APPENDIX G

Section 45

Outfall 013, February 16, 2009

MECX Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ISB1806

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014 DATA VALIDATION REPORT SSFL NPDES

SSFL NPDES
SDG: ISB1806

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES

Contract Task Order: 1261.100D.00

Sample Delivery Group: ISB1806 Project Manager: B. Kelly

Matrix: Water

QC Level: IV No. of Samples: 1

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 013	ISB1806-01	D9B190123-001, 31442-001	Water	02/16/09 1420	180.1, 245.1, 245.1 (Diss), 1613B, SM5310B

II. Sample Management

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

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Data Qualifier Reference Table

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

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Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	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
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
1	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

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Qualification Code Reference Table Cont.

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

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III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight Date Reviewed: March 30, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613, and the National Functional Guidelines Chlorinated Dioxin/Furan Data Review (9/05).

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

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 Blank Spikes and Laboratory Control Samples: OPR recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

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

B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks

Date Reviewed: March 26, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 245.1, and the National Functional Guidelines for Inorganic Data Review (10/04).

- Holding Times: The analytical holding time, 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995.
 Initial and continuing calibration recoveries were within 85-115%. The CRA and check standard was recovered within the control limits of 70-130%.
- Blanks: There were no applicable detects in the method blanks or CCBs.

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Interference Check Samples: Not applicable to this analysis.

- Blank Spikes and Laboratory Control Samples: The recoveries were within the laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: All associated sample internal standard intensities were within 60-125% of the internal standard intensities measured in the initial calibration.
- Sample Result Verification: Calculations were verified and the sample results reported on
 the sample result summaries were verified against the raw data. No transcription errors or
 calculation errors were noted. Detects reported below the reporting limit were qualified as
 estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit.
 Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: March 27, 2009

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Method 180.1, Standard Method SM5210B, and the National Functional Guidelines for Inorganic Data Review (10/04).

 Holding Times: Analytical holding times, 48 hours from collection for BOD and turbidity, were met.

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• Calibration: Calibration criteria were met. Turbidity initial calibration r² value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%.

- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries and the BOD RPD were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Any detects reported below the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Analyst: JMH

Client Data								
Test America-Irvine, CA Sample Data Indicators Data Indicators Indicators		806-01 Outfall	013				EPA M	ethod 1613
Test Americal-Irvine, CA			Sample Data		Laboratory Data			
December December		America-Irvine, CA	Matrix:	Aqueous	Lab Sample:	31443-001	Date Received:	18-Feb-09
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7,8-HxCDF ND 0.000000541 13C-2,3,4,6,7,8-HxCDF 82.2 7,8-HxCDF ND 0.000000642 13C-1,2,3,7,8,9-HxCDF 77.7 7,8-HxCDF ND 0.000000921 13C-1,2,3,7,8,9-HxCDF 71.7 8,7,8-HpCDF ND 0.00000131 13C-1,2,3,4,6,7,8-HpCDF 74.9 7,8,9-HpCDF ND 0.00000145 13C-0CDF 60.3 CDD ND 0.00000306 □ (b.2) Footnotes CDD ND 0.00000439 a. Sample specific estimated detection limit. 4pCDF ND 0.00000915 b. Estimated maximum possible concentration. 4pCDF ND 0.000000467 c. Method detection limit. 4pCDF ND 0.000000575 d. Lower control limit - upper control limit. 4pCDF ND 0.000000663 d. Lower control limit - upper control limit.	1,2,3,4,7,8-HxCDF	ND	0.000000547		13C-1,2,3,6,7,8-	HxCDF	26 -	
7,8-HxCDF ND 0.00000642 13C-1,2,3,7,8,9-HxCDF 77.7 8,9-HxCDF ND 0.000000921 13C-1,2,3,4,6,7,8-HpCDF 71.7 8,7,8-HpCDF ND 0.00000131 13C-1,2,3,4,6,7,8-HpCDF 74.9 7,7,8,9-HpCDF ND 0.00000145 13C-0CDF 60.3 0.0000036 5 book J CRS 37Cl-2,3,4,7,8,9-HpCDF 89.7 CDD ND 0.000000439 J Sample specific estimated detection limit. 89.7 4cCDD ND 0.000000915 b. Estimated maximum possible concentration. c. Method detection limit. 4pCDF ND 0.000000663 d. Lower control limit - upper control limit. 4pCDF ND 0.000000575 d. Lower control limit - upper control limit.	1,2,3,6,7,8-HxCDF	ND	0.000000541		13C-2,3,4,6,7,8-	HxCDF		
Age	2,3,4,6,7,8-HxCDF	ND	0.000000642		13C-1,2,3,7,8,9-	HxCDF		
A,6,7,8-HpCDF ND 0.00000131 13C-1,2,3,4,7,8,9-HpCDF 74.9 A,7,8,9-HpCDF ND 0.00000145 J CRS 37Cl-2,3,7,8-TCDD 89.7 CCDD ND 0.000000439 a Sample specific estimated detection limit. b. Estimated maximum possible concentration. ECDD ND 0.00000915 c. Method detection limit. 4pCDD 0.00000398 □ D.00 0.00000467 ecCDF ND 0.000000575 d. Lower control limit - upper control limit. 4pCDF ND 0.00000038 0.00000038	1,2,3,7,8,9-HxCDF	ND	0.000000921		13C-1,2,3,4,6,7,	8-HpCDF		
7,8,9-HpCDF ND	1,2,3,4,6,7,8-HpCDF	ND	0.00000131		13C-1,2,3,4,7,8,	9-HpCDF		
CRS 37Cl-2,3,7,8-TCDD	1,2,3,4,7,8,9-HpCDF	ND	0.00000145					
ND U. 0.00000439 ND ↓ 0.00000915 ND ↓ 0.00000113 D 0.00000398 되ういる ND ↓ 0.000000467 ND ↓ 0.000000575 ND ↓ 0.000000663 ND ↓ 0.000000663	OCDF	0.00000306 Java		J		DD		
ND U. 0.00000439 ND	Totals				Footnotes			
0.00000915 0.00000915 0.00000398 □ 0.00000113 0.00000467 ND	Total TCDD	ND U	0.000000439		a. Sample specific estimate	d detection limit.		
0.00000113 0.00000398 ゴロンマ 0.000000467 ND 0.000000575 ND 0.00000063 ND 0.000000138	Total PeCDD	ND /	0.000000915		b. Estimated maximum pos	ssible concentration.		
0.00000398 5 DD 0.000000467 ND 0.000000575 ND 0.00000063 ND 0.00000138	Total HxCDD	ND 🛧	0.00000113		c. Method detection limit.			
ND ND C	Total HpCDD	0.00000398 ゴロルマ			d. Lower control limit - up	per control limit.		
ND \	Total TCDF	ND (0.000000467					
ND U	Total PeCDF	ND	0.000000575					
ND 🗼	Total HxCDF	ND	0.000000663					
	Total HpCDF	ND 📗	0.00000138					



Approved By:

Martha M. Maier 07-Mar-2009 08:19



THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing

Project ID: Routine Outfall 013

618 Michillinda Avenue, Suite 200

Report Number: ISB1806

Sampled: 02/16/09

Received: 02/16/09

Arcadia, CA 91007 Attention: Bronwyn Kelly

MCAWW 245.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor		Date Analyzed	Data Qualifiers
Sample ID: ISB1806-01 (Outfall 013 - Water) - cont.									
Reporting Units: ug/L									
Mercury U	MCAWW 245.1	9050174	0.027	0.2	ND	1	02/19/09	02/19/09	

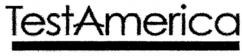
LEVEL IV

TestAmerica Irvine

Joseph Doak Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

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MWH-Pasadena/Boeing

Project ID: Routine Outfall 013

618 Michillinda Avenue, Suite 200

Report Number: ISB1806

Sampled: 02/16/09

Received: 02/16/09

Attention: Bronwyn Kelly

Arcadia, CA 91007

MCAWW 245.1-DISS

Analyte		Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample II	D: ISB1806-01 (Outfall 013	3 - Water) - cont.								
Repo	orting Units: ug/L									
Mercury	U	MCAWW 245.1-DISS	9050182	0.027	0.2	ND	1	02/19/09	02/19/09	

LEVEL IV

TestAmerica Irvine

Joseph Doak Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Arcadia, CA 91007

Project ID: Routine Outfall 013

618 Michillinda Avenue, Suite 200

Report Number: ISB1806

Sampled: 02/16/09

Received: 02/16/09

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB1806-01 (Outfall 013 -	Water) - cont.								
Reporting Units: mg/i									
Ammonia-N (Distilled) 🏋	SM4500NH3-C	9B24128	0.50	0.50	0.56	1	02/24/09	02/24/09	
Biochemical Oxygen Demand	SM5210B	9B17161	0.50	2.0	2.2	1	02/17/09	02/22/09	
Chloride 7	EPA 300.0	9B16057	0.25	0.50	8.4	1	02/16/09	02/17/09	
Fluoride	SM 4500-F-C	9B20008	0.020	0.10	0.14	1	02/20/09	02/20/09	
Nitrate-N	EPA 300.0	9B16057	0.060	0.11	0.66	1	02/16/09	02/17/09	
Nitrite-N	EPA 300.0	9B16057	0.090	0.15	ND	1	02/16/09	02/17/09	
Nitrate/Nitrite-N	EPA 300.0	9B16057	0.15	0.26	0.66	1	02/16/09	02/17/09	
Sulfate	EPA 300.0	9B16057	0.20	0.50	4.5	1	02/16/09	02/17/09	
Total Dissolved Solids	SM2540C	9B18065	10	10	58	1	02/18/09	02/18/09	
Total Suspended Solids	SM 2540D	9B21068	1.0	10	1.0	1	02/21/09	02/21/09	J
Sample ID: ISB1806-01 (Outfall 013 -	Water)								
Reporting Units: ml/l									
Total Settleable Solids	SM2540F	9B17065	0.10	0.10	ND	1	02/17/09	02/17/09	pН
Sample ID: ISB1806-01 (Outfall 013 -	Water)								
Reporting Units: NTU		100 000 000							
Turbidity	EPA 180.1	9B17067	0.040	1.0	7.6	I	02/17/09	02/17/09	
Sample ID: ISB1806-01 (Outfall 013 -	Water)								
Reporting Units: ug/I							00/10/00	00/10/00	
Perchlorate 💥	EPA 314.0	9B18101	0.90	4.0	ND	1	02/18/09	02/18/09	

LEVEL W

*Analysis not validated

TestAmerica Irvine

Joseph Doak Project Manager

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