CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Alta
Reviewer K. Shadowlight
Analysis/Method Dioxins

Package ID T711DF44
Task Order 313150010
SDG No. IOD0609
No. of Analyses 1

Date: May 6, 2005
Reviewer's Signature

ACTION ITEMS[a]	
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 assigned for the following:
Holding Times	* Detects below the EPA 1613 Minimum level
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
*#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data Qualifier Reference Table

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

DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD0609

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOD0609
Project Manager:	B. McIlvaine
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 6, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National 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 002	IOD0609-01	26037-001	water	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical above the temperature limits of 4°C ±2°C at 7°C; however, due to the nonvolatile nature of the analytes no qualifications were required. The sample was shipped to Alta for dioxin/furan analysis and was received below the temperature limits of 4°C ±2°C at 0.1°C; however, as the sample was not noted to have been frozen or damaged, no qualifications were required. According to the 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, custody seals were not required. The cooler received by Alta had custody seals present and intact; however, custody seals were not present on the sample container. The EPA 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 a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 04/23/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤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 (6730-MB001) was extracted and analyzed with the sample in this SDG. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (6730-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. 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 associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for 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 above the low point of the calibration curve but below the EPA Method 1613 minimum level were denoted by the laboratory with an "A," flag and were qualified as estimated, "J." If the concentration of any component of the total was below the lower method calibration level (MCL), the total detect was qualified as estimated, "J." The results and reporting limits were reported in ug/L. No further qualifications were required.

ALTA

Sample ID: IOD0609-01 Outfall 002

EPA Method 1613

Client Data
Name: Del Mar Analytical, Irvine
Project: IOD0609
Date Collected: 8-Apr-05
Time Collected: 1135

Sample Data
Matrix: Aqueous
Sample Size: 0.954 L

Laboratory Data
Lab Sample: 26037-001
QC Batch No.: 6730
Date Analyzed DB-5: 28-Apr-05
Date Received: 12-Apr-05
Date Extracted: 22-Apr-05
Date Analyzed DB-225: NA

Analyte	Conc. (ug/L)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.00000145		
1,2,3,7,8-PeCDD	ND	0.00000110		
1,2,3,4,7,8-HxCDD	ND	0.00000171		
1,2,3,6,7,8-HxCDD	ND	0.00000167		
1,2,3,7,8,9-HxCDD	ND	0.00000159		
1,2,3,4,6,7,8-HpCDD	0.00000333			
OCDD	0.0000165			A
2,3,7,8-TCDF	ND	0.00000159		A
1,2,3,7,8-PeCDF	ND	0.00000212		
2,3,4,7,8-PeCDF	ND	0.00000171		
1,2,3,4,7,8-HxCDF	ND	0.000000783		
1,2,3,6,7,8-HxCDF	ND	0.000000813		
2,3,4,6,7,8-HxCDF	ND	0.000000953		
1,2,3,7,8,9-HxCDF	ND	0.00000156		
1,2,3,4,6,7,8-HpCDF	ND	0.00000105		
1,2,3,4,7,8,9-HpCDF	ND	0.00000124		
OCDF	ND	0.00000341		
Totals				
Total TCDD	ND	0.00000145		
Total PeCDD	ND	0.00000110		
Total HxCDD	ND	0.00000165		
Total HpCDD	0.00000662			
Total TCDF	ND	0.00000159		
Total PeCDF	ND	0.00000191		
Total HxCDF	ND	0.000000997		
Total HpCDF	ND	0.00000113		

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	65.4	25 - 164	
	13C-1,2,3,7,8-PeCDD	72.4	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	80.1	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	88.6	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	87.3	23 - 140	
	13C-OCDD	57.7	17 - 157	
	13C-2,3,7,8-TCDF	65.7	24 - 169	
	13C-1,2,3,7,8-PeCDF	68.2	24 - 185	
	13C-2,3,4,7,8-PeCDF	71.0	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	79.0	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	79.6	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	79.4	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	79.3	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	84.3	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	94.0	26 - 138	
	13C-OCDF	66.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	70.5	35 - 197	

Footnotes

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

Analyst: JMH

Approved By: William J. Luksemburg 29-Apr-2005 08:31

Project 26037

AMEC VALIDATED

LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar
Reviewer M. Pokorny
Analysis/Method Volatiles

Package ID T711VO99
Task Order 313150010
SDG No. IOD0609
No. of Analyses 2

Date: May 11, 2005
Reviewer's Signature M. Pokorny

ACTION ITEMS[a]	
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. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS[b]	Acceptable as reviewed.

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOD0609

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
SDG#:	IOD0609
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	Volatiles
QC Level:	Level IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Reviewer:	M. Pokorny
Date of Review:	May 11, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2), EPA Method 624, EPA SW-846 Method 8260B,* 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 summary forms 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	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOD0609-01	water	624
Trip Blank	Trip Blank	IOD0609-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of 4°C ±2°C at 7°C; however, as the samples were transported directly from the field to the laboratory, insufficient time had elapsed to allow the samples to cool below 6°C, and the sample receipt temperature was considered acceptable. The COC noted that the samples were received intact; however, information regarding absence of headspace 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. The COCs accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection times. The Form Vs were verified from the raw data and no discrepancies between the summary forms and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 03/04/05, was associated with this SDG. The average RRFs were ≥0.05 for all compounds listed on the sample result summaries. The %RSDs were ≤35% for the target compounds. One continuing calibrations associated with the sample analyses was analyzed 04/11/05. The RRFs were ≥0.05 in the continuing calibration. The %Ds for the continuing calibrations associated with the site sample were all ≤20%. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5D11027-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5D11027-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 002 was the MS/MSD analyzed with this SDG. All percent recoveries and RPDs were within the QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank (IOD0609-02) was the trip blank associated with this SDG. No target compounds were reported in the Trip Blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ±0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standards and by the MDL study. Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in µg/L (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable 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. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Routine Outfall 002

Report Number: IOD0609

Sampled: 04/08/05
Received: 04/08/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers REV QUAL	QUAL CODE
Sample ID: IOD0609-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	U	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1	04/11/05	04/11/05		
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1	04/11/05	04/11/05		
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1	04/11/05	04/11/05		
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	1	04/11/05	04/11/05		
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05	04/11/05		
Toluene	EPA 624	5D11027	0.36	2.0	ND	1	04/11/05	04/11/05		
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
1,1,2-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	1	04/11/05	04/11/05		
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	1	04/11/05	04/11/05		
Surrogate: Dibromofluoromethane (80-120%)					*105 %*					
Surrogate: Toluene-d8 (80-120%)					*100 %*					
Surrogate: 4-Bromofluorobenzene (80-120%)					*97 %*					
Sample ID: IOD0609-02 (DRAFT: Trip Blank - Water)										
Reporting Units: ug/l										
Benzene	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05	U	
Carbon tetrachloride	EPA 624	5D11027	0.28	5.0	ND	1	04/11/05	04/11/05		
Chloroform	EPA 624	5D11027	0.33	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethane	EPA 624	5D11027	0.27	2.0	ND	1	04/11/05	04/11/05		
1,2-Dichloroethane	EPA 624	5D11027	0.28	2.0	ND	1	04/11/05	04/11/05		
1,1-Dichloroethene	EPA 624	5D11027	0.32	3.0	ND	1	04/11/05	04/11/05		
Ethylbenzene	EPA 624	5D11027	0.25	2.0	ND	1	04/11/05	04/11/05		
Tetrachloroethene	EPA 624	5D11027	0.32	2.0	ND	1	04/11/05	04/11/05		
Toluene	EPA 624	5D11027	0.36	2.0	ND	1	04/11/05	04/11/05		
1,1,1-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
1,1,2-Trichloroethane	EPA 624	5D11027	0.30	2.0	ND	1	04/11/05	04/11/05		
Trichloroethene	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Trichlorofluoromethane	EPA 624	5D11027	0.34	5.0	ND	1	04/11/05	04/11/05		
Vinyl chloride	EPA 624	5D11027	0.26	5.0	ND	1	04/11/05	04/11/05		
Xylenes, Total	EPA 624	5D11027	0.52	4.0	ND	1	04/11/05	04/11/05		
Surrogate: Dibromofluoromethane (80-120%)					*103 %*					
Surrogate: Toluene-d8 (80-120%)					*100 %*					
Surrogate: 4-Bromofluorobenzene (80-120%)					*98 %*					

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

AMEC VALIDATED

LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar Analytical
Reviewer L. Jarusewic
Analysis/Method General Minerals

Package ID T711WC144
Task Order 313150010
SDG No. IOD0609
No. of Analyses 1

Date: 05/13/05
Reviewer's Signature L Jarusewic

ACTION ITEMS[a]	
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:
Holding Times	1) Rejected sulfate reanalysis in favor of original result
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
*#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOD0609

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOD0609
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	1
Reviewer:	L. Jarusewic
Date of Review:	May 13, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.2, 180.1, and 120.1,* 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 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	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOD0609-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the laboratory above the temperature limits of 4°C ± 2°C at 7°C; however, as the sample had insufficient time to cool in transit to the laboratory, 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. The COC accounted for all analyses presented in this SDG. The laboratory did not append the Outfall 002 ID with an "RE1" suffix for the sulfate reanalysis. The reviewer added this information to the Form I. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia, sulfate, and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥0.995. The initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity and sulfate were detected in a bracketing CCB at 0.040 NTU and 0.56 mg/L, respectively; however, the turbidity and sulfate CCB results were insufficient to qualify the Outfall 002 results. The remaining method blank and CCB results reported on the summary forms and in the raw data for the blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

A laboratory duplicate analysis was performed on Outfall 002 for turbidity. The RPD was within the control limit of ≤20% and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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 based on LCS results.

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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. The laboratory reanalyzed Outfall 002 for sulfate. As the Outfall 002RE1 and Outfall 002 results were similar, the Outfall 002RE1 result was rejected, "R," in favor of Outfall 002. No further qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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

Project ID: Routine Outfall 002

Report Number: IOD0609

Sampled: 04/08/05
Received: 04/08/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD0609-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5D12076	0.30	0.50	**0.84**	1	04/12/05	04/12/05	
Sulfate	EPA 300.0	5D08047	1.8	5.0	**360**	10	04/08/05	04/08/05	
Sample ID: IOD0609-01RE1 (DRAFT: Outfall 002 - Water)									
Reporting Units: mg/l									
Sulfate	EPA 300.0	5D14046	1.8	5.0	**350**	10	04/14/05	04/14/05	R D
Sample ID: IOD0609-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5D09037	0.040	1.0	**2.5**	1	04/09/05	04/09/05	
Sample ID: IOD0609-01 (DRAFT: Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5D13108	1.0	1.0	**1200**	1	04/13/05	04/13/05	

Outfall 002 RE1

REV QUAL COD

EJ 5/17/05

AMEC VALIDATED

LEVEL IV

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

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LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 04/15/05
Received: 04/15/05
Issued: 06/06/05 15:14

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(s) of Custody, 13 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOD1172-01	Outfall 002	Water
IOD1172-02	Trip Blank	Water

Reviewed By:

Michele Harper

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

Project ID: Routine Outfall 002
Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

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: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05	
Carbon tetrachloride	EPA 624	5D27018	0.28	5.0	ND	1	04/27/05	04/27/05	
Chloroform	EPA 624	5D27018	0.33	2.0	ND	1	04/27/05	04/27/05	
1,1-Dichloroethane	EPA 624	5D27018	0.27	2.0	ND	1	04/27/05	04/27/05	
1,2-Dichloroethane	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05	
1,1-Dichloroethene	EPA 624	5D27018	0.32	3.0	ND	1	04/27/05	04/27/05	
Ethylbenzene	EPA 624	5D27018	0.25	2.0	ND	1	04/27/05	04/27/05	
Tetrachloroethene	EPA 624	5D27018	0.32	2.0	ND	1	04/27/05	04/27/05	
Toluene	EPA 624	5D27018	0.36	2.0	ND	1	04/27/05	04/27/05	
1,1,1-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05	
1,1,2-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05	
Trichloroethene	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05	
Trichlorofluoromethane	EPA 624	5D27018	0.34	5.0	ND	1	04/27/05	04/27/05	
Vinyl chloride	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05	
Xylenes, Total	EPA 624	5D27018	0.52	4.0	ND	1	04/27/05	04/27/05	
Surrogate: Dibromofluoromethane (80-120%)					*99 %*				
Surrogate: Toluene-d8 (80-120%)					*107 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)					*99 %*				
Sample ID: IOD1172-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05	
Carbon tetrachloride	EPA 624	5D27018	0.28	5.0	ND	1	04/27/05	04/27/05	
Chloroform	EPA 624	5D27018	0.33	2.0	ND	1	04/27/05	04/27/05	
1,1-Dichloroethane	EPA 624	5D27018	0.27	2.0	ND	1	04/27/05	04/27/05	
1,2-Dichloroethane	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05	
1,1-Dichloroethene	EPA 624	5D27018	0.32	3.0	ND	1	04/27/05	04/27/05	
Ethylbenzene	EPA 624	5D27018	0.25	2.0	ND	1	04/27/05	04/27/05	
Tetrachloroethene	EPA 624	5D27018	0.32	2.0	ND	1	04/27/05	04/27/05	
Toluene	EPA 624	5D27018	0.36	2.0	ND	1	04/27/05	04/27/05	
1,1,1-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05	
1,1,2-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05	
Trichloroethene	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05	
Trichlorofluoromethane	EPA 624	5D27018	0.34	5.0	ND	1	04/27/05	04/27/05	
Vinyl chloride	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05	
Xylenes, Total	EPA 624	5D27018	0.52	4.0	ND	1	04/27/05	04/27/05	
Surrogate: Dibromofluoromethane (80-120%)					*98 %*				
Surrogate: Toluene-d8 (80-120%)					*105 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)					*98 %*				

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

Project ID: Routine Outfall 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Bis(2-ethylhexyl)phthalate	EPA 625	5D17002	1.1	5.0	**1.1**	0.971	04/17/05	04/21/05	B, J
2,4-Dinitrotoluene	EPA 625	5D17002	0.23	9.0	ND	0.971	04/17/05	04/21/05	
N-Nitrosodimethylamine	EPA 625	5D17002	0.22	8.0	ND	0.971	04/17/05	04/21/05	
Pentachlorophenol	EPA 625	5D17002	0.78	8.0	ND	0.971	04/17/05	04/21/05	
2,4,6-Trichlorophenol	EPA 625	5D17002	0.10	6.0	ND	0.971	04/17/05	04/21/05	
Surrogate: 2-Fluorophenol (30-120%)					*55 %*				
Surrogate: Phenol-d6 (35-120%)					*61 %*				
Surrogate: 2,4,6-Tribromophenol (45-120%)					*79 %*				
Surrogate: Nitrobenzene-d5 (45-120%)					*63 %*				
Surrogate: 2-Fluorobiphenyl (45-120%)					*62 %*				
Surrogate: Terphenyl-d14 (45-120%)					*73 %*				

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

ORGANOCHLORINE PESTICIDES (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1172-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
alpha-BHC	EPA 608	5D20037	0.0010	0.010	ND	0.971	04/20/05	04/21/05	
Surrogate: Decachlorobiphenyl (45-120%)					*88 %*				
Surrogate: Tetrachloro-m-xylene (35-115%)					*72 %*				

Del Mar Analytical, Irvine
Michele Harper
Project Manager

Del Mar Analytical

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

Project ID: Routine Outfall 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1172-01 (Outfall 002 - Water) - cont.									
Reporting Units: ug/l									
Copper	EPA 200.8	5D15129	0.49	2.0	**3.1**	1	04/15/05	04/16/05	
Lead	EPA 200.8	5D15129	0.13	1.0	**0.22**	1	04/15/05	04/16/05	J
Mercury	EPA 245.1	5D18059	0.063	0.20	ND	1	04/18/05	04/18/05	

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INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD1172-01 (Outfall 002 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5D19082	0.30	0.50	ND	1	04/19/05	04/19/05	
Biochemical Oxygen Demand	EPA 405.1	5D15082	0.59	2.0	ND	1	04/15/05	04/21/05	
Chloride	EPA 300.0	5D15057	2.6	5.0	**51**	10	04/15/05	04/15/05	
Nitrate/Nitrite-N	EPA 300.0	5D15057	0.072	0.26	ND	1	04/15/05	04/15/05	
Oil & Grease	EPA 413.1	5D16034	0.94	5.0	**1.1**	1	04/16/05	04/16/05	J
Sulfate	EPA 300.0	5D15057	1.8	5.0	**400**	10	04/15/05	04/15/05	
Surfactants (MBAS)	SM5540-C	5D15128	0.044	0.10	ND	1	04/15/05	04/15/05	
Total Dissolved Solids	SM2540C	5D18095	10	10	**800**	1	04/18/05	04/18/05	
Total Suspended Solids	EPA 160.2	5D19080	10	10	ND	1	04/19/05	04/19/05	
Sample ID: IOD1172-01RE1 (Outfall 002 - Water)									
Reporting Units: mg/l									
Sulfate	EPA 300.0	5D18055	3.6	10	**400**	20	04/18/05	04/18/05	
Sample ID: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5D15080	0.10	0.10	ND	1	04/15/05	04/15/05	
Sample ID: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5D16054	0.040	1.0	**2.1**	1	04/16/05	04/16/05	
Sample ID: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Total Cyanide	EPA 335.2	5D18072	2.2	5.0	ND	1	04/18/05	04/18/05	
Perchlorate	EPA 314.0	5D20061	0.80	4.0	ND	1	04/20/05	04/20/05	
Sample ID: IOD1172-01 (Outfall 002 - Water)									
Reporting Units: umhos/cm									
Specific Conductance	EPA 120.1	5D18087	1.0	1.0	**1300**	1	04/18/05	04/18/05	

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Sampled: 04/15/05
Received: 04/15/05

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 002 (IOD1172-01) - Water					
EPA 160.5	2	04/15/2005 14:15	04/15/2005 17:30	04/15/2005 18:00	04/15/2005 19:00
EPA 180.1	2	04/15/2005 14:15	04/15/2005 17:30	04/16/2005 14:30	04/16/2005 15:30
EPA 300.0	2	04/15/2005 14:15	04/15/2005 17:30	04/15/2005 19:40	04/15/2005 19:47
EPA 405.1	2	04/15/2005 14:15	04/15/2005 17:30	04/15/2005 22:30	04/21/2005 13:00
SM5540-C	2	04/15/2005 14:15	04/15/2005 17:30	04/15/2005 20:11	04/15/2005 21:06

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Received: 04/15/05

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
Batch: 5D27018 Extracted: 04/27/05											
Blank Analyzed: 04/27/2005 (5D27018-BLK1)											
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	0.32	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	*25.1*			*ug/l*	*25.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*27.2*			*ug/l*	*25.0*		*109*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.3*			*ug/l*	*25.0*		*101*	*80-120*			
LCS Analyzed: 04/27/2005 (5D27018-BS1)											
Benzene	26.0	2.0	0.28	ug/l	25.0		104	70-120			
Carbon tetrachloride	22.2	5.0	0.28	ug/l	25.0		89	70-140			
Chloroform	24.5	2.0	0.33	ug/l	25.0		98	75-130			
1,1-Dichloroethane	24.8	2.0	0.27	ug/l	25.0		99	70-135			
1,2-Dichloroethane	20.2	2.0	0.28	ug/l	25.0		81	60-150			
1,1-Dichloroethene	26.2	3.0	0.32	ug/l	25.0		105	75-135			
Ethylbenzene	26.0	2.0	0.25	ug/l	25.0		104	80-120			
Tetrachloroethene	25.0	2.0	0.32	ug/l	25.0		100	75-125			
Toluene	24.4	2.0	0.36	ug/l	25.0		98	75-120			
1,1,1-Trichloroethane	23.5	2.0	0.30	ug/l	25.0		94	75-140			
1,1,2-Trichloroethane	22.9	2.0	0.30	ug/l	25.0		92	70-125			
Trichloroethene	23.7	5.0	0.26	ug/l	25.0		95	80-120			
Trichlorofluoromethane	20.4	5.0	0.34	ug/l	25.0		82	65-145			
Vinyl chloride	19.2	5.0	0.26	ug/l	25.0		77	50-130			
Surrogate: Dibromofluoromethane	*25.5*			*ug/l*	*25.0*		*102*	*80-120*			

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

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
Batch: 5D27018 Extracted: 04/27/05											
LCS Analyzed: 04/27/2005 (5D27018-BS1)											
Surrogate: Toluene-d8	*26.5*			*ug/l*	*25.0*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.4*			*ug/l*	*25.0*		*102*	*80-120*			
Matrix Spike Analyzed: 04/27/2005 (5D27018-MS1)						**Source: IOD1172-01**					
Benzene	25.9	2.0	0.28	ug/l	25.0	ND	104	70-120			
Carbon tetrachloride	21.9	5.0	0.28	ug/l	25.0	ND	88	70-145			
Chloroform	23.9	2.0	0.33	ug/l	25.0	ND	96	70-135			
1,1-Dichloroethane	25.5	2.0	0.27	ug/l	25.0	ND	102	65-135			
1,2-Dichloroethane	19.4	2.0	0.28	ug/l	25.0	ND	78	60-150			
1,1-Dichloroethene	26.6	3.0	0.32	ug/l	25.0	ND	106	65-140			
Ethylbenzene	26.4	2.0	0.25	ug/l	25.0	ND	106	70-130			
Tetrachloroethene	25.2	2.0	0.32	ug/l	25.0	ND	101	70-130			
Toluene	23.8	2.0	0.36	ug/l	25.0	ND	95	70-120			
1,1,1-Trichloroethane	23.2	2.0	0.30	ug/l	25.0	ND	93	75-140			
1,1,2-Trichloroethane	22.3	2.0	0.30	ug/l	25.0	ND	89	60-135			
Trichloroethene	23.3	5.0	0.26	ug/l	25.0	ND	93	70-125			
Trichlorofluoromethane	19.7	5.0	0.34	ug/l	25.0	ND	79	55-145			
Vinyl chloride	18.5	5.0	0.26	ug/l	25.0	ND	74	40-135			
Surrogate: Dibromofluoromethane	*24.9*			*ug/l*	*25.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*25.8*			*ug/l*	*25.0*		*103*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.4*			*ug/l*	*25.0*		*102*	*80-120*			
Matrix Spike Dup Analyzed: 04/27/2005 (5D27018-MSD1)						**Source: IOD1172-01**					
Benzene	26.4	2.0	0.28	ug/l	25.0	ND	106	70-120	2	20	
Carbon tetrachloride	22.6	5.0	0.28	ug/l	25.0	ND	90	70-145	3	25	
Chloroform	24.4	2.0	0.33	ug/l	25.0	ND	98	70-135	2	20	
1,1-Dichloroethane	25.4	2.0	0.27	ug/l	25.0	ND	102	65-135	0	20	
1,2-Dichloroethane	22.4	2.0	0.28	ug/l	25.0	ND	90	60-150	14	20	
1,1-Dichloroethene	25.7	3.0	0.32	ug/l	25.0	ND	103	65-140	3	20	
Ethylbenzene	24.7	2.0	0.25	ug/l	25.0	ND	99	70-130	7	20	
Tetrachloroethene	23.8	2.0	0.32	ug/l	25.0	ND	95	70-130	6	20	
Toluene	25.4	2.0	0.36	ug/l	25.0	ND	102	70-120	7	20	
1,1,1-Trichloroethane	23.5	2.0	0.30	ug/l	25.0	ND	94	75-140	1	20	
1,1,2-Trichloroethane	27.0	2.0	0.30	ug/l	25.0	ND	108	60-135	19	25	
Trichloroethene	24.3	5.0	0.26	ug/l	25.0	ND	97	70-125	4	20	
Trichlorofluoromethane	20.1	5.0	0.34	ug/l	25.0	ND	80	55-145	2	25	

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Received: 04/15/05

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
Batch: 5D27018 Extracted: 04/27/05											
Matrix Spike Dup Analyzed: 04/27/2005 (5D27018-MSD1)						**Source: IOD1172-01**					
Vinyl chloride	17.2	5.0	0.26	ug/l	25.0	ND	69	40-135	7	30	
Surrogate: Dibromofluoromethane	*26.1*			*ug/l*	*25.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*26.8*			*ug/l*	*25.0*		*107*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*25.6*			*ug/l*	*25.0*		*102*	*80-120*			

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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
Batch: 5D17002 Extracted: 04/17/05											
Blank Analyzed: 04/21/2005 (5D17002-BLK1)											
Bis(2-ethylhexyl)phthalate	1.36	5.0	1.1	ug/l							J
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	*12.5*			*ug/l*	*20.0*		*62*	*30-120*			
Surrogate: Phenol-d6	*14.0*			*ug/l*	*20.0*		*70*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	*14.7*			*ug/l*	*20.0*		*74*	*45-120*			
Surrogate: Nitrobenzene-d5	*7.20*			*ug/l*	*10.0*		*72*	*45-120*			
Surrogate: 2-Fluorobiphenyl	*7.36*			*ug/l*	*10.0*		*74*	*45-120*			
Surrogate: Terphenyl-d14	*7.66*			*ug/l*	*10.0*		*77*	*45-120*			
LCS Analyzed: 04/21/2005 (5D17002-BS1)											M-NR1
Bis(2-ethylhexyl)phthalate	8.26	5.0	1.1	ug/l	10.0		83	60-130			
2,4-Dinitrotoluene	6.28	9.0	0.23	ug/l	10.0		63	60-120			J
N-Nitrosodimethylamine	6.12	8.0	0.22	ug/l	10.0		61	40-120			J
Pentachlorophenol	7.72	8.0	0.78	ug/l	10.0		77	50-120			J
2,4,6-Trichlorophenol	7.48	6.0	0.10	ug/l	10.0		75	60-120			
Surrogate: 2-Fluorophenol	*10.9*			*ug/l*	*20.0*		*54*	*30-120*			
Surrogate: Phenol-d6	*12.2*			*ug/l*	*20.0*		*61*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	*15.2*			*ug/l*	*20.0*		*76*	*45-120*			
Surrogate: Nitrobenzene-d5	*6.64*			*ug/l*	*10.0*		*66*	*45-120*			
Surrogate: 2-Fluorobiphenyl	*6.60*			*ug/l*	*10.0*		*66*	*45-120*			
Surrogate: Terphenyl-d14	*7.16*			*ug/l*	*10.0*		*72*	*45-120*			
LCS Dup Analyzed: 04/21/2005 (5D17002-BSD1)											
Bis(2-ethylhexyl)phthalate	8.18	5.0	1.1	ug/l	10.0		82	60-130	1	20	
2,4-Dinitrotoluene	6.50	9.0	0.23	ug/l	10.0		65	60-120	3	20	J
N-Nitrosodimethylamine	6.38	8.0	0.22	ug/l	10.0		64	40-120	4	20	J
Pentachlorophenol	7.46	8.0	0.78	ug/l	10.0		75	50-120	3	25	J
2,4,6-Trichlorophenol	7.62	6.0	0.10	ug/l	10.0		76	60-120	2	20	
Surrogate: 2-Fluorophenol	*11.5*			*ug/l*	*20.0*		*58*	*30-120*			
Surrogate: Phenol-d6	*12.7*			*ug/l*	*20.0*		*64*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	*15.0*			*ug/l*	*20.0*		*75*	*45-120*			
Surrogate: Nitrobenzene-d5	*6.56*			*ug/l*	*10.0*		*66*	*45-120*			
Surrogate: 2-Fluorobiphenyl	*6.60*			*ug/l*	*10.0*		*66*	*45-120*			

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Sampled: 04/15/05
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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
Batch: 5D17002 Extracted: 04/17/05											
LCS Dup Analyzed: 04/21/2005 (5D17002-BSD1)											
Surrogate: Terphenyl-d14	*6.76*			*ug/l*	*10.0*		*68*	*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
Batch: 5D20037 Extracted: 04/20/05											
Blank Analyzed: 04/21/2005 (5D20037-BLK1)											
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	*0.425*			*ug/l*	*0.500*		*85*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.219*			*ug/l*	*0.500*		*44*	*35-115*			
LCS Analyzed: 04/21/2005 (5D20037-BS1)											**M-NR1**
alpha-BHC	0.356	0.010	0.0010	ug/l	0.500		71	45-115			
Surrogate: Decachlorobiphenyl	*0.425*			*ug/l*	*0.500*		*85*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.336*			*ug/l*	*0.500*		*67*	*35-115*			
LCS Dup Analyzed: 04/21/2005 (5D20037-BSD1)											
alpha-BHC	0.245	0.010	0.0010	ug/l	0.500		49	45-115	37	30	*R-7*
Surrogate: Decachlorobiphenyl	*0.433*			*ug/l*	*0.500*		*87*	*45-120*			
Surrogate: Tetrachloro-m-xylene	*0.245*			*ug/l*	*0.500*		*49*	*35-115*			

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METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D15129 Extracted: 04/15/05											
Blank Analyzed: 04/16/2005 (5D15129-BLK1)											
Copper	ND	2.0	0.49	ug/l							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 04/16/2005 (5D15129-BS1)											
Copper	75.0	2.0	0.49	ug/l	80.0		94	85-115			
Lead	85.5	1.0	0.13	ug/l	80.0		107	85-115			
Matrix Spike Analyzed: 04/16/2005 (5D15129-MS1)						**Source: IOD1172-01**					
Copper	72.3	2.0	0.49	ug/l	80.0	3.1	87	70-130			
Lead	81.6	1.0	0.13	ug/l	80.0	0.22	102	70-130			
Matrix Spike Dup Analyzed: 04/16/2005 (5D15129-MSD1)						**Source: IOD1172-01**					
Copper	72.1	2.0	0.49	ug/l	80.0	3.1	86	70-130	0	20	
Lead	81.3	1.0	0.13	ug/l	80.0	0.22	101	70-130	0	20	
Batch: 5D18059 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18059-BLK1)											
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 04/18/2005 (5D18059-BS1)											
Mercury	7.76	0.20	0.063	ug/l	8.00		97	85-115			
Matrix Spike Analyzed: 04/18/2005 (5D18059-MS1)						**Source: IOD1267-01**					
Mercury	5.54	0.20	0.063	ug/l	8.00	0.078	68	70-130			*M2*
Matrix Spike Dup Analyzed: 04/18/2005 (5D18059-MSD1)						**Source: IOD1267-01**					
Mercury	5.56	0.20	0.063	ug/l	8.00	0.078	69	70-130	0	20	*M2*

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D15057 Extracted: 04/15/05											
Blank Analyzed: 04/15/2005 (5D15057-BLK1)											
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 04/15/2005 (5D15057-BS1)											
Chloride	4.75	0.50	0.26	mg/l	5.00		95	90-110			*M-3*
Sulfate	9.57	0.50	0.18	mg/l	10.0		96	90-110			*M-3*
Batch: 5D15082 Extracted: 04/15/05											
Blank Analyzed: 04/21/2005 (5D15082-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 04/21/2005 (5D15082-BS1)											
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115			
LCS Dup Analyzed: 04/21/2005 (5D15082-BSD1)											
Biochemical Oxygen Demand	204	100	30	mg/l	198		103	85-115	1	20	
Batch: 5D15128 Extracted: 04/15/05											
Blank Analyzed: 04/15/2005 (5D15128-BLK1)											
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 04/15/2005 (5D15128-BS1)											
Surfactants (MBAS)	0.247	0.10	0.044	mg/l	0.250		99	90-110			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D15128 Extracted: 04/15/05											
Matrix Spike Analyzed: 04/15/2005 (5D15128-MS1)						**Source: IOD1172-01**					
Surfactants (MBAS)	0.278	0.10	0.044	mg/l	0.250	ND	111	50-125			
Matrix Spike Dup Analyzed: 04/15/2005 (5D15128-MSD1)						**Source: IOD1172-01**					
Surfactants (MBAS)	0.283	0.10	0.044	mg/l	0.250	ND	113	50-125	2	20	
Batch: 5D16034 Extracted: 04/16/05											
Blank Analyzed: 04/16/2005 (5D16034-BLK1)											
Oil & Grease	1.00	5.0	0.94	mg/l							*J*
LCS Analyzed: 04/16/2005 (5D16034-BS1)											**M-NR1**
Oil & Grease	19.4	5.0	0.94	mg/l	20.0		97	65-120			
LCS Dup Analyzed: 04/16/2005 (5D16034-BSD1)											
Oil & Grease	17.8	5.0	0.94	mg/l	20.0		89	65-120	9	20	
Batch: 5D16054 Extracted: 04/16/05											
Blank Analyzed: 04/16/2005 (5D16054-BLK1)											
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 04/16/2005 (5D16054-DUP1)						**Source: IOD1211-01**					
Turbidity	0.640	1.0	0.040	NTU		0.60			6	20	*J*
Batch: 5D18055 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18055-BLK1)											
Sulfate	ND	0.50	0.18	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
Batch: 5D18055 Extracted: 04/18/05											
LCS Analyzed: 04/18/2005 (5D18055-BS1)											
Sulfate	9.82	0.50	0.18	mg/l	10.0		98	90-110			
Matrix Spike Analyzed: 04/18/2005 (5D18055-MS1)						**Source: IOD0867-02**					
Sulfate	253	5.0	1.8	mg/l	100	170	83	80-120			
Matrix Spike Dup Analyzed: 04/18/2005 (5D18055-MSD1)						**Source: IOD0867-02**					
Sulfate	259	5.0	1.8	mg/l	100	170	89	80-120	2	20	
Batch: 5D18072 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18072-BLK1)											
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 04/18/2005 (5D18072-BS1)											
Total Cyanide	180	5.0	2.2	ug/l	200		90	90-110			
Matrix Spike Analyzed: 04/18/2005 (5D18072-MS1)						**Source: IOD0852-01**					
Total Cyanide	185	5.0	2.2	ug/l	200	ND	92	70-115			
Matrix Spike Dup Analyzed: 04/18/2005 (5D18072-MSD1)						**Source: IOD0852-01**					
Total Cyanide	184	5.0	2.2	ug/l	200	ND	92	70-115	1	15	
Batch: 5D18087 Extracted: 04/18/05											
Duplicate Analyzed: 04/18/2005 (5D18087-DUP1)						**Source: IOD1082-01**					
Specific Conductance	230	1.0	1.0	umhos/cm		240			4	5	

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D18095 Extracted: 04/18/05											
Blank Analyzed: 04/18/2005 (5D18095-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 04/18/2005 (5D18095-BS1)											
Total Dissolved Solids	988	10	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 04/18/2005 (5D18095-DUP1)						**Source: IOD0830-01**					
Total Dissolved Solids	345	10	10	mg/l		350			1	10	
Batch: 5D19080 Extracted: 04/19/05											
Blank Analyzed: 04/19/2005 (5D19080-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 04/19/2005 (5D19080-BS1)											
Total Suspended Solids	974	10	10	mg/l	1000		97	85-115			
Duplicate Analyzed: 04/19/2005 (5D19080-DUP1)						**Source: IOD1168-06**					
Total Suspended Solids	ND	10	10	mg/l		ND				10	
Batch: 5D19082 Extracted: 04/19/05											
Blank Analyzed: 04/19/2005 (5D19082-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 04/19/2005 (5D19082-BS1)											
Ammonia-N (Distilled)	10.4	0.50	0.30	mg/l	10.0		104	80-115			

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Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D19082 Extracted: 04/19/05											
Matrix Spike Analyzed: 04/19/2005 (5D19082-MS1)						**Source: IOD1008-01**					
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	1.1	98	70-120			
Matrix Spike Dup Analyzed: 04/19/2005 (5D19082-MSD1)						**Source: IOD1008-01**					
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0	1.1	95	70-120	3	15	
Batch: 5D20061 Extracted: 04/20/05											
Blank Analyzed: 04/20/2005 (5D20061-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 04/20/2005 (5D20061-BS1)											
Perchlorate	44.9	4.0	0.80	ug/l	50.0		90	85-115			
Matrix Spike Analyzed: 04/20/2005 (5D20061-MS1)						**Source: IOD1378-02**					
Perchlorate	43.9	4.0	0.80	ug/l	50.0	ND	88	80-120			
Matrix Spike Dup Analyzed: 04/20/2005 (5D20061-MSD1)						**Source: IOD1378-02**					
Perchlorate	45.7	4.0	0.80	ug/l	50.0	ND	91	80-120	4	20	

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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
IOD1172-01	413.1 Oil and Grease	Oil & Grease	mg/l	1.10	5.0	10.00
IOD1172-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOD1172-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOD1172-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOD1172-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOD1172-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOD1172-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	1.10	5.0	4.00
IOD1172-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOD1172-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOD1172-01	BOD	Biochemical Oxygen Demand	mg/l	0.51	2.0	20
IOD1172-01	Chloride - 300.0	Chloride	mg/l	51	5.0	150
IOD1172-01	Copper-200.8	Copper	ug/l	3.10	2.0	7.10
IOD1172-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-7	5.0	4.30
IOD1172-01	Lead-200.8	Lead	ug/l	0.22	1.0	2.60
IOD1172-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.0097	0.10	0.50
IOD1172-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IOD1172-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.027	0.26	8.00
IOD1172-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOD1172-01	**Sulfate-300.0**	**Sulfate**	**mg/l**	**400**	**5.0**	**300**
IOD1172-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	800	10	950
IOD1172-01RE1	**Sulfate-300.0**	**Sulfate**	**mg/l**	**400**	**10**	**300**
IOD1172-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOD1172-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00

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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 unknown quality.
M2	The MS and/or MSD were below 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-7	LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 120.1	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 608	Water	X	X
EPA 624	Water	X	X
EPA 625	Water	X	X
SM2540C	Water	X	X
SM5540-C	Water	X	X

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

Subcontracted Laboratories

Alta Analytical *California Cert #1640*
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR
Samples: IOD1172-01

Analysis Performed: EDD + Level 4
Samples: IOD1172-01

Del Mar Analytical, Irvine
Michele Harper
Project Manager

#345 LD1172

Del Mar Analytical Version 02/17/05 — CHAIN OF CUSTODY FORM

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

Project Manager: Bronwyn Kelly
Sampler: Pollock

Project:
Boeing-SSFL NPDES
Routine Outfall 002

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

Field readings:
Temp = 67.5 F
pH= 8.0

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle * #	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 (608)	2,4,6 Trichlorophenol, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, pentachlorophenol (EPA 625)		Comments
Outfall 002	W	Poly-1 liter	1	4-15-05 14:15	HNO3	1A	X														24 TAT
Outfall 002-Dup	W	Poly-1 liter	1		HNO3	1B	X														24 TAT
Outfall 002	W	Poly-1 liter	1		None	2		X													
Outfall 002	W	VOAs	3		HCl	3A, 3B, 3C			X												
Outfall 002	W	Glass-Amber	2		None	4A, 4B				X											
Outfall 002	W	1L Amber	2		HCl	5A, 5B					X										24 TAT
Outfall 002	W	Poly-500 ml	1		NaOH	6						X									24 TAT
Outfall 002	W	Poly-1 liter	1		None	7							X								
Outfall 002	W	Poly-500 ml	2		None	8A, 8B								X							
Outfall 002	W	Poly-500 ml	2		None	9A, 9B									X						
Outfall 002	W	Poly-500 ml	2		None	10A, 10B										X					
Outfall 002	W	Poly-500 ml	1		H2SO4	11											X				
Outfall 002	W	1L Amber	2		None	12A, 12B												X			
Outfall 002	W	1L Amber	2		None	13A, 13B													X		
Trip Blank	W	VOAs	3		HCl	14A, 14B, 14C			X												

Relinquished By	Date/Time:	Received By	Date/Time:
	4-15-05 1425	L. DeLaney	4/15/05 1425
L. DeLaney	4/15/05 1730		4/15/05 17:30
Relinquished By	Date/Time:	Received By	Date/Time:

INTACT 3°C

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: _____

Del Mar Analytical

17461 Derian Ave., Irvine CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

May 20, 2005

MWH- Pasadena / Boeing
300 North Lake Avenue, Suite 1200
Pasadena, CA 91101

Attention: Bronwyn Kelly

Project: Routine Outfall 002
Sampled: 04/15/05
Del Mar Analytical Number: IOD1172

Dear Ms. Kelly:

Alta Analytical Laboratories performed the EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans for the project referenced above. Please use the following cross-reference table when reviewing your results.

MWH ID	Del Mar ID	Alta ID
Outfall 002	IOD1172-01	26065-001

Attached is the original report from the subcontract laboratory. If you have any questions or require further assistance, please do not hesitate to contact me at (949) 261-1022, extension 215.

Sincerely yours,

DEL MAR ANALYTICAL

Michele Harper
Project Manager

Enclosure

ALTA

May 07, 2005

Alta Project I.D.: 26065

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on April 19, 2005 under your Project Name "IOD1172". 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.

An "A" qualifier indicates that the result is greater than the low point in the calibration curve, but lower than the EPA Method 1613 Minimum Level.

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. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier

Martha M. Maier
Director of HRMS Services

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **4/19/2005**

Alta Lab. ID	Client Sample ID
26065-001	IOD1172-01

SECTION II

Method Blank

EPA Method 1613

Matrix: Aqueous | QC Batch No.: 6763 | Lab Sample: 0-MB001

Sample Size: 1.000 L | Date Extracted: 4-May-05 | Date Analyzed DB-5: 6-May-05 | Date Analyzed DB-225: NA

Analyte	Conc. (ug/L)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.00000197		
1,2,3,7,8-PeCDD	ND	0.00000151		
1,2,3,4,7,8-HxCDD	ND	0.00000262		
1,2,3,6,7,8-HxCDD	ND	0.00000234		
1,2,3,7,8,9-HxCDD	ND	0.00000231		
1,2,3,4,6,7,8-HpCDD	ND	0.00000194		
OCDD	ND	0.00000718		
2,3,7,8-TCDF	ND	0.00000152		
1,2,3,7,8-PeCDF	ND	0.00000249		
2,3,4,7,8-PeCDF	ND	0.00000222		
1,2,3,4,7,8-HxCDF	ND	0.000000832		
1,2,3,6,7,8-HxCDF	ND	0.000000842		
2,3,4,6,7,8-HxCDF	ND	0.00000113		
1,2,3,7,8,9-HxCDF	ND	0.00000212		
1,2,3,4,6,7,8-HpCDF	ND	0.00000183		
1,2,3,4,7,8,9-HpCDF	ND	0.00000201		
OCDF	ND	0.00000436		

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	53.3	25 - 164	
	13C-1,2,3,7,8-PeCDD	51.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	70.4	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	82.1	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	68.0	23 - 140	
	13C-OCDD	42.8	17 - 157	
	13C-2,3,7,8-TCDF	54.1	24 - 169	
	13C-1,2,3,7,8-PeCDF	50.1	24 - 185	
	13C-2,3,4,7,8-PeCDF	50.1	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	73.2	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	78.1	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	74.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	69.9	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	62.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	75.4	26 - 138	
	13C-OCDF	48.7	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	60.2	35 - 197	

Totals

Total TCDD	ND	0.00000197
Total PeCDD	ND	0.00000151
Total HxCDD	ND	0.00000240
Total HpCDD	ND	0.00000194
Total TCDF	ND	0.00000152
Total PeCDF	ND	0.00000235
Total HxCDF	ND	0.00000117
Total HpCDF	ND	0.00000191

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 10:07

ALTA

OPR Results — **EPA Method 1613**

Matrix:	Aqueous	QC Batch No.:	6763	Lab Sample:	0-OPR001
Sample Size:	1.000 L	Date Extracted:	4-May-05	Date Analyzed DB-5:	6-May-05
				Date Analyzed DB-225:	NA

Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits
2,3,7,8-TCDD	10.0	10.7	6.7 - 15.8
1,2,3,7,8-PeCDD	50.0	54.8	35 - 71
1,2,3,4,7,8-HxCDD	50.0	50.6	35 - 82
1,2,3,6,7,8-HxCDD	50.0	52.5	38 - 67
1,2,3,7,8,9-HxCDD	50.0	47.5	32 - 81
1,2,3,4,6,7,8-HpCDD	50.0	51.0	35 - 70
OCDD	100	106	78 - 144
2,3,7,8-TCDF	10.0	10.7	7.5 - 15.8
1,2,3,7,8-PeCDF	50.0	52.1	40 - 67
2,3,4,7,8-PeCDF	50.0	52.6	34 - 80
1,2,3,4,7,8-HxCDF	50.0	50.6	36 - 67
1,2,3,6,7,8-HxCDF	50.0	52.7	42 - 65
2,3,4,6,7,8-HxCDF	50.0	51.9	35 - 78
1,2,3,7,8,9-HxCDF	50.0	52.3	39 - 65
1,2,3,4,6,7,8-HpCDF	50.0	49.6	41 - 61
1,2,3,4,7,8,9-HpCDF	50.0	51.9	39 - 69
OCDF	100	101	63 - 170

	Labeled Standard	%R	LCL-UCL
IS	13C-2,3,7,8-TCDD	56.3	25 - 164
	13C-1,2,3,7,8-PeCDD	56.2	25 - 181
	13C-1,2,3,4,7,8-HxCDD	71.4	32 - 141
	13C-1,2,3,6,7,8-HxCDD	81.0	28 - 130
	13C-1,2,3,4,6,7,8-HpCDD	70.7	23 - 140
	13C-OCDD	43.9	17 - 157
	13C-2,3,7,8-TCDF	54.4	24 - 169
	13C-1,2,3,7,8-PeCDF	55.2	24 - 185
	13C-2,3,4,7,8-PeCDF	54.9	21 - 178
	13C-1,2,3,4,7,8-HxCDF	74.9	26 - 152
	13C-1,2,3,6,7,8-HxCDF	78.5	26 - 123
	13C-2,3,4,6,7,8-HxCDF	77.1	28 - 136
	13C-1,2,3,7,8,9-HxCDF	73.0	29 - 147
	13C-1,2,3,4,6,7,8-HpCDF	68.3	28 - 143
	13C-1,2,3,4,7,8,9-HpCDF	77.5	26 - 138
	13C-OCDF	55.3	17 - 157
CRS	37Cl-2,3,7,8-TCDD	67.8	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 10:07

ALTA

Sample ID: IOD1172-01 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26065-001	Date Received:	19-Apr-05
Project:	IOD1172	Sample Size:	0.948 L	QC Batch No.:	6763	Date Extracted:	4-May-05
Date Collected:	15-Apr-05			Date Analyzed DB-5:	6-May-05	Date Analyzed DB-225:	NA
Time Collected:	1415						

Analyte	Conc. (ug/L)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.00000142		
1,2,3,7,8-PeCDD	ND	0.00000133		
1,2,3,4,7,8-HxCDD	ND	0.00000328		
1,2,3,6,7,8-HxCDD	ND	0.00000299		
1,2,3,7,8,9-HxCDD	ND	0.00000294		
1,2,3,4,6,7,8-HpCDD	ND	0.00000531		
OCDD	0.0000262			A
2,3,7,8-TCDF	ND	0.00000178		
1,2,3,7,8-PeCDF	ND	0.00000205		
2,3,4,7,8-PeCDF	ND	0.00000196		
1,2,3,4,7,8-HxCDF	ND	0.000000728		
1,2,3,6,7,8-HxCDF	ND	0.000000713		
2,3,4,6,7,8-HxCDF	ND	0.000000852		
1,2,3,7,8,9-HxCDF	ND	0.00000162		
1,2,3,4,6,7,8-HpCDF	ND	0.00000161		
1,2,3,4,7,8,9-HpCDF	ND	0.00000196		
OCDF	ND	0.00000311		

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	61.6	25 - 164	
	13C-1,2,3,7,8-PeCDD	63.8	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	75.9	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	75.3	23 - 140	
	13C-OCDD	62.9	17 - 157	
	13C-2,3,7,8-TCDF	61.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	60.6	24 - 185	
	13C-2,3,4,7,8-PeCDF	58.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	73.8	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	76.0	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	77.8	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	73.4	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	75.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	80.2	26 - 138	
	13C-OCDF	69.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	73.5	35 - 197	

Totals

Total TCDD	ND	0.00000142
Total PeCDD	ND	0.00000133
Total HxCDD	ND	0.00000306
Total HpCDD	ND	0.00000531
Total TCDF	ND	0.00000178
Total PeCDF	ND	0.00000200
Total HxCDF	ND	0.000000939
Total HpCDF	ND	0.00000176

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 10:07

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.
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.
P	Homologue totals include any coplanar PCBs detected at concentrations less than the reporting limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

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

The control limits are "interim limits only" until in-house limits are utilized.

NELAP — (Primary AA: California, Certificate No. 02102CA)

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

Bureau of Reclamation — Mid-Pacific Region — (MP-470, Res-1.10)

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

State of Alaska, Department of Environmental Conservation — (Certificate No. OS-00197)

State of Arizona — (Certificate No. AZ0639)

State of Arkansas, Department of Health — (Approval granted through CA certification)

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

State of Connecticut — (Certificate No. PH-0182)

State of Florida — (Certificate No. 87456)

State of Louisiana, Department of Health and Hospitals — (Certificate No. LA000014)

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

State of New York, Department of Health — (Certificate No. 11411)

State of North Carolina — (Certification No. 06700)

State of North Dakota, Department of Health — (Certificate No. R-078)

State of New Mexico

State of Oklahoma – (D9919)

State of Oregon – (Certificate No. CA413)

State of Pennsylvania — (Certificate No. 68-490)

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

State of Texas — (Certificate No. TX247-1000A

State of Utah — (Certificate No. E-201)

State of Washington – (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

State of Wyoming — (USEPA Region 8 Ref: 8TMS-Q)

Del Mar Analytical

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 # IOD1172

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 Harper

RECEIVING LABORATORY:

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

26065
0.7°C

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

Analysis	Expiration	Comments
Sample ID: IOD1172-01 Water	**Sampled: 04/15/05 14:15**	**Instant Nofication**
1613-Dioxin-HR	04/22/05 14:15	J flags, 17 congeners, no TEQ, sub to Alta
EDD + Level 4	05/13/05 14:15	Excel EDD email to pm,Include Std logs for Lvl IV

Containers Supplied:
1 L Amber (IOD1172-01G)
1 L Amber (IOD1172-01H)

SAMPLE INTEGRITY:

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

Released By	Date	Time	Received By	Date	Time
[signature]	4-18-05	1700	Bettina J. Benedict	4/19/05	0852

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26065

		YES	NO	NA
1.	Date Samples Arrived: 4/19/05 0852 Initials: [illegible] Location: WR-2			
2.	Time / Date logged in: 1220 4/19/05 Initials: [illegible] Location: WR-2			
3.	Samples Arrived By: (circle) FedEx UPS World Courier Other:			
4.	Shipping Preservation: (circle) Ice / Blue Ice / Dry Ice / None Temp °C 0.7			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	✓		
6.	Shipping Container(s) Custody Seals Present?	✓		
	Intact? If not intact, describe condition in comment section.	✓		
7.	Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number 7929 0047 2266	✓		
8.	Sample Custody Seal(s) Present? No. of Seals_____ or Seal No.		✓	
	Intact? If not intact, describe condition in comment section.			✓
9.	Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10.	Chain of Custody (COC) or other Sample Documentation Present?	✓		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12.	Shipping Container (circle): ALTA Client Retain or Return or Disposed			
13.	Container(s) and/or Bottle(s) Requested?		✓	
14.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N			✓
	Preservation Info From? (circle) COC or Sample Container or None Noted			

Comments: Sampler's initials found on sample label.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T711DF45
Task Order 313150010
SDG No. IOD1172, IOD1251
No. of Analyses 2

Laboratory Alta
Reviewer K. Shadowlight
Analysis/Method Dioxins

Date: May 11, 2005
Reviewer's Signature K. Shadowlight

ACTION ITEMS[a]	
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 assigned for the following:
Holding Times	* Detect below the EPA 1613 Minimum level
GC/MS Tune/Inst. Performance	
Calibration	
Method blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
*#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

DATA VALIDATION REPORT

NPDES
Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD1172, IOD1251

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOD1172, IOD1251
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	May 11, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National 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 001	IOD1251-01	26064-001	water	1613
Outfall 002	IOD1172-01	26065-001	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 samples in these SDGs were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4°C ±2°C at 0.7°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COCs and transfer COCs were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in these SDGs. As the samples were couriered directly to Del Mar Analytical, custody seals were not required. The cooler received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA IDs were added to the sample result summaries by the reviewer. No qualifications were required.

2.1.3 Holding Times

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

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

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

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 04/23/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs ≤20% for the 16 native compounds (calibration by isotope dilution) and ≤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 (6763-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported 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 Ongoing Precision Recovery (OPR) sample (6763-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. 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 samples in these SDGs had no associated field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

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 detect above the low point of the calibration curve but below the EPA Method 1613 minimum level was denoted by the laboratory with an "A," flag and was qualified as estimated, "J." The results and reporting limits were reported in ug/L. No further qualifications were required.

ALTA

Sample ID: IOD1251-01 Outfall 021

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26064-001	Date Received:	19-Apr-05
Project:	IOD1251	Sample Size:	0.949 L	QC Batch No.:	6763	Date Extracted:	4-May-05
Date Collected:	16-Apr-05			Date Analyzed DB-5:	6-May-05	Date Analyzed DB-225:	NA
Time Collected:	0855						

Analyte	Conc. (ug/L)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.000000882		
1,2,3,7,8-PeCDD	ND	0.00000161		
1,2,3,4,7,8-HxCDD	ND	0.00000315		
1,2,3,6,7,8-HxCDD	ND	0.00000303		
1,2,3,7,8,9-HxCDD	ND	0.00000291		
1,2,3,4,6,7,8-HpCDD	ND	0.00000286		
OCDD	ND	0.0000101		
2,3,7,8-TCDF	ND	0.00000144		
1,2,3,7,8-PeCDF	ND	0.00000233		
2,3,4,7,8-PeCDF	ND	0.00000213		
1,2,3,4,7,8-HxCDF	ND	0.000000879		
1,2,3,6,7,8-HxCDF	ND	0.000000896		
2,3,4,6,7,8-HxCDF	ND	0.00000118		
1,2,3,7,8,9-HxCDF	ND	0.00000232		
1,2,3,4,6,7,8-HpCDF	ND	0.00000164		
1,2,3,4,7,8,9-HpCDF	ND	0.00000195		
OCDF	ND	0.00000736		
Totals				
Total TCDD	ND	0.000000882		
Total PeCDD	ND	0.00000161		
Total HxCDD	ND	0.00000302		
Total HpCDD	ND	0.00000286		
Total TCDF	ND	0.00000144		
Total PeCDF	ND	0.00000223		
Total HxCDF	ND	0.00000125		
Total HpCDF	ND	0.00000178		

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	63.1	25 - 164	
	13C-1,2,3,7,8-PeCDD	64.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	74.9	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	86.9	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	73.9	23 - 140	
	13C-OCDD	44.7	17 - 157	
	13C-2,3,7,8-TCDF	63.2	24 - 169	
	13C-1,2,3,7,8-PeCDF	60.9	24 - 185	
	13C-2,3,4,7,8-PeCDF	60.0	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	81.8	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	86.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	82.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	78.3	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	71.9	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	82.4	26 - 138	
	13C-OCDF	54.7	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	72.6	35 - 197	

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 09:58

ALTA VALIDATED

LEVEL IV

ALTA

Sample ID: IOD1172-01 Outfall 002

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Aqueous	Lab Sample:	26065-001	Date Received:	19-Apr-05
Project:	IOD1172	Sample Size:	0.948 L	QC Batch No.:	6763	Date Extracted:	4-May-05
Date Collected:	15-Apr-05			Date Analyzed DB-5:	6-May-05	Date Analyzed DB-225:	NA
Time Collected:	1415						

Analyte	Conc. (ug/L)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.00000142		
1,2,3,7,8-PeCDD	ND	0.00000133		
1,2,3,4,7,8-HxCDD	ND	0.00000328		
1,2,3,6,7,8-HxCDD	ND	0.00000299		
1,2,3,7,8,9-HxCDD	ND	0.00000294		
1,2,3,4,6,7,8-HpCDD	ND	0.00000531		
OCDD	0.0000262			A
2,3,7,8-TCDF	ND	0.00000178		
1,2,3,7,8-PeCDF	ND	0.00000205		
2,3,4,7,8-PeCDF	ND	0.00000196		
1,2,3,4,7,8-HxCDF	ND	0.000000728		
1,2,3,6,7,8-HxCDF	ND	0.000000713		
2,3,4,6,7,8-HxCDF	ND	0.000000852		
1,2,3,7,8,9-HxCDF	ND	0.00000162		
1,2,3,4,6,7,8-HpCDF	ND	0.00000161		
1,2,3,4,7,8,9-HpCDF	ND	0.00000196		
OCDF	ND	0.00000311		
Totals				
Total TCDD	ND	0.00000142		
Total PeCDD	ND	0.00000133		
Total HxCDD	ND	0.00000306		
Total HpCDD	ND	0.00000531		
Total TCDF	ND	0.00000178		
Total PeCDF	ND	0.00000200		
Total HxCDF	ND	0.000000939		
Total HpCDF	ND	0.00000176		

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	61.6	25 - 164	
	13C-1,2,3,7,8-PeCDD	63.8	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	68.5	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	75.9	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	75.3	23 - 140	
	13C-OCDD	62.9	17 - 157	
	13C-2,3,7,8-TCDF	61.8	24 - 169	
	13C-1,2,3,7,8-PeCDF	60.6	24 - 185	
	13C-2,3,4,7,8-PeCDF	58.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	73.8	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	76.0	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	77.8	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	73.4	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	75.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	80.2	26 - 138	
	13C-OCDF	69.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	73.5	35 - 197	

Footnotes

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

Analyst: JMH

Approved By: Martha M. Maier 07-May-2005 10:07

Project 26065

AMEC VALIDATED LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar
Reviewer M. Pokorny
Analysis/Method Volatiles

Package ID T711VO104
Task Order 313150010
SDG No. IOD1172
No. of Analyses 2

Date: May 24, 2005
Reviewer's Signature M. Pokorny

ACTION ITEMS[a]	
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. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	
COMMENTS[b]	Acceptable as reviewed.

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOD1172

Prepared by

AMEC Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
SDG#:	IOD1172
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	Volatiles
QC Level:	Level IV
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Reviewer:	M. Pokorny
Date of Review:	May 24, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2), EPA Method 624, SW846 Method 8260B,* 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 summary forms 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	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOD1172-01	water	624
Trip Blank	Trip Blank	IOD1172-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The samples were properly preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace 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. The COC accounted for the analyses presented in this SDG. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were analyzed within 14 days of collection. No qualifications were required.

2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in EPA Method 624, and all ion abundances were within the established windows. The samples and associated QC were analyzed within 12 hours of the BFB injection time. The BFB summary report was verified from the raw data and no discrepancies between the summary report and the raw data were noted. No qualifications were required.

2.3 CALIBRATION

One initial calibration dated 03/31/05 was associated with this SDG. The average RRFs were ≥0.05 for the target compounds listed on the sample result summaries. The %RSDs were ≤35% for all applicable target compounds. One continuing calibration dated 04/27/05 was associated with the sample analyses in this SDG. The %Ds for all target compounds were ≤20% in the continuing calibration. The RRFs were ≥0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5D27018-BLK1) was associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5D27018-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The surrogates were recovered within the QC limits of 80-120% in the samples and associated QC. A representative number of surrogate recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 002 was the MS/MSD analyzed with this SDG. All recoveries and RPDs were within the laboratory-established QC limits. A representative number of recoveries and RPDs were recalculated from the raw data and no calculation or transcription errors were found. 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 sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDLs in the trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

Internal standard area counts and retention times for the samples in this SDG were within the control limits established by the continuing calibration standards: +100%/-50% for internal standard areas and ±0.50 minutes for retention times. A representative number of internal standard areas and retention times were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 15 volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limits were supported by the lowest concentrations of the initial calibration standard and by the MDL study. As there were no sample detects in this SDG, compound quantitation was verified by recalculating a representative number of blank spike and surrogate recoveries from the raw data. Results were reported in µg/L (ppb). No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

A review of the chromatograms and other raw data showed no identifiable problems with system performance. No qualifications were required.

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX 370-1046
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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX 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 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	LEV QUAL	QUAL CODE
Sample ID: IOD1172-01 (DRAFT: Outfall 002 - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05		U	
Carbon tetrachloride	EPA 624	5D27018	0.28	5.0	ND	1	04/27/05	04/27/05			
Chloroform	EPA 624	5D27018	0.33	2.0	ND	1	04/27/05	04/27/05			
1,1-Dichloroethane	EPA 624	5D27018	0.27	2.0	ND	1	04/27/05	04/27/05			
1,2-Dichloroethane	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05			
1,1-Dichloroethene	EPA 624	5D27018	0.32	3.0	ND	1	04/27/05	04/27/05			
Ethylbenzene	EPA 624	5D27018	0.25	2.0	ND	1	04/27/05	04/27/05			
Tetrachloroethene	EPA 624	5D27018	0.32	2.0	ND	1	04/27/05	04/27/05			
Toluene	EPA 624	5D27018	0.36	2.0	ND	1	04/27/05	04/27/05			
1,1,1-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05			
1,1,2-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05			
Trichloroethene	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05			
Trichlorofluoromethane	EPA 624	5D27018	0.34	5.0	ND	1	04/27/05	04/27/05			
Vinyl chloride	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05			
Xylenes, Total	EPA 624	5D27018	0.52	4.0	ND	1	04/27/05	04/27/05			
Surrogate: Dibromofluoromethane (80-120%)					*99 %*						
Surrogate: Toluene-d8 (80-120%)					*101 %*						
Surrogate: 4-Bromofluorobenzene (80-120%)					*99 %*						
Sample ID: IOD1172-02 (DRAFT: Trip Blank - Water)											
Reporting Units: ug/l											
Benzene	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05		U	
Carbon tetrachloride	EPA 624	5D27018	0.28	5.0	ND	1	04/27/05	04/27/05			
Chloroform	EPA 624	5D27018	0.33	2.0	ND	1	04/27/05	04/27/05			
1,1-Dichloroethane	EPA 624	5D27018	0.27	2.0	ND	1	04/27/05	04/27/05			
1,2-Dichloroethane	EPA 624	5D27018	0.28	2.0	ND	1	04/27/05	04/27/05			
1,1-Dichloroethene	EPA 624	5D27018	0.32	3.0	ND	1	04/27/05	04/27/05			
Ethylbenzene	EPA 624	5D27018	0.25	2.0	ND	1	04/27/05	04/27/05			
Tetrachloroethene	EPA 624	5D27018	0.32	2.0	ND	1	04/27/05	04/27/05			
Toluene	EPA 624	5D27018	0.36	2.0	ND	1	04/27/05	04/27/05			
1,1,1-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05			
1,1,2-Trichloroethane	EPA 624	5D27018	0.30	2.0	ND	1	04/27/05	04/27/05			
Trichloroethene	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05			
Trichlorofluoromethane	EPA 624	5D27018	0.34	5.0	ND	1	04/27/05	04/27/05			
Vinyl chloride	EPA 624	5D27018	0.26	5.0	ND	1	04/27/05	04/27/05			
Xylenes, Total	EPA 624	5D27018	0.52	4.0	ND	1	04/27/05	04/27/05			
Surrogate: Dibromofluoromethane (80-120%)					*98 %*						
Surrogate: Toluene-d8 (80-120%)					*105 %*						
Surrogate: 4-Bromofluorobenzene (80-120%)					*98 %*						

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

AMEC VALIDATED

- LEVEL IV

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Laboratory Del Mar Analytical
Reviewer L. Jarusewic
Analysis/Method General Minerals

Package ID T711WC150
Task Order 313150010
SDG No. IOD1172
No. of Analyses 1

Date: 05/20/05
Reviewer's Signature L Jarusewic

ACTION ITEMS[a]	
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:
Holding Times	1) Rejected sulfate reanalysis in favor of original result
GC/MS Tune/Inst. Performance	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and Quantitation	
System Performance	

COMMENTS[b]	

[a] Subcontracted analytical laboratory is not meeting contract and/or method requirements.
[b] Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
$	Reported result or other information was incorrect	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*#	Unusual problems found with the data that have been described in Section 1, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.	Unusual problems found with the data that have been described in Section 1, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.

DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOD1172

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOD1172
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	General Minerals
QC Level:	Level IV
No. of Samples:	1
Reviewer:	L. Jarusewic
Date of Review:	May 20, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures* SOP DVP-6, Rev. 2, *USEPA Methods for Chemical Analysis of Water and Wastes Method 300.0, 350.2, 120.1, and 180.1,* 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 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	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOD1172-01	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°C ± 2°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. The COC accounted for all analyses presented in this SDG. The laboratory did not append the Form I for the sulfate reanalysis with the "RE1" suffix. The reviewer edited the Form I to reflect this information. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia, sulfate, and conductivity and the 48-hour holding time for turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995. Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required.

2.3 BLANKS

Turbidity was detected in a bracketing CCB at 0.040NTU; however, the turbidity CCB result was insufficient to qualify the Outfall 002 result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries were within the laboratory-established control limits. The LCS is not applicable to turbidity or conductivity. No qualifications were required.

2.5 SURROGATES RECOVERY

Surrogate recovery is not applicable to the analyses presented in this SDG.

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

Furnace atomic absorption was not utilized for the analyses of this sample; therefore, furnace atomic absorption QC is not applicable.

2.9 ICP SERIAL DILUTION

ICP serial dilution is not applicable to the analyses presented in this data validation report.

2.10 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. Outfall 002 was reanalyzed for sulfate. As the Outfall 002RE1 sulfate result was similar to the Outfall 002 result, the Outfall 002RE1 sulfate result was rejected, "R," in favor of the original analysis. No further qualifications were required.

2.11 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:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

Del Mar Analytical

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

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

Project ID: Routine Outfall 002

Report Number: IOD1172

Sampled: 04/15/05
Received: 04/15/05

DRAFT: INORGANICS

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers REV QUAL	Data Qualifiers QUAL CODE
Sample ID: IOD1172-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	5D19082	0.30	0.50	ND	1	04/19/05	04/19/05	U	
Sulfate	EPA 300.0	5D15057	1.8	5.0	**400**	10	04/15/05	04/15/05		
Sample ID: IOD1172-01RE1 (DRAFT: ~~Outfall 002~~ Outfall 002RE1 - Water)										
Reporting Units: mg/l										
Sulfate	EPA 300.0	5D18055	3.6	10	**400**	20	04/18/05	04/18/05	R	D
Sample ID: IOD1172-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: NTU										
Turbidity	EPA 180.1	5D16054	0.040	1.0	**2.1**	1	04/16/05	04/16/05		
Sample ID: IOD1172-01 (DRAFT: Outfall 002 - Water)										
Reporting Units: umhos/cm										
Specific Conductance	EPA 120.1	5D18087	1.0	1.0	**1300**	1	04/18/05	04/18/05		

AJ 5.20.05

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LEVEL IV

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

LABORATORY REPORT

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

Project: Routine Outfall 002

Sampled: 04/22/05
Received: 04/22/05
Issued: 06/20/05 16:28

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
IOD1705-01	Outfall 002	Water
IOD1705-02	Trip Blank	Water

Reviewed By:

Michele Harper

Del Mar Analytical, Irvine
Michele Harper
Project Manager

Del Mar Analytical

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

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

Project ID: Routine Outfall 002
Report Number: IOD1705

Sampled: 04/22/05
Received: 04/22/05

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: IOD1705-01 (Outfall 002 - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5E03004	0.28	2.0	ND	1	05/03/05	05/03/05	
Carbon tetrachloride	EPA 624	5E03004	0.28	5.0	ND	1	05/03/05	05/03/05	
Chloroform	EPA 624	5E03004	0.33	2.0	ND	1	05/03/05	05/03/05	
1,1-Dichloroethane	EPA 624	5E03004	0.27	2.0	ND	1	05/03/05	05/03/05	
1,2-Dichloroethane	EPA 624	5E03004	0.28	2.0	ND	1	05/03/05	05/03/05	
1,1-Dichloroethene	EPA 624	5E03004	0.32	3.0	ND	1	05/03/05	05/03/05	
Ethylbenzene	EPA 624	5E03004	0.25	2.0	ND	1	05/03/05	05/03/05	
Tetrachloroethene	EPA 624	5E03004	0.32	2.0	ND	1	05/03/05	05/03/05	
Toluene	EPA 624	5E03004	0.36	2.0	ND	1	05/03/05	05/03/05	
1,1,1-Trichloroethane	EPA 624	5E03004	0.30	2.0	ND	1	05/03/05	05/03/05	
1,1,2-Trichloroethane	EPA 624	5E03004	0.30	2.0	ND	1	05/03/05	05/03/05	
Trichloroethene	EPA 624	5E03004	0.26	5.0	ND	1	05/03/05	05/03/05	
Trichlorofluoromethane	EPA 624	5E03004	0.34	5.0	ND	1	05/03/05	05/03/05	M1
Vinyl chloride	EPA 624	5E03004	0.26	5.0	ND	1	05/03/05	05/03/05	
Xylenes, Total	EPA 624	5E03004	0.52	4.0	ND	1	05/03/05	05/03/05	
Surrogate: Dibromofluoromethane (80-120%)					*116 %*				
Surrogate: Toluene-d8 (80-120%)					*110 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)					*114 %*				
Sample ID: IOD1705-02 (Trip Blank - Water)									
Reporting Units: ug/l									
Benzene	EPA 624	5E03004	0.28	2.0	ND	1	05/03/05	05/03/05	
Carbon tetrachloride	EPA 624	5E03004	0.28	5.0	ND	1	05/03/05	05/03/05	
Chloroform	EPA 624	5E03004	0.33	2.0	ND	1	05/03/05	05/03/05	
1,1-Dichloroethane	EPA 624	5E03004	0.27	2.0	ND	1	05/03/05	05/03/05	
1,2-Dichloroethane	EPA 624	5E03004	0.28	2.0	ND	1	05/03/05	05/03/05	
1,1-Dichloroethene	EPA 624	5E03004	0.32	3.0	ND	1	05/03/05	05/03/05	
Ethylbenzene	EPA 624	5E03004	0.25	2.0	ND	1	05/03/05	05/03/05	
Tetrachloroethene	EPA 624	5E03004	0.32	2.0	ND	1	05/03/05	05/03/05	
Toluene	EPA 624	5E03004	0.36	2.0	ND	1	05/03/05	05/03/05	
1,1,1-Trichloroethane	EPA 624	5E03004	0.30	2.0	ND	1	05/03/05	05/03/05	
1,1,2-Trichloroethane	EPA 624	5E03004	0.30	2.0	ND	1	05/03/05	05/03/05	
Trichloroethene	EPA 624	5E03004	0.26	5.0	ND	1	05/03/05	05/03/05	
Trichlorofluoromethane	EPA 624	5E03004	0.34	5.0	ND	1	05/03/05	05/03/05	
Vinyl chloride	EPA 624	5E03004	0.26	5.0	ND	1	05/03/05	05/03/05	
Xylenes, Total	EPA 624	5E03004	0.52	4.0	ND	1	05/03/05	05/03/05	
Surrogate: Dibromofluoromethane (80-120%)					*112 %*				
Surrogate: Toluene-d8 (80-120%)					*110 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)					*109 %*				

Del Mar Analytical, Irvine
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