APPENDIX G

Section 45

Outfall 013, February 16, 2009

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ISB1806

Prepared by

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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.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight
Date Reviewed: March 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.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq$20% for the 16 native compounds (calibration by isotope dilution) and $\leq$35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had no target compound detects above the EDL.

- Blank Spikes and Laboratory Control Samples: 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 r^2 values were $\geq$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.

- Interference Check Samples: Not applicable to this analysis.

- Blank Spikes and Laboratory Control Samples: The recoveries were within the laboratory-established 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.

- Calibration: Calibration criteria were met. Turbidity initial calibration r^2 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.

Sample ID: **ISB1806-01** Outfall 013 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Test America-Irvine, CA	Matrix:	Aqueous	Lab Sample:	31443-001	Date Received:	18-Feb-09
Project:	ISB1806	Sample Size:	1.03 L	QC Batch No.:	1907	Date Extracted:	21-Feb-09
Date Collected:	16-Feb-09			Date Analyzed DB-5:	24-Feb-09	Date Analyzed DB-225:	NA
Time Collected:	1420						

Analyte	Conc. (ug/L)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND U	0.000000439		
1,2,3,7,8-PeCDD	ND	0.000000915		
1,2,3,4,7,8-HxCDD	ND	0.00000118		
1,2,3,6,7,8-HxCDD	ND	0.00000111		
1,2,3,7,8,9-HxCDD	ND	0.00000110		
1,2,3,4,6,7,8-HpCDD	0.00000398 JDNQ			J
OCDD	0.0000215 JDNQ			J
2,3,7,8-TCDF	ND U	0.000000467		
1,2,3,7,8-PeCDF	ND	0.000000557		
2,3,4,7,8-PeCDF	ND	0.000000593		
1,2,3,4,7,8-HxCDF	ND	0.000000547		
1,2,3,6,7,8-HxCDF	ND	0.000000541		
2,3,4,6,7,8-HxCDF	ND	0.000000642		
1,2,3,7,8,9-HxCDF	ND	0.000000921		
1,2,3,4,6,7,8-HpCDF	ND	0.00000131		
1,2,3,4,7,8,9-HpCDF	ND	0.00000145		
OCDF	0.00000306 JDNQ			J

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	85.1	25 - 164	
	13C-1,2,3,7,8-PeCDD	76.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	79.6	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	78.7	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	71.9	23 - 140	
	13C-OCDD	61.1	17 - 157	
	13C-2,3,7,8-TCDF	94.0	24 - 169	
	13C-1,2,3,7,8-PeCDF	81.5	24 - 185	
	13C-2,3,4,7,8-PeCDF	80.2	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	85.6	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	77.7	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	82.2	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	77.7	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	71.7	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	74.9	26 - 138	
	13C-OCDF	60.3	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	89.7	35 - 197	

Totals		
Total TCDD	ND U	0.000000439
Total PeCDD	ND	0.000000915
Total HxCDD	ND	0.00000113
Total HpCDD	0.00000398 JDNQ	
Total TCDF	ND U	0.000000467
Total PeCDF	ND	0.000000575
Total HxCDF	ND	0.000000663
Total HpCDF	ND	0.00000138

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-Mar-2009 08:19

LEVEL IV

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 013
Report Number: ISB1806

Sampled: 02/16/09
Received: 02/16/09

MCAWW 245.1

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: ug/L									
Mercury	MCAWW 245.1	9050174	0.027	0.2	ND	1	02/19/09	02/19/09	

LEVEL IV

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 013
Report Number: ISB1806

Sampled: 02/16/09
Received: 02/16/09

MCAWW 245.1-DISS

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

LEVEL IV

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 013
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/l									
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	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	pH
Sample ID: ISB1806-01 (Outfall 013 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	9B17067	0.040	1.0	**7.6**	1	02/17/09	02/17/09	
Sample ID: ISB1806-01 (Outfall 013 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	9B18101	0.90	4.0	ND	1	02/18/09	02/18/09	

LEVEL IV

*Analysis not validated

TestAmerica Irvine

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