CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
355 South Teller Street
Suite 300
Lakewood, CO 80226

Package ID T713DF1
Task Order 313150010
SDG No. IOI2209
No. of Analyses 6

Laboratory Alta
Reviewer K. Shadowlight
Analysis/Method Dioxins

Date: November 2, 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	* Method blank contamination
GC/MS Tune/Inst. Performance	* EMPCs were identified
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.
*#	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

Topanga Fire Ash Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOI2209

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
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1. INTRODUCTION

Task Order Title:	Topanga Fire Ash Samples
Contract Task Order #:	313150010
Sample Delivery Group #:	IOI2209
Project Manager:	P. Costa
Matrix:	Soil
Analysis:	Dioxins/Furans
QC Level:	Level IV
No. of Samples:	6
No. of Reanalyses/Dilutions:	0
Reviewer:	K. Shadowlight
Date of Review:	October 28, 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
Perimeter Pond Dam	IOI2209-01	26761-001	soil	1613
Happy Valley Near Hydrant 125	IOI2209-02	26761-002	soil	1613
Behind B-203	IOI2209-03	26761-003	soil	1613
Near SRE Outfall	IOI2209-04	26761-004	soil	1613
Above Telescope A-4	IOI2209-05	26761-005	soil	1613
Near Well-9 Upper Gate	IOI2209-06	26761-006	soil	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 this SDG were received at Del Mar Analytical above the temperature limits of 4°C ±2°C at 8°C; however, the samples were transported directly to the laboratory from the field, and had not completely cooled in transit. The samples were shipped to Alta for dioxin/furan analysis and were received within the temperature limits of 4°C ±2°C. According to the case narrative and 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 COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. The cooler received by Alta had no custody seals present. 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 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 06/27/05. 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 (7288-MB001) was extracted and analyzed with the samples in this SDG. Target compound 1,2,3,4,6,7,8-HpCDF was reported at a concentration of 0.120 pg/g in the method blank. Any detects for 1,2,3,4,6,7,8-HpCDF ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in the site samples of this SDG. Total HxCDF and HpCDF were also reported in the method blank. Detects for total HpCDF at concentrations ≤ five times the concentration reported in the method blank were qualified as estimated, "UJ," in samples Perimeter Pond Dam and Behind B-203 and the detect for total HxCDF was qualified, "UJ," in sample Above Telescope A-4. In instances where the total concentration included peaks not present in the method blank as well as the method blank contamination, the total concentration was considered estimated, "J," as a portion of the total concentration was considered blank contamination. There were no other target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No further qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (7288-OPR001) was extracted and analyzed with the samples 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 samples in this SDG had no identified 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. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." The results and reporting limits were appropriately reported on a dry-weight basis and were reported in pg/g. No further qualifications were required.

Sample ID: IOI2209-01 Perimeter Pond Dam

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-001	Date Received:	3-Oct-05
Project:	IOI2209	Sample Size:	9.79 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05
Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	5-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1420						

Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
UJ	*10	2,3,7,8-TCDD	ND		0.0862	
J		1,2,3,7,8-PeCDD	0.192			J
UJ	*10	1,2,3,4,7,8-HxCDD	ND		0.132	
J		1,2,3,6,7,8-HxCDD	0.171			J
		1,2,3,7,8,9-HxCDD	0.207			J
		1,2,3,4,6,7,8-HpCDD	1.06			J
		OCDD	2.22			J
		2,3,7,8-TCDF	0.283			J
		1,2,3,7,8-PeCDF	0.234			J
		2,3,4,7,8-PeCDF	0.243			J
UJ	*10	1,2,3,4,7,8-HxCDF	ND		0.149	
J		1,2,3,6,7,8-HxCDF	0.148			J
		2,3,4,6,7,8-HxCDF	0.128			J
U		1,2,3,7,8,9-HxCDF	ND	0.0346		
UJ	B	1,2,3,4,6,7,8-HpCDF	0.250			J,B
U		1,2,3,4,7,8,9-HpCDF	ND	0.0562		
J		OCDF	0.253			J

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	75.9	25 - 164	
	13C-1,2,3,7,8-PeCDD	84.3	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	71.6	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	78.8	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	88.2	23 - 140	
	13C-OCDD	50.5	17 - 157	
	13C-2,3,7,8-TCDF	76.0	24 - 169	
	13C-1,2,3,7,8-PeCDF	87.2	24 - 185	
	13C-2,3,4,7,8-PeCDF	90.5	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	77.2	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	82.8	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	83.1	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	81.7	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	81.4	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	90.6	26 - 138	
	13C-OCDF	64.9	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	75.6	35 - 197	

Totals

Total TCDD	1.55	2.07	
Total PeCDD	2.39	2.74	
Total HxCDD	2.52	3.18	
Total HpCDD	2.94		
Total TCDF	4.11	4.75	
Total PeCDF	2.92		
Total HxCDF	0.883	1.18	B
UJ B Total HpCDF	0.250		B

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.339

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

11/07/05

Sample ID: IOI2209-02 Happy Valley Near Hydrant 125 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-002	Date Received:	3-Oct-05
Project:	IOI2209	Sample Size:	8.81 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05
Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	5-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1441						

Rev Qual	Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
J		2,3,7,8-TCDD	0.271			J
J		1,2,3,7,8-PeCDD	0.856			J
US	*10	1,2,3,4,7,8-HxCDD	ND		0.746	
		1,2,3,6,7,8-HxCDD	3.23			
J		1,2,3,7,8,9-HxCDD	2.31			J
		1,2,3,4,6,7,8-HpCDD	19.7			
		OCDD	115			
J		2,3,7,8-TCDF	0.387			J
		1,2,3,7,8-PeCDF	0.348			J
		2,3,4,7,8-PeCDF	0.365			J
		1,2,3,4,7,8-HxCDF	0.369			J
		1,2,3,6,7,8-HxCDF	0.286			J
		2,3,4,6,7,8-HxCDF	0.260			J
		1,2,3,7,8,9-HxCDF	0.128			J
		1,2,3,4,6,7,8-HpCDF	1.18			J,B
		1,2,3,4,7,8,9-HpCDF	0.122			J
		OCDF	1.05			J

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	83.9	25 - 164	
	13C-1,2,3,7,8-PeCDD	89.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	81.7	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	90.3	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	95.2	23 - 140	
	13C-OCDD	55.8	17 - 157	
	13C-2,3,7,8-TCDF	87.0	24 - 169	
	13C-1,2,3,7,8-PeCDF	96.0	24 - 185	
	13C-2,3,4,7,8-PeCDF	97.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	82.3	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	88.6	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	92.9	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	92.0	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	85.5	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	96.8	26 - 138	
	13C-OCDF	71.0	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	80.5	35 - 197	

Totals	
Total TCDD	9.51
Total PeCDD	20.2
Total HxCDD	37.6
Total HpCDD	62.5
Total TCDF	7.62
Total PeCDF	6.24
Total HxCDF	4.26
Total HpCDF	2.51

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 1.92

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

AMEC VALIDATED LEVEL IV

Rev Qual	Qual Code	Sample ID: IOI2209-03 Behind B-203					EPA Method 1613			
		Client Data		**Sample Data**		**Laboratory Data**				
		Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-003	Date Received:	3-Oct-05	
		Project:	IOI2209	Sample Size:	10.04 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05	
		Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	5-Oct-05	Date Analyzed DB-225:	NA	
		Time Collected:	1508							

Rev Qual	Qual Code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers		Labeled Standard	%R	LCL-UCL [d]	Qualifiers
U		2,3,7,8-TCDD	ND	0.0454			IS	13C-2,3,7,8-TCDD	77.9	25 - 164	
J		1,2,3,7,8-PeCDD	0.149			J		13C-1,2,3,7,8-PeCDD	84.0	25 - 181	
UJ	*10	1,2,3,4,7,8-HxCDD	ND		0.118			13C-1,2,3,4,7,8-HxCDD	86.2	32 - 141	
J		1,2,3,6,7,8-HxCDD	0.220			J		13C-1,2,3,6,7,8-HxCDD	94.9	28 - 130	
		1,2,3,7,8,9-HxCDD	0.226			J		13C-1,2,3,4,6,7,8-HpCDD	92.5	23 - 140	
		1,2,3,4,6,7,8-HpCDD	1.45			J		13C-OCDD	57.0	17 - 157	
		OCDD	3.25			J		13C-2,3,7,8-TCDF	82.7	24 - 169	
UJ	*10	2,3,7,8-TCDF	ND		0.262			13C-1,2,3,7,8-PeCDF	89.7	24 - 185	
J		1,2,3,7,8-PeCDF	0.112			J		13C-2,3,4,7,8-PeCDF	93.7	21 - 178	
		2,3,4,7,8-PeCDF	0.119			J		13C-1,2,3,4,7,8-HxCDF	87.1	26 - 152	
		1,2,3,4,7,8-HxCDF	0.115			J		13C-1,2,3,6,7,8-HxCDF	93.1	26 - 123	
U		1,2,3,6,7,8-HxCDF	ND	0.0348				13C-2,3,4,6,7,8-HxCDF	96.2	28 - 136	
		2,3,4,6,7,8-HxCDF	ND	0.0365				13C-1,2,3,7,8,9-HxCDF	92.8	29 - 147	
		1,2,3,7,8,9-HxCDF	ND	0.0568				13C-1,2,3,4,6,7,8-HpCDF	84.7	28 - 143	
UJ	B	1,2,3,4,6,7,8-HpCDF	0.155			J,B		13C-1,2,3,4,7,8,9-HpCDF	100	26 - 138	
U		1,2,3,4,7,8,9-HpCDF	ND	0.0417				13C-OCDF	70.6	17 - 157	
J		OCDF	0.143			J	CRS	37Cl-2,3,7,8-TCDD	73.7	35 - 197	

Totals					Toxic Equivalent Quotient (TEQ) Data [e]
Total TCDD	1.25		1.46		TEQ (Min): 0.215
Total PeCDD	2.23		2.69		
Total HxCDD	3.31		3.43		a. Sample specific estimated detection limit.
Total HpCDD	3.98				b. Estimated maximum possible concentration.
Total TCDF	1.18		1.64		c. Method detection limit.
Total PeCDF	0.898				d. Lower control limit - upper control limit.
J B Total HxCDF	0.358		0.404	B	e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).
UJ B Total HpCDF	0.155			B	

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

11/07/05

AMEC VALIDATED LEVEL IV

Sample ID: IOI2209-04 Near SRE Outfall

EPA Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-004	Date Received:	3-Oct-05
Project:	IOI2209	Sample Size:	9.37 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05
Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	5-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1518						

Rev Qual	Qual code	Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
J		2,3,7,8-TCDD	0.138			J
J		1,2,3,7,8-PeCDD	0.438			J
UJ	*10	1,2,3,4,7,8-HxCDD	ND		0.379	
J		1,2,3,6,7,8-HxCDD	0.622			J
		1,2,3,7,8,9-HxCDD	0.618			J
		1,2,3,4,6,7,8-HpCDD	4.92			
		OCDD	11.5			
UJ	*10	2,3,7,8-TCDF	ND		0.120	
		1,2,3,7,8-PeCDF	ND		0.0643	
		2,3,4,7,8-PeCDF	ND		0.0781	
		1,2,3,4,7,8-HxCDF	ND		0.0847	
J		1,2,3,6,7,8-HxCDF	0.0712			J
J		2,3,4,6,7,8-HxCDF	0.0661			J
U		1,2,3,7,8,9-HxCDF	ND	0.0418		
UJ	B	1,2,3,4,6,7,8-HpCDF	0.275			J,B
U		1,2,3,4,7,8,9-HpCDF	ND	0.0550		
J		OCDF	0.287			J
		Totals				
		Total TCDD	2.85		3.40	
		Total PeCDD	6.99		7.93	
		Total HxCDD	11.7		12.1	
		Total HpCDD	14.9			
		Total TCDF	0.549		1.01	
		Total PeCDF	0.783		1.01	
		Total HxCDF	0.719		0.804	B
J	B	Total HpCDF	0.490			B

	Labeled Standard	%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	78.1	25 - 164	
	13C-1,2,3,7,8-PeCDD	81.2	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	79.2	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	85.8	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	85.4	23 - 140	
	13C-OCDD	44.8	17 - 157	
	13C-2,3,7,8-TCDF	82.4	24 - 169	
	13C-1,2,3,7,8-PeCDF	86.3	24 - 185	
	13C-2,3,4,7,8-PeCDF	91.8	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	82.9	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	88.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	88.3	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	91.6	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	79.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	92.8	26 - 138	
	13C-OCDF	62.2	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	74.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.558

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

11/07/05

AMEC VALIDATED

LEVEL IV

Sample ID: IOI2209-05 Above Telescope A-4 **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-005	Date Received:	3-Oct-05
Project:	IOI2209	Sample Size:	9.68 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05
Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	5-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1531						

Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	ND	0.0455		
1,2,3,7,8-PeCDD	ND	0.0666		
1,2,3,4,7,8-HxCDD	ND	0.0901		
1,2,3,6,7,8-HxCDD	ND	0.0889		
1,2,3,7,8,9-HxCDD	ND	0.0879		
1,2,3,4,6,7,8-HpCDD	0.118			J
OCDD	0.557			J
2,3,7,8-TCDF	0.173			J
1,2,3,7,8-PeCDF	ND	0.0856		
2,3,4,7,8-PeCDF	ND	0.0731		
1,2,3,4,7,8-HxCDF	ND	0.0375		
1,2,3,6,7,8-HxCDF	ND	0.0368		
2,3,4,6,7,8-HxCDF	ND	0.0379		
1,2,3,7,8,9-HxCDF	ND	0.0561		
1,2,3,4,6,7,8-HpCDF	ND		0.0586	
1,2,3,4,7,8,9-HpCDF	ND	0.0290		
OCDF	ND	0.145		

Labeled Standard		%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	74.4	25 - 164	
	13C-1,2,3,7,8-PeCDD	81.1	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	74.2	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	80.4	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	85.5	23 - 140	
	13C-OCDD	51.6	17 - 157	
	13C-2,3,7,8-TCDF	77.3	24 - 169	
	13C-1,2,3,7,8-PeCDF	84.3	24 - 185	
	13C-2,3,4,7,8-PeCDF	87.3	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	74.8	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	80.2	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	83.6	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	82.7	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	78.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	88.1	26 - 138	
	13C-OCDF	65.8	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	70.6	35 - 197	

Totals				
Total TCDD	ND	0.0455		
Total PeCDD	ND	0.0666		
Total HxCDD	0.0748			
Total HpCDD	0.275			
Total TCDF	0.680			
Total PeCDF	0.546			
Total HxCDF	0.125			B
Total HpCDF	ND		0.0586	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.0190

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

KS 11/07/05 AMEC VALIDATED LEVEL IV

Sample ID: IOI2209-06 Near Well 9 Upper Gate **EPA Method 1613**

Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Solid	Lab Sample:	26761-006	Date Received:	3-Oct-05
Project:	IOI2209	Sample Size:	9.38 g	QC Batch No.:	7288	Date Extracted:	4-Oct-05
Date Collected:	30-Sep-05	%Solids:	100	Date Analyzed DB-5:	6-Oct-05	Date Analyzed DB-225:	NA
Time Collected:	1542						

Res Qual / Qual Lab

Analyte	Conc. (pg/g)	DL [a]	EMPC [b]	Qualifiers
2,3,7,8-TCDD	0.264			J
1,2,3,7,8-PeCDD	0.851			J
1,2,3,4,7,8-HxCDD	0.716			J
1,2,3,6,7,8-HxCDD	1.16			J
1,2,3,7,8,9-HxCDD	1.30			J
1,2,3,4,6,7,8-HpCDD	9.07			
OCDD	23.8			
2,3,7,8-TCDF	0.288			J
1,2,3,7,8-PeCDF	0.143			J
2,3,4,7,8-PeCDF	0.199			J
1,2,3,4,7,8-HxCDF	0.176			J
1,2,3,6,7,8-HxCDF	0.153			J
2,3,4,6,7,8-HxCDF	0.119			J
1,2,3,7,8,9-HxCDF	ND	0.0399		
1,2,3,4,6,7,8-HpCDF	0.585			J,B
1,2,3,4,7,8,9-HpCDF	ND	0.0665		
OCDF	0.521			J

Labeled Standard		%R	LCL-UCL [d]	Qualifiers
IS	13C-2,3,7,8-TCDD	73.9	25 - 164	
	13C-1,2,3,7,8-PeCDD	80.0	25 - 181	
	13C-1,2,3,4,7,8-HxCDD	76.1	32 - 141	
	13C-1,2,3,6,7,8-HxCDD	82.0	28 - 130	
	13C-1,2,3,4,6,7,8-HpCDD	91.9	23 - 140	
	13C-OCDD	63.9	17 - 157	
	13C-2,3,7,8-TCDF	76.5	24 - 169	
	13C-1,2,3,7,8-PeCDF	86.4	24 - 185	
	13C-2,3,4,7,8-PeCDF	89.9	21 - 178	
	13C-1,2,3,4,7,8-HxCDF	76.5	26 - 152	
	13C-1,2,3,6,7,8-HxCDF	80.3	26 - 123	
	13C-2,3,4,6,7,8-HxCDF	85.7	28 - 136	
	13C-1,2,3,7,8,9-HxCDF	84.8	29 - 147	
	13C-1,2,3,4,6,7,8-HpCDF	84.2	28 - 143	
	13C-1,2,3,4,7,8,9-HpCDF	92.5	26 - 138	
	13C-OCDF	76.6	17 - 157	
CRS	37Cl-2,3,7,8-TCDD	69.7	35 - 197	

Totals			
Total TCDD	6.61	6.83	
Total PeCDD	13.5		
Total HxCDD	20.6		
Total HpCDD	25.8		
Total TCDF	3.80	4.10	
Total PeCDF	2.32	2.43	
Total HxCDF	1.77	1.85	B
Total HpCDF	1.17		B

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 1.31

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: RAS

Approved By: Martha M. Maier 06-Oct-2005 10:51

11/07/05

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