Cadmium	EPA 200.8	6D13067	0.025	1.0	<b>0.043</b>	1	04/13/06	04/15/06	J
Copper	EPA 200.8	6D13067	0.25	2.0	<b>2.6</b>	1	04/13/06	04/15/06	B
Lead	EPA 200.8	6D13067	0.040	1.0	<b>0.082</b>	1	04/13/06	04/15/06	B, J
Mercury	EPA 245.1	6D13068	0.050	0.20	ND	1	04/13/06	04/13/06	
Thallium	EPA 200.8	6D13067	0.15	1.0	ND	1	04/13/06	04/15/06	

**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: Routine Outfall 009

Report Number: IPD1230

Sampled: 04/11/06  
Received: 04/12/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1230-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D12138	0.15	0.50	<b>13</b>	1	04/12/06	04/13/06	
Nitrate/Nitrite-N	EPA 300.0	6D12138	0.080	0.15	<b>2.6</b>	1	04/12/06	04/13/06	
Oil & Grease	EPA 413.1	6D14054	0.89	4.7	ND	1	04/14/06	04/14/06	
Sulfate	EPA 300.0	6D12138	0.45	0.50	<b>49</b>	1	04/12/06	04/13/06	
Total Dissolved Solids	SM2540C	6D13076	10	10	<b>230</b>	1	04/13/06	04/13/06	
Total Suspended Solids	EPA 160.2	6D15045	10	10	ND	1	04/15/06	04/17/06	

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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: Routine Outfall 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 009 (IPD1230-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/11/2006 10:35	04/12/2006 19:55	04/12/2006 22:00	04/13/2006 00:59

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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: IPD1230

Sampled: 04/11/06

Received: 04/12/06

## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D13067 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/15/2006 (6D13067-BLK1)</b>											
Antimony	ND	2.0	0.050	ug/l							
Cadmium	ND	1.0	0.025	ug/l							
Copper	0.298	2.0	0.25	ug/l							J
Lead	0.0781	1.0	0.040	ug/l							J
Thallium	ND	1.0	0.15	ug/l							
<b>LCS Analyzed: 04/15/2006 (6D13067-BS1)</b>											
Antimony	72.6	2.0	0.050	ug/l	80.0		91	85-115			
Cadmium	75.9	1.0	0.025	ug/l	80.0		95	85-115			
Copper	76.5	2.0	0.25	ug/l	80.0		96	85-115			
Lead	77.1	1.0	0.040	ug/l	80.0		96	85-115			
Thallium	77.1	1.0	0.15	ug/l	80.0		96	85-115			
<b>Matrix Spike Analyzed: 04/15/2006 (6D13067-MS1) Source: IPD1055-01</b>											
Antimony	74.6	2.0	0.050	ug/l	80.0	0.060	93	70-130			
Cadmium	74.7	1.0	0.025	ug/l	80.0	0.031	93	70-130			
Copper	70.4	2.0	0.25	ug/l	80.0	0.87	87	70-130			
Lead	73.6	1.0	0.040	ug/l	80.0	0.27	92	70-130			
Thallium	76.0	1.0	0.15	ug/l	80.0	0.17	95	70-130			
<b>Matrix Spike Dup Analyzed: 04/15/2006 (6D13067-MSD1) Source: IPD1055-01</b>											
Antimony	78.3	2.0	0.050	ug/l	80.0	0.060	98	70-130	5	20	
Cadmium	79.0	1.0	0.025	ug/l	80.0	0.031	99	70-130	6	20	
Copper	73.7	2.0	0.25	ug/l	80.0	0.87	91	70-130	5	20	
Lead	77.7	1.0	0.040	ug/l	80.0	0.27	97	70-130	5	20	
Thallium	80.6	1.0	0.15	ug/l	80.0	0.17	101	70-130	6	20	

**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 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

**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: 6D13068 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13068-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/13/2006 (6D13068-BS1)</b>											
Mercury	8.26	0.20	0.050	ug/l	8.00		103	85-115			
<b>Matrix Spike Analyzed: 04/13/2006 (6D13068-MS1)</b>											
						<b>Source: IPD0955-05</b>					
Mercury	8.23	0.20	0.050	ug/l	8.00	ND	103	70-130			
<b>Matrix Spike Dup Analyzed: 04/13/2006 (6D13068-MSD1)</b>											
						<b>Source: IPD0955-05</b>					
Mercury	8.23	0.20	0.050	ug/l	8.00	ND	103	70-130	0	20	

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Michele Chamberlin  
Project Manager

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D12138 Extracted: 04/12/06</b>										
<b>Blank Analyzed: 04/12/2006 (6D12138-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: 04/12/2006 (6D12138-BS1)</b>										
Chloride	4.94	0.50	0.15	mg/l	5.00		99	90-110		M-3
Sulfate	10.1	0.50	0.45	mg/l	10.0		101	90-110		M-3
<b>Batch: 6D13076 Extracted: 04/13/06</b>										
<b>Blank Analyzed: 04/13/2006 (6D13076-BLK1)</b>										
Total Dissolved Solids	ND	10	10	mg/l						
<b>LCS Analyzed: 04/13/2006 (6D13076-BS1)</b>										
Total Dissolved Solids	994	10	10	mg/l	1000		99	90-110		
<b>Duplicate Analyzed: 04/13/2006 (6D13076-DUP1)</b>										
Total Dissolved Solids	250	10	10	mg/l		Source: IPD1055-01 250			0	10
<b>Batch: 6D14054 Extracted: 04/14/06</b>										
<b>Blank Analyzed: 04/14/2006 (6D14054-BLK1)</b>										
Oil & Grease	ND	5.0	0.94	mg/l						
<b>LCS Analyzed: 04/14/2006 (6D14054-BS1)</b>										
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96	65-120		

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 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

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: 6D14054 Extracted: 04/14/06</b>											
<b>LCS Dup Analyzed: 04/14/2006 (6D14054-BSD1)</b>											
Oil & Grease	17.7	5.0	0.94	mg/l	20.0		88	65-120	8	20	
<b>Matrix Spike Analyzed: 04/14/2006 (6D14054-MS1) Source: IPD0915-01</b>											
Oil & Grease	18.3	4.7	0.89	mg/l	18.9	ND	97	65-120			
<b>Matrix Spike Dup Analyzed: 04/14/2006 (6D14054-MSD1) Source: IPD0915-01</b>											
Oil & Grease	17.4	4.7	0.89	mg/l	18.9	ND	92	65-120	5	25	
<b>Batch: 6D15045 Extracted: 04/15/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D15045-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/17/2006 (6D15045-BS1)</b>											
Total Suspended Solids	988	10	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 04/17/2006 (6D15045-DUP1) Source: IPD1202-01</b>											
Total Suspended Solids	192	10	10	mg/l		190			1	10	

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 009

Report Number: IPD1230

Sampled: 04/11/06  
 Received: 04/12/06

## 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
IPD1230-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.75	4.7	15
IPD1230-01	Antimony-200.8	Antimony	ug/l	0.77	2.0	6.00
IPD1230-01	Cadmium-200.8	Cadmium	ug/l	0.043	1.0	4.00
IPD1230-01	Chloride - 300.0	Chloride	mg/l	13	0.50	150
IPD1230-01	Copper-200.8	Copper	ug/l	2.60	2.0	14
IPD1230-01	Lead-200.8	Lead	ug/l	0.082	1.0	5.20
IPD1230-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPD1230-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	2.60	0.15	10.00
IPD1230-01	Sulfate-300.0	Sulfate	mg/l	49	0.50	250
IPD1230-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	230	10	850
IPD1230-01	Thallium-200.8	Thallium	ug/l	0.043	1.0	2.00

**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 009

Report Number: IPD1230

Sampled: 04/11/06  
Received: 04/12/06

### 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).
- 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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**NPDES - 771**  
IPD1230 <Page 10 of 11>



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

Project ID: Routine Outfall 009

Report Number: IPD1230

Sampled: 04/11/06

Received: 04/12/06

### 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.testamericainc.com](http://www.testamericainc.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: IPD1230-01

Analysis Performed: EDD + Level 4

Samples: IPD1230-01

#### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager



IPD1230

Del Mar Analytical Version 03/01/06 CHAIN OF CUSTODY FORM

Client Name/Address:		Project:		ANALYSIS REQUIRED						Field readings:		
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES Routine Outfall 009 Stormwater at WS-13		Total Recoverable Metals: Sp, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl-, SO4, NO3+NO2-N	TDS, TSS	Temp = 57.5	pH = 7.3	Comments	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	1A	1B	2A, 2B	3A, 3B		4A, 4B
Outfall 009	W	Poly-1L	1	4/11/06 16:35	HNO3	1A	X					
Outfall 009-Dup	W	Poly-1L	1		HNO3	1B	X					
Outfall 009	W	Glass-Amber	2		None	2A, 2B			X			
Outfall 009	W	Glass-Amber	2		HCl	3A, 3B				X		
Outfall 009	W	Poly-500 ml	2		None	4A, 4B					X	
Outfall 009	W	Poly-500 ml	2	4/11/06 16:35	None	5A, 5B						X
Relinquished By	Barnes	Date/Time	4/11/06	1640	Received By	B. K. Keener	Date/Time	4/12/06	1640	Turn around Time: (check)	24 Hours	5 Days
Relinquished By	B. K. Keener	Date/Time	4/12/06	1955	Received By		Date/Time			48 Hours	10 Days	
Relinquished By		Date/Time			Received By	W. J.	Date/Time	4-12-06	1955	72 Hours	Normal	

2300



April 27, 2006

**Alta Project I.D.: 27597**

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 April 14, 2006 under your Project Name "IPD1230". 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: 4/14/2006**

**Alta Lab. ID**

**Client Sample ID**

27597-001

IPD1230-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7951	Lab Sample:	0-MB001	Date Analyzed DB-5:	24-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	20-Apr-06						
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	0.00000103			<b>IS</b> 13C-2,3,7,8-TCDD	69.9	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000112			13C-1,2,3,7,8-PeCDD	62.3	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000217			13C-1,2,3,4,7,8-HxCDD	67.3	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000206			13C-1,2,3,6,7,8-HxCDD	74.6	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000202			13C-1,2,3,4,6,7,8-HpCDD	72.0	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000235			13C-OCDD	55.2	17 - 157		
OCDD	ND	0.00000532			13C-2,3,7,8-TCDF	75.5	24 - 169		
2,3,7,8-TCDF	ND	0.00000121			13C-1,2,3,7,8-PeCDF	64.4	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000198			13C-2,3,4,7,8-PeCDF	66.5	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000190			13C-1,2,3,4,7,8-HxCDF	66.2	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000649			13C-1,2,3,6,7,8-HxCDF	76.1	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000602			13C-2,3,4,6,7,8-HxCDF	74.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000650			13C-1,2,3,7,8,9-HxCDF	67.9	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000103			13C-1,2,3,4,6,7,8-HpCDF	62.5	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.00000122			13C-1,2,3,4,7,8,9-HpCDF	56.6	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000155			13C-OCDF	47.8	17 - 157		
OCDF	ND	0.00000560			<b>CRS</b> 37Cl-2,3,7,8-TCDD	83.1	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.00000103			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000112			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000207			c. Method detection limit.				
Total HpCDD	ND	0.00000235			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.00000121							
Total PeCDF	ND	0.00000194							
Total HxCDF	ND	0.000000713							
Total HpCDF	ND	0.00000136							

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:53

NPDES - 777

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7951	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	20-Apr-06	Date Analyzed DB-5:	24-Apr-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	10.2	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	56.3	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.1	35 - 71	13C-1,2,3,7,8-PeCDD	52.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	50.2	35 - 82	13C-1,2,3,4,7,8-HxCDD	52.6	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	49.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	57.7	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	52.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	51.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	51.5	35 - 70	13C-OCDD	36.7	17 - 157	
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	61.9	24 - 169	
2,3,7,8-TCDF	10.0	9.66	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	52.3	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.2	40 - 67	13C-2,3,4,7,8-PeCDF	56.1	21 - 178	
2,3,4,7,8-PeCDF	50.0	47.5	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.7	36 - 67	13C-1,2,3,6,7,8-HxCDF	56.3	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	49.6	42 - 65	13C-2,3,4,6,7,8-HxCDF	56.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	48.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	57.2	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.1	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	46.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	51.4	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	49.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	50.4	39 - 69	13C-OCDF	40.6	17 - 157	
OCDF	100	104	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	67.5	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:53

Sample ID: <b>IPD1230-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27597-001	Date Received:	14-Apr-06
Project:	IPD1230		Sample Size:	1.00 L	QC Batch No.:	7951	Date Extracted:	20-Apr-06
Date Collected:	11-Apr-06				Date Analyzed DB-5:	24-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	1035							
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	0.00000116			<b>IS</b> 13C-2,3,7,8-TCDD	66.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000879			13C-1,2,3,7,8-PeCDD	65.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000208			13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000202			13C-1,2,3,6,7,8-HxCDD	70.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000197			13C-1,2,3,4,6,7,8-HpCDD	71.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000318			13C-OCDD	55.9	17 - 157	
OCDD	0.00000678			J	13C-2,3,7,8-TCDF	71.8	24 - 169	
2,3,7,8-TCDF	ND	0.00000105			13C-1,2,3,7,8-PeCDF	62.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000162			13C-2,3,4,7,8-PeCDF	66.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000143			13C-1,2,3,4,7,8-HxCDF	68.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000660			13C-1,2,3,6,7,8-HxCDF	70.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000648			13C-2,3,4,6,7,8-HxCDF	70.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000641			13C-1,2,3,7,8,9-HxCDF	68.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000101			13C-1,2,3,4,6,7,8-HpCDF	60.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000985			13C-1,2,3,4,7,8,9-HpCDF	62.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000108			13C-OCDF	58.9	17 - 157	
OCDF	ND	0.00000278			<b>CRS</b> 37Cl-2,3,7,8-TCDD	78.9	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000116			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.000000879			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000202			c. Method detection limit.			
Total HpCDD	ND	0.00000318			d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000105						
Total PeCDF	ND	0.00000152						
Total HxCDF	ND	0.000000725						
Total HpCDF	ND	0.00000103						

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:53

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## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD1230

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;">             27597              OC           </div>

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

Analysis	Expiration	Comments
<b>Sample ID:</b> IPD1230-01 <b>Water</b> <b>Sampled:</b> 04/11/06 10:35 1613-Dioxin-HR-Alta      04/18/06 10:35 EDD + Level 4      05/09/06 10:35		<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 (IPD1230-01C)		
1 L Amber (IPD1230-01D)		

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
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):	_____	

<i>Ch</i>	<i>4/13/06</i>		<i>Bethma J. Benedict</i>	<i>4/14/06</i>	<i>0900</i>
Released By	Date	Time	Received By	Date	Time

Released By	Date	Time	Received By	Date	Time
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### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27597

Samples Arrival:	Date/Time <u>4/14/06 0900</u>	Initials: <u>UBLB</u>	Location: <u>WR-2</u>
			Shelf/Rack: _____
Logged In:	Date/Time <u>4/14/06 1015</u>	Initials: <u>UBLB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>C-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°C</u>	Time: <u>0905</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>7908 86003313</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?			<input checked="" type="radio"/> None
	COC	Sample Container	
Shipping Container	Alta	<input checked="" type="radio"/> Client	Retain
		<input checked="" type="radio"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 34**

Outfall 009, April 11, 2006

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

## CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID B4DF83  
 Task Order 1261.001D.01  
 SDG No. IPD1230  
 No. of Analyses 1

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

Date: <u>May 21, 2006</u>
Reviewer's Signature <i>K. Shadowlight</i>

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	_____
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: IPD1230

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD1230  
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: May 21, 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	IPD1230-01	27597-001	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 0°C. As the sample was not noted to be frozen or damaged, 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7951-MB001) was extracted and analyzed with the sample in this SDG. There were no target compounds detected in the method blank. 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 (0-7951-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 qualification of the site sample was 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." 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.

**EPA Method 1613**

**Sample ID: IPD1230-01** *Outfall 009*

**Client Data**  
 Name: Del Mar Analytical, Irvine  
 Project: IPD1230  
 Date Collected: 11-Apr-06  
 Time Collected: 1035

**Laboratory Data**  
 Lab Sample: 27597-001  
 QC Batch No.: 7951  
 Date Analyzed DB-5: 24-Apr-06  
 Date Received: 14-Apr-06  
 Date Extracted: 20-Apr-06  
 Date Analyzed DB-225: NA

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

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	0.00000116			13C-2,3,7,8-TCDD	66.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000879			13C-1,2,3,7,8-PeCDD	65.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0000208			13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0000202			13C-1,2,3,6,7,8-HxCDD	70.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0000197			13C-1,2,3,4,6,7,8-HpCDD	71.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000318			13C-OCDD	55.9	17 - 157	
OCDD	0.00000678			J	13C-2,3,7,8-TCDF	71.8	24 - 169	
2,3,7,8-TCDF	ND	0.0000105			13C-1,2,3,7,8-PeCDF	62.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.0000162			13C-2,3,4,7,8-PeCDF	66.8	21 - 178	
2,3,4,7,8-PeCDF	ND	0.0000143			13C-1,2,3,4,7,8-HxCDF	68.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000660			13C-1,2,3,6,7,8-HxCDF	70.2	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000648			13C-2,3,4,6,7,8-HxCDF	70.7	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000641			13C-1,2,3,7,8,9-HxCDF	68.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0000101			13C-1,2,3,4,6,7,8-HpCDF	60.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000985			13C-1,2,3,4,7,8,9-HpCDF	62.9	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.0000108			13C-OCDF	58.9	17 - 157	
OCDF	ND	0.00000278			CRS 37Cl-2,3,7,8-TCDD	78.9	35 - 197	

**Totals**

Total TCDD	ND	0.00000116						
Total PeCDD	ND	0.00000879						
Total HxCDD	ND	0.0000202						
Total HpCDD	ND	0.0000318						
Total TCDF	ND	0.0000105						
Total PeCDF	ND	0.0000152						
Total HxCDF	ND	0.00000725						
Total HpCDF	ND	0.0000103						

**Footnotes**

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

Analyst: MAS *Level IV*  
 Approved By: William J. Luksemburg 27-Apr-2006 09:53

# **APPENDIX G**

## **Section 35**

Outfall 010, April 05, 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: 04/05/06  
Received: 04/05/06  
Issued: 04/30/06 21:06

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**  
IPD0426-01

**CLIENT ID**  
Outfall 010

**MATRIX**  
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 010

Report Number: IPD0426

Sampled: 04/05/06  
Received: 04/05/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0426-01 (Outfall 010 - Water)</b>									
Reporting Units: ug/l									
Antimony	EPA 200.8	6D06072	0.050	2.0	<b>0.33</b>	1	04/06/06	04/07/06	J
Cadmium	EPA 200.8	6D06072	0.025	1.0	<b>0.042</b>	1	04/06/06	04/07/06	J
Copper	EPA 200.8	6D06072	0.25	2.0	<b>2.8</b>	1	04/06/06	04/07/06	
Lead	EPA 200.8	6D06072	0.040	1.0	<b>1.1</b>	1	04/06/06	04/07/06	
Mercury	EPA 245.1	6D06061	0.050	0.20	ND	1	04/06/06	04/06/06	
Thallium	EPA 200.8	6D06072	0.15	1.0	ND	1	04/06/06	04/07/06	

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: Routine Outfall 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

**INORGANICS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0426-01 (Outfall 010 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	6D06048	0.15	0.50	7.1	1	04/06/06	04/06/06	
Nitrate/Nitrite-N	EPA 300.0	6D06048	0.080	0.15	0.19	1	04/06/06	04/06/06	
Oil & Grease	EPA 413.1	6D06049	0.89	4.7	0.94	1	04/06/06	04/06/06	J
Sulfate	EPA 300.0	6D06048	0.45	0.50	5.1	1	04/06/06	04/06/06	
Total Dissolved Solids	SM2540C	6D06066	10	10	150	1	04/06/06	04/06/06	
Total Suspended Solids	EPA 160.2	6D11091	10	10	22	1	04/11/06	04/11/06	

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: Routine Outfall 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

**SHORT HOLD TIME DETAIL REPORT**

Sample ID: Outfall 010 (IPD0426-01) - Water EPA 300.0	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
	2	04/05/2006 10:20	04/05/2006 18:50	04/06/2006 09:30	04/06/2006 13:33

**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: Routine Outfall 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06061 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06061-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06061-BS1)</b>											
Mercury	8.10	0.20	0.050	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06061-MS1)</b>											
Mercury	8.34	0.20	0.050	ug/l	8.00	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06061-MSD1)</b>											
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006-04/07/2006 (6D06072-BLK1)</b>											
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
Thallium	ND	1.0	0.075	ug/l							
<b>LCS Analyzed: 04/06/2006-04/07/2006 (6D06072-BS1)</b>											
Antimony	77.5	2.0	0.18	ug/l	80.0		97	85-115			
Cadmium	78.2	1.0	0.015	ug/l	80.0		98	85-115			
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.3	1.0	0.040	ug/l	80.0		102	85-115			
Thallium	78.4	1.0	0.075	ug/l	80.0		98	85-115			

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 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

## 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: 6D06072 Extracted: 04/06/06</b>											
<b>Matrix Spike Analyzed: 04/06/2006-04/07/2006 (6D06072-MS1)</b>						<b>Source: IPD0061-03</b>					
Antimony	79.1	2.0	0.18	ug/l	80.0	ND	99	70-130			
Cadmium	77.5	1.0	0.015	ug/l	80.0	ND	97	70-130			
Copper	79.0	2.0	0.25	ug/l	80.0	ND	99	70-130			
Lead	80.0	1.0	0.040	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Analyzed: 04/07/2006 (6D06072-MS2)</b>						<b>Source: IPD0061-04</b>					
Antimony	78.7	2.0	0.18	ug/l	80.0	ND	98	70-130			
Cadmium	78.4	1.0	0.015	ug/l	80.0	ND	98	70-130			
Copper	79.2	2.0	0.25	ug/l	80.0	1.3	97	70-130			
Lead	79.5	1.0	0.040	ug/l	80.0	0.060	99	70-130			
Thallium	81.6	1.0	0.075	ug/l	80.0	ND	102	70-130			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D06072-MSD1)</b>						<b>Source: IPD0061-03</b>					
Antimony	76.9	2.0	0.18	ug/l	80.0	ND	96	70-130	3	20	
Cadmium	76.0	1.0	0.015	ug/l	80.0	ND	95	70-130	2	20	
Copper	76.0	2.0	0.25	ug/l	80.0	ND	95	70-130	4	20	
Lead	77.5	1.0	0.040	ug/l	80.0	ND	97	70-130	3	20	
Thallium	79.2	1.0	0.075	ug/l	80.0	ND	99	70-130	3	20	

**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 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06048 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06048-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: 04/06/2006 (6D06048-BS1)</b>											
Chloride	4.78	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	9.63	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06048-MS1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.5	0.50	0.15	mg/l	5.00	8.7	96	80-120			
Sulfate	33.2	0.50	0.45	mg/l	10.0	23	102	80-120			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06048-MSD1)</b>											
						<b>Source: IPD0419-01</b>					
Chloride	13.7	0.50	0.15	mg/l	5.00	8.7	100	80-120	1	20	
Sulfate	33.9	0.50	0.45	mg/l	10.0	23	109	80-120	2	20	
<b>Batch: 6D06049 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06049-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06049-BS1)</b>											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
<b>LCS Dup Analyzed: 04/06/2006 (6D06049-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	19	20	

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 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

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: 6D06066 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06066-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06066-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/06/2006 (6D06066-DUP1)</b>											
Total Dissolved Solids	156	10	10	mg/l		160			3	10	
<b>Source: IPD0419-01</b>											
<b>Batch: 6D11091 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11091-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/11/2006 (6D11091-BS1)</b>											
Total Suspended Solids	972	10	10	mg/l	1000		97	85-115			
<b>Duplicate Analyzed: 04/11/2006 (6D11091-DUP1)</b>											
Total Suspended Solids	326	10	10	mg/l		340			4	10	
<b>Source: IPD0412-01</b>											

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 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

### 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
IPD0426-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.94	4.7	15
IPD0426-01	Antimony-200.8	Antimony	ug/l	0.33	2.0	6.00
IPD0426-01	Cadmium-200.8	Cadmium	ug/l	0.042	1.0	4.00
IPD0426-01	Chloride - 300.0	Chloride	mg/l	7.10	0.50	150
IPD0426-01	Copper-200.8	Copper	ug/l	2.80	2.0	14
IPD0426-01	Lead-200.8	Lead	ug/l	1.10	1.0	5.20
IPD0426-01	Mercury - 245.1	Mercury	ug/l	0.022	0.20	0.20
IPD0426-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.19	0.15	10.00
IPD0426-01	Sulfate-300.0	Sulfate	mg/l	5.10	0.50	250
IPD0426-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	150	10	850
IPD0426-01	Thallium-200.8	Thallium	ug/l	0.014	1.0	2.00

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 010

Report Number: IPD0426

Sampled: 04/05/06

Received: 04/05/06

### 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-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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**NPDES - 804**  
IPD0426 <Page 10 of 11>





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

Project ID: Routine Outfall 010

Report Number: IPD0426

Sampled: 04/05/06  
 Received: 04/05/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD0426-01

Analysis Performed: EDD + Level 4

Samples: IPD0426-01

**Del Mar Analytical - Irvine**

Michele Chamberlin

Project Manager

IPD0426

**Del Mar Analytical** Version 03/01/06 **CHAIN OF CUSTODY FORM**

**Client Name/Address:**  
**MWH-Pasadena**  
 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101

**Project:**  
**Boeing-SSFL NPDES**  
**Routine Outfall 010**  
**Stormwater at Building 203**

**Project Manager:** Bronwyn Kelly

**Sampler:** *Burros, R*

**Phone Number:**  
 (626) 568-6691

**Fax Number:**  
 (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED						Field readings: Temp = 59 pH = 7.2	Comments
							Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cl <sub>2</sub> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N	TDS, TSS			
Outfall 010	W	Poly-1L	1	4/15/06 1620	HNO3	1A	X							
Outfall 010-Dup	W	Poly-1L	1		HNO3	1B	X							
Outfall 010	W	Glass-Amber	2		None	2A, 2B		X						
Outfall 010	W	Glass-Amber	2		HCl	3A, 3B			X					
Outfall 010	W	Poly-500 ml	2	4/15/06 1620	None	4A, 4B			X					
Outfall 010	W	Poly-500 ml	2		None	5A, 5B				X				

**Relinquished By:** *Burros, R* Date/Time: 4/15/06 1555  
**Received By:** *[Signature]* Date/Time: 4-5-06 1555

**Relinquished By:** *[Signature]* Date/Time: 4-5-06 1850  
**Received By:** *[Signature]* Date/Time: 4-5-06 1850

**Relinquished By:** *[Signature]* Date/Time: \_\_\_\_\_  
**Received By:** *[Signature]* Date/Time: \_\_\_\_\_

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:  *30*

2040



April 13, 2006

**Alta Project I.D.: 27566**

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 April 07, 2006 under your Project Name "IPD0426". 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  
HRMS Services Director



*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: 4/7/2006**

**Alta Lab. ID**

**Client Sample ID**

27566-001

IPD0426-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	10-Apr-06						
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	0.000000788			<b>IS</b> 13C-2,3,7,8-TCDD	72.2	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000469			13C-1,2,3,7,8-PeCDD	73.0	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000114			13C-1,2,3,4,7,8-HxCDD	75.7	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000120			13C-1,2,3,6,7,8-HxCDD	67.3	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000113			13C-1,2,3,4,6,7,8-HpCDD	69.6	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000167			13C-OCDD	44.8	17 - 157		
OCDD	ND	0.0000150			13C-2,3,7,8-TCDF	77.0	24 - 169		
2,3,7,8-TCDF	ND	0.000000832			13C-1,2,3,7,8-PeCDF	72.9	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000866			13C-2,3,4,7,8-PeCDF	77.1	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000754			13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000479			13C-1,2,3,6,7,8-HxCDF	66.8	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000466			13C-2,3,4,6,7,8-HxCDF	70.2	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000465			13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000684			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000806			13C-1,2,3,4,7,8,9-HpCDF	67.5	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000832			13C-OCDF	49.1	17 - 157		
OCDF	ND	0.00000337			<b>CRS</b> 37Cl-2,3,7,8-TCDD	86.2	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000788			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000120			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000116			c. Method detection limit.				
Total HpCDD	ND	0.00000167			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000832							
Total PeCDF	ND	0.000000808							
Total HxCDF	ND	0.000000515							
Total HpCDF	ND	0.000000818							

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

NPDES - 810

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	10-Apr-06	Date Analyzed DB-5:	11-Apr-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	9.88	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	72.6	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.8	35 - 71	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	48.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	47.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	76.4	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	49.2	35 - 70	13C-OCDD	50.8	17 - 157	
OCDD	100	99.7	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169	
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	79.0	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.3	40 - 67	13C-2,3,4,7,8-PeCDF	78.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	45.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.1	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.3	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	46.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	80.4	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	47.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	47.9	39 - 69	13C-OCDF	59.3	17 - 157	
OCDF	100	96.8	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

Sample ID: <b>IPD0426-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27566-001	Date Received:	7-Apr-06
Project:	IPD0426		Sample Size:	1.04 L	QC Batch No.:	7918	Date Extracted:	10-Apr-06
Date Collected:	5-Apr-06				Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	1020							
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	0.00000572			<b>IS</b> 13C-2,3,7,8-TCDD	66.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000745			13C-1,2,3,7,8-PeCDD	67.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000141			13C-1,2,3,4,7,8-HxCDD	65.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000266			13C-1,2,3,6,7,8-HxCDD	61.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000248			13C-1,2,3,4,6,7,8-HpCDD	64.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000503				13C-OCDD	42.1	17 - 157	
OCDD	0.000558				13C-2,3,7,8-TCDF	67.4	24 - 169	
2,3,7,8-TCDF	ND	0.00000635			13C-1,2,3,7,8-PeCDF	69.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000734			13C-2,3,4,7,8-PeCDF	70.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000674			13C-1,2,3,4,7,8-HxCDF	66.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000508			13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000340			13C-2,3,4,6,7,8-HxCDF	63.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000365			13C-1,2,3,7,8,9-HxCDF	63.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000536			13C-1,2,3,4,6,7,8-HpCDF	55.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000114			J	13C-1,2,3,4,7,8,9-HpCDF	62.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000982			13C-OCDF	49.4	17 - 157	
OCDF	0.000114				<b>CRS</b> 37Cl-2,3,7,8-TCDD	84.8	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000572			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000745			b. Estimated maximum possible concentration.			
Total HxCDD	0.00000433				c. Method detection limit.			
Total HpCDD	0.0000948				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000635						
Total PeCDF	ND	0.00000703						
Total HxCDF	0.00000623							
Total HpCDF	0.0000651							

Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

NPDES - 812



## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0426

**SENDING 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

**RECEIVING LABORATORY:**

Alta Analytical - SUB  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 Phone : (916) 933-1640  
 Fax: (916) 673-0106

27566  
1.10

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

Analysis	Expiration	Comments
<b>Sample ID: IPD0426-01</b> Water	<b>Sampled: 04/05/06 10:20</b>	<b>Instant Notification</b>
1613-Dioxin-HR-Alta	04/12/06 10:20	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/03/06 10:20	Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
 1 L Amber (IPD0426-01C)  
 1 L Amber (IPD0426-01D)

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

[Signature] \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
[Signature] \_\_\_\_\_ Date 4/7/06 Time 0900

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27566

Samples Arrival:	Date/Time 4/7/06 0900	Initials: YBB	Location: WR-2
Logged In:	Date/Time 4/10/06 0809	Initials: YBB	Location: WR-2 Shelf/Rack: C-3
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	1.1°C	Time: 0942	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 # 7914 3658 8291			
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 36**

Outfall 010, April 05, 2006

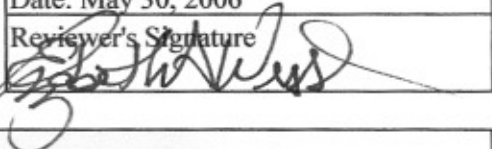
MEC<sup>X</sup> Data Validation Reports

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF81  
 Task Order 1261.001D.01  
 SDG No. IPD0426  
 No. of Analyses 1

Laboratory Alta Analytical  
 Reviewer E. Wessling  
 Analysis/Method Dioxin/Furans

Date: May 30, 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: - results between the RL and the MDL were estimated
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: IPD0426

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



## 1. INTRODUCTION

Task Order Title:	NPDES
Contract Task Order:	1261.001D.01
Sample Delivery Group:	IPD0426
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:	May 30, 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 010	IPD0426-01	27566-001	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 1.1°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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7918-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. 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 (0-7918-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 qualification of the site sample was 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. A detect below the laboratory lower calibration level was qualified as estimated, "J." This "J" value was annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. No further qualifications were required.

Sample ID: <b>IPD0426-01</b> <i>Outfall 010</i>				EPA Method 1613				
Client Data		Sample Data		Laboratory Data				
Name: Del Mar Analytical, Irvine		Matrix: Aqueous		Lab Sample: 27566-001	Date Received: 7-Apr-06			
Project: IPD0426		Sample Size: 1.04 L		QC Batch No.: 7918	Date Extracted: 10-Apr-06			
Date Collected: 5-Apr-06				Date Analyzed DB-5: 11-Apr-06	Date Analyzed DB-225: NA			
Time Collected: 1020								
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	0.00000572			<u>IS</u> 13C-2,3,7,8-TCDD	66.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000745			13C-1,2,3,7,8-PeCDD	67.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0000141			13C-1,2,3,4,7,8-HxCDD	65.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0000266			13C-1,2,3,6,7,8-HxCDD	61.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0000248			13C-1,2,3,4,6,7,8-HpCDD	64.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000503				13C-OCDD	42.1	17 - 157	
OCDD	0.000558				13C-2,3,7,8-TCDF	67.4	24 - 169	
2,3,7,8-TCDF	ND	0.00000635			13C-1,2,3,7,8-PeCDF	69.0	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000734			13C-2,3,4,7,8-PeCDF	70.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000674			13C-1,2,3,4,7,8-HxCDF	66.3	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000508			13C-1,2,3,6,7,8-HxCDF	63.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.00000340			13C-2,3,4,6,7,8-HxCDF	63.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000365			13C-1,2,3,7,8,9-HxCDF	63.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000536			13C-1,2,3,4,6,7,8-HpCDF	55.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000114			J	13C-1,2,3,4,7,8,9-HpCDF	62.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000982			13C-OCDF	49.4	17 - 157	
OCDF	0.000114				<u>CRS</u> 37CI-2,3,7,8-TCDD	84.8	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000572			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000745			b. Estimated maximum possible concentration.			
Total HxCDD	0.0000433				c. Method detection limit.			
Total HpCDD	0.0000948				d. Lower control limit - upper control limit.			
Total TCDF	ND	0.00000635						
Total PeCDF	ND	0.00000703						
Total HxCDF	0.0000623							
Total HpCDF	0.0000651							

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Analyst: MAS

Approved By: William J. Luksemburg 13-Apr-2006 07:31

LEVEL III

# **APPENDIX G**

## **Section 37**

Outfall 011, April 05, 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: 04/05/06  
Received: 04/05/06  
Issued: 05/07/06 17:11

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
IPD0421-01	Outfall 011	Water
IPD0421-02	Trip Blank	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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

**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: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D07007	1.2	5.0	ND	1	04/07/06	04/07/06	
Carbon tetrachloride	EPA 624	6D07007	0.28	5.0	ND	1	04/07/06	04/07/06	
Chloroform	EPA 624	6D07007	0.33	2.0	ND	1	04/07/06	04/07/06	
1,1-Dichloroethane	EPA 624	6D07007	0.27	2.0	ND	1	04/07/06	04/07/06	
1,2-Dichloroethane	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	
1,1-Dichloroethene	EPA 624	6D07007	0.42	3.0	ND	1	04/07/06	04/07/06	
Ethylbenzene	EPA 624	6D07007	0.25	2.0	ND	1	04/07/06	04/07/06	
Tetrachloroethene	EPA 624	6D07007	0.32	2.0	ND	1	04/07/06	04/07/06	
Toluene	EPA 624	6D07007	0.36	2.0	ND	1	04/07/06	04/07/06	
1,1,1-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06	
1,1,2-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06	
Trichloroethene	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06	
Trichlorofluoromethane	EPA 624	6D07007	0.34	5.0	ND	1	04/07/06	04/07/06	
Vinyl chloride	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06	
Xylenes, Total	EPA 624	6D07007	0.90	4.0	ND	1	04/07/06	04/07/06	

Surrogate: Dibromofluoromethane (80-120%)

100 %

Surrogate: Toluene-d8 (80-120%)

95 %

Surrogate: 4-Bromofluorobenzene (80-120%)

98 %

**Sample ID: IPD0421-02 (Trip Blank - Water)**

**Sampled: 04/05/06**

**Reporting Units: ug/l**

Benzene	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D07007	1.2	5.0	ND	1	04/07/06	04/07/06	
Carbon tetrachloride	EPA 624	6D07007	0.28	5.0	ND	1	04/07/06	04/07/06	
Chloroform	EPA 624	6D07007	0.33	2.0	ND	1	04/07/06	04/07/06	
1,1-Dichloroethane	EPA 624	6D07007	0.27	2.0	ND	1	04/07/06	04/07/06	
1,2-Dichloroethane	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	
1,1-Dichloroethene	EPA 624	6D07007	0.42	3.0	ND	1	04/07/06	04/07/06	
Ethylbenzene	EPA 624	6D07007	0.25	2.0	ND	1	04/07/06	04/07/06	
Tetrachloroethene	EPA 624	6D07007	0.32	2.0	ND	1	04/07/06	04/07/06	
Toluene	EPA 624	6D07007	0.36	2.0	ND	1	04/07/06	04/07/06	
1,1,1-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06	
1,1,2-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06	
Trichloroethene	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06	
Trichlorofluoromethane	EPA 624	6D07007	0.34	5.0	ND	1	04/07/06	04/07/06	
Vinyl chloride	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06	
Xylenes, Total	EPA 624	6D07007	0.90	4.0	ND	1	04/07/06	04/07/06	

Surrogate: Dibromofluoromethane (80-120%)

94 %

Surrogate: Toluene-d8 (80-120%)

94 %

Surrogate: 4-Bromofluorobenzene (80-120%)

96 %

**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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

**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: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
<b>Bis(2-ethylhexyl)phthalate</b>	EPA 625	6D10085	1.6	4.7	<b>1.6</b>	0.943	04/10/06	04/12/06	J
2,4-Dinitrotoluene	EPA 625	6D10085	0.19	8.5	ND	0.943	04/10/06	04/12/06	
N-Nitrosodimethylamine	EPA 625	6D10085	0.094	7.5	ND	0.943	04/10/06	04/12/06	
Pentachlorophenol	EPA 625	6D10085	0.094	7.5	ND	0.943	04/10/06	04/12/06	
2,4,6-Trichlorophenol	EPA 625	6D10085	0.094	5.7	ND	0.943	04/10/06	04/12/06	
<i>Surrogate: 2-Fluorophenol (30-120%)</i>					64 %				
<i>Surrogate: Phenol-d6 (35-120%)</i>					73 %				
<i>Surrogate: 2,4,6-Tribromophenol (45-120%)</i>					73 %				
<i>Surrogate: Nitrobenzene-d5 (45-120%)</i>					71 %				
<i>Surrogate: 2-Fluorobiphenyl (45-120%)</i>					72 %				
<i>Surrogate: Terphenyl-d14 (45-120%)</i>					85 %				

**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: IPD0421

Sampled: 04/05/06  
Received: 04/05/06

**ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0421-01 (Outfall 011 - Water) - cont.</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
alpha-BHC	EPA 608	6D11131	0.00094	0.0094	ND	0.943	04/11/06	04/12/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					73 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					68 %				

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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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0421-01 (Outfall 011 - Water) - cont.</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
Copper	EPA 200.8	6D06072	0.25	2.0	4.7	1	04/06/06	04/07/06	
Lead	EPA 200.8	6D06072	0.040	1.0	3.7	1	04/06/06	04/07/06	
Mercury	EPA 245.1	6D06061	0.050	0.20	ND	1	04/06/06	04/06/06	
<b>Sample ID: IPD0421-01RE1 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
Lead	EPA 200.8	6E01070	0.040	1.0	4.4	1	05/01/06	05/02/06	

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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0421-01 (Outfall 011 - Water) - cont.</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: mg/l</b>									
Ammonia-N (Distilled)	EPA 350.2	6D11088	0.30	0.50	ND	1	04/11/06	04/11/06	
<b>Biochemical Oxygen Demand</b>	EPA 405.1	6D06109	0.59	2.0	<b>1.5</b>	1	04/06/06	04/11/06	J
<b>Chloride</b>	EPA 300.0	6D06048	0.15	0.50	<b>7.2</b>	1	04/06/06	04/06/06	
Total Cyanide	EPA 335.2	6D13102	0.0022	0.0050	ND	1	04/13/06	04/14/06	
<b>Nitrate/Nitrite-N</b>	EPA 300.0	6D06048	0.080	0.15	<b>1.6</b>	1	04/06/06	04/06/06	
Oil & Grease	EPA 413.1	6D06049	0.89	4.7	ND	1	04/06/06	04/06/06	
<b>Sulfate</b>	EPA 300.0	6D06048	0.45	0.50	<b>14</b>	1	04/06/06	04/06/06	
<b>Surfactants (MBAS)</b>	EPA 425.1	6D05142	0.088	0.20	<b>0.15</b>	2	04/05/06	04/06/06	RL-1, J
<b>Total Dissolved Solids</b>	EPA 160.1	6D06066	10	10	<b>140</b>	1	04/06/06	04/06/06	
<b>Total Suspended Solids</b>	EPA 160.2	6D11091	10	10	<b>31</b>	1	04/11/06	04/11/06	
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ml/l/hr</b>									
Total Settleable Solids	EPA 160.5	6D05133	0.10	0.10	ND	1	04/05/06	04/05/06	
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: NTU</b>									
<b>Turbidity</b>	EPA 180.1	6D06110	0.080	2.0	<b>54</b>	2	04/06/06	04/06/06	
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: ug/l</b>									
Perchlorate	EPA 314.0	6D07070	0.80	4.0	ND	1	04/07/06	04/07/06	
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>				
<b>Reporting Units: umhos/cm</b>									
<b>Specific Conductance</b>	EPA 120.1	6D06064	1.0	1.0	<b>190</b>	1	04/06/06	04/06/06	

**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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

**SHORT HOLD TIME DETAIL REPORT**

**Sample ID: Outfall 011 (IPD0421-01) - Water**

	<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>
EPA 160.5	2	04/05/2006 10:40	04/05/2006 18:50	04/05/2006 20:30	04/05/2006 21:30
EPA 180.1	2	04/05/2006 10:40	04/05/2006 18:50	04/06/2006 13:15	04/06/2006 14:15
EPA 300.0	2	04/05/2006 10:40	04/05/2006 18:50	04/06/2006 09:30	04/06/2006 11:13
EPA 405.1	2	04/05/2006 10:40	04/05/2006 18:50	04/06/2006 15:45	04/11/2006 14:30
EPA 425.1	2	04/05/2006 10:40	04/05/2006 18:50	04/05/2006 19:36	04/06/2006 00:03

**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: IPD0421

Sampled: 04/05/06  
Received: 04/05/06

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D07007 Extracted: 04/07/06</b>										
<b>Blank Analyzed: 04/07/2006 (6D07007-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	0.90	ug/l						
Surrogate: Dibromofluoromethane	24.7			ug/l	25.0		99		80-120	
Surrogate: Toluene-d8	23.5			ug/l	25.0		94		80-120	
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98		80-120	

LCS Analyzed: 04/07/2006 (6D07007-BS1)

Benzene	26.9	2.0	0.28	ug/l	25.0		108		65-120	
Carbon tetrachloride	28.1	5.0	0.28	ug/l	25.0		112		65-140	
Chloroform	27.2	2.0	0.33	ug/l	25.0		109		65-130	
1,1-Dichloroethane	26.6	2.0	0.27	ug/l	25.0		106		65-130	
1,2-Dichloroethane	27.8	2.0	0.28	ug/l	25.0		111		60-140	
1,1-Dichloroethene	25.8	3.0	0.42	ug/l	25.0		103		70-130	
Ethylbenzene	27.1	2.0	0.25	ug/l	25.0		108		70-125	
Tetrachloroethene	26.6	2.0	0.32	ug/l	25.0		106		65-125	
Toluene	25.2	2.0	0.36	ug/l	25.0		101		70-125	
1,1,1-Trichloroethane	26.8	2.0	0.30	ug/l	25.0		107		65-135	
1,1,2-Trichloroethane	29.0	2.0	0.30	ug/l	25.0		116		65-125	
Trichloroethene	25.5	5.0	0.26	ug/l	25.0		102		70-125	
Trichlorofluoromethane	26.5	5.0	0.34	ug/l	25.0		106		60-140	
Vinyl chloride	22.8	5.0	0.26	ug/l	25.0		91		50-130	
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104		80-120	

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Michele Chamberlin  
Project Manager



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

Project ID: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

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: 6D07007 Extracted: 04/07/06</b>											
<b>LCS Analyzed: 04/07/2006 (6D07007-BS1)</b>											
Surrogate: Toluene-d8	24.1			ug/l	25.0		96	80-120			
Surrogate: 4-Bromofluorobenzene	24.7			ug/l	25.0		99	80-120			
<b>Matrix Spike Analyzed: 04/07/2006 (6D07007-MS1) Source: IPD0421-01</b>											
Benzene	23.4	2.0	0.28	ug/l	25.0	ND	94	60-125			
Carbon tetrachloride	24.3	5.0	0.28	ug/l	25.0	ND	97	65-140			
Chloroform	23.6	2.0	0.33	ug/l	25.0	ND	94	65-135			
1,1-Dichloroethane	23.1	2.0	0.27	ug/l	25.0	ND	92	60-130			
1,2-Dichloroethane	23.5	2.0	0.28	ug/l	25.0	ND	94	60-140			
1,1-Dichloroethene	21.9	3.0	0.42	ug/l	25.0	ND	88	60-135			
Ethylbenzene	24.2	2.0	0.25	ug/l	25.0	ND	97	65-130			
Tetrachloroethene	23.5	2.0	0.32	ug/l	25.0	ND	94	60-130			
Toluene	21.8	2.0	0.36	ug/l	25.0	ND	87	65-125			
1,1,1-Trichloroethane	23.2	2.0	0.30	ug/l	25.0	ND	93	65-140			
1,1,2-Trichloroethane	24.6	2.0	0.30	ug/l	25.0	ND	98	60-130			
Trichloroethene	21.7	5.0	0.26	ug/l	25.0	ND	87	60-125			
Trichlorofluoromethane	23.0	5.0	0.34	ug/l	25.0	ND	92	55-145			
Vinyl chloride	20.8	5.0	0.26	ug/l	25.0	ND	83	40-135			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	23.6			ug/l	25.0		94	80-120			
Surrogate: 4-Bromofluorobenzene	25.0			ug/l	25.0		100	80-120			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D07007-MSD1) Source: IPD0421-01</b>											
Benzene	23.7	2.0	0.28	ug/l	25.0	ND	95	60-125	1	20	
Carbon tetrachloride	24.6	5.0	0.28	ug/l	25.0	ND	98	65-140	1	25	
Chloroform	23.4	2.0	0.33	ug/l	25.0	ND	94	65-135	1	20	
1,1-Dichloroethane	23.0	2.0	0.27	ug/l	25.0	ND	92	60-130	0	20	
1,2-Dichloroethane	24.0	2.0	0.28	ug/l	25.0	ND	96	60-140	2	20	
1,1-Dichloroethene	22.0	3.0	0.42	ug/l	25.0	ND	88	60-135	1	20	
Ethylbenzene	24.1	2.0	0.25	ug/l	25.0	ND	96	65-130	0	20	
Tetrachloroethene	23.6	2.0	0.32	ug/l	25.0	ND	94	60-130	0	20	
Toluene	21.9	2.0	0.36	ug/l	25.0	ND	88	65-125	1	20	
1,1,1-Trichloroethane	23.4	2.0	0.30	ug/l	25.0	ND	94	65-140	1	20	
1,1,2-Trichloroethane	25.2	2.0	0.30	ug/l	25.0	ND	101	60-130	2	25	
Trichloroethene	22.0	5.0	0.26	ug/l	25.0	ND	88	60-125	1	20	
Trichlorofluoromethane	22.5	5.0	0.34	ug/l	25.0	ND	90	55-145	2	25	

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Michele Chamberlin  
Project Manager





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Pasadena, CA 91101  
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**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: 6D07007 Extracted: 04/07/06</b>											
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D07007-MSD1)</b>						<b>Source: IPD0421-01</b>					
Vinyl chloride	20.6	5.0	0.26	ug/l	25.0	ND	82	40-135	1	30	
Surrogate: Dibromofluoromethane	25.0			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	23.7			ug/l	25.0		95	80-120			
Surrogate: 4-Bromofluorobenzene	24.8			ug/l	25.0		99	80-120			

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Project Manager

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 Pasadena, CA 91101  
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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	RPD Limits	RPD RPD	Data Limit	Qualifiers
<b>Batch: 6D10085 Extracted: 04/10/06</b>											
<b>Blank Analyzed: 04/12/2006 (6D10085-BLK1)</b>											
Bis(2-ethylhexyl)phthalate	ND	5.0	1.7	ug/l							
2,4-Dinitrotoluene	ND	9.0	0.20	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.10	ug/l							
Pentachlorophenol	ND	8.0	0.10	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	11.6			ug/l	20.0		58	30-120			
Surrogate: Phenol-d6	13.8			ug/l	20.0		69	35-120			
Surrogate: 2,4,6-Tribromophenol	13.4			ug/l	20.0		67	45-120			
Surrogate: Nitrobenzene-d5	7.66			ug/l	10.0		77	45-120			
Surrogate: 2-Fluorobiphenyl	7.54			ug/l	10.0		75	45-120			
Surrogate: Terphenyl-d14	8.90			ug/l	10.0		89	45-120			
<b>LCS Analyzed: 04/12/2006 (6D10085-BS1)</b>											
Bis(2-ethylhexyl)phthalate	10.5	5.0	1.7	ug/l	10.0		105	60-130			M-NR1
2,4-Dinitrotoluene	8.82	9.0	0.20	ug/l	10.0		88	60-120			J
N-Nitrosodimethylamine	7.72	8.0	0.10	ug/l	10.0		77	40-120			J
Pentachlorophenol	8.76	8.0	0.10	ug/l	10.0		88	50-120			
2,4,6-Trichlorophenol	7.86	6.0	0.10	ug/l	10.0		79	60-120			
Surrogate: 2-Fluorophenol	12.3			ug/l	20.0		62	30-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0		68	35-120			
Surrogate: 2,4,6-Tribromophenol	14.7			ug/l	20.0		74	45-120			
Surrogate: Nitrobenzene-d5	6.82			ug/l	10.0		68	45-120			
Surrogate: 2-Fluorobiphenyl	6.62			ug/l	10.0		66	45-120			
Surrogate: Terphenyl-d14	7.92			ug/l	10.0		79	45-120			
<b>LCS Dup Analyzed: 04/12/2006 (6D10085-BSD1)</b>											
Bis(2-ethylhexyl)phthalate	12.2	5.0	1.7	ug/l	10.0		122	60-130	15	20	
2,4-Dinitrotoluene	10.7	9.0	0.20	ug/l	10.0		107	60-120	19	20	
N-Nitrosodimethylamine	9.14	8.0	0.10	ug/l	10.0		91	40-120	17	20	
Pentachlorophenol	9.64	8.0	0.10	ug/l	10.0		96	50-120	10	25	
2,4,6-Trichlorophenol	8.16	6.0	0.10	ug/l	10.0		82	60-120	4	20	
Surrogate: 2-Fluorophenol	12.0			ug/l	20.0		60	30-120			
Surrogate: Phenol-d6	14.2			ug/l	20.0		71	35-120			
Surrogate: 2,4,6-Tribromophenol	15.9			ug/l	20.0		80	45-120			
Surrogate: Nitrobenzene-d5	7.90			ug/l	10.0		79	45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	45-120			

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 Michele Chamberlin  
 Project Manager



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 Pasadena, CA 91101  
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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: 6D10085 Extracted: 04/10/06</b>											
<b>LCS Dup Analyzed: 04/12/2006 (6D10085-BSD1)</b>											
Surrogate: Terphenyl-d14	8.82			ug/l	10.0		88	45-120			

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ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D11131 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/12/2006 (6D11131-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.419			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.366			ug/l	0.500		73	35-115			
<b>LCS Analyzed: 04/12/2006 (6D11131-BS1)</b>											
alpha-BHC	0.390	0.010	0.0010	ug/l	0.500		78	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.415			ug/l	0.500		83	45-120			
Surrogate: Tetrachloro-m-xylene	0.352			ug/l	0.500		70	35-115			
<b>LCS Dup Analyzed: 04/12/2006 (6D11131-BSD1)</b>											
alpha-BHC	0.392	0.010	0.0010	ug/l	0.500		78	45-120	1	30	
Surrogate: Decachlorobiphenyl	0.422			ug/l	0.500		84	45-120			
Surrogate: Tetrachloro-m-xylene	0.365			ug/l	0.500		73	35-115			

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Project Manager



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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06061 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06061-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06061-BS1)</b>											
Mercury	8.10	0.20	0.050	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06061-MS1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.34	0.20	0.050	ug/l	8.00	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06061-MSD1)</b>											
						<b>Source: IPD0320-01</b>					
Mercury	8.17	0.20	0.050	ug/l	8.00	ND	102	70-130	2	20	
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06072-BLK1)</b>											
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06072-BS1)</b>											
Copper	81.8	2.0	0.25	ug/l	80.0		102	85-115			
Lead	81.3	1.0	0.040	ug/l	80.0		102	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06072-MS1)</b>											
						<b>Source: IPD0061-03</b>					
Copper	79.0	2.0	0.25	ug/l	80.0	ND	99	70-130			
Lead	80.0	1.0	0.040	ug/l	80.0	ND	100	70-130			
<b>Matrix Spike Analyzed: 04/07/2006 (6D06072-MS2)</b>											
						<b>Source: IPD0061-04</b>					
Copper	79.2	2.0	0.25	ug/l	80.0	1.3	97	70-130			
Lead	79.5	1.0	0.040	ug/l	80.0	0.060	99	70-130			

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 Project Manager



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Pasadena, CA 91101  
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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06072 Extracted: 04/06/06</b>											
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D06072-MSD1)</b>						<b>Source: IPD0061-03</b>					
Copper	76.0	2.0	0.25	ug/l	80.0	ND	95	70-130	4	20	
Lead	77.5	1.0	0.040	ug/l	80.0	ND	97	70-130	3	20	
<b>Batch: 6E01070 Extracted: 05/01/06</b>											
<b>Blank Analyzed: 05/02/2006 (6E01070-BLK1)</b>											
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 05/02/2006 (6E01070-BS1)</b>											
Lead	90.7	1.0	0.040	ug/l	80.0		113	85-115			
<b>Matrix Spike Analyzed: 05/02/2006 (6E01070-MS1)</b>						<b>Source: IPD2699-01</b>					
Lead	92.2	1.0	0.040	ug/l	80.0	6.1	108	70-130			
<b>Matrix Spike Dup Analyzed: 05/02/2006 (6E01070-MSD1)</b>						<b>Source: IPD2699-01</b>					
Lead	91.1	1.0	0.040	ug/l	80.0	6.1	106	70-130	1	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: 6D05142 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D05142-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D05142-BS1)</b>											
Surfactants (MBAS)	0.261	0.10	0.044	mg/l	0.250		104	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D05142-MS1) Source: IPD0205-01</b>											
Surfactants (MBAS)	0.250	0.10	0.044	mg/l	0.250	ND	100	50-125			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D05142-MSD1) Source: IPD0205-01</b>											
Surfactants (MBAS)	0.250	0.10	0.044	mg/l	0.250	ND	100	50-125	0	20	
<b>Batch: 6D06048 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06048-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: 04/06/2006 (6D06048-BS1)</b>											
Chloride	4.78	0.50	0.15	mg/l	5.00		96	90-110			
Sulfate	9.63	0.50	0.45	mg/l	10.0		96	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06048-MS1) Source: IPD0419-01</b>											
Chloride	13.5	0.50	0.15	mg/l	5.00	8.7	96	80-120			
Sulfate	33.2	0.50	0.45	mg/l	10.0	23	102	80-120			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06048-MSD1) Source: IPD0419-01</b>											
Chloride	13.7	0.50	0.15	mg/l	5.00	8.7	100	80-120	1	20	
Sulfate	33.9	0.50	0.45	mg/l	10.0	23	109	80-120	2	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: 6D06049 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06049-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06049-BS1)</b>											
Oil & Grease	15.9	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
<b>LCS Dup Analyzed: 04/06/2006 (6D06049-BSD1)</b>											
Oil & Grease	19.2	5.0	0.94	mg/l	20.0		96	65-120	19	20	
<b>Batch: 6D06064 Extracted: 04/06/06</b>											
<b>Duplicate Analyzed: 04/06/2006 (6D06064-DUP1)</b>											
Specific Conductance	224	1.0	1.0	umhos/cm		Source: IPD0419-01 230			3	5	
<b>Batch: 6D06066 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06066-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D06066-BS1)</b>											
Total Dissolved Solids	1000	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/06/2006 (6D06066-DUP1)</b>											
Total Dissolved Solids	156	10	10	mg/l		Source: IPD0419-01 160			3	10	
<b>Batch: 6D06109 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D06109-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							

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### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D06109 Extracted: 04/06/06</b>											
<b>LCS Analyzed: 04/11/2006 (6D06109-BS1)</b>											
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115			
<b>LCS Dup Analyzed: 04/11/2006 (6D06109-BSD1)</b>											
Biochemical Oxygen Demand	197	100	30	mg/l	198		99	85-115	3	20	
<b>Batch: 6D06110 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06110-BLK1)</b>											
Turbidity	0.0400	1.0	0.040	NTU							J
<b>Duplicate Analyzed: 04/06/2006 (6D06110-DUP1)</b>											
Turbidity	0.110	1.0	0.040	NTU		Source: IPD0464-01 0.10			10	20	J
<b>Batch: 6D07070 Extracted: 04/07/06</b>											
<b>Blank Analyzed: 04/07/2006 (6D07070-BLK1)</b>											
Perchlorate	0.920	4.0	0.80	ug/l							J
<b>LCS Analyzed: 04/07/2006 (6D07070-BS1)</b>											
Perchlorate	47.7	4.0	0.80	ug/l	50.0		95	85-115			
<b>Matrix Spike Analyzed: 04/07/2006 (6D07070-MS1)</b>											
Perchlorate	52.5	4.0	0.80	ug/l	50.0	Source: IPD0225-01 1.8	101	80-120			
<b>Matrix Spike Dup Analyzed: 04/07/2006 (6D07070-MSD1)</b>											
Perchlorate	50.6	4.0	0.80	ug/l	50.0	Source: IPD0225-01 1.8	98	80-120	4	20	

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: Quarterly Outfall 011

Report Number: IPD0421

Sampled: 04/05/06

Received: 04/05/06

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D11088 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11088-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 04/11/2006 (6D11088-BS1)</b>											
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0		112	80-115			
<b>Matrix Spike Analyzed: 04/11/2006 (6D11088-MS1)</b>											
						<b>Source: IPD0340-01</b>					
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	ND	112	70-120			
<b>Matrix Spike Dup Analyzed: 04/11/2006 (6D11088-MSD1)</b>											
						<b>Source: IPD0340-01</b>					
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	ND	109	70-120	3	15	
<b>Batch: 6D11091 Extracted: 04/11/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D11091-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/11/2006 (6D11091-BS1)</b>											
Total Suspended Solids	972	10	10	mg/l	1000		97	85-115			
<b>Duplicate Analyzed: 04/11/2006 (6D11091-DUP1)</b>											
						<b>Source: IPD0412-01</b>					
Total Suspended Solids	326	10	10	mg/l		340			4	10	
<b>Batch: 6D13102 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/14/2006 (6D13102-BLK1)</b>											
Total Cyanide	ND	0.0050	0.0022	mg/l							

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Sampled: 04/05/06

Received: 04/05/06

**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: 6D13102 Extracted: 04/13/06</b>											
<b>LCS Analyzed: 04/14/2006 (6D13102-BS1)</b>											
Total Cyanide	0.188	0.0050	0.0022	mg/l	0.200		94	90-110			
<b>Matrix Spike Analyzed: 04/14/2006 (6D13102-MS1) Source: IPD0421-01</b>											
Total Cyanide	0.193	0.0050	0.0022	mg/l	0.200	ND	96	70-115			
<b>Matrix Spike Dup Analyzed: 04/14/2006 (6D13102-MSD1) Source: IPD0421-01</b>											
Total Cyanide	0.187	0.0050	0.0022	mg/l	0.200	ND	94	70-115	3	15	

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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

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Sampled: 04/05/06

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## Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IPD0421-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.094	4.7	10.00
IPD0421-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0094	0.0100
IPD0421-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD0421-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IPD0421-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.7	6.50
IPD0421-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	8.5	9.10
IPD0421-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	1.60	4.7	4.00
IPD0421-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	7.5	8.10
IPD0421-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	7.5	8.20
IPD0421-01	BOD	Biochemical Oxygen Demand	mg/l	1.50	2.0	20
IPD0421-01	Chloride - 300.0	Chloride	mg/l	7.20	0.50	150
IPD0421-01	Copper-200.8	Copper	ug/l	4.70	2.0	7.10
IPD0421-01	Cyanide-335.2 5ppb	Total Cyanide	mg/l	0	0.0050	0.0043
<b>IPD0421-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>3.70</b>	<b>1.0</b>	<b>2.60</b>
IPD0421-01	MBAS - 425.1	Surfactants (MBAS)	mg/l	0.15	0.20	0.50
IPD0421-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IPD0421-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	1.60	0.15	8.00
IPD0421-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPD0421-01	Sulfate-300.0	Sulfate	mg/l	14	0.50	300
IPD0421-01	TDS - EPA 160.1	Total Dissolved Solids	mg/l	140	10	950
<b>IPD0421-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>4.40</b>	<b>1.0</b>	<b>2.60</b>
IPD0421-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD0421-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



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Sampled: 04/05/06

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### 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-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- RL-1** Reporting limit raised 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

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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: IPD0421

Sampled: 04/05/06  
 Received: 04/05/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD0421-01

Analysis Performed: EDD + Level 4

Samples: IPD0421-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager

IP00421

Del Mar Analytical Version 03/1/06 CHAIN OF CUSTODY FORM

<b>Client Name/Address:</b> MWH Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		<b>Project:</b> Boeing-SSFL NPDES Routine Outfall 011 Perimeter Pond QUARTERLY		<b>ANALYSIS REQUIRED</b> Total Recoverable Metals: Cu, Pb, Hg Setttable Solids VOCs 624 + xylenes TCDD (and all congeners) Oil & Grease (EPA 413.1) Cyanide (total recoverable) BOD5(20 degrees C) Surfactants (MBAS) Cl-, SO4, NO3+NO2-N, Perchlorate Turbidity, TDS, TSS, Conductivity Ammonia-N Alpha BHC (8081A) 2,4,6 Trichlorophenol, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)										Field readings Temp = 57.2 pH = 7.0		Comments FERN 113							
<b>Project Manager:</b> Bronwyn Kelly <b>Sampler:</b> <i>B. Kelly</i>		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Preservative HNO3 HNO3 None HCl None HCl NaOH None None None None H2SO4 None HCl		Sampling Date/Time 4/5/06 16:40		Bottle # 1A 1B 2 3A, 3B, 3C 4A, 4B 5A, 5B 6 7 8A, 8B 9A, 9B 10A, 10B 11 12A, 12B 13A, 13B 15A, 15B, 15C		Container Type Poly-1L Poly-1L Poly-1L VOAs 1L Amber 1L Amber Poly-500 ml Poly-1 L Poly-500 ml Poly-500 ml Poly-500 ml Poly-500 ml 1L Amber 1L Amber VOAs		# of Cont. 1 1 1 3 2 2 1 1 2 2 1 2 2 1 2 2 3		Sample Matrix W W W W W W W W W W W W W W W W W		Relinquished By B-11039R Date/Time: 4/5/06 1555		Received By <i>[Signature]</i> Date/Time: 4-5-06 1555		Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal <input checked="" type="checkbox"/>		Metals Only 72 Hours _____ Sample Integrity: (Check) Intact <input checked="" type="checkbox"/> On Ice <input checked="" type="checkbox"/>	
Relinquished By <i>[Signature]</i> Date/Time: 4-5-04 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850		Relinquished By <i>[Signature]</i> Date/Time: 4-5-06 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850		Relinquished By <i>[Signature]</i> Date/Time: 4-5-06 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850		Relinquished By <i>[Signature]</i> Date/Time: 4-5-06 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850		Relinquished By <i>[Signature]</i> Date/Time: 4-5-06 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850		Relinquished By <i>[Signature]</i> Date/Time: 4-5-06 1850		Received By <i>[Signature]</i> Date/Time: 4-5-06 1850	

2040



June 09, 2006

**Alta Project I.D.: 27561**

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

Dear Ms. Chamberlin,

Enclosed is the amended report for the aqueous sample received at Alta Analytical Laboratory on April 07, 2006 under your Project Name "IPD0421". The 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 1,2,3,4,7,8-HxCDD in the sample was reported as an EMPC rather than a DL in the original report.

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  
HRMS Services Director



*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: 4/7/2006**

Alta Lab. ID

Client Sample ID

27561-001

IPD0421-01

**SECTION II**

Method Blank		EPA Method 1613					
Matrix:	Aqueous	QC Batch No.:	7918	Lab Sample:	0-MB001		
Sample Size:	1.00 L	Date Extracted:	10-Apr-06	Date Analyzed DB-5:	11-Apr-06		
				Date Analyzed DB-22.5:	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	0.000000788		13C-2,3,7,8-TCDD	72.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.000000469		13C-1,2,3,7,8-PeCDD	73.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000114		13C-1,2,3,4,7,8-HxCDD	75.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000120		13C-1,2,3,6,7,8-HxCDD	67.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000113		13C-1,2,3,4,6,7,8-HpCDD	69.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000167		13C-OCDD	44.8	17 - 157	
OCDD	ND	0.0000150		13C-2,3,7,8-TCDF	77.0	24 - 169	
2,3,7,8-TCDF	ND	0.000000832		13C-1,2,3,7,8-PeCDF	72.9	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000866		13C-2,3,4,7,8-PeCDF	77.1	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000754		13C-1,2,3,4,7,8-HxCDF	70.7	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000479		13C-1,2,3,6,7,8-HxCDF	66.8	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000466		13C-2,3,4,6,7,8-HxCDF	70.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000465		13C-1,2,3,7,8,9-HxCDF	68.4	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000684		13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.000000806		13C-1,2,3,4,7,8,9-HpCDF	67.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.000000832		13C-OCDF	49.1	17 - 157	
OCDF	ND	0.00000337		CRS 37Cl-2,3,7,8-TCDD	86.2	35 - 197	
<b>Totals</b>				<b>Footnotes</b>			
Total TCDD	ND	0.000000788		a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000120		b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000116		c. Method detection limit.			
Total HpCDD	ND	0.00000167		d. Lower control limit - upper control limit.			
Total TCDF	ND	0.000000832					
Total PeCDF	ND	0.000000808					
Total HxCDF	ND	0.000000515					
Total HpCDF	ND	0.000000818					

Analyst: MAS

Approved By:

William J. Luksemburg 13-Apr-2006 07:30

OPR Results		EPA Method 1613				
Matrix	Aqueous	QC Batch No.	7918	Lab Sample	0-OPR001	
Sample Size	1.00 L	Date Extracted	10-Apr-06	Date Analyzed DB-5:	11-Apr-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	9.88	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	72.6	25 - 161
1,2,3,7,8-PeCDD	50.0	49.8	35 - 71	13C-1,2,3,7,8-PeCDD	75.2	25 - 181
1,2,3,4,7,8-HxCDD	50.0	48.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141
1,2,3,6,7,8-HxCDD	50.0	47.5	38 - 67	13C-1,2,3,6,7,8-HxCDD	76.4	28 - 130
1,2,3,7,8,9-HxCDD	50.0	45.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.0	23 - 140
1,2,3,4,6,7,8-HpCDD	50.0	49.2	35 - 70	13C-OCDD	50.8	17 - 157
OCDD	100	99.7	78 - 144	13C-2,3,7,8-TCDF	75.2	24 - 169
2,3,7,8-TCDF	10.0	9.58	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	79.0	24 - 185
1,2,3,7,8-PeCDF	50.0	46.3	40 - 67	13C-2,3,4,7,8-PeCDF	78.4	21 - 178
2,3,4,7,8-PeCDF	50.0	45.0	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.1	26 - 152
1,2,3,4,7,8-HxCDF	50.0	48.1	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123
1,2,3,6,7,8-HxCDF	50.0	48.3	42 - 65	13C-2,3,4,6,7,8-HxCDF	77.3	28 - 136
2,3,4,6,7,8-HxCDF	50.0	46.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	80.4	29 - 147
1,2,3,7,8,9-HxCDF	50.0	48.4	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	69.2	28 - 143
1,2,3,4,6,7,8-HpCDF	50.0	47.2	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	76.0	26 - 138
1,2,3,4,7,8,9-HpCDF	50.0	47.9	39 - 69	13C-OCDF	59.3	17 - 157
OCDF	100	96.8	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	79.2	35 - 197

Analyst: MAS

Approved By:

William J. Luksemburg 13-Apr-2006 07:30

Sample ID: IPD0421-01		EPA Method 1613					
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27561-001		
Project:	IPD0421	Sample Size:	1.03 L	QC Batch No.:	7918		
Date Collected:	5-Apr-06			Date Analyzed DB-5:	11-Apr-06		
Time Collected:	1040			Date Analyzed DB-225:	NA		
				Date Received:	7-Apr-06		
				Date Extracted:	10-Apr-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	0.000000699		IS 13C-2,3,7,8-TCDD	64.7	25 - 164	
1,2,3,7,8-PeCDD	0.000000657			13C-1,2,3,7,8-PeCDD	63.8	25 - 181	J
1,2,3,4,7,8-HxCDD	ND	0.00000158		13C-1,2,3,4,7,8-HxCDD	66.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND		0.00000161	13C-1,2,3,6,7,8-HxCDD	59.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000262		13C-1,2,3,4,6,7,8-HpCDD	64.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000466			13C-OCDD	46.9	17 - 157	
OCDD	0.000479			13C-2,3,7,8-TCDF	66.6	24 - 169	
2,3,7,8-TCDF	ND	0.00000145		13C-1,2,3,7,8-PeCDF	65.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112		13C-2,3,4,7,8-PeCDF	66.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000104		13C-1,2,3,4,7,8-HxCDF	63.5	26 - 152	
1,2,3,4,7,8-HxCDF	0.00000123			13C-1,2,3,6,7,8-HxCDF	62.1	26 - 123	J
1,2,3,6,7,8-HxCDF	0.000000779			13C-2,3,4,6,7,8-HxCDF	62.2	28 - 136	J
2,3,4,6,7,8-HxCDF	ND	0.000000835		13C-1,2,3,7,8,9-HxCDF	62.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000119		13C-1,2,3,4,6,7,8-HpCDF	58.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000895			13C-1,2,3,4,7,8,9-HpCDF	62.5	26 - 138	J
1,2,3,4,7,8,9-HpCDF	ND	0.00000183		13C-OCDF	52.9	17 - 157	
OCDF	0.0000304			CRS 37C1-2,3,7,8-TCDD	83.6	35 - 197	
<b>Totals</b>							
Total TCDD	ND	0.000000699					
Total PeCDD	0.000000657		0.00000230				
Total HxCDD	0.0000104		0.0000120				
Total HpCDD	0.000105						
Total TCDF	ND	0.00000162					
Total PeCDF	0.00000108						
Total HxCDF	0.0000102						
Total HpCDF	0.0000284						

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

Analyst: MAS

Approved By: William J. Luksemburg 09-Jun-2006 14:36

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0421

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-family: cursive; font-size: 1.2em;">             27561              1.0°C              CSB 4/17/06           </div>

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

Analysis	Expiration	Comments
Sample ID: IPD0421-01 Water	Sampled: 04/05/06 10:40	Instant Notification
1613-Dioxin-HR-Alta	04/12/06 10:40	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/03/06 10:40	Excel EDD email to pm, Include Std logs for Lvl IV
<b>Containers Supplied:</b>		
1 L Amber (IPD0421-01G)		
1 L Amber (IPD0421-01H)		

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	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):	_____

<i>Julia</i>			<i>Bettina J. Bredet</i>		
Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

Project 27561

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27561

Samples Arrival:	Date/Time 4/7/06 0900	Initials: ABB	Location: WR-2
Logged In:	Date/Time 4/10/06 0647	Initials: ABB	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	1.0	Time: 0930	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 # 7914 3658 8280	✓		
Sample Container Intact?			
Sample Custody Seals Intac:?			✓
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="checkbox"/> Client	Retain
		<input checked="" type="checkbox"/> Return	Dispose

Comments:

# **APPENDIX G**

## **Section 38**

Outfall 011, April 05, 2006

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

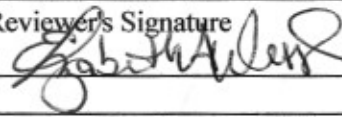
**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID B4DF87  
 Task Order 1261.001D.01  
 SDG No. IPD0421

No. of Analyses 1

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

Date: June 9, 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: - results between the RL and the MDL were estimated - EMPC value qualified as estimated nondetect
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: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD0421

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD0421  
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: June 9, 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	IPD0421-01	27561-001	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 1.0°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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7918-MB001) was extracted and analyzed with the sample in this SDG. No target compounds were detected in the method blank. No qualifications were required. 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 (0-7918-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 qualification of the site sample was 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. Detects below the laboratory lower calibration level were qualified as estimated, "J." These "J" values were annotated with the qualification code of "DNQ" to comply with the reporting requirements of the NPDES permit. An EMPC value for 1,2,3,6,7,8-HxCDD was qualified as an estimated nondetect, "UJ." No further qualifications were required.

Sample ID: **IPD0421-01** *outfall oil* EPA Method 1613

Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27561-001
Project:	IPD0421	Sample Size:	1.03 L	Date Received:	7-Apr-06
Date Collected:	5-Apr-06			QC Batch No.:	7918
Time Collected:	1040			Date Extracted:	10-Apr-06
				Date Analyzed DB-5:	11-Apr-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	0.000000699			<b>IS</b> 13C-2,3,7,8-TCDD	64.7	25 - 164	
1,2,3,7,8-PeCDD	0.000000657			J	13C-1,2,3,7,8-PeCDD	63.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000158			13C-1,2,3,4,7,8-HxCDD	66.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND		0.00000161		13C-1,2,3,6,7,8-HxCDD	59.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000262			13C-1,2,3,4,6,7,8-HpCDD	64.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000466				13C-OCDD	46.9	17 - 157	
OCDD	0.000479				13C-2,3,7,8-TCDF	66.6	24 - 169	
2,3,7,8-TCDF	ND	0.00000145			13C-1,2,3,7,8-PeCDF	65.8	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000112			13C-2,3,4,7,8-PeCDF	66.6	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000104			13C-1,2,3,4,7,8-HxCDF	63.5	26 - 152	
1,2,3,4,7,8-HxCDF	0.00000123			J	13C-1,2,3,6,7,8-HxCDF	62.1	26 - 123	
1,2,3,6,7,8-HxCDF	0.000000779			J	13C-2,3,4,6,7,8-HxCDF	62.2	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000835			13C-1,2,3,7,8,9-HxCDF	62.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000119			13C-1,2,3,4,6,7,8-HpCDF	58.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000895			J	13C-1,2,3,4,7,8,9-HpCDF	62.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000183			13C-OCDF	52.9	17 - 157	
OCDF	0.0000304			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	83.6	35 - 197	

Totals				Footnotes	
Total TCDD	ND	0.000000699		a. Sample specific estimated detection limit.	
Total PeCDD	0.000000657		0.00000230	b. Estimated maximum possible concentration.	
Total HxCDD	0.0000104		0.0000120	c. Method detection limit.	
Total HpCDD	0.000105			d. Lower control limit - upper control limit.	
Total TCDF	ND	0.00000162			
Total PeCDF	0.00000108				
Total HxCDF	0.0000102				
Total HpCDF	0.0000284				

Analyst: MAS

Approved By: William J. Luksemburg 09-Jun-2006 14:36

*Local IV*

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4MT72  
 Task Order: 1261.001D.01  
 SDG No.: IPD0421

No. of Analyses: 1

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

Date: <u>June 5, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative Deficiencies</b>	_____
2. <b>Out of Scope Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy Deliverables</b>	_____
5. <b>Incorrect Hardcopy Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</b>	Reanalysis result rejected in favor of original result.
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 011

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPD0421

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: IPD0421  
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: June 5, 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 Method 200.8*, 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	IPD0421-01	Water	200.8

## 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. Outfall 011 was reanalyzed for lead. As the laboratory did not append the MWH ID for the reanalysis with "RE1," the reviewer added this information to the Form I. 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. 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. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and the recoveries were considered to be acceptable. No qualifications were required.

### 2.4 BLANKS

There were no detects in the associated method blanks or CCBs associated with the sample in this SDG. No qualifications were required.



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

ICSA and ICSAB analyses were performed for the lead reanalysis only. All recoveries were acceptable. No qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

## 2.7 LABORATORY DUPLICATES

No 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 or matrix spike 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 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 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. Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 011 for lead. As the reanalysis yielded a result similar to the

original result, the reanalysis, Outfall 011 RE1, was rejected, "R," in favor of the original result. 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

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 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: IPD0421

Sampled: 04/05/06  
 Received: 04/05/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD0421-01 (Outfall 011 - Water) - cont.					Sampled: 04/05/06					Rev Qual
Reporting Units: ug/l									Code	
Copper	EPA 200.8	6D06072	0.25	2.0	4.7	1	04/06/06	04/07/06		
Lead	EPA 200.8	6D06072	0.040	1.0	3.7	1	04/06/06	04/07/06		
Mercury	EPA 245.1	6D06061	0.050	0.20	ND	1	04/06/06	04/06/06	*	
Sample ID: IPD0421-01RE1 (Outfall 011 - Water) <i>outfall 011 RE1</i>					Sampled: 04/05/06					
Reporting Units: ug/l										
Lead	EPA 200.8	6E01070	0.040	1.0	4.4	1	05/01/06	05/02/06	R D	

\* Analysis not validated.

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

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.

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4WC76  
 Task Order: 1261.001D.01  
 SDG No.: IPD0421

No. of Analyses: 1

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

Date: <u>June 6, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

<b>ACTION ITEMS<sup>a</sup></b>	
<b>1. Case Narrative Deficiencies</b>	<hr/> <hr/>
<b>2. Out of Scope Analyses</b>	<hr/> <hr/>
<b>3. Analyses Not Conducted</b>	<hr/> <hr/>
<b>4. Missing Hardcopy Deliverables</b>	<hr/> <hr/>
<b>5. Incorrect Hardcopy Deliverables</b>	<hr/> <hr/>
<b>6. Deviations from Analysis Protocol, e.g.,</b>	<hr/>
Holding Times	<hr/>
GC/MS Tune/Inst. Performance	<hr/>
Calibration	<hr/>
Method blanks	<hr/>
Surrogates	<hr/>
Matrix Spike/Dup LCS	<hr/>
Field QC	<hr/>
Internal Standard Performance	<hr/>
Compound Identification	<hr/>
Quantitation	<hr/>
System Performance	<hr/>
<b>COMMENTS<sup>b</sup></b>	Acceptable as reviewed.
<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: IPD0421

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: IPD0421  
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: June 6, 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, 180.1, and 350.2*, 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	IPD0421-01	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. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For turbidity and specific conductivity, the check standard recoveries were found to be acceptable. For ammonia, no information regarding the standardization of the titrant was provided; therefore, the ammonia LCS result was compared to the calibration control limits. As the ammonia LCS recovery was above the CCV control limits of 90-110%, at 112%; however, as ammonia was not detected in Outfall 011, no qualifications were required.

### 2.3 BLANKS

Turbidity was detected in the associated method blank, but not at sufficient concentration to qualify the site sample. There were no other 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 ammonia LCS recovery was within the laboratory-established control limits. LCS samples are not applicable to the turbidity and specific conductivity analyses. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in 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 the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of the ammonia method accuracy was based on the LCS result. 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 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.



MWH-Pasadena/Boeing Project ID: Quarterly Outfall 011  
300 North Lake Avenue, Suite 1200 Report Number: IPD0421  
Pasadena, CA 91101  
Attention: Bronwyn Kelly  
Sampled: 04/05/06  
Received: 04/05/06

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qua Code
<b>Sample ID: IPD0421-01 (Outfall 011 - Water) - cont.</b>					<b>Sampled: 04/05/06</b>						
<b>Reporting Units: mg/l</b>											
Ammonia-N (Distilled)	EPA 350.2	6D11088	0.30	0.50	ND	1	04/11/06	04/11/06	U		
Biochemical Oxygen Demand	EPA 405.1	6D06109	0.59	2.0	1.5	1	04/06/06	04/11/06	* J		
Chloride	EPA 300.0	6D06048	0.15	0.50	7.2	1	04/06/06	04/06/06			
Total Cyanide	EPA 335.2	6D13102	0.0022	0.0050	ND	1	04/13/06	04/14/06			
Nitrate/Nitrite-N	EPA 300.0	6D06048	0.080	0.15	1.6	1	04/06/06	04/06/06			
Oil & Grease	EPA 413.1	6D06049	0.89	4.7	ND	1	04/06/06	04/06/06			
Sulfate	EPA 300.0	6D06048	0.45	0.50	14	1	04/06/06	04/06/06			
Surfactants (MBAS)	EPA 425.1	6D05142	0.088	0.20	0.15	2	04/05/06	04/06/06	RL-1, J		
Total Dissolved Solids	EPA 160.1	6D06066	10	10	140	1	04/06/06	04/06/06			
Total Suspended Solids	EPA 160.2	6D11091	10	10	31	1	04/11/06	04/11/06			
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>						
<b>Reporting Units: ml/l/hr</b>											
Total Settleable Solids	EPA 160.5	6D05133	0.10	0.10	ND	1	04/05/06	04/05/06	*		
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>						
<b>Reporting Units: NTU</b>											
Turbidity	EPA 180.1	6D06110	0.080	2.0	54	2	04/06/06	04/06/06			
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>						
<b>Reporting Units: ug/l</b>											
Perchlorate	EPA 314.0	6D07070	0.80	4.0	ND	1	04/07/06	04/07/06	*		
<b>Sample ID: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>						
<b>Reporting Units: umhos/cm</b>											
Specific Conductance	EPA 120.1	6D06064	1.0	1.0	190	1	04/06/06	04/06/06			

\* Analysis not validated

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

LEVEL IV

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.

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4V057  
 Task Order: 1261.001D.01  
 SDG No.: IPD0421

No. of Analyses: 2

Laboratory: Del Mar Analytical-Irvine  
 Reviewer: L. Calvin  
 Analysis/Method: Volatiles by Method 624

Date: <u>June 5, 2006</u>
Reviewer's Signature <i>L. Calvin</i>

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	_____
COMMENTS <sup>b</sup>	Acceptable as reviewed.
<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  
Quarterly Outfall 011

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPD0421

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: IPD0421  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 2  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: June 5, 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	IPD0421-01	Water	624
Trip Blank	IPD0421-02	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of 4°C  $\pm$ 2°C, at 3°C. According to the case narrative for this SDG, the samples were 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 samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The preserved water samples were 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 dated 04/04/06 were associated with the sample analyses, one for trichlorotrifluoroethane only, and one for all remaining target compounds. The average RRFs were  $\geq 0.05$ , and the %RSDs were  $\leq 35\%$  or  $r^2$  values  $\geq 0.995$  for all target compounds listed on the sample result summary forms. The continuing calibrations associated with the sample analyses were dated 04/07/06. The RRFs were  $\geq 0.05\%$  and the %Ds were within the QC limit of  $\leq 20\%$  for all target compounds. No qualifications were required.

### 2.4 BLANKS

One method blank (6D07007-BLK1) was analyzed with this SDG. No target compounds were detected above the MDL 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 (6D07007-BS1) was analyzed with this SDG. All recoveries 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 performed on site sample Outfall 011. All recoveries and RPDs were within the laboratory-established 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.

## 2.8 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

Sample Trip Blank was the trip blank associated with site sample Outfall 011. No target compounds were detected above the MDL in the trip blank. 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 standard: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. The internal standard areas 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.



# Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
1014 E. Cockey Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
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: IPD0421

Sampled: 04/05/06  
Received: 04/05/06

## 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: IPD0421-01 (Outfall 011 - Water)</b>					<b>Sampled: 04/05/06</b>					
<b>Reporting Units: ug/l</b>										
Benzene	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	<i>real qual code</i> ↓	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D07007	1.2	5.0	ND	1	04/07/06	04/07/06		
Carbon tetrachloride	EPA 624	6D07007	0.28	5.0	ND	1	04/07/06	04/07/06		
Chloroform	EPA 624	6D07007	0.33	2.0	ND	1	04/07/06	04/07/06		
1,1-Dichloroethane	EPA 624	6D07007	0.27	2.0	ND	1	04/07/06	04/07/06		
1,2-Dichloroethane	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06		
1,1-Dichloroethene	EPA 624	6D07007	0.42	3.0	ND	1	04/07/06	04/07/06		
Ethylbenzene	EPA 624	6D07007	0.25	2.0	ND	1	04/07/06	04/07/06		
Tetrachloroethene	EPA 624	6D07007	0.32	2.0	ND	1	04/07/06	04/07/06		
Toluene	EPA 624	6D07007	0.36	2.0	ND	1	04/07/06	04/07/06		
1,1,1-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06		
1,1,2-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06		
Trichloroethene	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06		
Trichlorofluoromethane	EPA 624	6D07007	0.34	5.0	ND	1	04/07/06	04/07/06		
Vinyl chloride	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06		
Xylenes, Total	EPA 624	6D07007	0.90	4.0	ND	1	04/07/06	04/07/06		
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %					
<i>Surrogate: Toluene-d8 (80-120%)</i>					95 %					
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					98 %					
<b>Sample ID: IPD0421-02 (Trip Blank - Water)</b>					<b>Sampled: 04/05/06</b>					
<b>Reporting Units: ug/l</b>										
Benzene	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06	↓	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D07007	1.2	5.0	ND	1	04/07/06	04/07/06		
Carbon tetrachloride	EPA 624	6D07007	0.28	5.0	ND	1	04/07/06	04/07/06		
Chloroform	EPA 624	6D07007	0.33	2.0	ND	1	04/07/06	04/07/06		
1,1-Dichloroethane	EPA 624	6D07007	0.27	2.0	ND	1	04/07/06	04/07/06		
1,2-Dichloroethane	EPA 624	6D07007	0.28	2.0	ND	1	04/07/06	04/07/06		
1,1-Dichloroethene	EPA 624	6D07007	0.42	3.0	ND	1	04/07/06	04/07/06		
Ethylbenzene	EPA 624	6D07007	0.25	2.0	ND	1	04/07/06	04/07/06		
Tetrachloroethene	EPA 624	6D07007	0.32	2.0	ND	1	04/07/06	04/07/06		
Toluene	EPA 624	6D07007	0.36	2.0	ND	1	04/07/06	04/07/06		
1,1,1-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06		
1,1,2-Trichloroethane	EPA 624	6D07007	0.30	2.0	ND	1	04/07/06	04/07/06		
Trichloroethene	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06		
Trichlorofluoromethane	EPA 624	6D07007	0.34	5.0	ND	1	04/07/06	04/07/06		
Vinyl chloride	EPA 624	6D07007	0.26	5.0	ND	1	04/07/06	04/07/06		
Xylenes, Total	EPA 624	6D07007	0.90	4.0	ND	1	04/07/06	04/07/06		
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					94 %					
<i>Surrogate: Toluene-d8 (80-120%)</i>					94 %					
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					96 %					

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

*Level IV*

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# **APPENDIX G**

## **Section 39**

Outfall 018, April 04, 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 018

Sampled: 04/04/06  
Received: 04/04/06  
Issued: 05/07/06 16:32

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
IPD0255-01	Outfall 018	Water
IPD0255-02	Trip Blank	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: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

**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: IPD0255-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D05021	1.2	5.0	ND	1	04/05/06	04/05/06	
Carbon tetrachloride	EPA 624	6D05021	0.28	5.0	ND	1	04/05/06	04/05/06	
Chloroform	EPA 624	6D05021	0.33	2.0	ND	1	04/05/06	04/05/06	
1,1-Dichloroethane	EPA 624	6D05021	0.27	2.0	ND	1	04/05/06	04/05/06	
1,2-Dichloroethane	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	
1,1-Dichloroethene	EPA 624	6D05021	0.42	3.0	ND	1	04/05/06	04/05/06	
Ethylbenzene	EPA 624	6D05021	0.25	2.0	ND	1	04/05/06	04/05/06	
Tetrachloroethene	EPA 624	6D05021	0.32	2.0	ND	1	04/05/06	04/05/06	
Toluene	EPA 624	6D05021	0.36	2.0	ND	1	04/05/06	04/05/06	
1,1,1-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06	
1,1,2-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06	
Trichloroethene	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06	
Trichlorofluoromethane	EPA 624	6D05021	0.34	5.0	ND	1	04/05/06	04/05/06	
Vinyl chloride	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06	
Xylenes, Total	EPA 624	6D05021	0.52	4.0	ND	1	04/05/06	04/05/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					<i>102 %</i>				
<i>Surrogate: Toluene-d8 (80-120%)</i>					<i>101 %</i>				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					<i>96 %</i>				

**Sample ID: IPD0255-02 (Trip Blank - Water)**

**Reporting Units: ug/l**

Benzene	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D05021	1.2	5.0	ND	1	04/05/06	04/05/06	
Carbon tetrachloride	EPA 624	6D05021	0.28	5.0	ND	1	04/05/06	04/05/06	
Chloroform	EPA 624	6D05021	0.33	2.0	ND	1	04/05/06	04/05/06	
1,1-Dichloroethane	EPA 624	6D05021	0.27	2.0	ND	1	04/05/06	04/05/06	
1,2-Dichloroethane	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	
1,1-Dichloroethene	EPA 624	6D05021	0.42	3.0	ND	1	04/05/06	04/05/06	
Ethylbenzene	EPA 624	6D05021	0.25	2.0	ND	1	04/05/06	04/05/06	
Tetrachloroethene	EPA 624	6D05021	0.32	2.0	ND	1	04/05/06	04/05/06	
Toluene	EPA 624	6D05021	0.36	2.0	ND	1	04/05/06	04/05/06	
1,1,1-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06	
1,1,2-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06	
Trichloroethene	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06	
Trichlorofluoromethane	EPA 624	6D05021	0.34	5.0	ND	1	04/05/06	04/05/06	
Vinyl chloride	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06	
Xylenes, Total	EPA 624	6D05021	0.52	4.0	ND	1	04/05/06	04/05/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					<i>96 %</i>				
<i>Surrogate: Toluene-d8 (80-120%)</i>					<i>101 %</i>				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					<i>97 %</i>				

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Michele Chamberlin  
Project Manager



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

Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

**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: IPD0255-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Bis(2-ethylhexyl)phthalate	EPA 625	6D10085	1.6	4.7	ND	0.943	04/10/06	04/12/06	
2,4-Dinitrotoluene	EPA 625	6D10085	0.19	8.5	ND	0.943	04/10/06	04/12/06	
N-Nitrosodimethylamine	EPA 625	6D10085	0.094	7.5	ND	0.943	04/10/06	04/12/06	
<b>Pentachlorophenol</b>	EPA 625	6D10085	0.094	7.5	<b>0.094</b>	0.943	04/10/06	04/12/06	J
2,4,6-Trichlorophenol	EPA 625	6D10085	0.094	5.7	ND	0.943	04/10/06	04/12/06	
Surrogate: 2-Fluorophenol (30-120%)					62 %				
Surrogate: Phenol-d6 (35-120%)					81 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					74 %				
Surrogate: Nitrobenzene-d5 (45-120%)					83 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					80 %				
Surrogate: Terphenyl-d14 (45-120%)					87 %				

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Sampled: 04/04/06

Received: 04/04/06

**ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0255-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
alpha-BHC	EPA 608	6D10116	0.00094	0.0094	ND	0.943	04/10/06	04/11/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					80 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					66 %				

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Sampled: 04/04/06

Received: 04/04/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0255-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: ug/l									
Copper	EPA 200.8	6D04150	0.25	2.0	<b>4.8</b>	1	04/04/06	04/05/06	
Lead	EPA 200.8	6D04150	0.040	1.0	<b>2.8</b>	1	04/04/06	04/05/06	
Mercury	EPA 245.1	6D05091	0.050	0.20	<b>0.081</b>	1	04/05/06	04/05/06	J
<b>Sample ID: IPD0255-01RE1 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Lead	EPA 200.8	6E01070	0.040	1.0	<b>3.1</b>	1	05/01/06	05/02/06	

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Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0255-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6D05128	0.30	0.50	<b>0.56</b>	1	04/05/06	04/05/06	
Biochemical Oxygen Demand	EPA 405.1	6D05064	0.59	2.0	<b>3.6</b>	1	04/05/06	04/10/06	
Chloride	EPA 300.0	6D04136	0.15	0.50	<b>17</b>	1	04/04/06	04/05/06	
Nitrate/Nitrite-N	EPA 300.0	6D04136	0.080	0.15	<b>0.18</b>	1	04/04/06	04/05/06	
Oil & Grease	EPA 413.1	6D05046	0.90	4.8	ND	1	04/05/06	04/05/06	
Sulfate	EPA 300.0	6D04136	0.45	0.50	<b>42</b>	1	04/04/06	04/05/06	
Surfactants (MBAS)	EPA 425.1	6D05142	0.088	0.20	<b>0.12</b>	2	04/05/06	04/06/06	RL-1, J
Total Dissolved Solids	EPA 160.1	6D05071	10	10	<b>200</b>	1	04/05/06	04/05/06	
Total Suspended Solids	EPA 160.2	6D07128	10	10	<b>73</b>	1	04/07/06	04/07/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	6D04131	0.10	0.10	<b>0.20</b>	1	04/04/06	04/04/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: NTU									
Turbidity	EPA 180.1	6D05115	0.20	5.0	<b>63</b>	5	04/05/06	04/05/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6D05143	2.2	5.0	ND	1	04/05/06	04/06/06	
Perchlorate	EPA 314.0	6D06060	0.80	4.0	ND	1	04/06/06	04/06/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6D05070	1.0	1.0	<b>300</b>	1	04/05/06	04/05/06	

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 Project Manager

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Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

**SHORT HOLD TIME DETAIL REPORT**

**Sample ID: Outfall 018 (IPD0255-01) - Water**

	<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>
EPA 160.5	2	04/04/2006 11:58	04/04/2006 18:05	04/04/2006 19:45	04/04/2006 20:45
EPA 180.1	2	04/04/2006 11:58	04/04/2006 18:05	04/05/2006 13:30	04/05/2006 14:30
EPA 300.0	2	04/04/2006 11:58	04/04/2006 18:05	04/04/2006 20:30	04/05/2006 01:39
EPA 405.1	2	04/04/2006 11:58	04/04/2006 18:05	04/05/2006 16:00	04/10/2006 15:00
EPA 425.1	2	04/04/2006 11:58	04/04/2006 18:05	04/05/2006 19:36	04/06/2006 00:03

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Project Manager

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Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D05021 Extracted: 04/05/06</b>										
<b>Blank Analyzed: 04/05/2006 (6D05021-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	23.2			ug/l	25.0		93		80-120	
Surrogate: Toluene-d8	25.0			ug/l	25.0		100		80-120	
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97		80-120	
<b>LCS Analyzed: 04/05/2006 (6D05021-BS1)</b>										
Benzene	23.2	2.0	0.28	ug/l	25.0		93		65-120	
Carbon tetrachloride	25.0	5.0	0.28	ug/l	25.0		100		65-140	
Chloroform	22.4	2.0	0.33	ug/l	25.0		90		65-130	
1,1-Dichloroethane	23.0	2.0	0.27	ug/l	25.0		92		65-130	
1,2-Dichloroethane	25.4	2.0	0.28	ug/l	25.0		102		60-140	
1,1-Dichloroethene	23.7	3.0	0.42	ug/l	25.0		95		70-130	
Ethylbenzene	26.2	2.0	0.25	ug/l	25.0		105		70-125	
Tetrachloroethene	25.2	2.0	0.32	ug/l	25.0		101		65-125	
Toluene	24.2	2.0	0.36	ug/l	25.0		97		70-125	
1,1,1-Trichloroethane	22.6	2.0	0.30	ug/l	25.0		90		65-135	
1,1,2-Trichloroethane	25.0	2.0	0.30	ug/l	25.0		100		65-125	
Trichloroethene	25.2	5.0	0.26	ug/l	25.0		101		70-125	
Trichlorofluoromethane	22.1	5.0	0.34	ug/l	25.0		88		60-140	
Vinyl chloride	18.1	5.0	0.26	ug/l	25.0		72		50-130	
Surrogate: Dibromofluoromethane	25.1			ug/l	25.0		100		80-120	

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Project Manager



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Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06  
Received: 04/04/06

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
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Batch: 6D05021 Extracted: 04/05/06

LCS Analyzed: 04/05/2006 (6D05021-BS1)

Surrogate: Toluene-d8	26.0			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	26.6			ug/l	25.0		106	80-120			

Matrix Spike Analyzed: 04/05/2006 (6D05021-MS1)

Source: IPD0254-01

Benzene	22.5	2.0	0.28	ug/l	25.0	ND	90	60-125			
Carbon tetrachloride	23.0	5.0	0.28	ug/l	25.0	ND	92	65-140			
Chloroform	22.7	2.0	0.33	ug/l	25.0	ND	91	65-135			
1,1-Dichloroethane	22.8	2.0	0.27	ug/l	25.0	ND	91	60-130			
1,2-Dichloroethane	25.7	2.0	0.28	ug/l	25.0	ND	103	60-140			
1,1-Dichloroethene	22.0	3.0	0.42	ug/l	25.0	ND	88	60-135			
Ethylbenzene	23.7	2.0	0.25	ug/l	25.0	ND	95	65-130			
Tetrachloroethene	22.0	2.0	0.32	ug/l	25.0	ND	88	60-130			
Toluene	23.0	2.0	0.36	ug/l	25.0	ND	92	65-125			
1,1,1-Trichloroethane	22.1	2.0	0.30	ug/l	25.0	ND	88	65-140			
1,1,2-Trichloroethane	26.1	2.0	0.30	ug/l	25.0	ND	104	60-130			
Trichloroethene	24.4	5.0	0.26	ug/l	25.0	0.86	94	60-125			
Trichlorofluoromethane	20.9	5.0	0.34	ug/l	25.0	ND	84	55-145			
Vinyl chloride	17.2	5.0	0.26	ug/l	25.0	ND	69	40-135			
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.6			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106	80-120			

Matrix Spike Dup Analyzed: 04/05/2006 (6D05021-MSD1)

Source: IPD0254-01

Benzene	25.3	2.0	0.28	ug/l	25.0	ND	101	60-125	12	20	
Carbon tetrachloride	27.0	5.0	0.28	ug/l	25.0	ND	108	65-140	16	25	
Chloroform	25.7	2.0	0.33	ug/l	25.0	ND	103	65-135	12	20	
1,1-Dichloroethane	25.9	2.0	0.27	ug/l	25.0	ND	104	60-130	13	20	
1,2-Dichloroethane	27.7	2.0	0.28	ug/l	25.0	ND	111	60-140	7	20	
1,1-Dichloroethene	25.6	3.0	0.42	ug/l	25.0	ND	102	60-135	15	20	
Ethylbenzene	27.3	2.0	0.25	ug/l	25.0	ND	109	65-130	14	20	
Tetrachloroethene	26.4	2.0	0.32	ug/l	25.0	ND	106	60-130	18	20	
Toluene	26.3	2.0	0.36	ug/l	25.0	ND	105	65-125	13	20	
1,1,1-Trichloroethane	25.8	2.0	0.30	ug/l	25.0	ND	103	65-140	15	20	
1,1,2-Trichloroethane	27.5	2.0	0.30	ug/l	25.0	ND	110	60-130	5	25	
Trichloroethene	27.9	5.0	0.26	ug/l	25.0	0.86	108	60-125	13	20	
Trichlorofluoromethane	24.8	5.0	0.34	ug/l	25.0	ND	99	55-145	17	25	

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Project Manager



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Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

**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: 6D05021 Extracted: 04/05/06</b>											
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D05021-MSD1)</b>						<b>Source: IPD0254-01</b>					
Vinyl chloride	20.2	5.0	0.26	ug/l	25.0	ND	81	40-135	16	30	
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	26.6			ug/l	25.0		106	80-120			

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Sampled: 04/04/06

Received: 04/04/06

## 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: 6D10085 Extracted: 04/10/06</b>											
<b>Blank Analyzed: 04/12/2006 (6D10085-BLK1)</b>											
Bis(2-ethylhexyl)phthalate	ND	5.0	1.7	ug/l							
2,4-Dinitrotoluene	ND	9.0	0.20	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.10	ug/l							
Pentachlorophenol	ND	8.0	0.10	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	11.6			ug/l	20.0		58	30-120			
Surrogate: Phenol-d6	13.8			ug/l	20.0		69	35-120			
Surrogate: 2,4,6-Tribromophenol	13.4			ug/l	20.0		67	45-120			
Surrogate: Nitrobenzene-d5	7.66			ug/l	10.0		77	45-120			
Surrogate: 2-Fluorobiphenyl	7.54			ug/l	10.0		75	45-120			
Surrogate: Terphenyl-d14	8.90			ug/l	10.0		89	45-120			
<b>LCS Analyzed: 04/12/2006 (6D10085-BS1)</b>											
Bis(2-ethylhexyl)phthalate	10.5	5.0	1.7	ug/l	10.0		105	60-130			M-NR1
2,4-Dinitrotoluene	8.82	9.0	0.20	ug/l	10.0		88	60-120			J
N-Nitrosodimethylamine	7.72	8.0	0.10	ug/l	10.0		77	40-120			J
Pentachlorophenol	8.76	8.0	0.10	ug/l	10.0		88	50-120			
2,4,6-Trichlorophenol	7.86	6.0	0.10	ug/l	10.0		79	60-120			
Surrogate: 2-Fluorophenol	12.3			ug/l	20.0		62	30-120			
Surrogate: Phenol-d6	13.5			ug/l	20.0		68	35-120			
Surrogate: 2,4,6-Tribromophenol	14.7			ug/l	20.0		74	45-120			
Surrogate: Nitrobenzene-d5	6.82			ug/l	10.0		68	45-120			
Surrogate: 2-Fluorobiphenyl	6.62			ug/l	10.0		66	45-120			
Surrogate: Terphenyl-d14	7.92			ug/l	10.0		79	45-120			
<b>LCS Dup Analyzed: 04/12/2006 (6D10085-BSD1)</b>											
Bis(2-ethylhexyl)phthalate	12.2	5.0	1.7	ug/l	10.0		122	60-130	15	20	
2,4-Dinitrotoluene	10.7	9.0	0.20	ug/l	10.0		107	60-120	19	20	
N-Nitrosodimethylamine	9.14	8.0	0.10	ug/l	10.0		91	40-120	17	20	
Pentachlorophenol	9.64	8.0	0.10	ug/l	10.0		96	50-120	10	25	
2,4,6-Trichlorophenol	8.16	6.0	0.10	ug/l	10.0		82	60-120	4	20	
Surrogate: 2-Fluorophenol	12.0			ug/l	20.0		60	30-120			
Surrogate: Phenol-d6	14.2			ug/l	20.0		71	35-120			
Surrogate: 2,4,6-Tribromophenol	15.9			ug/l	20.0		80	45-120			
Surrogate: Nitrobenzene-d5	7.90			ug/l	10.0		79	45-120			
Surrogate: 2-Fluorobiphenyl	7.90			ug/l	10.0		79	45-120			

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 Attention: Bronwyn Kelly

Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

## 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: 6D10085 Extracted: 04/10/06</b>											
<b>LCS Dup Analyzed: 04/12/2006 (6D10085-BSD1)</b>											
Surrogate: Terphenyl-d14	8.82			ug/l	10.0		88	45-120			

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 300 North Lake Avenue, Suite 1200  
 Pasadena, CA 91101  
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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: 6D10116 Extracted: 04/10/06</b>											
<b>Blank Analyzed: 04/11/2006 (6D10116-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.427			ug/l	0.500		85	45-120			
Surrogate: Tetrachloro-m-xylene	0.377			ug/l	0.500		75	35-115			
<b>LCS Analyzed: 04/11/2006 (6D10116-BS1)</b>											
alpha-BHC	0.371	0.010	0.0010	ug/l	0.500		74	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.412			ug/l	0.500		82	45-120			
Surrogate: Tetrachloro-m-xylene	0.350			ug/l	0.500		70	35-115			
<b>LCS Dup Analyzed: 04/11/2006 (6D10116-BSD1)</b>											
alpha-BHC	0.388	0.010	0.0010	ug/l	0.500		78	45-120	4	30	
Surrogate: Decachlorobiphenyl	0.418			ug/l	0.500		84	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	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D04150 Extracted: 04/04/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D04150-BLK1)</b>											
Copper	ND	2.0	0.25	ug/l							
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 04/05/2006 (6D04150-BS1)</b>											
Copper	79.2	2.0	0.25	ug/l	80.0		99	85-115			
Lead	80.9	1.0	0.040	ug/l	80.0		101	85-115			
<b>Matrix Spike Analyzed: 04/05/2006 (6D04150-MS1) Source: IPD0254-01</b>											
Copper	82.0	2.0	0.25	ug/l	80.0	7.4	93	70-130			
Lead	85.8	1.0	0.040	ug/l	80.0	6.9	99	70-130			
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D04150-MSD1) Source: IPD0254-01</b>											
Copper	80.7	2.0	0.25	ug/l	80.0	7.4	92	70-130	2	20	
Lead	85.5	1.0	0.040	ug/l	80.0	6.9	98	70-130	0	20	
<b>Batch: 6D05091 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05091-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/05/2006 (6D05091-BS1)</b>											
Mercury	7.98	0.20	0.050	ug/l	8.00		100	85-115			
<b>Matrix Spike Analyzed: 04/05/2006 (6D05091-MS1) Source: IPD0241-01</b>											
Mercury	8.57	0.20	0.050	ug/l	8.00	0.060	106	70-130			
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D05091-MSD1) Source: IPD0241-01</b>											
Mercury	8.73	0.20	0.050	ug/l	8.00	0.060	108	70-130	2	20	

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 Project Manager



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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: 6E01070 Extracted: 05/01/06</b>											
<b>Blank Analyzed: 05/02/2006 (6E01070-BLK1)</b>											
Lead	ND	1.0	0.040	ug/l							
<b>LCS Analyzed: 05/02/2006 (6E01070-BS1)</b>											
Lead	90.7	1.0	0.040	ug/l	80.0		113	85-115			
<b>Matrix Spike Analyzed: 05/02/2006 (6E01070-MS1)</b>											
						<b>Source: IPD2699-01</b>					
Lead	92.2	1.0	0.040	ug/l	80.0	6.1	108	70-130			
<b>Matrix Spike Dup Analyzed: 05/02/2006 (6E01070-MSD1)</b>											
						<b>Source: IPD2699-01</b>					
Lead	91.1	1.0	0.040	ug/l	80.0	6.1	106	70-130	1	20	

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 Michele Chamberlin  
 Project Manager



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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D04136 Extracted: 04/04/06</b>											
<b>Blank Analyzed: 04/04/2006 (6D04136-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: 04/04/2006 (6D04136-BS1)</b>											
Chloride	4.76	0.50	0.15	mg/l	5.00		95	90-110			
Sulfate	9.53	0.50	0.45	mg/l	10.0		95	90-110			
<b>Matrix Spike Analyzed: 04/04/2006 (6D04136-MS1) Source: IPD0234-12</b>											
Chloride	109	5.0	1.5	mg/l	50.0	66	86	80-120			
Sulfate	268	5.0	4.5	mg/l	100	180	88	80-120			
<b>Matrix Spike Dup Analyzed: 04/04/2006 (6D04136-MSD1) Source: IPD0234-12</b>											
Chloride	106	5.0	1.5	mg/l	50.0	66	80	80-120	3	20	
Sulfate	258	5.0	4.5	mg/l	100	180	78	80-120	4	20	M2
<b>Batch: 6D05046 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05046-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/05/2006 (6D05046-BS1) M-NR1</b>											
Oil & Grease	16.4	5.0	0.94	mg/l	20.0		82	65-120			
<b>LCS Dup Analyzed: 04/05/2006 (6D05046-BSD1)</b>											
Oil & Grease	16.5	5.0	0.94	mg/l	20.0		82	65-120	1	20	

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Project Manager



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**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: 6D05064 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/10/2006 (6D05064-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
<b>LCS Analyzed: 04/10/2006 (6D05064-BS1)</b>											
Biochemical Oxygen Demand	226	100	30	mg/l	198		114	85-115			
<b>LCS Dup Analyzed: 04/10/2006 (6D05064-BSD1)</b>											
Biochemical Oxygen Demand	226	100	30	mg/l	198		114	85-115	0	20	
<b>Batch: 6D05070 Extracted: 04/05/06</b>											
<b>Duplicate Analyzed: 04/05/2006 (6D05070-DUP1)</b>											
Specific Conductance	21.3	1.0	1.0	umhos/cm		21			1	5	
<b>Batch: 6D05071 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05071-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/05/2006 (6D05071-BS1)</b>											
Total Dissolved Solids	998	10	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 04/05/2006 (6D05071-DUP1)</b>											
Total Dissolved Solids	16.0	10	10	mg/l		18			12	10	R-4
<b>Batch: 6D05115 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05115-BLK1)</b>											
Turbidity	ND	1.0	0.040	NTU							

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Michele Chamberlin  
Project Manager



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Pasadena, CA 91101  
Attention: Bronwyn Kelly

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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: 6D05115 Extracted: 04/05/06</b>											
<b>Duplicate Analyzed: 04/05/2006 (6D05115-DUP1)</b>						<b>Source: IPD0239-01</b>					
Turbidity	18.5	1.0	0.040	NTU		18			3	20	
<b>Batch: 6D05128 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/05/2006 (6D05128-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 04/05/2006 (6D05128-BS1)</b>											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
<b>Matrix Spike Analyzed: 04/05/2006 (6D05128-MS1)</b>						<b>Source: IPD0105-01</b>					
Ammonia-N (Distilled)	11.8	0.50	0.30	mg/l	10.0	1.4	104	70-120			
<b>Matrix Spike Dup Analyzed: 04/05/2006 (6D05128-MSD1)</b>						<b>Source: IPD0105-01</b>					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	1.4	101	70-120	3	15	
<b>Batch: 6D05142 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D05142-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 04/06/2006 (6D05142-BS1)</b>											
Surfactants (MBAS)	0.261	0.10	0.044	mg/l	0.250		104	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D05142-MS1)</b>						<b>Source: IPD0205-01</b>					
Surfactants (MBAS)	0.250	0.10	0.044	mg/l	0.250	ND	100	50-125			

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Michele Chamberlin  
Project Manager



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Pasadena, CA 91101  
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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: 6D05142 Extracted: 04/05/06</b>											
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D05142-MSD1)</b>						<b>Source: IPD0205-01</b>					
Surfactants (MBAS)	0.250	0.10	0.044	mg/l	0.250	ND	100	50-125	0	20	
<b>Batch: 6D05143 Extracted: 04/05/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D05143-BLK1)</b>											
Total Cyanide	ND	5.0	2.2	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D05143-BS1)</b>											
Total Cyanide	196	5.0	2.2	ug/l	200		98	90-110			
<b>Matrix Spike Analyzed: 04/06/2006 (6D05143-MS1)</b>						<b>Source: IPD0017-01</b>					
Total Cyanide	191	5.0	2.2	ug/l	200	ND	96	70-115			
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D05143-MSD1)</b>						<b>Source: IPD0017-01</b>					
Total Cyanide	199	5.0	2.2	ug/l	200	ND	100	70-115	4	15	
<b>Batch: 6D06060 Extracted: 04/06/06</b>											
<b>Blank Analyzed: 04/06/2006 (6D06060-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 04/06/2006 (6D06060-BS1)</b>											
Perchlorate	46.7	4.0	0.80	ug/l	50.0		93	85-115			
<b>Matrix Spike Analyzed: 04/06/2006 (6D06060-MS1)</b>						<b>Source: IPD0173-01</b>					
Perchlorate	78.3	4.0	0.80	ug/l	50.0	30	97	80-120			

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Project Manager



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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: 6D06060 Extracted: 04/06/06</b>											
<b>Matrix Spike Dup Analyzed: 04/06/2006 (6D06060-MSD1)</b>						<b>Source: IPD0173-01</b>					
Perchlorate	78.4	4.0	0.80	ug/l	50.0	30	97	80-120	0	20	
<b>Batch: 6D07128 Extracted: 04/07/06</b>											
<b>Blank Analyzed: 04/07/2006 (6D07128-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/07/2006 (6D07128-BS1)</b>											
Total Suspended Solids	975	10	10	mg/l	1000		98	85-115			
<b>Duplicate Analyzed: 04/07/2006 (6D07128-DUP1)</b>						<b>Source: IPD0270-01</b>					
Total Suspended Solids	64.0	10	10	mg/l		67			5	10	

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## Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IPD0255-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.095	4.8	10.00
IPD0255-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0094	0.0100
IPD0255-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD0255-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0.16	5.0	5.00
IPD0255-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.7	6.50
IPD0255-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	8.5	9.10
IPD0255-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.96	4.7	4.00
IPD0255-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	7.5	8.10
IPD0255-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0.094	7.5	8.20
IPD0255-01	BOD	Biochemical Oxygen Demand	mg/l	3.60	2.0	20
IPD0255-01	Chloride - 300.0	Chloride	mg/l	17	0.50	150
IPD0255-01	Copper-200.8	Copper	ug/l	4.80	2.0	7.10
IPD0255-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	0.45	5.0	4.30
<b>IPD0255-01</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>2.80</b>	<b>1.0</b>	<b>2.60</b>
IPD0255-01	MBAS - 425.1	Surfactants (MBAS)	mg/l	0.12	0.20	0.50
IPD0255-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.18	0.15	8.00
IPD0255-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPD0255-01	Sulfate-300.0	Sulfate	mg/l	42	0.50	300
IPD0255-01	TDS - EPA 160.1	Total Dissolved Solids	mg/l	200	10	950
<b>IPD0255-01RE1</b>	<b>Lead-200.8</b>	<b>Lead</b>	<b>ug/l</b>	<b>3.10</b>	<b>1.0</b>	<b>2.60</b>
IPD0255-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD0255-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

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 Michele Chamberlin  
 Project Manager





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### 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. 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-4** Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
- RL-1** Reporting limit raised 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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Michele Chamberlin  
Project Manager

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## 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	Liquid	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.testamericainc.com](http://www.testamericainc.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: IPD0255-01

Analysis Performed: EDD + Level 4

Samples: IPD0255-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager

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# Del Mar Analytical Version 03/11/06 CHAIN OF CUSTODY FORM

IP00255

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

Project:  
**Boeing-SSFL NPDES  
 Routine Outfall 018  
 R-2 Spillway**  
 Phone Number:  
 (626) 568-6691  
 Fax Number:  
 (626) 568-6515

ANALYSIS REQUIRED			Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	Alpha BHC (8081A)	2,4 Trichlorophenol, 2,4 Dinitrofluorene, Bis(2- ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)	Field readings: Temp = 57° pH = <del>7.8</del> 7.5	Comments
Outfall 018	W	Poly-1L	1														
Outfall 018-Dup	W	Poly-1L	1														
Outfall 018	W	Poly-1L	1														
Outfall 018	W	VOAs	3														
Outfall 018	W	1L Amber	2														
Outfall 018	W	1L Amber	2														
Outfall 018	W	Poly-500 ml	1					X									
Outfall 018	W	Poly-1 L	1						X								
Outfall 018	W	Poly-500 ml	2							X							
Outfall 018	W	Poly-500 ml	2								X						
Outfall 018	W	Poly-500 ml	2									X					
Outfall 018	W	Poly-500 ml	1														
Outfall 018	W	1L Amber	2														
Outfall 018	W	1L Amber	2														
Outfall 018	W	1L Amber	2														
Trip Blank	W	VOAs	3														

Received By: *[Signature]* Date/Time: 4-4-06 1445  
 Received By: *[Signature]* Date/Time: 4-11-06 1005  
 Received By: *[Signature]* Date/Time: 4/4/06 1805

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)  
 Intact  On Ice:  3°C



April 12, 2006

**Alta Project I.D.: 27549**

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 April 06, 2006 under your Project Name "IPD0255". 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: 4/6/2006**

**Alta Lab. ID**

**Client Sample ID**

27549-001

IPD0255-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7910	Lab Sample:	0-MB001	Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	9-Apr-06						
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	0.000000628			<b>IS</b> 13C-2,3,7,8-TCDD	74.5	25 - 164		
1,2,3,7,8-PeCDD	ND	0.000000450			13C-1,2,3,7,8-PeCDD	71.4	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.000000804			13C-1,2,3,4,7,8-HxCDD	74.6	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.000000867			13C-1,2,3,6,7,8-HxCDD	70.7	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.000000808			13C-1,2,3,4,6,7,8-HpCDD	75.4	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000111			13C-OCDD	55.5	17 - 157		
OCDD	0.00000259			J	13C-2,3,7,8-TCDF	77.3	24 - 169		
2,3,7,8-TCDF	ND	0.000000346			13C-1,2,3,7,8-PeCDF	73.3	24 - 185		
1,2,3,7,8-PeCDF	ND	0.000000474			13C-2,3,4,7,8-PeCDF	72.6	21 - 178		
2,3,4,7,8-PeCDF	ND	0.000000453			13C-1,2,3,4,7,8-HxCDF	74.5	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000436			13C-1,2,3,6,7,8-HxCDF	66.9	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000334			13C-2,3,4,6,7,8-HxCDF	71.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000326			13C-1,2,3,7,8,9-HxCDF	70.0	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.000000456			13C-1,2,3,4,6,7,8-HpCDF	66.9	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.000000395			13C-1,2,3,4,7,8,9-HpCDF	72.4	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.000000424			13C-OCDF	56.7	17 - 157		
OCDF	ND	0.00000136			<b>CRS</b> 37Cl-2,3,7,8-TCDD	84.0	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.000000628			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.000000450			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.000000828			c. Method detection limit.				
Total HpCDD	ND	0.00000111			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.000000346							
Total PeCDF	ND	0.000000463							
Total HxCDF	ND	0.000000473							
Total HpCDF	ND	0.000000408							

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:56

NPDES - 923

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7910	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	9-Apr-06	Date Analyzed DB-5:	10-Apr-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	11.0	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	76.2	25 - 164	
1,2,3,7,8-PeCDD	50.0	53.6	35 - 71	13C-1,2,3,7,8-PeCDD	73.8	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	53.3	35 - 82	13C-1,2,3,4,7,8-HxCDD	79.3	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	53.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	72.2	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	53.8	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	77.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	54.0	35 - 70	13C-OCDD	51.6	17 - 157	
OCDD	100	107	78 - 144	13C-2,3,7,8-TCDF	78.6	24 - 169	
2,3,7,8-TCDF	10.0	10.9	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	74.4	24 - 185	
1,2,3,7,8-PeCDF	50.0	54.1	40 - 67	13C-2,3,4,7,8-PeCDF	75.4	21 - 178	
2,3,4,7,8-PeCDF	50.0	54.3	34 - 80	13C-1,2,3,4,7,8-HxCDF	78.7	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	53.4	36 - 67	13C-1,2,3,6,7,8-HxCDF	75.6	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	52.7	42 - 65	13C-2,3,4,6,7,8-HxCDF	75.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	51.8	35 - 78	13C-1,2,3,7,8,9-HxCDF	75.1	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	52.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	68.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	52.6	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	75.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	52.6	39 - 69	13C-OCDF	56.6	17 - 157	
OCDF	100	105	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	87.2	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:56



Sample ID: <b>IPD0255-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27549-001	Date Received:	6-Apr-06
Project:	IPD0255		Sample Size:	1.03 L	QC Batch No.:	7910	Date Extracted:	9-Apr-06
Date Collected:	4-Apr-06				Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	1158							
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	0.000000611			<b>IS</b> 13C-2,3,7,8-TCDD	67.9	25 - 164	
1,2,3,7,8-PeCDD	ND		0.000000852		13C-1,2,3,7,8-PeCDD	61.7	25 - 181	
1,2,3,4,7,8-HxCDD	0.00000232			J	13C-1,2,3,4,7,8-HxCDD	66.7	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000515			J	13C-1,2,3,6,7,8-HxCDD	60.2	28 - 130	
1,2,3,7,8,9-HxCDD	0.00000373			J	13C-1,2,3,4,6,7,8-HpCDD	68.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.000113				13C-OCDD	55.0	17 - 157	
OCDD	0.00121			B	13C-2,3,7,8-TCDF	69.9	24 - 169	
2,3,7,8-TCDF	ND	0.000000857			13C-1,2,3,7,8-PeCDF	63.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000122			13C-2,3,4,7,8-PeCDF	63.5	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000123			13C-1,2,3,4,7,8-HxCDF	63.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000787			13C-1,2,3,6,7,8-HxCDF	47.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000879			13C-2,3,4,6,7,8-HxCDF	62.1	28 - 136	
2,3,4,6,7,8-HxCDF	0.000000894			J	13C-1,2,3,7,8,9-HxCDF	63.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000411			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000191			J	13C-1,2,3,4,7,8,9-HpCDF	64.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.00000261			J	13C-OCDF	54.7	17 - 157	
OCDF	0.0000526				<b>CRS</b> 37Cl-2,3,7,8-TCDD	83.3	35 - 197	
Totals					Footnotes			
Total TCDD	0.00000106				a. Sample specific estimated detection limit.			
Total PeCDD	0.00000234		0.00000591		b. Estimated maximum possible concentration.			
Total HxCDD	0.0000452				c. Method detection limit.			
Total HpCDD	0.000237				d. Lower control limit - upper control limit.			
Total TCDF	0.0000227							
Total PeCDF	ND		0.00000247					
Total HxCDF	0.0000248							
Total HpCDF	0.0000566							

Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:56

NPDES - 925

## 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) 505-9596 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) 798-3620 Fax (702) 798-3621

## SUBCONTRACT ORDER - PROJECT # IPD0255

**SENDING 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

**RECEIVING LABORATORY:**

Alta Analytical - SUB  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 Phone : (916) 933-1640  
 Fax: (916) 673-0106

27549  
1.8°C

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

Analysis	Expiration	Comments
<b>Sample ID: IPD0255-01 Water</b>	<b>Sampled: 04/04/06 11:58</b>	<b>Instant Notification</b>
1613-Dioxin-HR-Alta	04/11/06 11:58	J flags, 17 congeners, no TEQ, ug/L, sub=Alta
EDD + Level 4	05/02/06 11:58	Excel EDD email to pm, Include Std logs for Lvl IV

**Containers Supplied:**  
 1 L Amber (IPD0255-01G)  
 1 L Amber (IPD0255-01H)

**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: 4/5/06 Time: \_\_\_\_\_ Received By: Bettina J. Benedict Date: 4/6/06 Time: 0850~~

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

### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27549

Samples Arrival:	Date/Time <u>4/6/06 0850</u>	Initials: <u>VB/B</u>	Location: <u>WR-2</u>
			Shelf/Rack: _____
Logged In:	Date/Time <u>4/6/06 1000</u>	Initials: <u>VB/B</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>C-3</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>1.8°C</u>	Time: <u>0900</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>7920 6313 8160</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	Sample Container <u>None</u>
Shipping Container	Alta	<u>Client</u>	Retain <u>Return</u> Dispose

Comments:

## **APPENDIX G**

### **Section 40**

Outfall 018, April 04, 2006

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

**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4DF90  
 Task Order: 1261.001D.01  
 SDG No.: IPD0255

No. of Analyses: 1

Laboratory: Alta Analytical  
 Reviewer: K. Shadowlight  
 Analysis/Method: Dioxins

Date: <u>June 5, 2006</u>
Reviewer's Signature <i>P. Meeks for K. Shadowlight</i>

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative</b>	_____
<b>Deficiencies</b>	_____
2. <b>Out of Scope Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy Deliverables</b>	_____
5. <b>Incorrect Hardcopy Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</b>	Qualification applied for all detects below the reporting limit and for EMPC values.
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 018

ANALYSIS: DIOXINS/FURANS  
SAMPLE DELIVERY GROUP: IPD0255

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

## 1. INTRODUCTION

Task Order Title: NPDES  
Contract Task Order: 1261.001D.01  
Sample Delivery Group: IPD0255  
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: June 5, 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 018	IPD0255-01	27549-001	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 at 2°C. 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 sample was couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The Client ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

The sample was 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 03/22/2006 on instrument VG-5. 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 VER was 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 (0-7910-MB001) was extracted and analyzed with the sample in this SDG. Target compound OCDD was detected in the method blank at a concentration below the laboratory calibration level. OCDD was also detected in the site sample; however, the detect in the sample exceeded five times the concentration reported in the method blank and required no qualification. There were no other target compounds detected in the method blank. 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 (0-7910-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 qualification of the site sample was 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." 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.

Sample ID: **IPD0255-01** *Outfall 018* EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	27549-001	Date Received:	6-Apr-06
Project:	IPD0255	Sample Size:	1.03 L	QC Batch No.:	7910	Date Extracted:	9-Apr-06
Date Collected:	4-Apr-06			Date Analyzed DB-5:	11-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	1158						

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	0.000000611			<b>IS</b> 13C-2,3,7,8-TCDD	67.9	25 - 164	
1,2,3,7,8-PeCDD	ND		0.000000852		13C-1,2,3,7,8-PeCDD	61.7	25 - 181	
1,2,3,4,7,8-HxCDD	0.00000232			J	13C-1,2,3,4,7,8-HxCDD	66.7	32 - 141	
1,2,3,6,7,8-HxCDD	0.00000515			J	13C-1,2,3,6,7,8-HxCDD	60.2	28 - 130	
1,2,3,7,8,9-HxCDD	0.00000373			J	13C-1,2,3,4,6,7,8-HpCDD	68.3	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.000113				13C-OCDD	55.0	17 - 157	
OCDD	0.00121			B	13C-2,3,7,8-TCDF	69.9	24 - 169	
2,3,7,8-TCDF	ND	0.000000857			13C-1,2,3,7,8-PeCDF	63.6	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000122			13C-2,3,4,7,8-PeCDF	63.5	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000123			13C-1,2,3,4,7,8-HxCDF	63.8	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000787			13C-1,2,3,6,7,8-HxCDF	47.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000879			13C-2,3,4,6,7,8-HxCDF	62.1	28 - 136	
2,3,4,6,7,8-HxCDF	0.000000894			J	13C-1,2,3,7,8,9-HxCDF	63.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000411			13C-1,2,3,4,6,7,8-HpCDF	61.1	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.0000191			J	13C-1,2,3,4,7,8,9-HpCDF	64.3	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.00000261			J	13C-OCDF	54.7	17 - 157	
OCDF	0.0000526				<b>CRS</b> 37Cl-2,3,7,8-TCDD	83.3	35 - 197	

Totals				Footnotes			
Total TCDD	0.00000106			a. Sample specific estimated detection limit.			
Total PeCDD	0.00000234		0.00000591	b. Estimated maximum possible concentration.			
Total HxCDD	0.0000452			c. Method detection limit.			
Total HpCDD	0.000237			d. Lower control limit - upper control limit.			
Total TCDF	0.0000227						
Total PeCDF	ND		0.00000247				
Total HxCDF	0.0000248						
Total HpCDF	0.0000566						

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Analyst: MAS

Approved By: William J. Luksemburg 12-Apr-2006 09:56

*Level IV*







# DATA VALIDATION REPORT

NPDES Sampling  
Outfall 018

ANALYSIS: METALS

SAMPLE DELIVERY GROUP IPD0255

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: IPD0255  
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: June 6, 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 Method 200.8*, 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 018	IPD0255-01	Water	200.8

## 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. Outfall 018 was reanalyzed for lead. As the laboratory did not append the MWH ID for the reanalysis with "RE1," the reviewer added this information to the Form I. 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. 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. The laboratory analyzed reporting limit check standards in association with the sample in this SDG and the recoveries were considered to be acceptable. No qualifications were required.

## 2.4 BLANKS

There were no detects in the associated method blanks or CCBs associated with the sample in this SDG. No qualifications were required.

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

ICSA and ICSAB analyses were performed in association with the sample in this SDG. Copper, which is not spiked into the ICSA solution, was detected above the reporting limit in the ICSA. The reviewer checked the sample analysis for the presence of known interferents. None were noted at concentrations that would require sample qualification. All recoveries were acceptable and no qualifications were required.

## 2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

## 2.7 LABORATORY DUPLICATES

No 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 base 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 sample in this data package. Calculations were verified and the sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted.

Per a request from MWH personnel, the laboratory reanalyzed sample Outfall 018 for lead. As the reanalysis yielded a results similar to the original result, the reanalysis, Outfall 018 RE1, was rejected, "R," in favor of the original result. 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

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
 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 018

Report Number: IPD0255

Sampled: 04/04/06

Received: 04/04/06

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD0255-01 (Outfall 018 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	6D04150	0.25	2.0	4.8	1	04/04/06	04/05/06	Rev Qual   Qual Code
Lead	EPA 200.8	6D04150	0.040	1.0	2.8	1	04/04/06	04/05/06	
Mercury	EPA 245.1	6D05091	0.050	0.20	0.081	1	04/05/06	04/05/06	* J
Sample ID: IPD0255-01RE1 (Outfall 018 - Water) Outfall 018 RE 1									
Reporting Units: ug/l									
Lead	EPA 200.8	6E01070	0.040	1.0	3.1	1	05/01/06	05/02/06	R D

\* Analysis not validated

Del Mar Analytical - Irvine  
 Michele Chamberlin  
 Project Manager

LEVEL IV

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.



**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4VO59  
 Task Order: 1261.001D.01  
 SDG No.: IPD0255

No. of Analyses: 2

Laboratory: Del Mar Analytical-Irvine  
 Reviewer: L. Calvin  
 Analysis/Method: Volatiles by Method 624

Date: <u>June 5, 2006</u>
Reviewer's Signature <i>L. Calvin</i>

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative Deficiencies</b>	_____
2. <b>Out of Scope Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy Deliverables</b>	_____
5. <b>Incorrect Hardcopy Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</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>	Acceptable as reviewed.
<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  
Quarterly Outfall 018

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IPD0255

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: IPD0255  
Project Manager: P. Costa  
Matrix: Water  
Analysis: Volatiles  
QC Level: Level IV  
No. of Samples: 2  
No. of Reanalyses/Dilutions: 0  
Reviewer: L. Calvin  
Date of Review: June 5, 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 018	IPD0255-01	Water	624
Trip Blank	IPD0255-02	Water	624

## 2. DATA VALIDATION FINDINGS

### 2.1 SAMPLE MANAGEMENT

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C, at 3°C. According to the case narrative for this SDG, the samples were 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 samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

#### 2.1.3 Holding Times

The preserved water samples were 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 analyses, dated 03/16/06 (trichlorotrifluoroethane only) and 03/28/06 (all remaining target compounds). The average RRFs were ≥0.05, and the %RSDs were ≤35% or  $r^2$  values ≥0.995 for all target compounds listed on the sample result summary forms. The continuing calibrations associated with the sample analyses were dated 04/05/06. The RRFs were ≥0.05% and the %Ds were within the QC limit of ≤20% for all target compounds. No qualifications were required.

### 2.4 BLANKS

One method blank (6D05021-BLK1) was analyzed with this SDG. No target compounds were detected above the MDL 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 (6D05021-BS1) was analyzed with this SDG. All recoveries 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 site sample in 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**

Sample Trip Blank was the trip blank associated with site sample Outfall 018. No target compounds were detected above the MDL in the trip blank. 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 standard: -50%/+100% for internal standard areas and  $\pm 30$  seconds for retention times. The internal standard areas 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.



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

Project ID: Quarterly Outfall 018

Report Number: IPD0255

Sampled: 04/04/06  
Received: 04/04/06

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: IPD0255-01 (Outfall 018 - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	u	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D05021	1.2	5.0	ND	1	04/05/06	04/05/06	<div style="position: absolute; top: 20px; left: 20px; font-size: 2em;">u</div> <div style="position: absolute; top: 20px; left: 20px; font-size: 2em;">rel qual</div> <div style="position: absolute; top: 20px; left: 20px; font-size: 2em;">qual code</div>	
Carbon tetrachloride	EPA 624	6D05021	0.28	5.0	ND	1	04/05/06	04/05/06		
Chloroform	EPA 624	6D05021	0.33	2.0	ND	1	04/05/06	04/05/06		
1,1-Dichloroethane	EPA 624	6D05021	0.27	2.0	ND	1	04/05/06	04/05/06		
1,2-Dichloroethane	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06		
1,1-Dichloroethene	EPA 624	6D05021	0.42	3.0	ND	1	04/05/06	04/05/06		
Ethylbenzene	EPA 624	6D05021	0.25	2.0	ND	1	04/05/06	04/05/06		
Tetrachloroethene	EPA 624	6D05021	0.32	2.0	ND	1	04/05/06	04/05/06		
Toluene	EPA 624	6D05021	0.36	2.0	ND	1	04/05/06	04/05/06		
1,1,1-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06		
1,1,2-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06		
Trichloroethene	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06		
Trichlorofluoromethane	EPA 624	6D05021	0.34	5.0	ND	1	04/05/06	04/05/06		
Vinyl chloride	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06		
Xylenes, Total	EPA 624	6D05021	0.52	4.0	ND	1	04/05/06	04/05/06		
Surrogate: Dibromofluoromethane (80-120%)					102 %					
Surrogate: Toluene-d8 (80-120%)					101 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %					
Sample ID: IPD0255-02 (Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06	u	
Trichlorotrifluoroethane (Freon 113)	EPA 624	6D05021	1.2	5.0	ND	1	04/05/06	04/05/06	<div style="position: absolute; top: 20px; left: 20px; font-size: 2em;">u</div>	
Carbon tetrachloride	EPA 624	6D05021	0.28	5.0	ND	1	04/05/06	04/05/06		
Chloroform	EPA 624	6D05021	0.33	2.0	ND	1	04/05/06	04/05/06		
1,1-Dichloroethane	EPA 624	6D05021	0.27	2.0	ND	1	04/05/06	04/05/06		
1,2-Dichloroethane	EPA 624	6D05021	0.28	2.0	ND	1	04/05/06	04/05/06		
1,1-Dichloroethene	EPA 624	6D05021	0.42	3.0	ND	1	04/05/06	04/05/06		
Ethylbenzene	EPA 624	6D05021	0.25	2.0	ND	1	04/05/06	04/05/06		
Tetrachloroethene	EPA 624	6D05021	0.32	2.0	ND	1	04/05/06	04/05/06		
Toluene	EPA 624	6D05021	0.36	2.0	ND	1	04/05/06	04/05/06		
1,1,1-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06		
1,1,2-Trichloroethane	EPA 624	6D05021	0.30	2.0	ND	1	04/05/06	04/05/06		
Trichloroethene	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06		
Trichlorofluoromethane	EPA 624	6D05021	0.34	5.0	ND	1	04/05/06	04/05/06		
Vinyl chloride	EPA 624	6D05021	0.26	5.0	ND	1	04/05/06	04/05/06		
Xylenes, Total	EPA 624	6D05021	0.52	4.0	ND	1	04/05/06	04/05/06		
Surrogate: Dibromofluoromethane (80-120%)					96 %					
Surrogate: Toluene-d8 (80-120%)					101 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %					

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

Level IV



**CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA**

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

Package ID: B4WC84  
 Task Order: 1261.001D.01  
 SDG No.: IPD0255

No. of Analyses: 1

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

Date: <u>June 6, 2006</u>
Reviewer's Signature <i>P. Meeks</i>

<b>ACTION ITEMS<sup>a</sup></b>	
1. <b>Case Narrative Deficiencies</b>	_____
2. <b>Out of Scope Analyses</b>	_____
3. <b>Analyses Not Conducted</b>	_____
4. <b>Missing Hardcopy Deliverables</b>	_____
5. <b>Incorrect Hardcopy Deliverables</b>	_____
6. <b>Deviations from Analysis Protocol, e.g.,</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>	Acceptable as reviewed.
<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 018

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IPD0255

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: IPD0255  
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: June 6, 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, 180.1, and 350.2*, 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 018	IPD0255-01	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. No qualifications were required.

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analysis. All analyses were performed within the method specified holding times. No qualifications were required.

### 2.2 CALIBRATION

For turbidity and specific conductivity, the check standard recoveries were found to be acceptable. For ammonia, no information regarding the standardization of the titrant was provided; therefore, the ammonia LCS result was compared to the calibration control limits. As the ammonia LCS recovery was within the CCV control limits, 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 ammonia LCS recovery was within the laboratory-established control limits. LCS samples are not applicable to the turbidity and specific conductivity analyses. No qualifications were required.

## 2.5 LABORATORY DUPLICATES

No laboratory duplicate analyses were performed in association with the sample in 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 the sample in this SDG; therefore, no assessment was made with respect to this criterion. Evaluation of the ammonia method accuracy was based on the LCS result. 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 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.



# Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297  
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046  
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 018  
Report Number: IPD0255

Sampled: 04/04/06  
Received: 04/04/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD0255-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	6D05128	0.30	0.50	0.56	1	04/05/06	04/05/06	
Biochemical Oxygen Demand	EPA 405.1	6D05064	0.59	2.0	3.6	1	04/05/06	04/10/06	*
Chloride	EPA 300.0	6D04136	0.15	0.50	17	1	04/04/06	04/05/06	
Nitrate/Nitrite-N	EPA 300.0	6D04136	0.080	0.15	0.18	1	04/04/06	04/05/06	
Oil & Grease	EPA 413.1	6D05046	0.90	4.8	ND	1	04/05/06	04/05/06	
Sulfate	EPA 300.0	6D04136	0.45	0.50	42	1	04/04/06	04/05/06	
Surfactants (MBAS)	EPA 425.1	6D05142	0.088	0.20	0.12	2	04/05/06	04/06/06	
Total Dissolved Solids	EPA 160.1	6D05071	10	10	200	1	04/05/06	04/05/06	
Total Suspended Solids	EPA 160.2	6D07128	10	10	73	1	04/07/06	04/07/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	6D04131	0.10	0.10	0.20	1	04/04/06	04/04/06	*
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: NTU									
Turbidity	EPA 180.1	6D05115	0.20	5.0	63	5	04/05/06	04/05/06	
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	6D05143	2.2	5.0	ND	1	04/05/06	04/06/06	*
Perchlorate	EPA 314.0	6D06060	0.80	4.0	ND	1	04/06/06	04/06/06	*
<b>Sample ID: IPD0255-01 (Outfall 018 - Water)</b>									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	6D05070	1.0	1.0	300	1	04/05/06	04/05/06	

Raw Qual | Qual Code  
\*  
RL-1, J  
↓

\* Analysis not validated

Del Mar Analytical - Irvine  
Michele Chamberlin  
Project Manager

LEVEL IV

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## **APPENDIX G**

### **Section 41**

Outfall 018, April 11, 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 018

Sampled: 04/11/06  
Received: 04/12/06  
Revised: 06/19/06 18:53

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:** Not all holding times were met. Results were qualified where the sample analysis did not occur within method specified holding time requirements. Due to laboratory oversight, the extraction of the EPA 625 analysis was performed past the method specified holding time.

**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 report was revised to add Total Xylenes to the BS/MS/MSD to the QC.

LABORATORY ID	CLIENT ID	MATRIX
IPD1228-01	Outfall 018	Water
IPD1228-02	Trip Blank	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 018

Report Number: IPD1228

Sampled: 04/11/06  
 Received: 04/12/06

## 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: IPD1228-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06	
Chloroform	EPA 624	6D17002	0.33	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethane	EPA 624	6D17002	0.27	2.0	ND	1	04/17/06	04/17/06	
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06	
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Trichlorofluoromethane	EPA 624	6D17002	0.34	5.0	ND	1	04/17/06	04/17/06	
Vinyl chloride	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Xylenes, Total	EPA 624	6D17002	0.90	4.0	ND	1	04/17/06	04/17/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					107 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					106 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					110 %				
<b>Sample ID: IPD1228-02 (Trip Blank - Water)</b>									
<b>Reporting Units: ug/l</b>									
Benzene	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
Carbon tetrachloride	EPA 624	6D17002	0.28	5.0	ND	1	04/17/06	04/17/06	
Chloroform	EPA 624	6D17002	0.33	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethane	EPA 624	6D17002	0.27	2.0	ND	1	04/17/06	04/17/06	
1,2-Dichloroethane	EPA 624	6D17002	0.28	2.0	ND	1	04/17/06	04/17/06	
1,1-Dichloroethene	EPA 624	6D17002	0.42	3.0	ND	1	04/17/06	04/17/06	
Ethylbenzene	EPA 624	6D17002	0.25	2.0	ND	1	04/17/06	04/17/06	
Tetrachloroethene	EPA 624	6D17002	0.32	2.0	ND	1	04/17/06	04/17/06	
Toluene	EPA 624	6D17002	0.36	2.0	ND	1	04/17/06	04/17/06	
1,1,1-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
1,1,2-Trichloroethane	EPA 624	6D17002	0.30	2.0	ND	1	04/17/06	04/17/06	
Trichloroethene	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Trichlorofluoromethane	EPA 624	6D17002	0.34	5.0	ND	1	04/17/06	04/17/06	
Vinyl chloride	EPA 624	6D17002	0.26	5.0	ND	1	04/17/06	04/17/06	
Xylenes, Total	EPA 624	6D17002	0.90	4.0	ND	1	04/17/06	04/17/06	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					103 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					106 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					110 %				

**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 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

**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: IPD1228-01 (Outfall 018 - Water)</b>									<b>H4</b>
<b>Reporting Units: ug/l</b>									
Bis(2-ethylhexyl)phthalate	EPA 625	6D19072	1.6	4.7	ND	0.948	04/19/06	04/25/06	
2,4-Dinitrotoluene	EPA 625	6D19072	0.19	8.5	ND	0.948	04/19/06	04/25/06	
N-Nitrosodimethylamine	EPA 625	6D19072	0.095	7.6	ND	0.948	04/19/06	04/25/06	
Pentachlorophenol	EPA 625	6D19072	0.095	7.6	ND	0.948	04/19/06	04/25/06	
2,4,6-Trichlorophenol	EPA 625	6D19072	0.095	5.7	ND	0.948	04/19/06	04/25/06	
Surrogate: 2-Fluorophenol (30-120%)					59 %				
Surrogate: Phenol-d6 (35-120%)					72 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					78 %				
Surrogate: Nitrobenzene-d5 (45-120%)					76 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					70 %				
Surrogate: Terphenyl-d14 (45-120%)					75 %				

**Del Mar Analytical - Irvine**  
Michele Chamberlin  
Project Manager

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300 North Lake Avenue, Suite 1200  
Pasadena, CA 91101  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

**ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1228-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
alpha-BHC	EPA 608	6D17091	0.00096	0.0096	ND	0.962	04/17/06	04/18/06	
<i>Surrogate: Decachlorobiphenyl (45-120%)</i>					76 %				
<i>Surrogate: Tetrachloro-m-xylene (35-115%)</i>					49 %				

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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 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

**METALS**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1228-01 (Outfall 018 - Water) - cont.</b>									
Reporting Units: ug/l									
Copper	EPA 200.8	6D13067	0.25	2.0	<b>2.7</b>	1	04/13/06	04/15/06	B
Lead	EPA 200.8	6D13067	0.040	1.0	<b>0.68</b>	1	04/13/06	04/15/06	B, J
Mercury	EPA 245.1	6D13068	0.050	0.20	ND	1	04/13/06	04/13/06	

**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: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IPD1228-01 (Outfall 018 - Water) - cont.</b>									
<b>Reporting Units: mg/l</b>									
Ammonia-N (Distilled)	EPA 350.2	6D13122	0.30	0.50	ND	1	04/13/06	04/13/06	
<b>Biochemical Oxygen Demand</b>	EPA 405.1	6D13078	0.59	2.0	<b>3.2</b>	1	04/13/06	04/18/06	
<b>Chloride</b>	EPA 300.0	6D12138	0.15	0.50	<b>20</b>	1	04/12/06	04/13/06	
<b>Nitrate/Nitrite-N</b>	EPA 300.0	6D12138	0.080	0.15	<b>0.85</b>	1	04/12/06	04/13/06	
Oil & Grease	EPA 413.1	6D14054	0.89	4.7	ND	1	04/14/06	04/14/06	
<b>Sulfate</b>	EPA 300.0	6D12138	0.45	0.50	<b>58</b>	1	04/12/06	04/13/06	
<b>Surfactants (MBAS)</b>	EPA 425.1	6D13003	0.044	0.10	<b>0.066</b>	1	04/13/06	04/13/06	J
<b>Total Dissolved Solids</b>	EPA 160.1	6D13076	10	10	<b>230</b>	1	04/13/06	04/13/06	
Total Suspended Solids	EPA 160.2	6D15045	10	10	ND	1	04/15/06	04/17/06	
<b>Sample ID: IPD1228-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ml/l/hr</b>									
Total Settleable Solids	EPA 160.5	6D13058	0.10	0.10	ND	1	04/13/06	04/13/06	
<b>Sample ID: IPD1228-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: NTU</b>									
<b>Turbidity</b>	EPA 180.1	6D13084	0.040	1.0	<b>5.7</b>	1	04/13/06	04/13/06	
<b>Sample ID: IPD1228-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: ug/l</b>									
Total Cyanide	EPA 335.2	6D17101	2.2	5.0	ND	1	04/17/06	04/17/06	
Perchlorate	EPA 314.0	6D17066	0.80	4.0	ND	1	04/17/06	04/18/06	
<b>Sample ID: IPD1228-01 (Outfall 018 - Water)</b>									
<b>Reporting Units: umhos/cm</b>									
<b>Specific Conductance</b>	EPA 120.1	6D13071	1.0	1.0	<b>410</b>	1	04/13/06	04/13/06	

**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 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

## SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 018 (IPD1228-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	04/11/2006 10:18	04/12/2006 19:55	04/13/2006 07:43	04/13/2006 07:45
EPA 180.1	2	04/11/2006 10:18	04/12/2006 19:55	04/13/2006 08:45	04/13/2006 10:00
EPA 300.0	2	04/11/2006 10:18	04/12/2006 19:55	04/12/2006 22:00	04/13/2006 00:10
EPA 405.1	2	04/11/2006 10:18	04/12/2006 19:55	04/13/2006 09:10	04/18/2006 11:15
EPA 425.1	2	04/11/2006 10:18	04/12/2006 19:55	04/13/2006 03:03	04/13/2006 04:56

**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 018

Report Number: IPD1228

Sampled: 04/11/06  
 Received: 04/12/06

## METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D17002 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D17002-BLK1)</b>											
Benzene	ND	2.0	0.28	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	0.90	ug/l							
Surrogate: Dibromofluoromethane	26.1			ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.5			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	27.4			ug/l	25.0		110	80-120			

### LCS Analyzed: 04/17/2006 (6D17002-BS1)

Benzene	22.3	2.0	0.28	ug/l	25.0		89	65-120			
Carbon tetrachloride	31.2	5.0	0.28	ug/l	25.0		125	65-140			
Chloroform	26.4	2.0	0.33	ug/l	25.0		106	65-130			
1,1-Dichloroethane	23.1	2.0	0.27	ug/l	25.0		92	65-130			
1,2-Dichloroethane	33.4	2.0	0.28	ug/l	25.0		134	60-140			
1,1-Dichloroethene	21.2	3.0	0.42	ug/l	25.0		85	70-130			
Ethylbenzene	27.1	2.0	0.25	ug/l	25.0		108	70-125			
Tetrachloroethene	24.7	2.0	0.32	ug/l	25.0		99	65-125			
Toluene	23.8	2.0	0.36	ug/l	25.0		95	70-125			
1,1,1-Trichloroethane	28.4	2.0	0.30	ug/l	25.0		114	65-135			
1,1,2-Trichloroethane	25.4	2.0	0.30	ug/l	25.0		102	65-125			
Trichloroethene	24.8	5.0	0.26	ug/l	25.0		99	70-125			
Trichlorofluoromethane	26.8	5.0	0.34	ug/l	25.0		107	60-140			
Vinyl chloride	19.9	5.0	0.26	ug/l	25.0		80	50-130			
Xylenes, Total	78.8	4.0	0.90	ug/l	75.0		105	70-125			
Surrogate: Dibromofluoromethane	26.5			ug/l	25.0		106	80-120			

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 Michele Chamberlin  
 Project Manager





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

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Received: 04/12/06

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: 6D17002 Extracted: 04/17/06</b>											
<b>LCS Analyzed: 04/17/2006 (6D17002-BS1)</b>											
Surrogate: Toluene-d8	27.4			ug/l	25.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	29.5			ug/l	25.0		118	80-120			
<b>Matrix Spike Analyzed: 04/17/2006 (6D17002-MS1) Source: IPD1227-01</b>											
Benzene	23.4	2.0	0.28	ug/l	25.0	ND	94	60-125			
Carbon tetrachloride	33.5	5.0	0.28	ug/l	25.0	ND	134	65-140			
Chloroform	27.9	2.0	0.33	ug/l	25.0	ND	112	65-135			
1,1-Dichloroethane	23.9	2.0	0.27	ug/l	25.0	ND	96	60-130			
1,2-Dichloroethane	35.2	2.0	0.28	ug/l	25.0	ND	141	60-140			MI
1,1-Dichloroethene	21.3	3.0	0.42	ug/l	25.0	ND	85	60-135			
Ethylbenzene	28.0	2.0	0.25	ug/l	25.0	ND	112	65-130			
Tetrachloroethene	25.3	2.0	0.32	ug/l	25.0	ND	101	60-130			
Toluene	24.6	2.0	0.36	ug/l	25.0	ND	98	65-125			
1,1,1-Trichloroethane	30.0	2.0	0.30	ug/l	25.0	ND	120	65-140			
1,1,2-Trichloroethane	26.3	2.0	0.30	ug/l	25.0	ND	105	60-130			
Trichloroethene	25.9	5.0	0.26	ug/l	25.0	ND	104	60-125			
Trichlorofluoromethane	28.4	5.0	0.34	ug/l	25.0	ND	114	55-145			
Vinyl chloride	20.4	5.0	0.26	ug/l	25.0	ND	82	40-135			
Xylenes, Total	77.0	4.0	0.90	ug/l	75.0	ND	103	60-130			
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	27.2			ug/l	25.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	30.1			ug/l	25.0		120	80-120			
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17002-MSD1) Source: IPD1227-01</b>											
Benzene	23.4	2.0	0.28	ug/l	25.0	ND	94	60-125	0	20	
Carbon tetrachloride	32.9	5.0	0.28	ug/l	25.0	ND	132	65-140	2	25	
Chloroform	27.3	2.0	0.33	ug/l	25.0	ND	109	65-135	2	20	
1,1-Dichloroethane	23.8	2.0	0.27	ug/l	25.0	ND	95	60-130	0	20	
1,2-Dichloroethane	34.3	2.0	0.28	ug/l	25.0	ND	137	60-140	3	20	
1,1-Dichloroethene	21.9	3.0	0.42	ug/l	25.0	ND	88	60-135	3	20	
Ethylbenzene	28.6	2.0	0.25	ug/l	25.0	ND	114	65-130	2	20	
Tetrachloroethene	26.1	2.0	0.32	ug/l	25.0	ND	104	60-130	3	20	
Toluene	24.9	2.0	0.36	ug/l	25.0	ND	100	65-125	1	20	
1,1,1-Trichloroethane	29.5	2.0	0.30	ug/l	25.0	ND	118	65-140	2	20	
1,1,2-Trichloroethane	26.0	2.0	0.30	ug/l	25.0	ND	104	60-130	1	25	
Trichloroethene	25.8	5.0	0.26	ug/l	25.0	ND	103	60-125	0	20	

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Michele Chamberlin  
Project Manager



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 Pasadena, CA 91101  
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## 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: 6D17002 Extracted: 04/17/06</b>											
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17002-MSD1)</b>						<b>Source: IPD1227-01</b>					
Trichlorofluoromethane	28.4	5.0	0.34	ug/l	25.0	ND	114	55-145	0	25	
Vinyl chloride	20.9	5.0	0.26	ug/l	25.0	ND	84	40-135	2	30	
Xylenes, Total	80.8	4.0	0.90	ug/l	75.0	ND	108	60-130	5	20	
<i>Surrogate: Dibromofluoromethane</i>	<i>26.4</i>			<i>ug/l</i>	<i>25.0</i>		<i>106</i>	<i>80-120</i>			
<i>Surrogate: Toluene-d8</i>	<i>27.3</i>			<i>ug/l</i>	<i>25.0</i>		<i>109</i>	<i>80-120</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>29.8</i>			<i>ug/l</i>	<i>25.0</i>		<i>119</i>	<i>80-120</i>			

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 Michele Chamberlin  
 Project Manager

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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	RPD Limits	RPD RPD	Data Qualifiers
<b>Batch: 6D19072 Extracted: 04/19/06</b>										
<b>Blank Analyzed: 04/24/2006 (6D19072-BLK1)</b>										
Bis(2-ethylhexyl)phthalate	2.66	5.0	1.7	ug/l						J
2,4-Dinitrotoluene	ND	9.0	0.20	ug/l						
N-Nitrosodimethylamine	ND	8.0	0.10	ug/l						
Pentachlorophenol	ND	8.0	0.10	ug/l						
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l						
Surrogate: 2-Fluorophenol	14.0			ug/l	20.0		70	30-120		
Surrogate: Phenol-d6	15.3			ug/l	20.0		76	35-120		
Surrogate: 2,4,6-Tribromophenol	16.3			ug/l	20.0		82	45-120		
Surrogate: Nitrobenzene-d5	7.92			ug/l	10.0		79	45-120		
Surrogate: 2-Fluorobiphenyl	8.12			ug/l	10.0		81	45-120		
Surrogate: Terphenyl-d14	8.06			ug/l	10.0		81	45-120		
<b>LCS Analyzed: 04/24/2006 (6D19072-BS1)</b>										
Bis(2-ethylhexyl)phthalate	12.1	5.0	1.7	ug/l	10.0		121	60-130		M-NR1
2,4-Dinitrotoluene	8.74	9.0	0.20	ug/l	10.0		87	60-120		J
N-Nitrosodimethylamine	7.00	8.0	0.10	ug/l	10.0		70	40-120		J
Pentachlorophenol	7.38	8.0	0.10	ug/l	10.0		74	50-120		J
2,4,6-Trichlorophenol	8.30	6.0	0.10	ug/l	10.0		83	60-120		
Surrogate: 2-Fluorophenol	12.3			ug/l	20.0		62	30-120		
Surrogate: Phenol-d6	13.4			ug/l	20.0		67	35-120		
Surrogate: 2,4,6-Tribromophenol	15.3			ug/l	20.0		76	45-120		
Surrogate: Nitrobenzene-d5	6.44			ug/l	10.0		64	45-120		
Surrogate: 2-Fluorobiphenyl	6.66			ug/l	10.0		67	45-120		
Surrogate: Terphenyl-d14	7.18			ug/l	10.0		72	45-120		
<b>LCS Dup Analyzed: 04/24/2006 (6D19072-BSD1)</b>										
Bis(2-ethylhexyl)phthalate	12.1	5.0	1.7	ug/l	10.0		121	60-130	0	20
2,4-Dinitrotoluene	9.50	9.0	0.20	ug/l	10.0		95	60-120	8	20
N-Nitrosodimethylamine	7.52	8.0	0.10	ug/l	10.0		75	40-120	7	20
Pentachlorophenol	5.94	8.0	0.10	ug/l	10.0		59	50-120	22	25
2,4,6-Trichlorophenol	8.62	6.0	0.10	ug/l	10.0		86	60-120	4	20
Surrogate: 2-Fluorophenol	12.0			ug/l	20.0		60	30-120		
Surrogate: Phenol-d6	13.6			ug/l	20.0		68	35-120		
Surrogate: 2,4,6-Tribromophenol	15.6			ug/l	20.0		78	45-120		
Surrogate: Nitrobenzene-d5	7.06			ug/l	10.0		71	45-120		
Surrogate: 2-Fluorobiphenyl	7.42			ug/l	10.0		74	45-120		

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 Project Manager



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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: 6D19072 Extracted: 04/19/06</b>											
<b>LCS Dup Analyzed: 04/24/2006 (6D19072-BSD1)</b>											
Surrogate: Terphenyl-d14	7.32			ug/l	10.0		73	45-120			

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 Michele Chamberlin  
 Project Manager

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Pasadena, CA 91101  
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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: 6D17091 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D17091-BLK1)</b>											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.357			ug/l	0.500		71	45-120			
Surrogate: Tetrachloro-m-xylene	0.276			ug/l	0.500		55	35-115			
<b>LCS Analyzed: 04/18/2006 (6D17091-BS1)</b>											
alpha-BHC	0.447	0.010	0.0010	ug/l	0.500		89	45-120			M-NR1
Surrogate: Decachlorobiphenyl	0.410			ug/l	0.500		82	45-120			
Surrogate: Tetrachloro-m-xylene	0.393			ug/l	0.500		79	35-115			
<b>LCS Dup Analyzed: 04/18/2006 (6D17091-BSD1)</b>											
alpha-BHC	0.398	0.010	0.0010	ug/l	0.500		80	45-120	12	30	
Surrogate: Decachlorobiphenyl	0.389			ug/l	0.500		78	45-120			
Surrogate: Tetrachloro-m-xylene	0.297			ug/l	0.500		59	35-115			

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Michele Chamberlin  
Project Manager



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## METHOD BLANK/QC DATA

### METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D13067 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/15/2006 (6D13067-BLK1)</b>											
Copper	0.298	2.0	0.25	ug/l							J
Lead	0.0781	1.0	0.040	ug/l							J
<b>LCS Analyzed: 04/15/2006 (6D13067-BS1)</b>											
Copper	76.5	2.0	0.25	ug/l	80.0		96	85-115			
Lead	77.1	1.0	0.040	ug/l	80.0		96	85-115			
<b>Matrix Spike Analyzed: 04/15/2006 (6D13067-MS1) Source: IPD1055-01</b>											
Copper	70.4	2.0	0.25	ug/l	80.0	0.87	87	70-130			
Lead	73.6	1.0	0.040	ug/l	80.0	0.27	92	70-130			
<b>Matrix Spike Dup Analyzed: 04/15/2006 (6D13067-MSD1) Source: IPD1055-01</b>											
Copper	73.7	2.0	0.25	ug/l	80.0	0.87	91	70-130	5	20	
Lead	77.7	1.0	0.040	ug/l	80.0	0.27	97	70-130	5	20	
<b>Batch: 6D13068 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13068-BLK1)</b>											
Mercury	ND	0.20	0.050	ug/l							
<b>LCS Analyzed: 04/13/2006 (6D13068-BS1)</b>											
Mercury	8.26	0.20	0.050	ug/l	8.00		103	85-115			
<b>Matrix Spike Analyzed: 04/13/2006 (6D13068-MS1) Source: IPD0955-05</b>											
Mercury	8.23	0.20	0.050	ug/l	8.00	ND	103	70-130			
<b>Matrix Spike Dup Analyzed: 04/13/2006 (6D13068-MSD1) Source: IPD0955-05</b>											
Mercury	8.23	0.20	0.050	ug/l	8.00	ND	103	70-130	0	20	

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D12138 Extracted: 04/12/06</b>											
<b>Blank Analyzed: 04/12/2006 (6D12138-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: 04/12/2006 (6D12138-BS1)</b>											
Chloride	4.94	0.50	0.15	mg/l	5.00		99	90-110			M-3
Sulfate	10.1	0.50	0.45	mg/l	10.0		101	90-110			M-3
<b>Batch: 6D13003 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13003-BLK1)</b>											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
<b>LCS Analyzed: 04/13/2006 (6D13003-BS1)</b>											
Surfactants (MBAS)	0.236	0.10	0.044	mg/l	0.250		94	90-110			
<b>Matrix Spike Analyzed: 04/13/2006 (6D13003-MS1)</b>											
						<b>Source: IPD1033-01</b>					
Surfactants (MBAS)	0.241	0.10	0.044	mg/l	0.250	ND	96	50-125			
<b>Matrix Spike Dup Analyzed: 04/13/2006 (6D13003-MSD1)</b>											
						<b>Source: IPD1033-01</b>					
Surfactants (MBAS)	0.242	0.10	0.044	mg/l	0.250	ND	97	50-125	0	20	
<b>Batch: 6D13071 Extracted: 04/13/06</b>											
<b>Duplicate Analyzed: 04/13/2006 (6D13071-DUP1)</b>											
						<b>Source: IPD1055-01</b>					
Specific Conductance	449	1.0	1.0	umhos/cm		450			0	5	

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**METHOD BLANK/QC DATA**

**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D13076 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13076-BLK1)</b>											
Total Dissolved Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/13/2006 (6D13076-BS1)</b>											
Total Dissolved Solids	994	10	10	mg/l	1000		99	90-110			
<b>Duplicate Analyzed: 04/13/2006 (6D13076-DUP1)</b>											
Total Dissolved Solids	250	10	10	mg/l		250			0	10	
<b>Batch: 6D13078 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/18/2006 (6D13078-BLK1)</b>											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
<b>LCS Analyzed: 04/18/2006 (6D13078-BS1)</b>											
Biochemical Oxygen Demand	203	100	30	mg/l	198		103	85-115			
<b>LCS Dup Analyzed: 04/18/2006 (6D13078-BSD1)</b>											
Biochemical Oxygen Demand	205	100	30	mg/l	198		104	85-115	1	20	
<b>Batch: 6D13084 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13084-BLK1)</b>											
Turbidity	0.0400	1.0	0.040	NTU							J
<b>Duplicate Analyzed: 04/13/2006 (6D13084-DUP1)</b>											
Turbidity	0.600	1.0	0.040	NTU		0.64			6	20	J

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Michele Chamberlin  
Project Manager





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**INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 6D13122 Extracted: 04/13/06</b>											
<b>Blank Analyzed: 04/13/2006 (6D13122-BLK1)</b>											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
<b>LCS Analyzed: 04/13/2006 (6D13122-BS1)</b>											
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0		106	80-115			
<b>Matrix Spike Analyzed: 04/13/2006 (6D13122-MS1)</b>											
						<b>Source: IPD1227-01</b>					
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0	ND	106	70-120			
<b>Matrix Spike Dup Analyzed: 04/13/2006 (6D13122-MSD1)</b>											
						<b>Source: IPD1227-01</b>					
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	ND	109	70-120	3	15	
<b>Batch: 6D14054 Extracted: 04/14/06</b>											
<b>Blank Analyzed: 04/14/2006 (6D14054-BLK1)</b>											
Oil & Grease	ND	5.0	0.94	mg/l							
<b>LCS Analyzed: 04/14/2006 (6D14054-BS1)</b>											
Oil & Grease	19.1	5.0	0.94	mg/l	20.0		96	65-120			
<b>LCS Dup Analyzed: 04/14/2006 (6D14054-BSD1)</b>											
Oil & Grease	17.7	5.0	0.94	mg/l	20.0		88	65-120	8	20	
<b>Matrix Spike Analyzed: 04/14/2006 (6D14054-MS1)</b>											
						<b>Source: IPD0915-01</b>					
Oil & Grease	18.3	4.7	0.89	mg/l	18.9	ND	97	65-120			
<b>Matrix Spike Dup Analyzed: 04/14/2006 (6D14054-MSD1)</b>											
						<b>Source: IPD0915-01</b>					
Oil & Grease	17.4	4.7	0.89	mg/l	18.9	ND	92	65-120	5	25	

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 018

Report Number: IPD1228

Sampled: 04/11/06

Received: 04/12/06

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: 6D15045 Extracted: 04/15/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D15045-BLK1)</b>											
Total Suspended Solids	ND	10	10	mg/l							
<b>LCS Analyzed: 04/17/2006 (6D15045-BS1)</b>											
Total Suspended Solids	988	10	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 04/17/2006 (6D15045-DUP1)</b>											
						<b>Source: IPD1202-01</b>					
Total Suspended Solids	192	10	10	mg/l		190			1	10	
<b>Batch: 6D17066 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D17066-BLK1)</b>											
Perchlorate	ND	4.0	0.80	ug/l							
<b>LCS Analyzed: 04/17/2006 (6D17066-BS1)</b>											
Perchlorate	49.4	4.0	0.80	ug/l	50.0		99	85-115			
<b>Matrix Spike Analyzed: 04/17/2006 (6D17066-MS1)</b>											
						<b>Source: IPD1634-14</b>					
Perchlorate	48.3	4.0	0.80	ug/l	50.0	3.2	90	80-120			
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17066-MSD1)</b>											
						<b>Source: IPD1634-14</b>					
Perchlorate	48.1	4.0	0.80	ug/l	50.0	3.2	90	80-120	0	20	
<b>Batch: 6D17101 Extracted: 04/17/06</b>											
<b>Blank Analyzed: 04/17/2006 (6D17101-BLK1)</b>											
Total Cyanide	ND	5.0	2.2	ug/l							

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Sampled: 04/11/06

Received: 04/12/06

**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: 6D17101 Extracted: 04/17/06</b>											
<b>LCS Analyzed: 04/17/2006 (6D17101-BS1)</b>											
Total Cyanide	186	5.0	2.2	ug/l	200		93	90-110			
<b>Matrix Spike Analyzed: 04/17/2006 (6D17101-MS1) Source: IPD1138-01</b>											
Total Cyanide	208	5.0	2.2	ug/l	200	ND	104	70-115			
<b>Matrix Spike Dup Analyzed: 04/17/2006 (6D17101-MSD1) Source: IPD1138-01</b>											
Total Cyanide	172	5.0	2.2	ug/l	200	ND	86	70-115	19	15	R

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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

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## Compliance Check

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

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IPD1228-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.85	4.7	10.00
IPD1228-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.0096	0.0100
IPD1228-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD1228-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0.24	5.0	5.00
IPD1228-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	5.7	6.50
IPD1228-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	8.5	9.10
IPD1228-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.23	4.7	4.00
IPD1228-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	7.6	8.10
IPD1228-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	7.6	8.20
IPD1228-01	BOD	Biochemical Oxygen Demand	mg/l	3.20	2.0	20
IPD1228-01	Chloride - 300.0	Chloride	mg/l	20	0.50	150
IPD1228-01	Copper-200.8	Copper	ug/l	2.70	2.0	7.10
IPD1228-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-1	5.0	5.00
IPD1228-01	Lead-200.8	Lead	ug/l	0.68	1.0	2.60
IPD1228-01	MBAS - 425.1	Surfactants (MBAS)	mg/l	0.066	0.10	0.50
IPD1228-01	Mercury - 245.1	Mercury	ug/l	0.0014	0.20	0.20
IPD1228-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.85	0.15	8.00
IPD1228-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IPD1228-01	Sulfate-300.0	Sulfate	mg/l	58	0.50	300
IPD1228-01	TDS - EPA 160.1	Total Dissolved Solids	mg/l	230	10	950
IPD1228-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IPD1228-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

**Del Mar Analytical - Irvine**  
 Michele Chamberlin  
 Project Manager



MWH-Pasadena/Boeing  
300 North Lake Avenue, Suite 1200  
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Project ID: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06  
Received: 04/12/06

### DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- H4** Sample was extracted past holding time, but analyzed within analysis holding time.
- 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.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- 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

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Michele Chamberlin  
Project Manager

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IPD1228 <Page 21 of 22>



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

Project ID: Routine Outfall 018

Report Number: IPD1228

Sampled: 04/11/06  
 Received: 04/12/06

## 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.testamericainc.com](http://www.testamericainc.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: IPD1228-01

Analysis Performed: EDD + Level 4

Samples: IPD1228-01

### Del Mar Analytical - Irvine

Michele Chamberlin

Project Manager

**Del Mar Analytical** Version 03/1/06 **CHAIN OF CUSTODY FORM**

<b>Client Name/Address:</b> MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		<b>Project:</b> Boeing-SSFL NPDES Routine Outfall 018 R-2 Spillway		<b>Project Manager:</b> Bronwyn Kelly Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		<b>Sampler:</b> Rick Pitt-A-Gu		<b>Field readings:</b> Temp = 58° pH = 7.2		<b>Comments</b>	
<b>ANALYSIS REQUIRED</b>											
Total Recoverable Metals: Cu, Pb, Hg	Settleable Solids	VOCs 624 + xylenes	TCDD (and all congeners)	Oil & Grease (EPA 413.1)	Cyanide (total recoverable)	BOD5(20 degrees C)	Surfactants (MBAS)	Cl-, SO4, NO3+NO2-N, Perchlorate	Turbidity, TDS, TSS, Conductivity	Ammonia-N	2,4,6 Trichlorophenol, 2,4-Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)
X	X	X	X	X	X	X	X	X	X	X	X
1A	1B	2	3A, 3B, 3C	4A, 4B	5A, 5B	6	7	8A, 8B	9A, 9B	10A, 10B	11
HNO3	HNO3	None	HCl	None	HCl	NaOH	None	None	None	None	H2SO4
4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06
Received By	Received By	Received By	Received By	Received By	Received By	Received By	Received By	Received By	Received By	Received By	Received By
4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06
Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By	Relinquished By
4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06	4-11-06
Turn around Time: (check)	24 Hours	48 Hours	72 Hours	Perchlorate Only 72 Hours	Metals Only 72 Hours	Sample Integrity: (Check)	Intact	On Ice:	✓	30	

2300



April 27, 2006

**Alta Project I.D.: 27595**

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 April 14, 2006 under your Project Name "IPD1228". 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: 4/14/2006**

**Alta Lab. ID**

**Client Sample ID**

27595-001

IPD1228-01

## SECTION II

Method Blank					EPA Method 1613				
Matrix:	Aqueous	QC Batch No.:	7951	Lab Sample:	0-MB001	Date Analyzed DB-5:	24-Apr-06	Date Analyzed DB-225:	NA
Sample Size:	1.00 L	Date Extracted:	20-Apr-06						
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	0.00000103			<b>IS</b> 13C-2,3,7,8-TCDD	69.9	25 - 164		
1,2,3,7,8-PeCDD	ND	0.00000112			13C-1,2,3,7,8-PeCDD	62.3	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.00000217			13C-1,2,3,4,7,8-HxCDD	67.3	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.00000206			13C-1,2,3,6,7,8-HxCDD	74.6	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.00000202			13C-1,2,3,4,6,7,8-HpCDD	72.0	23 - 140		
1,2,3,4,6,7,8-HpCDD	ND	0.00000235			13C-OCDD	55.2	17 - 157		
OCDD	ND	0.00000532			13C-2,3,7,8-TCDF	75.5	24 - 169		
2,3,7,8-TCDF	ND	0.00000121			13C-1,2,3,7,8-PeCDF	64.4	24 - 185		
1,2,3,7,8-PeCDF	ND	0.00000198			13C-2,3,4,7,8-PeCDF	66.5	21 - 178		
2,3,4,7,8-PeCDF	ND	0.00000190			13C-1,2,3,4,7,8-HxCDF	66.2	26 - 152		
1,2,3,4,7,8-HxCDF	ND	0.000000649			13C-1,2,3,6,7,8-HxCDF	76.1	26 - 123		
1,2,3,6,7,8-HxCDF	ND	0.000000602			13C-2,3,4,6,7,8-HxCDF	74.8	28 - 136		
2,3,4,6,7,8-HxCDF	ND	0.000000650			13C-1,2,3,7,8,9-HxCDF	67.9	29 - 147		
1,2,3,7,8,9-HxCDF	ND	0.00000103			13C-1,2,3,4,6,7,8-HpCDF	62.5	28 - 143		
1,2,3,4,6,7,8-HpCDF	ND	0.00000122			13C-1,2,3,4,7,8,9-HpCDF	56.6	26 - 138		
1,2,3,4,7,8,9-HpCDF	ND	0.00000155			13C-OCDF	47.8	17 - 157		
OCDF	ND	0.00000560			<b>CRS</b> 37Cl-2,3,7,8-TCDD	83.1	35 - 197		
Totals					Footnotes				
Total TCDD	ND	0.00000103			a. Sample specific estimated detection limit.				
Total PeCDD	ND	0.00000112			b. Estimated maximum possible concentration.				
Total HxCDD	ND	0.00000207			c. Method detection limit.				
Total HpCDD	ND	0.00000235			d. Lower control limit - upper control limit.				
Total TCDF	ND	0.00000121							
Total PeCDF	ND	0.00000194							
Total HxCDF	ND	0.000000713							
Total HpCDF	ND	0.00000136							

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:49

NPDES - 991

OPR Results				EPA Method 1613			
Matrix:	Aqueous	QC Batch No.:	7951	Lab Sample:	0-OPR001		
Sample Size:	1.00 L	Date Extracted:	20-Apr-06	Date Analyzed DB-5:	24-Apr-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	10.2	6.7 - 15.8	<b>IS</b> 13C-2,3,7,8-TCDD	56.3	25 - 164	
1,2,3,7,8-PeCDD	50.0	49.1	35 - 71	13C-1,2,3,7,8-PeCDD	52.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	50.2	35 - 82	13C-1,2,3,4,7,8-HxCDD	52.6	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	49.2	38 - 67	13C-1,2,3,6,7,8-HxCDD	57.7	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	52.0	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	51.6	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	51.5	35 - 70	13C-OCDD	36.7	17 - 157	
OCDD	100	101	78 - 144	13C-2,3,7,8-TCDF	61.9	24 - 169	
2,3,7,8-TCDF	10.0	9.66	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	52.3	24 - 185	
1,2,3,7,8-PeCDF	50.0	46.2	40 - 67	13C-2,3,4,7,8-PeCDF	56.1	21 - 178	
2,3,4,7,8-PeCDF	50.0	47.5	34 - 80	13C-1,2,3,4,7,8-HxCDF	49.5	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	48.7	36 - 67	13C-1,2,3,6,7,8-HxCDF	56.3	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	49.6	42 - 65	13C-2,3,4,6,7,8-HxCDF	56.6	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	48.7	35 - 78	13C-1,2,3,7,8,9-HxCDF	57.2	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	48.1	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	46.0	28 - 143	
1,2,3,4,6,7,8-HpCDF	50.0	51.4	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	49.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	50.4	39 - 69	13C-OCDF	40.6	17 - 157	
OCDF	100	104	63 - 170	<b>CRS</b> 37Cl-2,3,7,8-TCDD	67.5	35 - 197	

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:49

Sample ID: <b>IPD1228-01</b>					EPA Method 1613			
Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	27595-001	Date Received:	14-Apr-06
Project:	IPD1228		Sample Size:	1.01 L	QC Batch No.:	7951	Date Extracted:	20-Apr-06
Date Collected:	11-Apr-06				Date Analyzed DB-5:	24-Apr-06	Date Analyzed DB-225:	NA
Time Collected:	1018							
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	0.00000161			<b>IS</b> 13C-2,3,7,8-TCDD	69.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000144			13C-1,2,3,7,8-PeCDD	60.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000292			13C-1,2,3,4,7,8-HxCDD	66.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000275			13C-1,2,3,6,7,8-HxCDD	70.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000272			13C-1,2,3,4,6,7,8-HpCDD	63.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	0.0000185			J	13C-OCDD	48.1	17 - 157	
OCDD	0.000158				13C-2,3,7,8-TCDF	71.1	24 - 169	
2,3,7,8-TCDF	ND	0.00000140			13C-1,2,3,7,8-PeCDF	64.5	24 - 185	
1,2,3,7,8-PeCDF	ND	0.00000172			13C-2,3,4,7,8-PeCDF	59.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.00000193			13C-1,2,3,4,7,8-HxCDF	69.2	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.00000102			13C-1,2,3,6,7,8-HxCDF	74.9	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000930			13C-2,3,4,6,7,8-HxCDF	70.3	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.00000110			13C-1,2,3,7,8,9-HxCDF	66.7	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.000000633			13C-1,2,3,4,6,7,8-HpCDF	60.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.00000377			J	13C-1,2,3,4,7,8,9-HpCDF	55.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000147			13C-OCDF	44.5	17 - 157	
OCDF	0.0000121			J	<b>CRS</b> 37Cl-2,3,7,8-TCDD	81.1	35 - 197	
Totals					Footnotes			
Total TCDD	ND	0.00000161			a. Sample specific estimated detection limit.			
Total PeCDD	ND	0.00000144			b. Estimated maximum possible concentration.			
Total HxCDD	ND	0.00000512			c. Method detection limit.			
Total HpCDD	0.0000389				d. Lower control limit - upper control limit.			
Total TCDF	0.00000286							
Total PeCDF	ND	0.00000182						
Total HxCDF	0.00000179							
Total HpCDF	0.00000901							

Analyst: MAS

Approved By: William J. Luksemburg 27-Apr-2006 09:49

NPDES - 993

## 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





### SAMPLE LOG-IN CHECKLIST

Alta Project #: 27595

Samples Arrival:	Date/Time 4/14/06 0900	Initials: UBB	Location: WR-2
			Shelf/Rack: _____
Logged In:	Date/Time 4/14/06 1004	Initials: UBB	Location: WR-2
			Shelf/Rack: C-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°C	Time: 0905	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 # 7908 8600 3313			
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
			None
Shipping Container	Alta	Client	Retain
			Return
			Dispose

Comments:

Chain of Custody Anomaly/Sample Acceptance Form

Client: Del Mar Analytical, Irvine
Contact: Michele Chamberlin
Fax Number: 949-2603297

Project Number 27595
Date Received: Apr 14 2006
Documented by/date: BJB 4/14/06

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis. Thank You. ( Fax # 916-673-0106 )

The following information or item is needed to proceed with analysis:

- Complete Chain-of-Custody, Test Method Requested, Analyte List Requested, Preservative, Sample Identification, Sample Collection Date / Time, Collector's Name, Sample Type, Sample Location

The following anomalies were noted. Authorization is needed to proceed with the analysis.

Temperature outside +/-2C range Samples Affected:
Temperature outside C Ice present? Yes No
Sample ID Discrepancy Samples Affected
Sample holding time missed Samples Affected
Custody seals broken Samples Affected
Insufficient Sample Size Samples Affected
Sample Container(s) Broken Samples Affected IPD1228-01 received 2 bottles
Incorrect Container Type Samples Affected
Other one of 2 bottles received was broken upon receipt.

Client Authorization

Proceed With Analysis: YES NO Signature and Date [Signature] 4/27/06

Client Comments/Instructions: 2nd bottle not needed for analysis.

# **APPENDIX G**

## **Section 42**

Outfall 018, April 11, 2006

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