Chain of Custody and Supporting Documentation

														,
												237071	_	Page: 1 of 2
Custome	Customer Information		Project Information	nation			Proje	et Info	Project Information					
Site:	SSFL		Client Name:	Boeing	Бu		Collector:		A. Goldenberg	erg		Boeing PM:	M:	
Company:			Sampling Event:	-	Sampling,	ISRA Sampling, August 2009	Contact #:	ict #:						
Report to:			Project Number:		1891614.05462					Reques	Requested Analyses	6S		Instructions/TAT
Address:	2121 N. California Blvd		Project Manager:	1	Alex Fischl									
	Suite 600		PM Phone #:	(925)	(925) 627-4627				,					Legend: Numerical values for
	Walnut Creek		Field Contact:	Benj	Benjamin Stewart	+			-					analyses equate to turn around time in days
	CA		Field Contact #:		(818) 266-1378									H - Hold
	94596		Lab Name:	GEL	GEL Laboratories, LLC	s, LLC								EH - Extract/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.c	lobal.c	Lab Contact:	Jacki	Jackie Trudell									
	sean.leffler@mwhgtobal.com	mo	Lab Address:	2040	2040 Savage Road	ad	D2	Meta	_		-			
				Char	Charleston, SC 29407	9407	216 1	ls 60						bellow are Turn Around
			Lab Phone:	(843)	(843) 769-7388		Moist	20 S						limes.
Sample Name	eme		Matrix	Date	Time	No. of Containers	ure Soi	oil Lead						Comments
HZET0200S001	001	Soil		9/10/2009	9:40	-	5	2		-				
HZET0201S001	001	Soil		9/10/2009	10:00	-	2	5		\vdash				
HZET0202S001	001	Soil		9/10/2009	10:45	-	5	2		-				
HZET0203S001	001	Soil		9/10/2009	11:15	-	S	2		-				
HZET0204S001	001	Soil		9/10/2009	11:20	-	2	5						
HZET0205S001	001	Soil		9/10/2009	12:45	-	5	5		-				
HZET0206S001	001	Soil		9/10/2009	13:00	-	S	5						
HZET0207S001	001	Soil		9/10/2009	13:10	-	2	5		-				
HZET0208S001	001	Soil		9/10/2009	13:20	-	5	2						
HZET0209S001	001	Soil		9/10/2009	13:30	-	5	5		-				
1. Relinquished by:	ished by: Date:	:0	2. Received by:	'n:		Date:	3. Reli	3. Relinquished by:	í by:		Date:	4. Received by:		Date:
Alley .	m). Redd	60-01-6 <	R.m. Mt	PTUC		11109								
Company: MWH	Time:	te:	Company:	,		Time: A VO	Company:	:Yu			Time:	Company:		Time:
Comments:											Geo	Geotracker EDF		

	1.1	
	-	
	ŝ	
1	e	
	2	
1	Ś	
1	9	
	ъ.	
	ł,	5
X	2	ļ
1	0	

CHAIN OF CUSTODY RECORD

COC #:

Custome	Customer Information	Project Information	mation					25 to 71	Page: 2 of 2
						Project I	Project Information		
Site:	SSFL	Client Name:	Boeing	ing		Collector:	Collector: A. Goldenberg		
Company: MWH	HWH:	Sampling Event:	<u> </u>	ISRA Sampling, August 2009	August 2009	Contact #:		:WH Buland	
Report to:	Report to: Sarah Von Raesfeld	Project Number:		1614.05462					
Address:	2121 N. California Blvd	Project Manager:	iger: Alex	c Fischl				s	Instructions/TAT
	Suite 600	PM Phone #:	(925)	5) 627-4627					Legend:
	Walnut Creek	Field Contact:		Benjamin Stewart	+				Numerical values for analyses equate to turn
	CA	Field Contact #:	t#: (818)	3) 266-1378					around time in days
	94596	Lab Name:	GEL	- Laboratories, LLC	1, LLC				H - Hold EH - Fytract/Extends o
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	al.c Lab Contact:		Jackie Trudell					Hold
	sean.leffler@mwhglobal.com	Lab Address:	: 2040	3 Savage Road	ad				
			Chai	Charleston, SC 29407	9407				Note: Values in the cells
		Lab Phone:	(843)) 769-7388					Times.
Sample Name	ame	Matrix	Date	Time	No. of Containers	oil Lead			
HZET0210S001		Soil	9/10/2009	13:40	-	+			Comments
HZET0211S001		Soil	9/10/2009		-	5 5			
 HZET0212S001 		Soil	9/10/2009	14:00		5 5			

Time: Date: Geotracker EDF 4. Received by: Company: Time: Date: 3. Relinquished by: Company: $\frac{2}{100}$ $\frac{2}{100}$ $\frac{100}{100}$ $\frac{100}{100}$ Date: 2. Received by: R.M.XI company: Ere 1 60-01-6 Date: Time: - all XULan my 72 1. Relinquished by: Comments: Company: MWH

6

GEL Laboratories LLC

2

SAMPLE RECEIPT & REVIEW FORM

Clier	nt:55F1				SDG/ARCOC/Work Order: 2370アレ	
	ived By: RMS					
	ected Hazard Information	8	•	*If (Date Received: $9 11 09$ Counts > x2 area background on samples not marked "radioactive", contact	
		Yes	ů	the l	Radiation Safety Group of further investigation.	
	/Samples marked as radioactive?		1	Max	timum Counts Observed*:	
	ified Radioactive II or III by RSO?	-	Ļ		Hocpm	
	/Samples marked containing PCBs?		\vdash			
	bed as a DOT Hazardous?	-	Ě	Haz	ard Class Shipped: UN#:	
15am			-			
L	Sample Receipt Criteria	Yes	NA	°N N	Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)	
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	/			Preservation Method: blue ice dry ice none other (describe)	
3	Chain of custody documents included with shipment?	/				
4	Sample containers intact and sealed?	~			Circle Applicable: seals broken damaged container leaking container other (describe)	
5	Samples requiring chemical preservation at proper pH?		$\overline{}$		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:	
6	VOA vials free of headspace (defined as < 6mm bubble)?		\	÷	Sample ID's and containers affected:	
7	Are Encore containers present?			1	(If yes, immediately deliver to Volatiles laboratory)	
8	Samples received within holding time?	1		•	Id's and tests affected:	
9	Sample ID's on COC match ID's on bottles?	1			Sample ID's and containers affected:	
10	Date & time on COC match date & time on bottles?	1			Sample ID's affected:	
11	Number of containers received match number indicated on COC?	1			Sample ID's affected: .	
12	COC form is properly signed in relinquished/received sections?	/				
Comn F _×	nents: .: 9457 3161 4159					

Date _____9/11/09-

ব্য

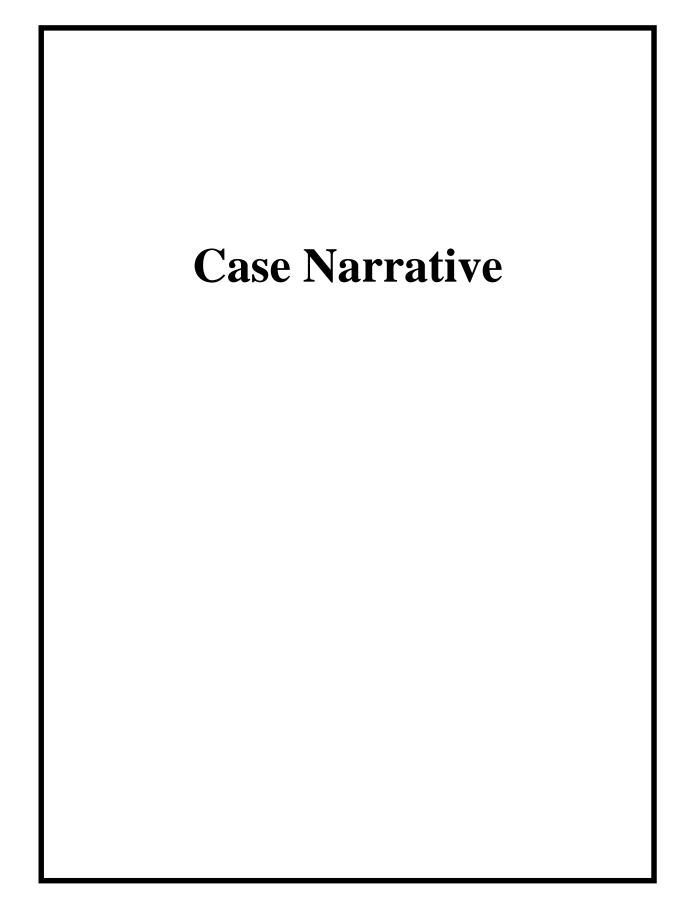
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	ampling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
	2121	N. California Blvd. Ste. 600		20	040 Savage F	Rd.
	W	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
		· · · · · · · · · · · · · · · · · · ·				
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	I
Phone Number:		925-627-4654	Phone Number:		843-769-738	3
Fax Number:		925-627-4501	Fax Number:		843-766-1178	3
E-mail Address:	<u>Sarah</u>	.VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	<u>gel.com</u>
		SAMPLE C	ONTAINER ORDER FORM			
Date Required:			Requested Analyses:	(Sp	pecify # of Samp	oles)
	-		. , , ,	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_ ` ` `	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information	:		Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	-	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?		(Yes/No)	% Moisture (D2216)	0	170	0
		(100,110)	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	х	(select all applicable)	Zinc (6020)	5	20	0
Water	<u>X</u>	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)		J	25	0
ναροι						
Est. Total # of Samples:	175	Est. Total # of EDDs				
Project TAT:		LABORATORY R	EPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablacy	
Project TAT:	v	(42 During and share)	Draft Results Fax?:	rts Delivera		
Normal:		(10 Business days)	-		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Rec	uirem	ents:	Project Site		(enter "X")	
Contingent Analysis?	-	(Yes/No)	Consultant Office		(enter "X")	
Contingent Analysis			-			
TIC (VOC) Required?	No	_(Yes/No)	Other Location (specify in comments)			
TIC (SVOC) Required?		(Yes/No)	-	Х	(enter "X")	
Data Validation Pckge.:	Tier II	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
-	Corola	ion Dooofold	•			
	-	on Raesfeld	Name:			
Date:	09/02/0	9	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	9
Laboratory Certifications	11
Percent Moisture	13
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	37 52 55



Case Narrative for Boeing - SSFL (MWH) Work Order: 237071 SDG: 237071

September 25, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 11, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237071001	HZET0200S001
237071002	HZET0201S001
237071003	HZET0202S001
237071004	HZET0203S001
237071005	HZET0204S001
237071006	HZET0205S001
237071007	HZET0206S001
237071008	HZET0207S001
237071009	HZET0208S001
237071010	HZET0209S001
237071011	HZET0210S001
237071012	HZET0211S001
237071013	HZET0212S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

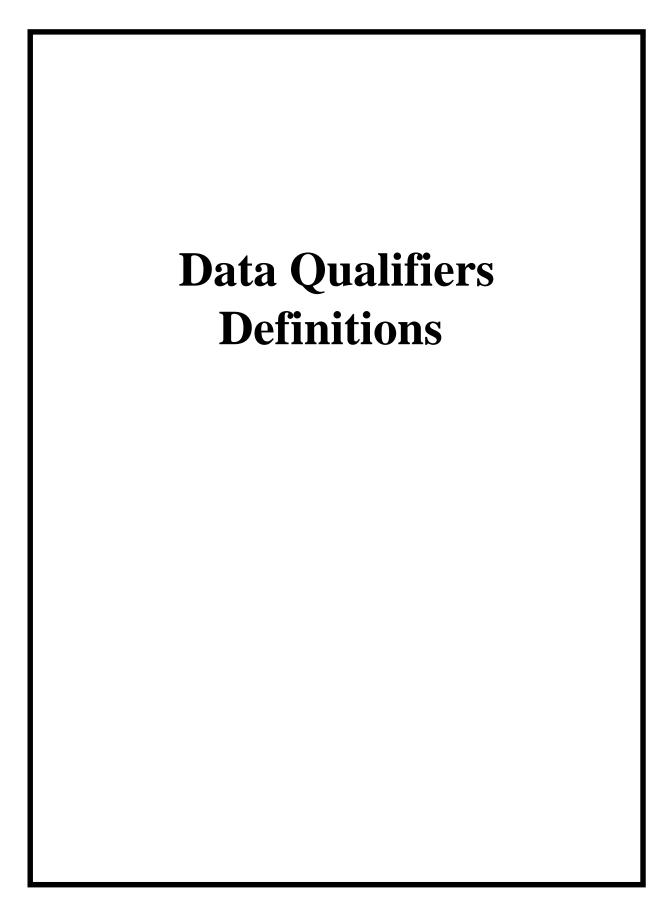
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline a Judel

Jacqueline Trudell

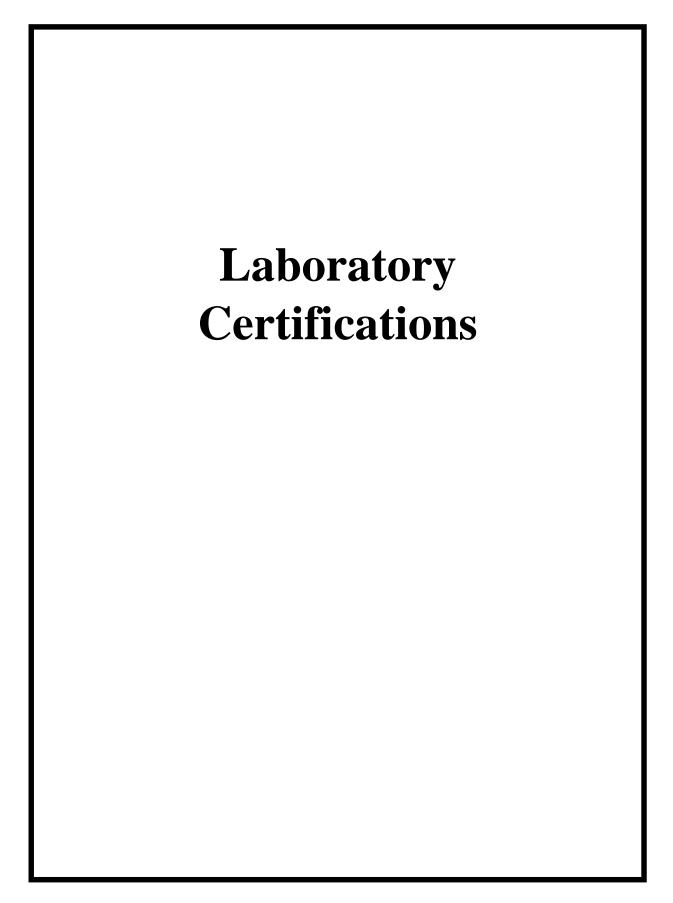
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 18 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237071

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL RFI ISRA
Contract Task Order:	1261.500D.00
Sample Delivery Group:	237071
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	13
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZET0200S001	237071001	N/A	Soil	9/10/2009 9:40:00 AM	6020
HZET0201S001	237071002	N/A	Soil	9/10/2009 10:00:00 AM	6020
HZET0202S001	237071003	N/A	Soil	9/10/2009 10:45:00 AM	6020
HZET0203S001	237071004	N/A	Soil	9/10/2009 11:15:00 AM	6020
HZET0204S001	237071005	N/A	Soil	9/10/2009 11:20:00 AM	6020
HZET0205S001	237071006	N/A	Soil	9/10/2009 12:45:00 PM	6020
HZET0206S001	237071007	N/A	Soil	9/10/2009 1:00:00 PM	6020
HZET0207S001	237071008	N/A	Soil	9/10/2009 1:10:00 PM	6020
HZET0208S001	237071009	N/A	Soil	9/10/2009 1:20:00 PM	6020
HZET0209S001	237071010	N/A	Soil	9/10/2009 1:30:00 PM	6020
HZET0210S001	237071011	N/A	Soil	9/10/2009 1:40:00 PM	6020
HZET0211S001	237071012	N/A	Soil	9/10/2009 1:50:00 PM	6020
HZET0212S001	237071013	N/A	Soil	9/10/2009 2:00:00 PM	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
Т- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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 6020—Lead

Reviewed By: P. Meeks Date Reviewed: October 2, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0200S001. The RPD was within the method-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0200S001. Recoveries and the RPD were within laboratory-established QC limits.
- Serial Dilution: A serial dilution analysis was performed on HZET0200S001. The %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. The samples in this SDG were analyzed at the laboratory's standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (223913) was the field blank associated with the samples in this SDG. Lead was not detected in the field blank. The samples in this SDG had no equipment rinsate.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 237071

Analysis Method 6020

Sample Name	HZET0200S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071001	Sample	Date: 9	/10/2009 9:40:00 AN	4 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.68	0.402	0.101 mg/kg		
Sample Name	HZET0201S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071002	Sample	Date: 9	/10/2009 10:00:00 A	м	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.73	0.406	0.102 mg/kg		
Sample Name	HZET0202S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071003	Sample	Date: 9	/10/2009 10:45:00 A	М	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.59	0.401	0.1 mg/kg		
Sample Name	HZET0203S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071004	Sample Date: 9/10/2009 11:15:00 AM Validation Level: V				
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.44	0.4	0.1 mg/kg		
Sample Name	HZET0204S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071005	Sample	Date: 9	/10/2009 11:20:00 A	м	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.52	0.391	0.0976 mg/kg		
Sample Name	HZET0205S001		Matrix '	Fype: SOIL	Res	Ilt Type: Primary Result
Lab Sample Name:	237071006	Sample	Date: 9	/10/2009 12:45:00 P	М	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	5.78	0.404	0.101 mg/kg		
Sample Name	HZET0206S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237071007	Sample	Date: 9	/10/2009 1:00:00 PM	ı v	alidation Level: V
	CAC N	D 1/	ы		T - 1	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier

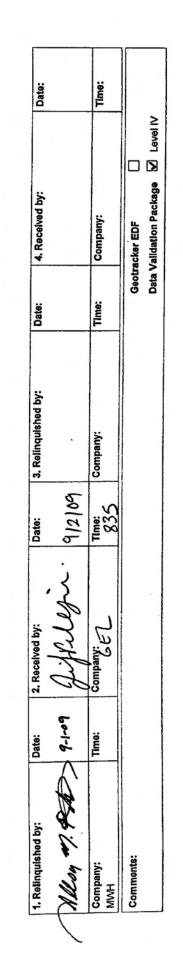
Tuesday, October 06, 2009

Analysis Method 6020

Sample Name	HZET0207S001	N	Iatrix T	Type: SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071008	Sample Da	ate: 9/	10/2009 1:10:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	6.3	0.417	0.104 mg/kg		
Sample Name	HZET0208S001	N	Iatrix T	ype: SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071009	Sample Da	ate: 9/	10/2009 1:20:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	11	0.402	0.1 mg/kg		
Sample Name	HZET0209S001	N	latrix T	SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071010	Sample Da	ate: 9/	10/2009 1:30:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	6.13	0.391	0.0977 mg/kg		
Sample Name	HZET0210S001	N	latrix T	SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071011	Sample Da	ate: 9/	10/2009 1:40:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	5.8	0.406	0.102 mg/kg		
Sample Name	HZET0211S001	N	latrix T	SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071012	Sample Da	ate: 9/	10/2009 1:50:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	5.72	0.411	0.103 mg/kg		
Sample Name	HZET0212S001	N	latrix T	SOIL	Resu	It Type: Primary Result
Lab Sample Name:	237071013	Sample Da	ate: 9/	10/2009 2:00:00 PM	v	alidation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	7.79	0.434	0.108 mg/kg		

Chain of Custody and Supporting Documentation

0	O BOLLIND		CHAI	IN OF	CHAIN OF CUSTODY RECORD	Y RE	COR	۵			•	# 000	1+C40+22	+CA	MWHAG20090901_00	00_0
5												ţ,	236434 Jr glillog Page:	MIL X	^{OA} Page: 1 of 1	11
Customer	Customer Information	Project Information	ation			Projec	Project Information	matio	c							
Site:	SSFL	Client Name:	Boeing			Collector:	<u> </u>	A. Goldenberg	nberg				Boeing PM:	ļ		
Company: MWH	HWH	Sampling Event:	<u>+</u>	npling, Au	ISRA Sampling, August 2009	Contact #:	í#:							-		
Report to:	Report to: Sarah Von Raesfeld	Project Number:	: 1891614.05462	05462					Re	queste	Requested Analyses	98			Instructions/TAT	F
Address:	2121 N. California Blvd	Project Manager:	r: Alex Fischl	F										<u> </u>		
	Sulte 600	PM Phone #:	(925) 627-4627	-4627											Legena: Numerical values for	5
	Walnut Creek	Field Contact:	Alex Fischl	F											analyses equate to turn around time in days	s turn
	CA	Field Contact #:	(925) 627-4627	-4627											H- Hold	
	94596	Lab Name:	GEL Lab	GEL Laboratories, LLC	TLC										EH - Extract/Extrude & Hold	ie &
Emall:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	I.c Lab Contact:	Jackie Trudell	udell				-	M							
	sean.leffler@mwhglobal.com	Lab Address:	2040 Sav	2040 Savage Road					atale			_			Note: Velues in the cells	oller
			Charlesto	Charleston, SC 29407	107				6020						bellow are Turn Around	punc
		Lab Phone:	(843) 769-7388	9-7388					14/24							
Sample Name	ame	Matrix	Date	Time	No. of Containers	u Water	Copper	bil Lead	er Lead						Comments	
EBQW2246		Water	9/1/2009	13:16	3	9	-	9	0			-				
HZET0300D001		Soil	9/1/2009	11:50	1	5	ŝ	20								T
HZET0300\$001		Soil	9/1/2009	11:50	1	5	60	5				╞				T
HZET0301S001		Soll	9/1/2009	11:38	+	10	s	5								Γ



.

GEL	Laboratories LLC
GEL	Lanoratories III

SAMPLE RECEIPT & REVIEW FORM

				237085H		
_	t: SSFL			SDG/ARCOC/Work Order: 236436 JT 9/11/09		
Rece	ived By: JP			Date Received: 9/2/19		
Susp	ected Hazard Information	Yes	°Ž	*If Counts > x2 area background on samples not marked "radioactive", contact		
COC/Samples marked as radioactive?		F.	14	une Audiation Safety Group of Turiner Investigation.		
	ified Radioactive II or III by RSO?	-	17	Maximum Counts Observed*: 204pm		
	/Samples marked containing PCBs?	+	ť⁄			
_	ed as a DOT Hazardous?		17	Hazard Class Shipped: UN#:		
	les identified as Foreign Soil?		1			
-	Sample Receipt Criteria	Yes	NA	2 Comments/Qualifiers (Required for Non-Conforming Items)		
1	Shipping containers received intact and sealed?	/		Circle Applicable: seals broken damaged container leaking container other (describe)		
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	V	-	Preservation Method: U o lice bags blue ice dry ice none other (describe)		
3	Chain of custody documents included with shipment?	V				
4	Sample containers intact and sealed?	~		Circle Applicable: seals broken damaged container leaking container other (describe)		
5	Samples requiring chemical preservation at proper pH?	\checkmark	$\langle \rangle$	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:		
6	VOA vials free of headspace (defined as < 6mm bubble)?		$\overline{}$	Sample ID's and containers affected:		
7	Are Encore containers present?			(If yes, immediately deliver to Volatiles laboratory)		
8	Samples received within holding time?	~		Id's and tests affected:		
9	Sample ID's on COC match ID's on bottles?			Sample ID's and containers affected:		
10	Date & time on COC match date & time on bottles?		-	Sample ID's affected:		
11	Number of containers received match number indicated on COC?			Sample ID's affected: A cooler arrived with 3 empty usals with no		
12	COC form is properly signed in relinquished/received sections?					
lomn	hents: Fed Ey 945	7	3	1580558		
	PM (or PMA) review: Initia	als		JT Date 9/2/09		

:

Subject: leachates From: Sarah Von Raesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com> Date: Fri, 11 Sep 2009 10:07:29 -0600 To: Jackie Trudell <jacqueline.trudell@gel.com>

Hi Jackie,

Please run STLC on a 5 day TAT for the following samples:

.

HZET0300S001 - Cu and Pb HZET0300D001 - Cu

Thanks, Sarah



BUILDING A BETTER WORLD

Sarah Von Raesfeld			
Environmental Chemist			
MWH Americas, Inc.	Telephone:	925 627 4500	
2121 N. California Blvd.	Direct Line:	925 627 4654	
Suite 600	Facsimile:	925 627 4501	
Walnut Creek, California 94596			

e

.

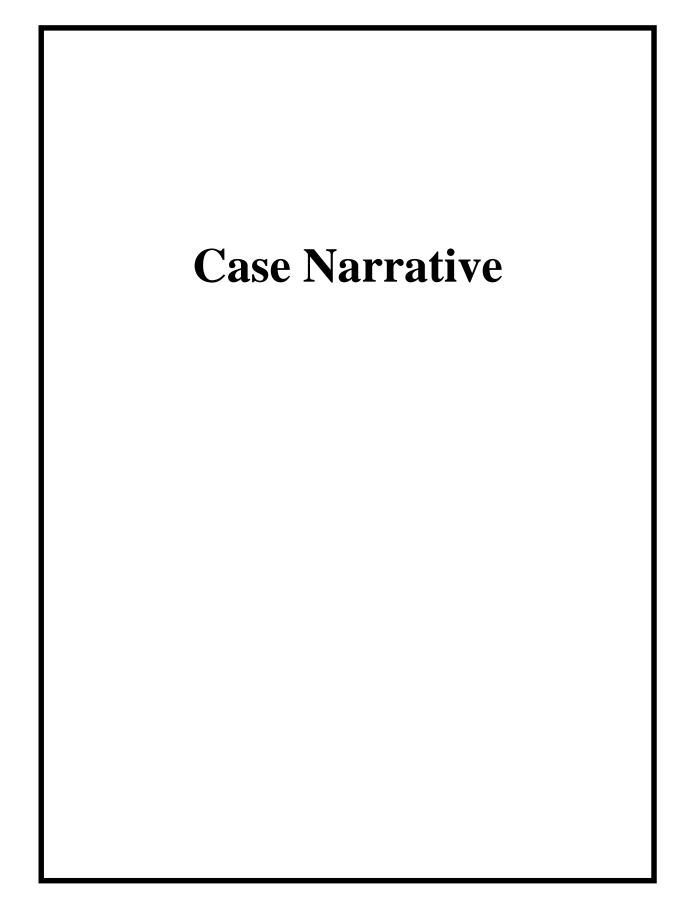
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	ampling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
	2121	N. California Blvd. Ste. 600		20	040 Savage F	Rd.
	W	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
		· · · · · · · · · · · · · · · · · · ·				
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	I
Phone Number:		925-627-4654	Phone Number:		843-769-738	3
Fax Number:		925-627-4501	Fax Number:		843-766-1178	3
E-mail Address:	<u>Sarah</u>	.VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	<u>gel.com</u>
		SAMPLE C	ONTAINER ORDER FORM			
Date Required:			Requested Analyses:	(Sp	pecify # of Samp	oles)
	-		. , , ,	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_ ` ` `	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information	:		Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	-	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?	-	(Yes/No)	% Moisture (D2216)	0	170	0
		(100,110)	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	х	(select all applicable)	Zinc (6020)	5	20	0
Water	<u>X</u>	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)		J	25	0
ναροι						
Est. Total # of Samples:	175	Est. Total # of EDDs				
Project TAT.		LABORATORY R	EPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablacy	
Project TAT:	v	(42 During and share)	Draft Results Fax?:	rts Delivera		
Normal:		(10 Business days)	-		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Rec	uirem	ents:	Project Site		(enter "X")	
Contingent Analysis?	-	(Yes/No)	Consultant Office		(enter "X")	
Contingent Analysis			-			
TIC (VOC) Required?	No	_(Yes/No)	Other Location (specify in comments)			
TIC (SVOC) Required?		(Yes/No)	-	Х	(enter "X")	
Data Validation Pckge.:	Tier II	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
-	Corola	ion Dooofold	•			
	-	on Raesfeld	Name:			
Date:	09/02/0	9	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	3
Data Qualifiers Definitions	8
Laboratory Certifications	10
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	12 13 18 21 36 39 210



Case Narrative for Boeing - SSFL (MWH) Work Order: 237085 SDG: 237085H

October 01, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 02, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237085001	HZET0300S001
237085002	HZET0300D001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

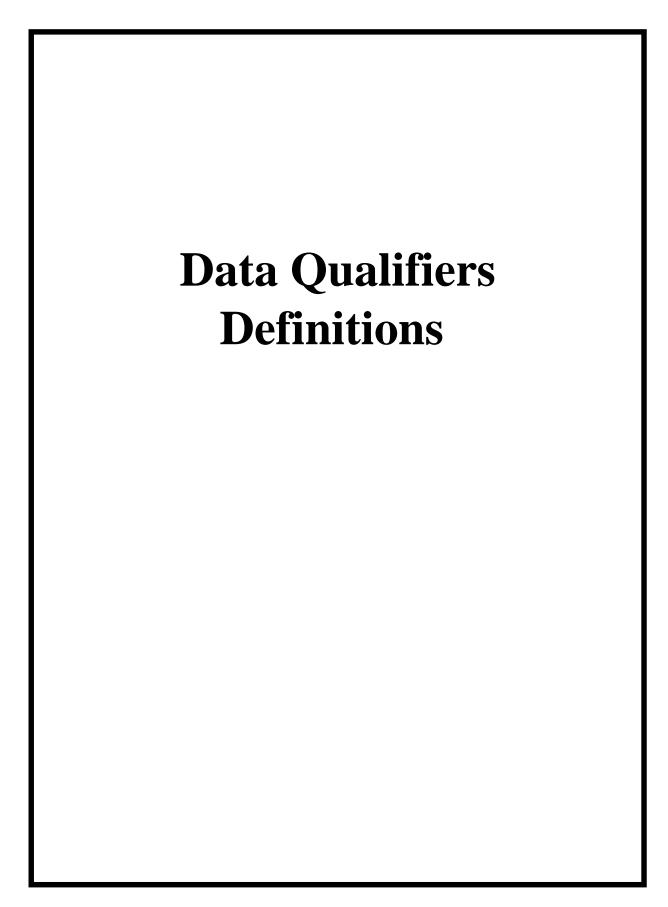
Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline a Judel

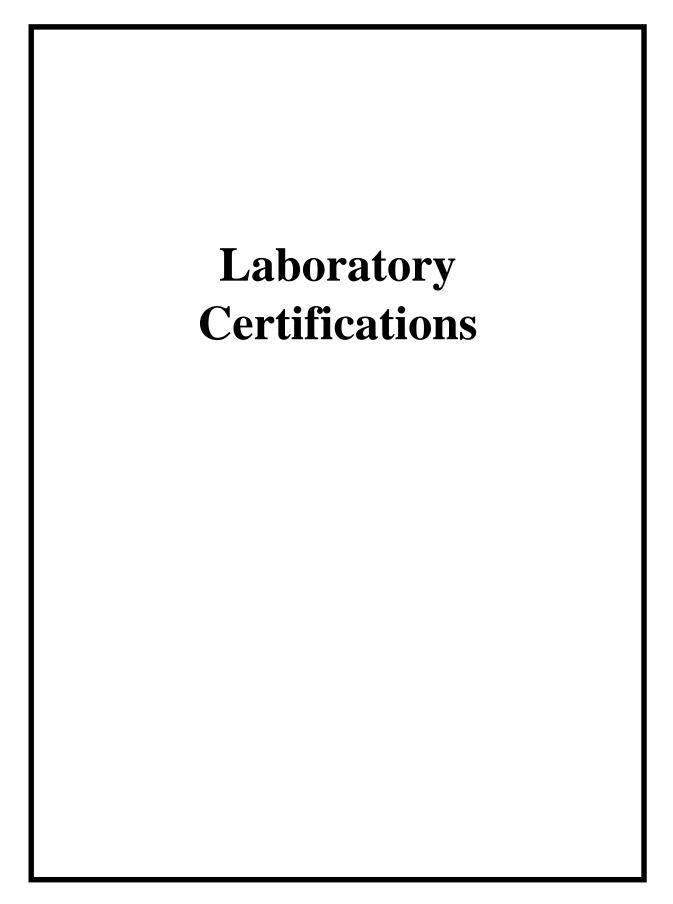
Jacqueline Trudell Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 18 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237085H

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Contract Task Order: Sample Delivery Group: Project Manager:	Boeing SSFL RFI ISRA 1261.500D.00 237085H Dixie Hambrick
, Matrix:	water/soil
QC Level:	V
No. of Samples:	2
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
	007005000		Call	0/4/0000 44-50-00 AM	
HZET0300D001 HZET0300S001	237085002 237085001	N/A N/A	Soil Soil	9/1/2009 11:50:00 AM 9/1/2009 11:50:00 AM	6020-STLC 6020-STLC

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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 6020—Metals

Reviewed By: P. Meeks Date Reviewed: October 5, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0300S001. The RPDs were within the method-established control limit.
- Matrix Spike/Matrix Spike Duplicate: A matrix spike analysis was performed on HZET0300S001. The recoveries were within method-established QC limits.
- Serial Dilution: A serial dilution analysis was performed on HZET0300S001. The lead %D exceeded the control limit; therefore, lead detected in the samples was qualified as estimated, "J." The copper %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. In order to report the analyte within the linear range of the instrument, copper was reported from 20x dilutions. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was the field blank and EBQW2246 was the equipment rinsate associated with the original soil samples in this SDG. There are no field QC samples associated with the STLC leachate samples.
- Field Duplicates: The samples in this SDG were identified as field duplicate samples. The copper RPD was 4.5% and the lead RPD was 13%.

Validated Sample Result Forms: 237085H

Analysis Method 6020-STLC

Sample Name	HZET0300D001		Matrix 7	Type: Soil	Rest	ult Type: Pr	imary Result
Lab Sample Name:	237085002	Sample	Date: 9/	/1/2009 11:50:00 AM	í V	alidation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	13.2	0.2	0.066 mg/L			
Lead	7439921	2.11	0.02	0.005 mg/L	Е	J	Α
Sample Name	HZET0300S001		Matrix 7	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	237085001	Sample	Date: 9/	/1/2009 11:50:00 AM	ı v	alidation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	13.8	0.2	0.066 mg/L			
Lead	7439921	1.85	0.02	0.005 mg/L	Е	J	Α

Chain of Custody and Supporting Documentation

Customer information Project information Project information Project information Customer information Simpling Frenci: Booing Pix: 2.37-283 Page: 101 Simpling Frenci: Simpling Frenci: Booing Pix: Project information Project information Reports Simpling Frenci: Broject Manuber: Biol (1.0542) Collobores Biol (1.0542) Reports Simpling Frenci: Biol (1.0542) Collobores Biol (1.0542) Page: 101 Report Field Contact: Biol (1.0542) Collobores Requested Analyses Biol (1.0542) Sigle Sigle Field Contact: Biol (1.0542) Contact: Biol (1.0542) Biol (1.0542) Sigle Sigle Field Contact: Biol (1.0542) Requested Analyses Biol (1.0542) Biol (1.0542) Sigle Field Contact: Biol (1.0542) Requested Analyses Biol (1.0542) Biol (1.0542) Sigle Field Contact: Biol (1.0542) Requested Analyses Biol (1.0542) Biol (1.0542) Sigle Field Contact:												I	
										237	-283	Page:	1 of 1
SFLCollector:Collector:Collector:Collector:Collector:RoomBoomany:MVHSampling EventISRA Sampling August 2009Contact #AABoomBoomAassati Von RasefieldProject Manager:IB9164.054873IB9164.054873IB9164.054873BoomBoomAassati Von RasefieldProject Manager:IB9164.054873IB9164.05483IB9164.05483IB9164.05483IB9164.054834IB9164.054834assati Von RasefieldProject Manager:IB9164.05483IB9164.05483IB9164.054834IB9164.054834IB9164.054834IB9164.054834valuut CreekIB40 Contact:IB40 Contact:IB9164.05484IB9164.054844IB9164.054844IB9164.054844IB9164.054844valuut CreekIB40 Contact:IB40 Contact:IB9164.054844IB9164.054844IB9164.054844IB9164.054844valuut CreekIB40 Contact:IB40 Contact:IB9164.054844IB9164.054844IB9164.054844valuut CreekIB40 Contact:IB40 Contact:IB9164.054844IB9164.054844IB9164.054844valuut CreekIB40 Contact:IB40 Contact:IB40 Contact:IB40 Contact:IB9164.054844valuut CreekIB40 Contact:IB40 Contact:IB40 Contact:IB4176494IIB7164.054844valuut CreekIB416Contact:IB40 Contact:IB416Contact:IB4176494IIB7164444444444valuut CreekIB416Contact:IB416Contact:IB416404444444444444444444444444444444444	ustomer	r Information	Project Informa	ition			Project I	nformation					
	ite:	SSFL	Client Name:	Boeing			Collector.	-	spers		Boeing PM:		
Interview <	ompany:	HWM	Sampling Event:	<u>+</u>	ampling, A	ugust 2009	Contact #	22					
st. 2121 N. California Blvd Project Hanager: Benjamin Slewart Sulfa 600 PM Phone #: (818) 266-1378 (818) 266-1378 Valanut Creek Field Contact: (818) 266-1378 (818) 266-1378 Valanut Creek Field Contact: (818) 266-1378 (818) 266-1378 94596 Lab Name: GEL Laboratoriles, LLC Jackie Trudell Sarah.leffler@mvhglobal.com Lab Name: GEL Laboratoriles, LLC Jackie Trudell Jackie Trudell No. of Sarah.leffler@mvhglobal.com Lab Name: GEL Laboratoriles, LLC Jackie Trudell Jackie Trudell No. of Sarah.leffler@mvhglobal.com Lab Name: GEL Laboratoriles, LLC Sarah.leffler@mvhglobal.com Lab Name: GER Name GER Name	eport to:		Project Number:	+	4.05462				Request	ted Analyses		Instructi	ons/TAT
Suffle 600PM Phome #:(818) 266-1378Vialinut CreekField Contact:Benjamin StewartCAField Contact:Benjamin StewartCAEab Name:CEL Laboratories, LLC94596Lab Name:CEL Laboratories, LLCsarah.vorraesteld@mwfglobal.comLab Name:CEL Laboratories, LLC94596Lab Name:CEL Laboratories, LLCsarah.vorraesteld@mwfglobal.comLab Name:CEL Laboratories, LLCsarah.vorraesteld@mwfglobal.comLab Mame:CASean.leffler@mwfglobal.comLab Maters:2040 Savage RoadSean.leffler@mwfglobal.comLab Phone:(843) 769-7388MameMatrixDateTimeNo. ofNameMatrixDateTimeSean.leffler@mwfglobal.comSol9/14/200812.55151517155001Sol9/14/200813.351155001Sol9/14/200813.3515155001Sol9/14/200813.3515155001Sol9/14/200813.35151155001Sol9/14/200813.351511155001Sol9/14/200813.351511155001Sol9/14/200813.3515111155001Sol9/14/200813.3515111115501Sol9/14/2008<	ddress:	2121 N. California Blvd	Project Manager:	Ben	in Stewart							ecend.	
Wallandt Creekt Field Contact: Benjamin Stewart CA Field Contact: Benjamin Stewart CA Field Contact: (Bit) 266-1378 94596 Lab Name: CEL Laboratories, LLC 94596 Lab Name: CEL Laboratories, LLC 94596 Lab Name: CEL Laboratories, LLC 94596 Lab Contact: Jackie Trudeil sean.Leffler@mwfglobal.com Lab Contact: Jackie Trudeil sean.Leffler@mwfglobal.com Lab Address: 2040 Savage Road sean.Leffler@mwfglobal.com Lab Phone: Charleston, SC 29407 sean.Leffler@mwfglobal.com Lab Phone: (B43) 769-7388 Mame Matrix Date Time On. of 143001 Seil 91(4/2009 1236 1 6 7 145001 Seil 91(4/2009 1235 1 6 7 7 7 145001 Seil 91(4/2009 1337 1 6 7 7 7 7 7 7 7 <td></td> <td>Suite 600</td> <td>PM Phone #:</td> <td>(818) 2(</td> <td>66-1378</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Numerical</td> <td>values for</td>		Suite 600	PM Phone #:	(818) 2(66-1378							Numerical	values for
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Walnut Creek	Field Contact:	Benjam	iin Stewart							around tim	le in days
94596 Lab Name: GEL Laboratories, LLC sarath.vonraesfeld@mwhglobal.c Lab Name: GEL Laboratories, LLC sarath.vonraesfeld@mwhglobal.com Lab Address: 2040 Savage Road sean-leffler@mwhglobal.com Lab Address: 2040 Savage Road sean-leffler@mwhglobal.com Lab Phone: (843) 769-7388 Address: 2040 Savage Road Rapicon 1 Charleston, SC 29407 Rapicon a Mame Matrix Date Time 155001 Soil 1769-7388 No. of 6 Persons 155001 Soil 11750 5 6 P P P 155001 Soil 11750 1 5 6 P P P P 155001 Soil 114/2009 12:35 1 5 6 P <td></td> <td>CA</td> <td>Field Contact #:</td> <td>(818) 2(</td> <td>66-1378</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>H-Hold</td> <td></td>		CA	Field Contact #:	(818) 2(66-1378							H-Hold	
sarah.vonraesteld@mwhglobal.cJackie Trudellsean.leffler@mwhglobal.comLab Address:2040 Savage Roadsean.leffler@mwhglobal.comLab Address:2040 Savage RoadSean.leffler@mwhglobal.comLab Phone:(843) 769-7388Noncessi (843) 769-7388Soli9/14/20089/14/200811Soli9/14/20089/14/200811Soli9/14/20081175001Soli9/14/2008115500155555551155001555551155001 <th< td=""><td></td><td>94596</td><td>Lab Name:</td><td>GEL La</td><td>horatories,</td><td>LLC</td><td></td><td></td><td></td><td></td><td></td><td>EH - EXtra Hold</td><td>ict/Extrude &</td></th<>		94596	Lab Name:	GEL La	horatories,	LLC						EH - EXtra Hold	ict/Extrude &
an.leffler@mwhglobal.com Lab Address: 2040 Savage Road Eab Address: 2040 Savage Road nam.leffler@mwhglobal.com Lab Phone: Charleston. SC 29407 Charleston. SC 29407 Charleston. SC 29407 nam.leffler@mwhglobal.com Lab Phone: Charleston. SC 29407 Charleston. SC 29407 Charleston. SC 29407 nam.leffler@mwhglobal.com Soil Not of Charleston. SC 29407 Charleston. SC 29407 nam.leffler@mwhglobal.com Soil 91412009 12:35 1 5 C	mail:	sarah.vonraesfeld@mwhglobal.c		Jackie	Trudell								
Image: constraint of the length of the le		sean.leffler@mwhglobal.com	Lab Address:	2040 S	avage Roa	q						Note: Valu	es in the cell
Matrix Date Time No. of No. of No. of Soli 9/14/2009 12.39 1 5 5 1 5 1 5 5 1 5 5 1 5 5 1 5 1 5 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Charles	ston, SC 25	9407						bellow are Times.	Turn Around
Matrix Date Time No. of No No. of			Lab Phone:	(843) 7(69-7388		_						
Soil 9/14/2009 12:35 1 5 5 7 7 7 7 Soil 9/14/2009 12:45 1 5 5 7 7 7 7 Soil 9/14/2009 12:45 1 5 5 7 7 7 7 Soil 9/14/2009 12:55 1 5 5 7 7 7 7 Soil 9/14/2009 13:07 1 5 5 7 7 7 7 Soil 9/14/2009 13:28 1 5 5 7 7 7 7 Soil 9/14/2009 13:28 1 5 5 7 7 7 7 7 Soil 9/14/2009 13:35 1 5 5 7	ample Na	ame		Date	Time	No. of Containers						Commer	Its
Soil 9/14/2009 12:45 1 5 5 1 <th1< th=""> 1 1</th1<>	IZET0213S			14/2009	12:39	+	-						
Soil 9/14/2009 12:55 1 5 5 0	IZET0214S			14/2009	12:45	÷							
Soil 9/14/2009 13:07 1 5 Soil 9/14/2009 13:28 1 5 Soil 9/14/2009 13:35 1 5 Soil 9/14/2009 13:35 1 5 Soil 9/14/2009 13:40 1 5 Soil 9/14/2009 13:40 1 5	IZET0215S			14/2009	12:55	۲						GSW/SW	
Soil 9/14/2009 13:28 1 5 Soil 9/14/2009 13:35 1 5 Soil 9/14/2009 13:40 1 5 Soil 9/14/2009 13:40 1 5 Soil 9/14/2009 13:40 1 5	HZET0216S			14/2009	13:07	1							
Soil 9/14/2009 13:35 1 5 Soil 9/14/2009 13:40 1 5 Soil 9/14/2009 13:45 1 5	HZET0217S			14/2009	13:28	1							
Soil 9/14/2009 13:40 1 5 Soil 9/14/2009 13:45 1 5	HZET0218S			14/2009	13:35	1							
Soil 9/14/2009 13:45 1 5	HZET0219S			14/2009	13:40	٢							
	HZET02205			14/2009	13:45	٢							
	1. Reling	1. Relinquished by: Date:	2. Received by:	×		Date:	3. Relinquished by:	lished by:		Date:	4. Received by:		Date:

Time: Geotracker EDF Company: Time: Company: Allor or Date > 9-14-09 / Leve Arhen allelog Time: 09rs GER Company: Time: 17:00 Comments: 5 day TAT Company: MWH

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL SDG/ARCOC/Work Order: 237283								
Recei	ived By: Ricky Albee				Date Received: 9/16/69			
Susp	ected Hazard Information	Yes	No		ounts $> x^2$ area background on samples not marked "radioactive", contact adiation Safety Group of further investigation.			
COC					mum Counts Observed*: 40 Cfm			
Class	Classified Radioactive II or III by RSO?							
	Samples marked containing PCBs?		/					
	ed as a DOT Hazardous?		~	Haza	rd Class Shipped: UN#:			
Samp	les identified as Foreign Soil?		-					
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)			
1	Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)			
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	/			Preservation Method: ice bags blue ice dry ice none other (describe)			
3	Chain of custody documents included with shipment?	>						
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)			
5	Samples requiring chemical preservation at proper pH?		1		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:			
6	VOA vials free of headspace (defined as < 6mm bubble)?		>		Sample ID's and containers affected:			
7	Are Encore containers present?			~	(If yes, immediately deliver to Volatiles laboratory)			
8	Samples received within holding time?	~			Id's and tests affected:			
9	Sample ID's on COC match ID's on bottles?	~			Sample ID's and containers affected:			
10	Date & time on COC match date & time on bottles?	~			Sample ID's affected:			
11	Number of containers received match number indicated on COC?	/			Sample ID's affected:			
12	COC form is properly signed in relinquished/received sections?	~						
Com	Comments: Fedter 9457 3161 4160 PM (or PMA) review: Initials JT Date							

6

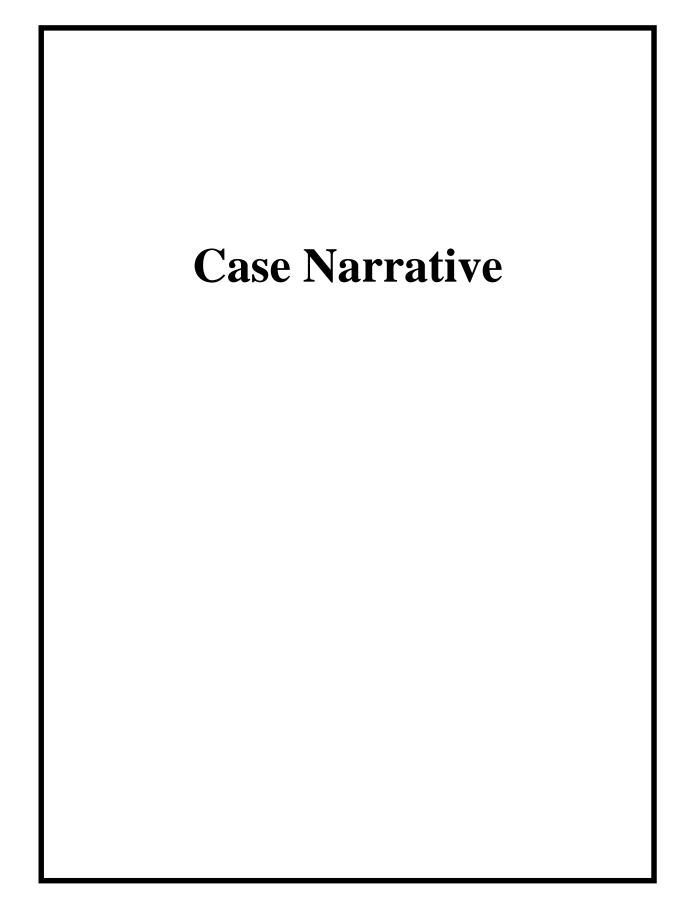
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	ampling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
	2121	N. California Blvd. Ste. 600		20	040 Savage F	Rd.
	W	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
		· · · · · · · · · · · · · · · · · · ·				
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	I
Phone Number:		925-627-4654	Phone Number:		843-769-738	3
Fax Number:		925-627-4501	Fax Number:		843-766-1178	3
E-mail Address:	<u>Sarah</u>	.VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	<u>gel.com</u>
		SAMPLE C	ONTAINER ORDER FORM			
Date Required:			Requested Analyses:	(Sp	pecify # of Samp	oles)
			. , , ,	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_ ` ` `	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information	:		Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	-	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?		(Yes/No)	% Moisture (D2216)	0	170	0
		(100,110)	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	х	(select all applicable)	Zinc (6020)	5	20	0
Water	<u>X</u>	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)		J	25	0
ναροι						
Est. Total # of Samples:	175	Est. Total # of EDDs				
Project TAT.		LABORATORY R	EPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablacy	
Project TAT:	v	(42 During and share)	Draft Results Fax?:	rts Delivera		
Normal:		(10 Business days)	-		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Rec	uirem	ents:	Project Site		(enter "X")	
Contingent Analysis?	-	(Yes/No)	Consultant Office		(enter "X")	
Contingent Analysis			-			
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify in comments)			
TIC (SVOC) Required?		(Yes/No)	-	Х	(enter "X")	
Data Validation Pckge.:	Tier II	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
-	Corola	ion Doosfold	•			
	-	on Raesfeld	Name:			
Date:	09/02/0	9	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	8
Laboratory Certifications	10
Percent Moisture	12
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	16 17 22 31 45 48 135



Case Narrative for Boeing - SSFL (MWH) Work Order: 237283 SDG: 237283

September 25, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 16, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237283001	HZET0213S001
237283002	HZET0214S001
237283003	HZET0215S001
237283004	HZET0216S001
237283005	HZET0217S001
237283006	HZET0218S001
237283007	HZET0219S001
237283008	HZET0220S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

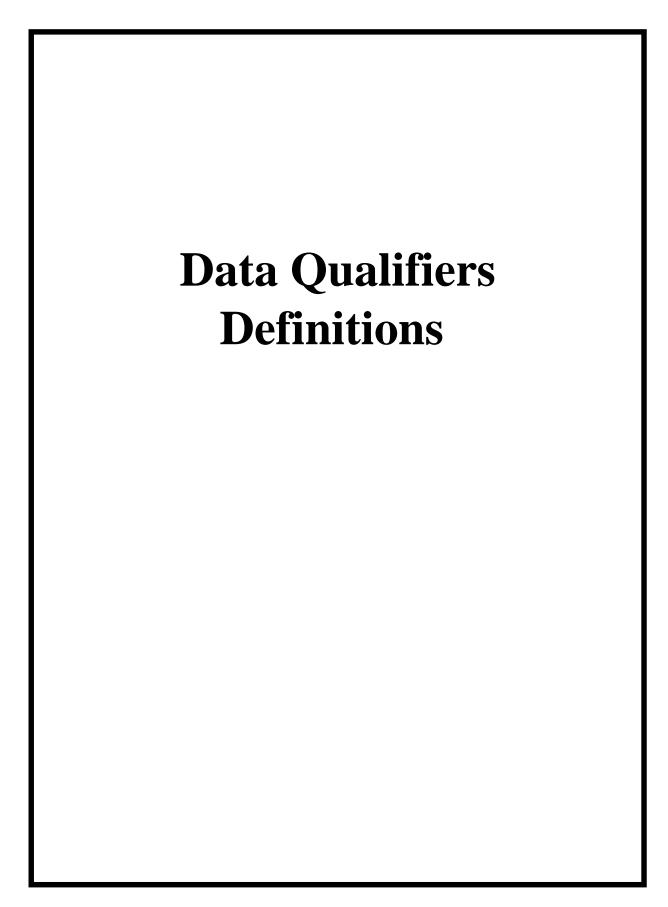
Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline a Judel Jacqueline Trudell

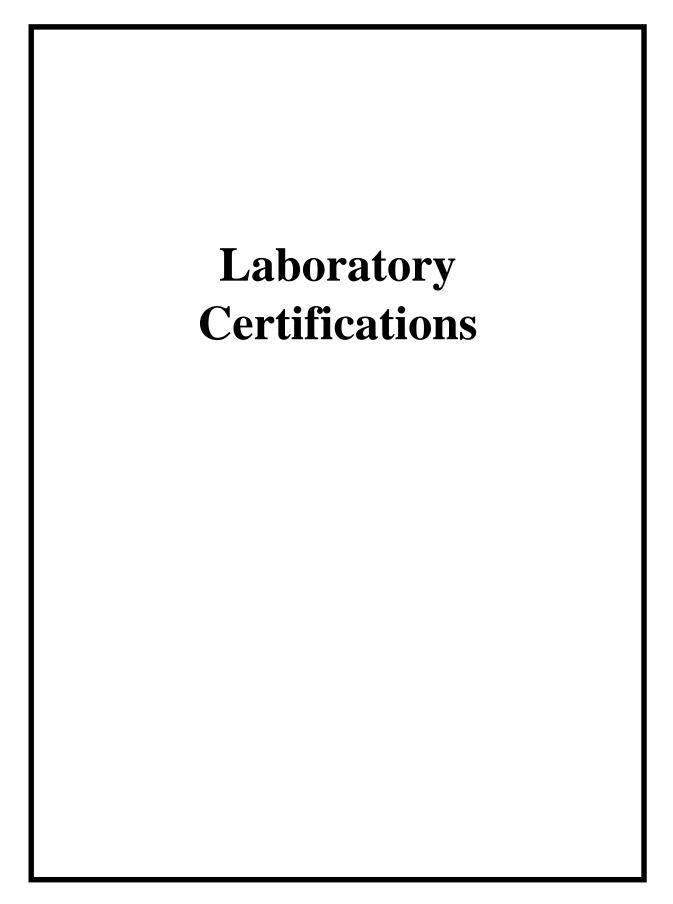
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 23 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237283

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL RFI ISRA
Contract Task Order:	1261.500D.00
Sample Delivery Group:	237283
Project Manager:	Dixie Hambrick
Matrix:	water/soil
QC Level:	V
No. of Samples:	8
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZET0213S001	237283001	N/A	SOIL	9/14/2009 12:39:00 PM	6020
HZET0214S001	237283002	N/A	SOIL	9/14/2009 12:45:00 PM	6020
HZET0215S001	237283003	N/A	SOIL	9/14/2009 12:55:00 PM	6020
HZET0216S001	237283004	N/A	SOIL	9/14/2009 1:07:00 PM	6020
HZET0217S001	237283005	N/A	SOIL	9/14/2009 1:28:00 PM	6020
HZET0218S001	237283006	N/A	SOIL	9/14/2009 1:35:00 PM	6020
HZET0219S001	237283007	N/A	SOIL	9/14/2009 1:40:00 PM	6020
HZET0220S001	237283008	N/A	SOIL	9/14/2009 1:45:00 PM	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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 6020—Lead

Reviewed By: P. Meeks Date Reviewed: September 29, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZET0215S001. The RPD was within the method-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0215S001. The lead MS exceeded the control limit; therefore, lead detected in the samples was qualified as estimated, "J." The MSD recovery and the RPD were within method-established QC limits.
- Serial Dilution: Serial dilution analyses were performed on HZET0215S001. The %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. The laboratory analyzed the samples at their standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was the field blank associated with the samples in this SDG. Lead was not detected in the field blank. The samples in this SDG had no identified equipment rinsate.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 237283

Analysis Method 6020

Sample Name	HZET0213S001		Matrix 7	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283001	Sample	Date: 9	/14/2009 12:39:00 PM	И	Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	n Notes
Lead	7439921	15.2	0.426	0.106 mg/kg	Ν	J Q	
Sample Name	HZET0214S001		Matrix 7	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283002	Sample	Date: 9	/14/2009 12:45:00 PM	А	Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	ı Notes
Lead	7439921	3.16	0.447	0.112 mg/kg	Ν	1 Q	
Sample Name	HZET0215S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283003	Sample	Date: 9	/14/2009 12:55:00 PM	И	Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	Notes
Lead	7439921	4.1	0.457	0.114 mg/kg	Ν	J Q	
Sample Name	HZET0216S001		Matrix 7	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283004	Sample	Date: 9	/14/2009 1:07:00 PM		Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	ı Notes
Lead	7439921	4.97	0.457	0.114 mg/kg	Ν	J Q	
Sample Name	HZET0217S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283005	Sample	Date: 9	/14/2009 1:28:00 PM	, T	Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	ı Notes
Lead	7439921	6.92	0.442	0.11 mg/kg	Ν	J Q	
Sample Name	HZET0218S001		Matrix 7	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283006	Sample	Date: 9,	/14/2009 1:35:00 PM		Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	n Notes
Lead	7439921	5.24	0.563	0.141 mg/kg	Ν	J Q	
Sample Name	HZET0219S001		Matrix 7	Type: SOIL	Res	ult Type: Primary Result	
Lab Sample Name:	237283007	Sample	Date: 9,	/14/2009 1:40:00 PM		Validation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Qualifier	Notes
					•	• ••••	

Friday, October 02, 2009

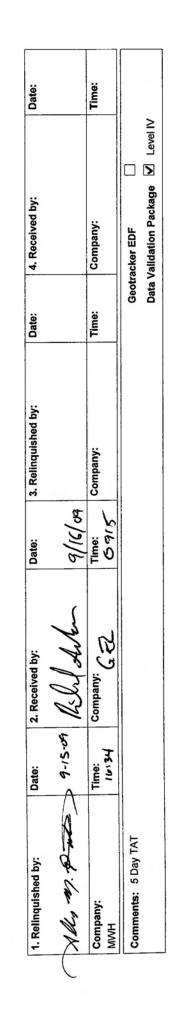
Analysis Method 6020

Sample Name	HZET0220S001		Matrix	Type: SOIL	Rest	ult Type: Pr	imary Result
Lab Sample Name:	237283008	Sample I	Date: 9	0/14/2009 1:45:00 PM	۲	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	5.64	0.396	0.0991 mg/kg	Ν	J	Q

Chain of Custody and Supporting Documentation

	DNIZ DA						20		3 4	237307	Page:	Page: 1 of 2
ustomer	Customer Information	Project Information	ation			Project	Project Information	Ľ				
Site:	SSFL	Client Name:	Boeing			Collector:	or: A. Goldenbers	enbers		Boeing PM:		
Company: MWH	HMM	Sampling Event:		ISRA Sampling, August 2009	st 2009	Contact #:	#					
Report to:	Sarah Von Raesfeld	Project Number:	: 1891614.05462	05462				Reque	Requested Analyses		Instruct	Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Benjamin	Stewart							f egend.	
	Suite 600	PM Phone #:	(818) 266-1378	-1378							Numerice	Numerical values for
	Walnut Creek	Field Contact:	Benjamin Stewart	Stewart							around ti	ariaryses equate to turin around time in days
	CA	Field Contact #:	(818) 266-1378	-1378							H-Hold	
	94596	Lab Name:	GEL Labo	GEL Laboratories, LLC	0						EH - Extr Hold	EH - Extract/Extrude & Hold
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell	udell								
	sean.leftler@mwhglobal.com	Lab Address:	2040 Sav	2040 Savage Road							Note: Val	lues in the cells
			Charlesto	Charleston, SC 29407							bellow an Times.	bellow are Turn Around Times.
		Lab Phone:	(843) 769-7388	-7388								
Sample Name	ame	Matrix	Date	Time	No. of Containers	il Lead					Comments	onts
HZET0221S001	S001 Soil		9/15/2009	7:50	-	5 5						
HZET0222S001	S001 Soil		9/15/2009	8:05	1	5 5						
HZET0223S001	S001 Soil		9/15/2009	8:15	1	5 5						
HZET0224S001	S001 Soil		9/15/2009	8:20	1	5 5		-				
HZET0225S001	S001 Soil		9/15/2009	8:30	1	5 5						
HZET0226S001	S001 Soil		9/15/2009	8:35	1	5 5						
HZET0227S001	S001 Soil		9/15/2009	9:48	1	5 5						
HZET0228S001	S001 Soil		9/15/2009	10:00	1	5 5						
HZET0229S001	S001 Soil		9/15/2009	10:10	1	5 5						
HZET0302S001	S001 Soil		9/15/2009	9:15	1	2	X					
1. Relinqu	1. Relinquished by: Date:	2. Received by:	:Ye	Date:	ä	3. Reline	3. Relinquished by:		Date:	4. Received by:		Date:
A Mo.	Alley my fail 9-15-09	" Kild Ard	the	3/10	9/16/09							
Company: MWH	y: Time: 10:34	Company:	62	Щ М	Time: dary	Company:	ż		Time:	Company:		Time:
Comments:	its: 5 Day TAT								Geotr	Geotracker EDF		

C BOEING			CHAIN OF	CHAIN OF CUSTODY RECORD	Y RECO	RD	COC #:		MWHAG20090915_00
							131	137307	Page: 2 of 2
Customer	Customer Information	Project Information	ıtion		Project Information	formation			
Site:	SSFL	Client Name:	Boeing		Collector:	Collector: A. Goldenbers		Boeing PM:	
Company: MWH	MWH	Sampling Event:	ISRA Sampling, August 2009	August 2009	Contact #:				
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462			Requ	Requested Analyses		Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	: Benjamin Stewart	-					Legend:
	Suite 600	PM Phone #:	(818) 266-1378						Numerical values for analyses equate to turn
	Walnut Creek	Field Contact:	Benjamin Stewart						around time in days
	CA	Field Contact #:	(818) 266-1378						H - Hold
	94596	Lab Name:	GEL Laboratories, LLC	s, LLC		_			En - Extracvextrude & Hold
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	Lab Contact:	Jackie Trudell		N				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road	ad					Note: Values in the cells
			Charleston, SC 29407	9407					bellow are Turn Around Times.
		Lab Phone:	(843) 769-7388						
Sample Name	ame	Matrix	Date Time	No. of Containers	il Lead Ire Soil				Comments
HZET0303S001	S001 Soil		9/15/2009 9:00	-	5 5 7	4			



GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Clien	: CSF2				SDG/ARCOC/Work Order: 237307
Recei	ved By: Ricky Albee				Date Received: 9/16/07
	cted Hazard Information	Yes	No		Counts > x^2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC/	Samples marked as radioactive?		S		timum Counts Observed*: 40 CPm
Classi	fied Radioactive II or III by RSO?		٢		
COC/	Samples marked containing PCBs?		5		
	ed as a DOT Hazardous?		5	Haza	ard Class Shipped: UN#:
Samples identified as Foreign Soil?					
	Sample Receipt Criteria	Yes	NA	No.	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	1			Preservation Method: Cice bags blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	1			
4	Sample containers intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		\		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		1		Sample ID's and containers affected:
7	Are Encore containers present?			~	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	5			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	٢			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	1			Sample ID's affected:
11	Number of containers received match number indicated on COC?	5			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	~			
Com	Fedex 9457 31	6(4	((7	Ø

T

9/16/09

Date ____

Date: 09-17-09

Requesting Firm: MWH Address: 2121 No. California Blvd. Walnut Creek, CA 94596 Phone: 925-627-4654 Fax: 925-627-4501 E-mail:Sarah.VonRaesfeld@mwhglobal.com

То:	Jackie Trudell	Phone: 843-769-7388
Laboratory	GEL Laboratories, LLC	E-mail: jacqueline.trudell@gel.com
From:	Sarah Von Raesfeld	
Requestor	signature:	
Subject:	Chain-of-Custody Form Analytical Request Change	No. of Pages: 3

Per Request:

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	Client Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MWHAG20090915_00	HZET0302S001 HZET0303S001	09/15/09		Add copper.

 The reason for these changes:

 Incorrectly marked on COC form

 Lack of sample volume

 Change in analytical request

 X

 Other:

Thank you

1

Customer Information Project Information Customer Information Srs.L Culent Nume: Stat: Sint Culent Nume: Bening Company: MiNH Sintelling Company: Report us: Srs.L Culent Nume: Bening Company: MiNH Sintelling Company: Contact: Report: Srs.L Culent Number: Bening Contact: Support: Stanyling Event: Resonance Bening Contact: Address: 2121 N. California Biod Project Number: Bening Contact: Mature Cool Project Number: Bening Bening Contact: Acuders: Suite 600 Project Number: Bening Bewart Contact: Acuders: Valuut Creek Flaid Contact: Hadorss: 22:00 Savage Road Contact: Acuders: Sample Mane Matrix Date Time Contact: Acuders: Project Information Sample Name Sample Name Sant-Metercorsson Sant-Metercorsson Project Information Project Information Sample Name Sample Name Lab Name: Contact: Bening Contact: Project Sample Name	COC #:	MWHAG20090915_00
Alton Project Information Project Information Collector: Sampling Event: Boeing Collector: Collect Number: 1891614.05462 Collector: Collector: Collector: Renjamin Stewart Collector: Collector: Do PM Phone #: (818) 266-1378 Collector: D Project Number: 1891614.05462 Collector: D PM Phone #: (819) 266-1378 Contact: D PM Phone #: (818) 266-1378 Contact: D PM Phone #: (813) 266-1378 Contact: D PM Phone #: (813) 266-1378 Contact: D Packle Trudell Jackle Trudell Packle Trudell D Name: Charleston, SC 29407 D D Sold 91/5/2009 8:06 1 5 Sold 91/5/2009 8:06 1 5 5 Sold 91/5/2009 8:07 1 5 5 Sold 91/5/2009 9:05 1 5 5 Sold 91/5/2009 9:05 1 5 5 Sold 91/5/2009 9:05 1 5 5 Sold <td< th=""><th>237307</th><th>Page: 1 of 2</th></td<>	237307	Page: 1 of 2
Collector: Boeing Collector: Sampling Event: ISRA Sampling, August 2009 Collector: Sampling Event: ISRA Sampling, August 2009 Collector: Project Number: 1891614.05462 Collector: On Rassleld Project Number: 1891614.05462 Collector: D PM Phone #: (813) 266-1378 Contact: D PM Phone #: (813) 266-1378 Contact: D PM Phone #: (813) 266-1378 Contact: Creek Fleid Contact: Benjamin Stewart August 2009 Creek Fleid Contact: Jackie Trudell I.ab Phone: Creek Fleid Contact: Jackie Trudell I.ab Dreek Time Codi Contact: Jackie Trudell Matrix Date Time Codi Contact Scienci Contact Soid Priston Scienci Contact Scienci Contact Scienci Contact Scienci Contact Soid Priston Scienci Contact Priston Scienci Contact Scienci Contact Scie	ne e tên ve dinêm in de a bênê her an de bere an de bere ander de a de anne anne de le terre terre de bere de	and the second
	A. Goldenbers Boeing PM:	an man parte services por the second state states in a man second second second
(on Raesfeld Project Number: 1891614.05462 California Blvd Project Namager: Benjamin Slewart 00 PM Phone #:: (818) 266-1378 Creek Field Contact:: Benjamin Slewart 10 Creek Field Contact:: Benjamin Slewart 11 Creek Field Contact:: Benjamin Slewart 12 Field Contact:: Benjamin Slewart 13 Creek GEL Laboratories, LLC 14 Jackie Trudell Jackie Trudell filer@mwlglobal.com Lab Phone:: 2040 Savage Road filer@mwlglobal.com Savage Road 1 filer@mwlglobal.com Savage Road		
California Blvd Project Manager: Benjamin Stewart 00 PM Phone #:: (818) 266-1378 Creek Fjeld Contact:: Benjamin Stewart Inter@mwhglobal.com Lab Name:: CEL Laboratorles, LLC Inter@mwhglobal.com Lab Address: 2040 Savage Road Iffer@mwhglobal.com Lab Phone: (843) 769-7388 Iffer@mwhglobal.com Soil 9/15/2009 7:50 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 9:05 1	Requested Analyses	Instructions/TAT
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
Creek Field Contact: Benjamin Stewart Creek Field Contact #: (818) 266-1378 Inter@mwhglobal.com Lab Namo:: GEL Laboratorles, LLC onraesfeld@mwhglobal.com Lab Contact:: Jackie Trudell fifer@mwhglobal.com Lab Address: 2040 Savage Road fifer@mwhglobal.com Lab Phone: GEL Laboratorles, LLC Iffer@mwhglobal.com Lab Contact:: Jackie Trudell Matrix Date Time No. of Soid 9/15/2009 8:05 1 Soid 9/15/2009 9:15 1 Soid 9/15/2009 8:05 1 Soid 9/15/2009 9:15 1 Soid 9/15/2009 9:15 1 Soid 9/15/2009 9:15 1		Legend: Numerical values for
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		analyses equate to tu around time in dave
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		
Ortræssfeld@mwhglobal.com Lab Contact:: Jackie Trudell fifer@mwhglobal.com Lab Address: 2040 Savage Road fifer@mwhglobal.com Lab Phone: (843) 769-7388 Ratrix Date Time No. of Soil 9/15/2009 7:50 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 9:05 1 Soil 9/15/2009 9:05 1 Matrix Soil 9/15/2009 9:05 1 Time: Soil 9/15/2009 9:05 1 Soil 9/15/2009 9:15 1 Matrix Soil 9/15/2009 9:15 1 Matrix Soil 9/15/2009		EH - Extract/Extrude &
Iffer@mwhglobal.com Lab Address: 2040 Savage Road Imatrix Charleston, SC 29407 Charleston, SC 29407 Lab Phone: (843) 769-7388 No. of Address: Soil 9/15/2009 7:50 1 Soil 9/15/2009 8:05 1 1 Soil 9/15/2009 9:00 1 1 Soil 9/15/2009 9:15 1 1 Pate: <td></td> <td></td>		
Iab Phone: Charleston, SC 29407 Lab Phone: Charleston, SC 29407 Matrix Date Time No. of Matrix Date Time Containers Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:15 1 Soil 9/15/2009 8:20 1 Soil 9/15/2009 8:20 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 8:35 1 Soil 9/15/2009 9:30 1 Soil 9/15/2009 9:35 1 Soil 9/15/2009 9:35 1 Soil 9/15/2009 9:15 1 Pate: Soil <td></td> <td></td>		
Lab Phone: (843) 769-7388 Matrix Date Time Containers Soil 9/15/2009 7:50 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 9:30 1 Soil 9/15/2009 9:30 1 Soil 9/15/2009 9:30 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 Mate: Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 1 Pate: Soil 9/15/2009 9:15 1 Pate:		Note: Values in the cells beliow are Turn Around
Matrix Date Time No. of Soil 9/15/2009 7:50 1 Soil 9/15/2009 8:05 1 Soil 9/15/2009 8:0 1 Soil 9/15/2009 8:30 1 Soil 9/15/2009 9:00 1 Soil 9/15/2009 9:15 1 Pate: Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 1 Pate: Soil 9/15/2009 9:15 1		Times.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Commonte
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
Soil 9/15/2009 8:35 1 Soil 9/15/2009 9:48 1 Soil 9/15/2009 10:00 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:16 1 Pate: Soil 9/15/2009 9:15 1 Time: Date: 2. Received by: Date: Date: Public A-is or Auth Auth 9/16/09 1 Time: Iu::3H Company: Get Get Get Grave Grave: Grave:		
Soil 9/15/2009 9.48 1 Soil 9/15/2009 10:00 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 9.15 1 Soil Soil 9/15/2009 9.15 1 Soil Soil 9/15/2009 9.15 1 Soil Soil 9/15/2009 9.15 1 Pate: Soil 9/15/2009 9.15 1 Pate: Date: 2. Received by: Date: 1 Public: A-is of Auther 9/16/09 1 Time: Company: Get 37/5 37/5		
Soil 9/15/2009 10:00 1 Soil 9/15/2009 10:10 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 Soil 9/15/2009 9:15 1 Pate: Date: 2. Received by: Date: 1 Pate: 9/15/2009 9:15 1 1 Pate: 1 9/15/2009 9:15 1 Pate: 1 1 1 1 Pate: 1 1 1 1 Pate: 1 1 1 1 1 Pate: 1 1 1 1 1 Pate: 1 1 1 1 1 1		
Soil 9/15/2009 10:10 1 Soil Soil 9/15/2009 10:10 1 Soil Soil 9/15/2009 9:15 1 Pate: 2. Received by: Date: 2 1 Pate: 7-15 org Null Auto 9/16/09 Time: Time: Company: 5 0 0		
: Date: 2. Received by: Date: Prot 9-15-09 Multitude 9/16/09 Time: Company: Gee days		
: Date: 2. Received by: Date: P-is of KULL ALL 9/16/09 Time: Company: Call Date: 03(5)		
And 9-15 of Kulthur 9/16/09 Time: Company: Call Oct	Date: 4. Received by:	Date:
any: Time: Company: GC Time: 10:34 Company: GC Time:	•	
	Time: Company:	Time:
Comments: 5 Day TAT	Geotracker EDF	Level IV

	ONISOS	
,	d	

CHAIN OF CUSTODY RECORD

MWHAG20090915_00 coc #

				ala and an and a second state of the second s			7.2	151501	Page:	2 of 2
custome	Customer Information	Project Information	nation		Project Information	^c ormation	n a frankriger a na mennen a seneraria e antegra vers gere gere and antegra vers e seneraria	renne en la seconda de la banca consume en dura las riversementes y por constantes en la constante de la const	and a submit of the contract of the state of	
Site:	SSFL	Client Name:	Boeing		Collector:	Collector: A. Goldenbers	re na fad af Adda e na e na m a i fan i fan i far an an da da an agustart (b	Boeing PM:	a mada biya a ca biya dadinin u mumu u biyan da yi masa a ba ya c	
Company: MWH	HWH	Sampling Event:	t: ISRA Sa	ISRA Sampling, August 2009	Contact #:					
Report to:	Report to: Sarah Von Raesfeld	Project Number:	r: 1891614.05462	.05462		Request	Requested Analyses		Instructions/TAT	ns/TAT
Address:	2121 N. California Blvd	Project Manager:	r: Benjamin Stewart	1 Stewart	M	5				
	Suite 600	PM Phone #:	(818) 266-1378	3-1378					Legend: Numerical values for	alues for
	Walnut Creek	Field Contact:	Benjamin Stewart	1 Stewart	<u>als</u>				analyses equate to t around time in dave	analyses equate to turn around time in dave
	CA	Field Contact #:	: (818) 266-1378	3-1378	<u> </u>				H - Hold	
	94596	Lab Name:	GEL Lab	GEL Laboratories, LLC	002				EH - Extrac	EH - Extract/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	: Lab Contact:	Jackie Trudell	udell						
	sean.leffler@mwhglobal.com	Lab Address:	2040 Sai	2040 Savage Road	Meta D2				Made Verl	
			Charlest	Charleston, SC 29407	ls 60				bellow are	bellow are Turn Around
		Lab Phone:	(843) 769-7388	3-7388	20 Si Noist				Times.	
Sample Name	ame	Matrix	Date	Time Containers	pe / oil Lead ure Soil				Comments	
HZET0303S001	1001 Soil		9/15/2009	9:00	2 2 2					

-	Dale:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Kon of the will	9-15-09	-15-00 Relade	9/10/09				
Company: Tim MVNH 10	Time: I urisy	company: G2	Time: 6915	Company:	Time:	Company:	Time:
Comments: 5 Day TAT					Geot	Geotracker EDF	
					Data	Data Validation Package 🖌 Level IV	evel IV

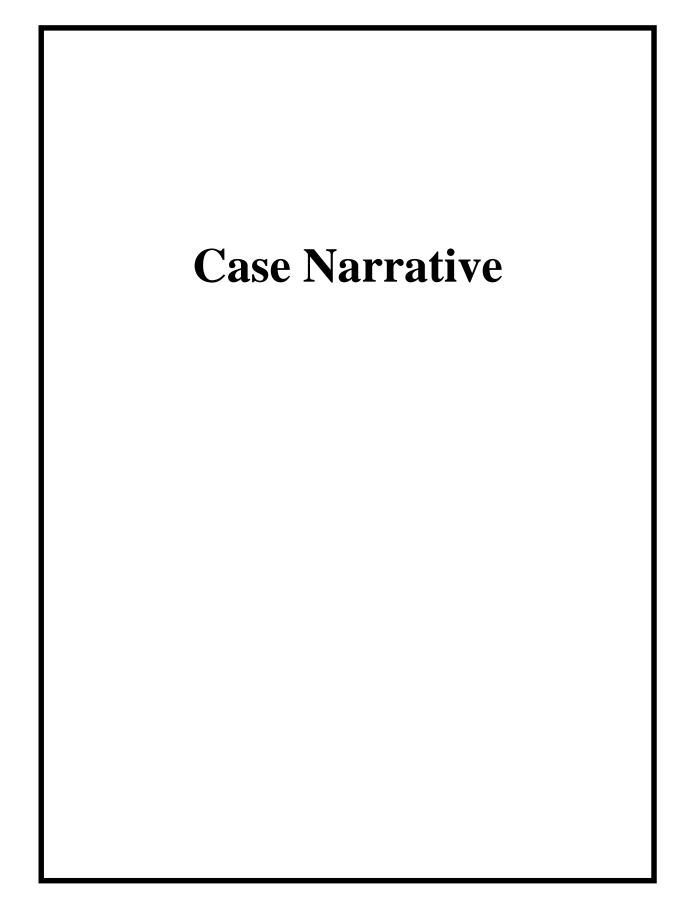
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	ampling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
	2121	N. California Blvd. Ste. 600		20	040 Savage F	Rd.
	W	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
		· · · · · · · · · · · · · · · · · · ·				
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	I
Phone Number:		925-627-4654	Phone Number:		843-769-738	3
Fax Number:		925-627-4501	Fax Number:		843-766-1178	3
E-mail Address:	<u>Sarah</u>	.VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	<u>gel.com</u>
		SAMPLE C	ONTAINER ORDER FORM			
Date Required:			Requested Analyses:	(Sp	pecify # of Samp	oles)
	-		. , , ,	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_ ` ` `	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information	:		Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	-	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?		(Yes/No)	% Moisture (D2216)	0	170	0
		(100,110)	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	х	(select all applicable)	Zinc (6020)	5	20	0
Water	<u>X</u>	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)		J	25	0
ναροι						
Est. Total # of Samples:	175	Est. Total # of EDDs				
Project TAT:		LABORATORY R	EPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablacy	
Project TAT:	v	(42 During and share)	Draft Results Fax?:	rts Delivera		
Normal:		(10 Business days)	-		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Rec	uirem	ents:	Project Site		(enter "X")	
Contingent Analysis?	-	(Yes/No)	Consultant Office		(enter "X")	
Contingent Analysis			-			
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify in comments)			
TIC (SVOC) Required?		(Yes/No)	-	Х	(enter "X")	
Data Validation Pckge.:	Tier II	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
-	Corola	ion Doosfold	•			
	-	on Raesfeld	Name:			
Date:	09/02/0	9	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	12
Laboratory Certifications	14
Percent Moisture	16
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	26 38 52 55



Case Narrative for Boeing - SSFL (MWH) Work Order: 237307 SDG: 237307

September 25, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 16, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237307001	HZET0221S001
237307002	HZET0222S001
237307003	HZET0223S001
237307004	HZET0224S001
237307005	HZET0225S001
237307006	HZET0226S001
237307007	HZET0227S001
237307008	HZET0228S001
237307009	HZET0229S001
237307010	HZET0302S001
237307011	HZET0303S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

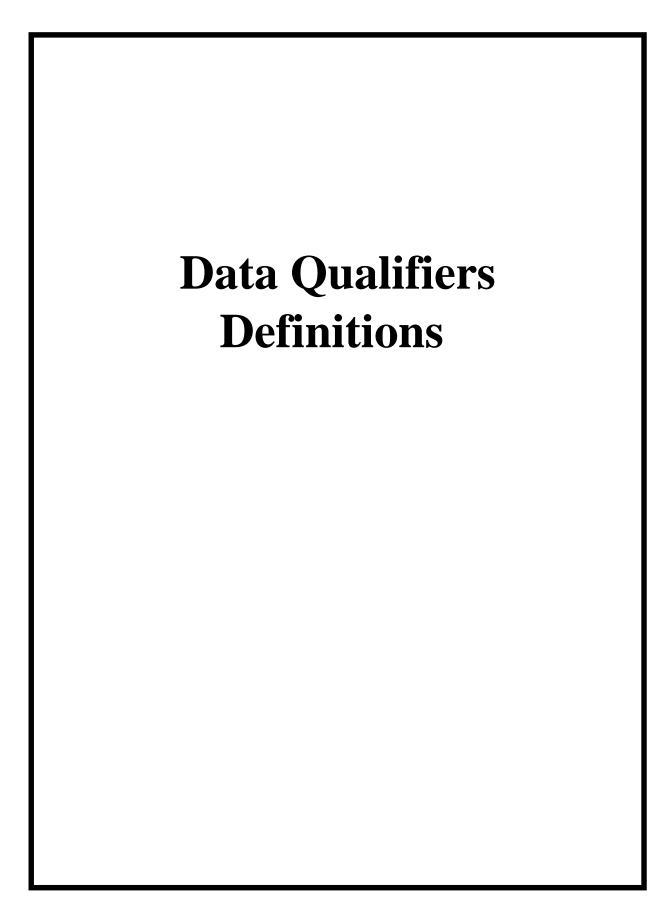
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline a Judel

Jacqueline Trudell

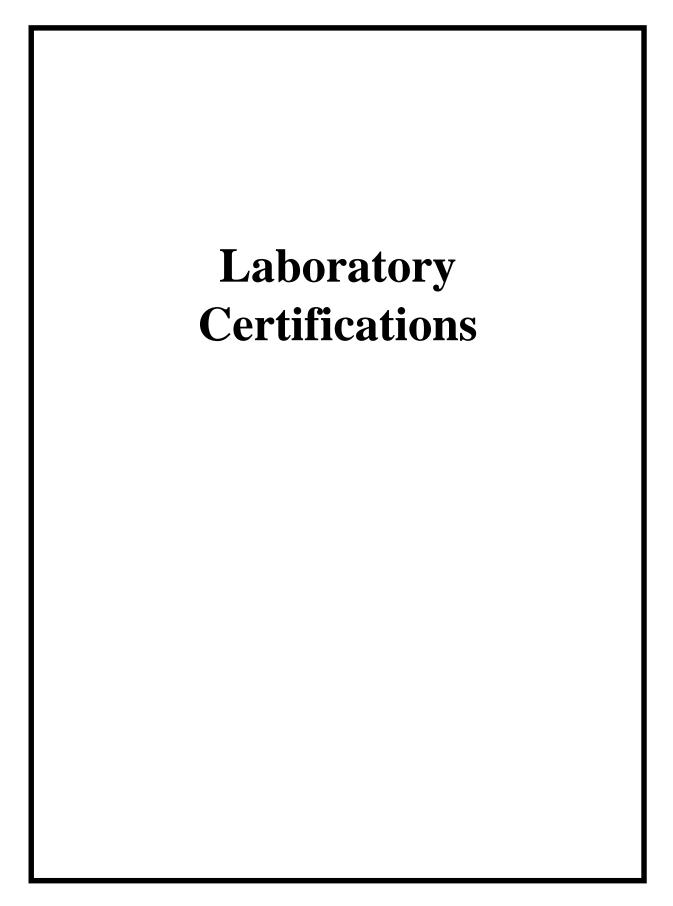
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 23 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237307

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL RFI ISRA
Contract Task Order:	1261.500D.00
Sample Delivery Group:	237307
Project Manager:	Dixie Hambrick
Matrix:	water/soil
QC Level:	V
No. of Samples:	11
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZET0221S001	237307001	N/A	Soil	9/15/2009 7:50:00 AM	6020
HZET0222S001	237307002	N/A	Soil	9/15/2009 8:05:00 AM	6020
HZET0223S001	237307003	N/A	Soil	9/15/2009 8:15:00 AM	6020
HZET0224S001	237307004	N/A	Soil	9/15/2009 8:20:00 AM	6020
HZET0225S001	237307005	N/A	Soil	9/15/2009 8:30:00 AM	6020
HZET0226S001	237307006	N/A	Soil	9/15/2009 8:35:00 AM	6020
HZET0227S001	237307007	N/A	Soil	9/15/2009 9:48:00 AM	6020
HZET0228S001	237307008	N/A	Soil	9/15/2009 10:00:00 AM	6020
HZET0229S001	237307009	N/A	Soil	9/15/2009 10:10:00 AM	6020
HZET0302S001	237307010	N/A	Soil	9/15/2009 9:15:00 AM	6020
HZET0303S001	237307011	N/A	Soil	9/15/2009 9:00:00 AM	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

2

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
Т- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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 6020—Metals

Reviewed By: P. Meeks Date Reviewed: September 29, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: the analytical holding time, six months for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no applicable detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZET0221S001. The RPD was within the method-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0221S001. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: Serial dilution analyses were performed on HZET0221S001. The %D for copper exceeded the control limit; therefore, copper detected in the samples was qualified as estimated, "J." The lead %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was the field blank associated with the samples in this SDG. There were no detects in the field blank. The samples in this SDG had no identified equipment rinsate.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 237307

Analysis Method 6020

Sample Name	HZET0221S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307001	Sample	Date: 9	/15/2009 7:50:00 AN	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.98	0.392	0.0981 mg/kg		
Sample Name	HZET0222S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307002	Sample	Date: 9	/15/2009 8:05:00 AM	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.17	0.393	0.0981 mg/kg		
Sample Name	HZET0223S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307003	Sample	Date: 9	/15/2009 8:15:00 AN	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	35.9	0.401	0.1 mg/kg		
Sample Name	HZET0224S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307004	Sample	Date: 9	/15/2009 8:20:00 AN	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	6.51	0.401	0.1 mg/kg		
Sample Name	HZET0225S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307005	Sample	Date: 9	/15/2009 8:30:00 AN	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	5.33	0.389	0.0973 mg/kg		
Sample Name	HZET0226S001		Matrix '	Fype: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307006	Sample	Date: 9	/15/2009 8:35:00 AN	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Lead	7439921	4.97	0.395	0.0988 mg/kg		
Sample Name	HZET0227S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	237307007	Sample	Date: 9	/15/2009 9:48:00 AM	1 1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
						-

Friday, October 02, 2009

Analysis Method 6020

Sample Name	HZET0228S001		Matrix 7	Fype: SOIL	Res	ult Type: Pri	imary Result
Lab Sample Name:	237307008	Sample	Date: 9	/15/2009 10:00:00 A	м	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	4.86	0.414	0.103 mg/kg			
Sample Name	HZET0229S001		Matrix 7	Fype: SOIL	Res	ult Type: Pri	imary Result
Lab Sample Name:	237307009	Sample	Date: 9	/15/2009 10:10:00 A	м	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	7.38	0.412	0.103 mg/kg			
Sample Name	HZET0302S001		Matrix 7	Fype: SOIL	Res	ult Type: Pri	imary Result
Lab Sample Name:	237307010	Sample	Date: 9	/15/2009 9:15:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	17.8	1	0.331 mg/kg		J	Α
Lead	7439921	11	0.402	0.1 mg/kg			
Sample Name	HZET0303S001		Matrix 7	Fype: SOIL	Res	ult Type: Pri	imary Result
Lab Sample Name:	237307011	Sample	Date: 9	/15/2009 9:00:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Connon	7440508	40	1.03	0.339 mg/kg		J	Α
Copper	7440500	40	1.05	0.557 mg/kg		•	

Chain of Custody and Supporting Documentation

Internation 1-37400 Project Information Project Informatinform Project Informatinfore Pr																
Image: Constraint of the													23	7620	-	age: 1 of 2
Collector: Boeing Sampling Fromt: Boeing Frait Boeing Frait <th>Customer</th> <th>· Information</th> <th></th> <th>Project Inform</th> <th>nation</th> <th></th> <th></th> <th>Proje</th> <th>ct Info</th> <th>ormat</th> <th>ion</th> <th></th> <th></th> <th></th> <th></th> <th></th>	Customer	· Information		Project Inform	nation			Proje	ct Info	ormat	ion					
Sampling Event: ISRA Sampling, August 2000 Contract #: Requested Analyses Table Float Project Kumber: 1801614,054622 Requested Analyses Table Float Project Kumber: 1801614,054622 Requested Analyses Rin Fluid Contact: Rind Float Requested Analyses Rin Fluid Contact: (615) 286-1378 Requested Analyses Rind Fluid Contact: (615) 286-1378 Requested Analyses Lub Phones: Call Lab Ordinact: (615) 286-1378 Mindjobal.com Lab Phones: Call Call Call Mindjobal.com Lab Phones: Call Call Call Mindjobal.com Lab Phones: Call Call Call Call Solid Lab Phones: Call Call Call Call Call Solid Ratix Date Time Contact Call Call Call Solid Ratix Date Time Contact Call Call Call	Site:	SSFL		Client Name:	Boeir	6		Collec	tor:	A. Go	ldenberg			Boeing PM:		
Table Project Number: 1871614.05462 Requested Analyses Timina Blvd Project Number: 1891614.05462 Amarger:	Company:	MWH		Sampling Even	-	Sampling,	August 2009	Conta	ct #:							
Induction Project Manager: Alax Flechi PM Phone :: (925) 627/4627 Bindid Contact: Benjamin Slewart Lab Name (16) 568-1378 Binvinglobal com Lab Name Lab Name (16) 569 Binvinglobal com Lab Name Lab Name Contact: Binvinglobal com Lab Name Binvinglobal com Lab Name Binvinglobal com Lab Name Sele Sele	Report to:			Project Numbe		614.05462			,		R	aqueste	d Analyse	8	n	structions/TAT
PM Phone #: (325) 827-4827 Benjamin Siewart Eenjamin Siewart Contract: Benjamin Siewart Contract: Benjamin Siewart Contract: Benjamin Siewart Contract: Benjamin Siewart Benjamin Siewart Contract: Benjamin Siewart Benjamin Siewart Class Contract: Benjamin Siewart Bild Contract: Jack Contract: Selicity Statution Lab Name: Class Contractions, LLC Lab Name: Class Contractions, LLC Class Contractions, LLC Class Contractions, LLC Class Contractions, LLC Lab Natitix Date Time Contractions, LLC Class Contractions, LLC Solid Bit/tixool Batitix Date Time Contractions, LLC Solid Bit/tixool Batitix Date Time Contractions, LLC Solid Bit/tixool Batitix Date Contractions, LLC Class Constratement Solid Bit/tixool Batitix Date Contractions, LLC Clastratement Class Constratement	Address:	2121 N. California Blvd		Project Manag	+	Fischl										
Sk Field Contact: Benjamin Stewart Efeld Contact: Benjamin Stewart Lab Name: CEL Laboratorides. LLC Geff Laboratorides. GEL Laboratorides. LLC Geff Laboratorides. GEL Laboratorides. LLC Giff Laboratoria (Field Contact: Jackle Trudell Giff Laboratorides. Contact: Giff Laboratoria (Field Contact: Jackle Trudell Giff Laboratoria (Field Contact: Jackle Trudell Mindiglobal.com Lab Phone: CAPATestor. Lab Phone: Charters: Z2040 Savage Road Solid Parte Time Contactients Solid Parto Time Contactients Solid Parto Parto Pice Pice Solid Parto Pice Pice Pice Pice Solid Pice Pice Pice Pice Pice Pice Solid Pice Pice Pice Pice Pice Pice Pice Solid Pice Pice		Suite 600		PM Phone #:	(925)	627-4627									ΞŹ	gend: imerical values for
Field Contacts: (Brield Contacts:		Walnut Creek		Field Contact:	Benja	min Stewa	F								8 8	nalyses equate to tu ound time in days
Lab Neme: Cell Laboratories, LLC Binwhiglobali (c) Lab Neme: Cell Laboratories, LLC Binwhiglobali (c) Lab Contact: Jacke Trudeil Ib Matrix Date Time Contact: Contact: Jacke Trudeil Matrix Date Time Matrix Date Time Contaction Sci Contaction Solid		CA		Field Contact #	(8)	266-1378									I	- Hold
Genefedd@mrwfglobal.c Lab Contact:: Jackie Trudell @mwfglobal.com Lab Address: 2040 Savege Road Charleston, SC 29407 Lab Address: 2040 Savege Road Matrix Lab Phone: Charleston, SC 29407 Charleston, SC 294		94596		Lab Name:	GEL	Laboratorie	s, LLC								ΞĬ	H - Extract/Extrude
Comminglobal.com Lab Address: 2040 Savage Road Imminglobal.com Lab Phone: Charleston, SC 29407 Sale Charleston, SC 29407 Charleston, SC 29407 Sale Charleston, SC 29407 Charleston, SC 29407 Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale Sale	mail:	sarah.vonraesfeld@mwt	hglobal.c	Lab Contact:	Jacki	e Trudell				_						
Charleston, SC 23407 Charleston, SC 23407 Lab Phone: (643) 763-7388 Matrix Date Time No. of No. of No. of Matrix Date Time Ontaliation, SC 23407 Ssil 9771/2009 9.25 1 5 6 6 7 0 Ssil 9771/2009 9.25 1 5 6 6 6 6 7 7 7 Ssil 9771/2009 9.25 1 5 6 6 6 6 6 6 6 7 7 7 Ssil 9771/2009 12:35 1 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 Sail 9771/2009 12:35 1 5 5 6 6 6 6 6 7 6 7 7 9		sean.leffler@mwhglobat	.com	Lab Address:	2040	Savage Ro	ad				Meta				ž	te: Values in the ce
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$					Charl	eston, SC	29407	-			als 60				ă F	Now are Turn Arour
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				Lab Phone:	(843)	769-7388					20 5		-		:	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	sample Na	me		Matrix	Date	Time	No. of Containers				Soil Zind				Ŭ	omments
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	ZET0100D	001	Soil		9/21/2009	9:25	-	+	+	+	2					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0100S(001	Soil		9/21/2009	9:25	-			5	5					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0101S	001	Soil		9/21/2009	9:35	-	-		2	5				-	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0101S	002	Soil		9/21/2009	13:10	+		-	5	5					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0102S	001	Soil		9/21/2009		3			5	5				W	USM/
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0103S	001	Soil		9/21/2009		-	-		2	5					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0103S	002	Soil		9/21/2009		-		-	5	5					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	IZET0600D	001	Soil		9/21/2009	6:00	-	S	ъ Ч	5	5					
Soli9/21/200910:40155551Date:2. Received by:Date:3. Relinquished by:3. Relinquished by:4. Received by: \mathcal{L} 9-21-09 \mathcal{R} \mathcal{M} \mathcal{M} \mathcal{I} 9 \mathcal{L} 9-21-09 \mathcal{R} \mathcal{M} \mathcal{M} \mathcal{I} \mathcal{L} 9-21-09 \mathcal{R} \mathcal{M} \mathcal{M} \mathcal{M} \mathcal{L} 9-21-09 \mathcal{R} \mathcal{M} \mathcal{M} \mathcal{L} \mathcal{M} \mathcal{M} \mathcal{M} \mathcal{M} \mathcal{L} \mathcal{M} \mathcal{M} \mathcal{M} \mathcal{M} \mathcal{L} \mathcal{M}	IZET0600S	001	Soil		9/21/2009	9:00	-	5	5	5	5					
Date: 2. Received by: Date: 3. Relinquished by: Date: 4. Received by: 2.7 9-21-09 R.M. (Multiple) 9/21/05 9/21/05 1000000000000000000000000000000000000	HZET0601S	001	Soil		9/21/2009	10:40	-	5	5	2	S					
Image: Time: 7-21-09 R.M. Sulley: 9/21/05 Time: Company: Time: Company: Time: Company: Time: 10:50 Gettacker EDF	I. Relinqu)ate:	2. Received	by:		Date:	3. Relir	Iquish	ed by:			ate:	4. Received by:		Date:
any: Time: Company: Time: Company: Time: Company: 10.50 Gel 12 tents: Geotracker EDF Geotracker EDF	1 hay	at p	9-21-09		Mi		22/09									
	Company: MWH		Time: 10:50	company:	•		Time: 9 Z O	Compa	:Ku			F	ime:	Company:		Time:
	Comments												Geo	tracker EDF		

0 80	O BORING		CHAIN	CHAIN OF CUSTODY RECORD	DY RE(CORI	~			5	COC #:		M	MWHAG20090921_00
5											53	237620	۵.	Page: 2 of 2
Custome	Customer Information	Project Information	ation		Project Information	lnfon	nation	_						
Site:	SSFL	Client Name:	Boeing		Collector:		A. Goldenberg	lberg				Boeing PM:		
Company: MWH	MWH	Sampling Event:	-	ISRA Sampling, August 2009	Contact #:	#								
Report to:	Report to: Sarah Von Raesfeld	Project Number:	: 1891614.05462	462				Rec	uested	Requested Analyses			Ĩ	Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	r: Alex Fischl		1		_			-				l ecend.
	Suite 600	PM Phone #:	(925) 627-4627	327	1								ĨŽ	Numerical values for
	Walnut Creek	Field Contact:	Benjamin Stewart	ewart									arc	analyses equate to turn around time in days
	CA	Field Contact #:	(818) 266-1378	378			_						ŕ	- Hold
	94596	Lab Name:	GEL Laboratories, LLC	tories, LLC		i							표 동	EH - Extract/Extrude & Hold
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell	16										
	sean.leftler@mwhglobal.com	Lab Address:	2040 Savage Road	e Road									Ñ	Note: Values in the cells
			Charleston, SC 29407	SC 29407	_									bellow are Turn Around Times
		Lab Phone:	(843) 769-7388	388										
Sample Name	ame	Matrix	Date Time	No. of Containers	B - Soil Ire Soil	dmium	oil Zinc oil Lead						ŭ	Comments
* HZET0602S001	S001 Soil		9/21/2009 9:05	1 1	5	2	5 5			-				
- HZET0603S001	S001 Soll		9/21/2009 10:50	50 1	5	S	5 5				_			
 HZET0604S001 	S001 Soil		9/21/2009 11:08	1 1	5	5	5 5.							
 HZET0605S001 	S001 Soil		9/21/2009 11:00	1 1	S	2	5 5							

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
NULar 14. A with 3-21-051	3-21-09	P.M. Rtellin	92/09				
Company: MWH	Time: 16:50	company:	time: 920	Company:	Time:	Company:	Time:
Comments:					Geotr	Geotracker EDF	
					Data	Data Validation Package 🗸 Level IV	svel IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Cli	ent: SS FI				SDG/ARCOC/Mark Order: 237620
Re	ceived By: RMs				Date Received: 9 22/07
	spected Hazard Information	Yes	Ŷ		Counts > x2 area background on samples not marked "radioactive", act the Radiation Safesy Group of further investigation.
CO	C/Samples marked as radioactive?		1	Max	timum Counts Observed*:
Cla	ssified Radioactive II by RSO?		\checkmark		30cpm
co	C/Samples marked containing PCBs?		1		
Shi	pped as a DOT Hazardous?		1	Haz	ard Class Shipped: UN#:
Sar	nples identified as Foreign Soil?		1		
	Sample Receipt Criteria	Yes	NA	v	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	ſ			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	/			Preservation Method: (ice bags blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH: If Preservation actived, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7	Are Encore containers present?			1	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	/			Id's and tests affected.
9	Sample ID's on COC match ID's on bottles?	1			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?)			Sample ID's affected:
11	Number of containers received match number indicated on COC?	1			Sample ID's affected:
12	relinquished/received sections.	/			
Co	mments: FEDEX#S				
	Fr. 9457 3161 418	6			

Date

J

7

9/22/09

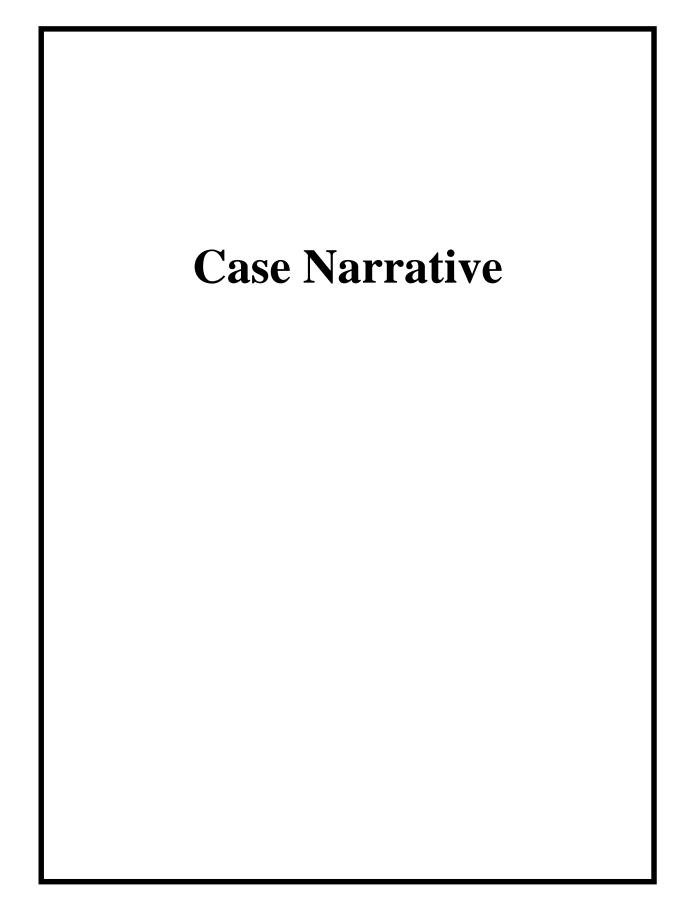
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	mpling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:	2121 N	I. California Blvd. Ste. 60		20	040 Savage F	Rd.
	Wa	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	
Phone Number:		925-627-4654	Phone Number:		843-769-738	
Fax Number:		925-627-4501	Fax Number: _		843-766-1178	
E-mail Address:	<u>Sarah</u>	VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	gel.com
Date Required:		SAMPLE	CONTAINER ORDER FORM Requested Analyses:	(6)	nacify # of Com	
Date Required.			Tequested Analyses.	Water	becify # of Samp Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		_(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_, ,	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information			Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	No	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?	No	(Yes/No)	% Moisture (D2216)	0	170	0
		_	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	Х	(select all applicable)	Zinc (6020)	5	20	0
Water	Х	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)				
Est. Total # of Samples:	175	Est. Total # of EDD	9s <u>40</u>			
		LABORATORY	REPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablaci	
Project TAT: Normal:	х	(10 Business days)	Draft Results Fax?:	Its Delivera	(Yes/No)	
RUSH:		<u> </u>	Draft Results E-mail?:	Yes	(Yes/No)	
		(Specify- 24 / 48 / 72HRS)		res	(res/NO)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Req	luireme	ents:	Project Site		(enter "X")	
Contingent Analysis?	No	(Yes/No)	Consultant Office		(enter "X")	
TIC (VOC) Required?	No	(Yes/No)	- Other Location (specify		_	
TIC (SVOC) Required?	No	_(Yes/No)	in comments)	Х	(enter "X")	
Data Validation Pckge.:			- # of Copies Reports Req.:	1	_()	
			NSTRUCTIONS/LTO NOTES		-	
		CONFIRMATIO	N OF TRANSMITTAL & RECEIPT	-		
LTO Sent By:			LTO Received By-			
Name:	Sarah V	on Raesfeld	Name:			
Date:	09/02/09)	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	9
Laboratory Certifications	11
Subcontract Data Dioxins	13
Percent Moisture	575
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	579 580 585 600 616 619 879



Case Narrative for Boeing - SSFL (MWH) Work Order: 237620 SDG: 237620

October 08, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 22, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237620001	HZET0100D001
237620002	HZET0100S001
237620003	HZET0101S001
237620004	HZET0101S002
237620005	HZET0102S001
237620006	HZET0103S001
237620007	HZET0103S002
237620008	HZET0600D001
237620009	HZET0600S001
237620010	HZET0601S001
237620011	HZET0602S001
237620012	HZET0603S001
237620013	HZET0604S001
237620014	HZET0605S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

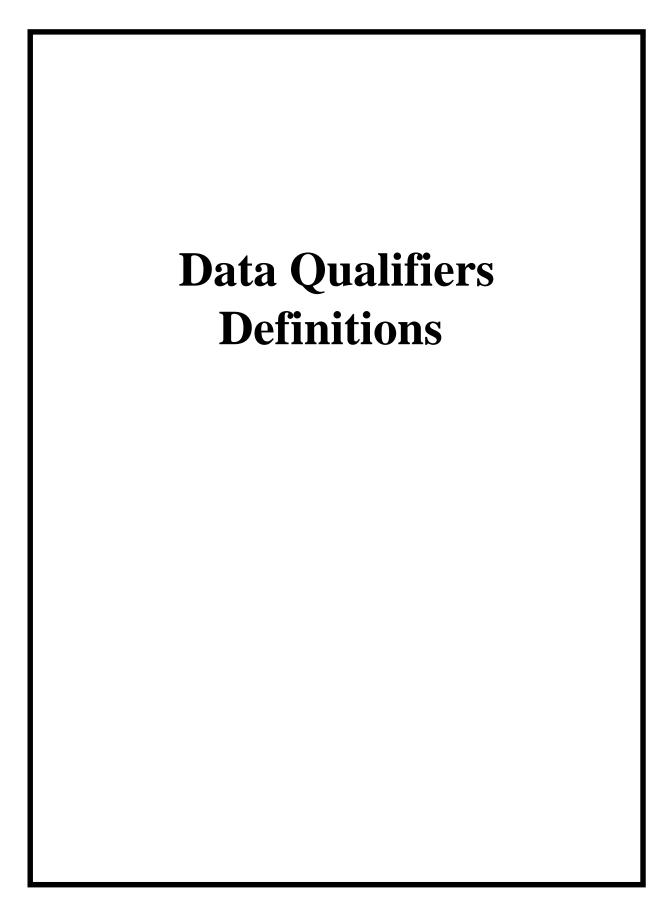
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals, Percent Moisture and Dioxins (Cape Fear Analytical).

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Gaequeline a Judel

Jacqueline Trudell

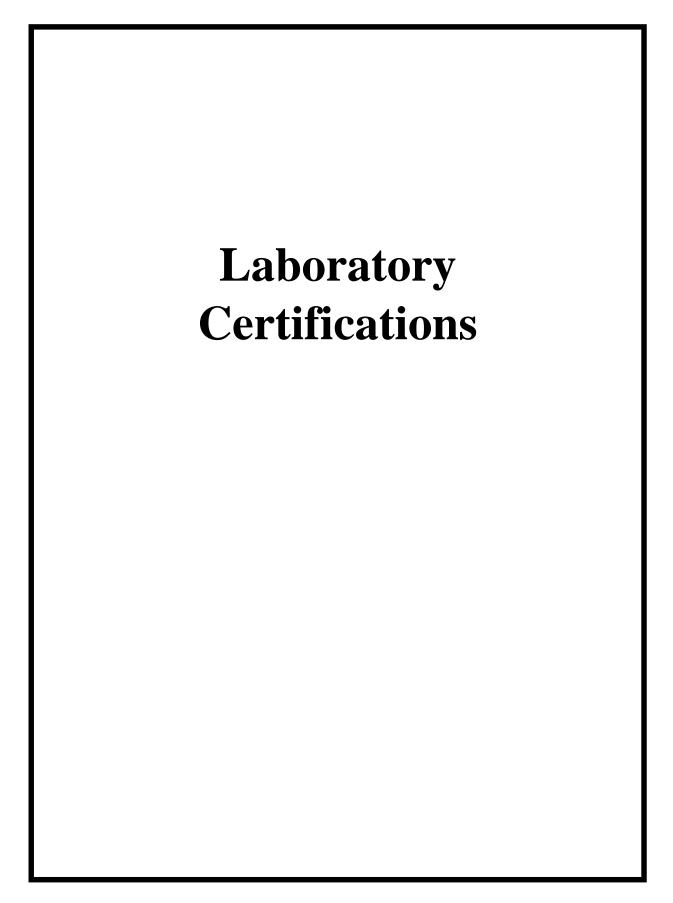
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 29 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237620

Prepared by

MEC^x, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZET0100D001	237620001	1068001	Soil	9/21/2009 09:25	1613B, 6020
HZET0100S001	237620002	1068002	Soil	9/21/2009 09:25	1613B, 6020
HZET0101S001	237620003	1068003	Soil	9/21/2009 09:35	1613B, 6020
HZET0101S002	237620004	1068004	Soil	9/21/2009 13:10	1613B, 6020
HZET0102S001	237620005	1068005	Soil	9/21/2009 12:55	1613B, 6020
HZET0103S001	237620006	1068006	Soil	9/21/2009 12:45	1613B, 6020
HZET0103S002	237620007	1068007	Soil	9/21/2009 13:25	1613B, 6020
HZET0600D001	237620008	N/A	Soil	9/21/2009 09:00	6020
HZET0600S001	237620009	N/A	Soil	9/21/2009 09:00	6020
HZET0601S001	237620010	N/A	Soil	9/21/2009 10:40	6020
HZET0602S001	237620011	N/A	Soil	9/21/2009 09:05	6020
HZET0603S001	237620012	N/A	Soil	9/21/2009 10:50	6020
HZET0604S001	237620013	N/A	Soil	9/21/2009 11:08	6020
HZET0605S001	237620014	N/A	Soil	9/21/2009 11:00	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratories within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

2

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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: P. Meeks Date Reviewed: October 13, 2009

The samples listed in Table 1 for this analysis were 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 (08/02).

- Holding Times: Extraction and analytical holding times were met. The samples were extracted and analyzed within one year of collection.
- Instrument Performance: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: The soil method blank had detects for all but two target compounds. Individual isomers detected below the reporting limit or at concentrations less than 5x the method blank concentration were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. All totals, except for TCDF, were qualified as estimated, "J," due to detects in the soil method blank.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and the RPDs were within the laboratory-established control limits.
- MS/MSD analyses were performed on HZER0102S001. Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and the RPDs were within the laboratory-established control limits.
- 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: FBQW2239 (235913) was identified as the field blank associated with the samples in this SDG; however, the sample was not analyzed for dioxins. The samples in this SDG had no identified equipment rinsate.
 - Field Duplicates: HZET0100S001 and HZET0100D001 were identified as field duplicate samples. There were four common detects above the reporting limit for 1,2,3,4,6,7,8-HpCDD, TCDF, OCDD, and OCDF with RPDs of 108%, 21%, 112%, and 99%, respectively. There were also three compounds detected below the RL

in one sample and not detected in the other and one compound was detected above the RL but was not detected in the other.

- Internal Standards Performance: Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed and reported confirmation analyses for all TCDF detects. As the confirmation analyses resulted in results similar to the original analyses, the reviewer rejected, "R," the confirmation analyses in all samples except HZET0101S002 and HZET0102S001 in favor of the original analyses. The original TCDF results for HZET0101S002 and HZET0102S001 were reported as estimated maximum possible concentrations (EMPCs); however, as the confirmation results were not reported as an EMPCs, the reviewer rejected, "R," the original results in favor of the confirmation results in HZET0102S001.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. The laboratory calculated and reported compound-specific detection limits (EDLs). EMPCs were identified in the samples of this SDG and qualified with a "K" by the laboratory. Any EMPC was qualified as estimated, "UJ," in the samples of this SDG. EMPCs reported as totals were qualified as estimated, "J," as only a portion of the total was identified as an EMPC. Any detect below the laboratory lower calibration level was qualified as estimated, "J." Nondetects are valid to the estimated detection limit (EDL).

B. EPA METHOD 6020—Metals

Reviewed By: P. Meeks Date Reviewed: October 13, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0102S001. The RPDs were within the method established control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0102S001. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: A serial dilution analysis was performed on HZET0102S001. The %D for lead exceeded the control limit; therefore, lead detected in the samples was qualified as estimated, "J." The remaining %Ds were within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. All zinc results were reported form 10x dilutions in order to report the analyte within the linear range of the instrument. The remaining analytes were reported from the laboratory's standard 2x dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was the field blank associated with the samples in this SDG. There were no applicable detects in the field blank. The samples in this SDG had no identified equipment rinsate.
 - Field Duplicates: HZET0100S001 and HZET0100D001 and HZET0600S001 and HZET0600D001 were identified as field duplicate samples. .All detects were in common and all RPDs were less than 100%.

Validated Sample Result Forms: 237620

Sample Name	HZET0100D001	Matrix Type: Soil			Res	Result Type: Primary			
Lab Sample Name:	1068001	Sample	9/	21/2009 9:25:00 AM	ı v	Validation			
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822469	15.4	2.42	0.646 pg/g					
1,2,3,4,6,7,8-HpCDF	67562394	2.42	2.42	2.42 pg/g	J	U	B, result changed from 1.8 and EDL from		
1,2,3,4,7,8,9-HpCDF	55673897	0.432	2.42	0.432 pg/g	U	U			
1,2,3,4,7,8-HxCDD	39227286	0.268	2.42	0.268 pg/g	U	U			
1,2,3,4,7,8-HxCDF	70648269	2.42	2.42	2.42 pg/g	JK	UJ	*III, result changed from 0.211 and		
1,2,3,6,7,8-HxCDD	57653857	0.601	2.42	0.304 pg/g	J	J			
1,2,3,6,7,8-HxCDF	57117449	0.184	2.42	0.184 pg/g	U	U			
1,2,3,7,8,9-HxCDD	19408743	0.301	2.42	0.301 pg/g	U	U			
1,2,3,7,8,9-HxCDF	72918219	0.291	2.42	0.291 pg/g	U	U			
1,2,3,7,8-PeCDD	40321764	0.206	2.42	0.206 pg/g	U	U			
1,2,3,7,8-PeCDF	57117416	0.189	2.42	0.189 pg/g	U	U			
2,3,4,6,7,8-HxCDF	60851345	0.215	2.42	0.215 pg/g	U	U			
2,3,4,7,8-PeCDF	57117314	2.42	2.42	2.42 pg/g	J	U	B, result changed from 0.178 and EDL from		
2,3,7,8-TCDD	1746016	0.178	0.485	0.178 pg/g	U	U			
2,3,7,8-TCDF	51207319	0.436	0.485	0.215 pg/g	J	R	D		
2,3,7,8-TCDF	51207319	0.481	0.485	0.24 pg/g	J	J			
OCDD	3268879	275	4.85	2.11 pg/g					
OCDF	39001020	5.77	4.85	1.78 pg/g					
Total HpCDD	37871004	68.7	2.42	0.646 pg/g		J	В		
Total HpCDF	38998753	5.27	2.42	0.275 pg/g		J	В		
Total HxCDD	34465468	3.79	2.42	0.268 pg/g		J	В		
Total HxCDF	55684941	2.86	2.42	0.163 pg/g		J	B, *III		
Total PeCDD	36088229	0.206	2.42	0.206 pg/g	U	U			
Total PeCDF	30402154	0.938	2.42	0.118 pg/g	J	J	В		
Total TCDD	41903575	0.178	0.485	0.178 pg/g	U	U			
Total TCDFs	55722275	1.43	0.485	0.24 pg/g	В				

Sample Name	HZET0100S001			ype: Soil		Result Type: Primary		
Lab Sample Name:	1068002	Sample	9/	21/2009 9:25:00 AM	I I	alidation	V	
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	51.7	2.47	0.555 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	5.17	2.47	0.152 pg/g				
1,2,3,4,7,8,9-HpCDF	55673897	2.47	2.47	2.47 pg/g	J	U	B, result changed from 0.525 and EDL from	
1,2,3,4,7,8-HxCDD	39227286	0.527	2.47	0.172 pg/g	J	J		
1,2,3,4,7,8-HxCDF	70648269	0.507	2.47	0.124 pg/g	J	J		
1,2,3,6,7,8-HxCDD	57653857	2.09	2.47	0.191 pg/g	J	J		
1,2,3,6,7,8-HxCDF	57117449	2.47	2.47	2.47 pg/g	JK	UJ	*III, result changed from 0.375 and	
1,2,3,7,8,9-HxCDD	19408743	2.47	2.47	2.47 pg/g	J	U	B, result changed from 1.01 and EDL from 0.19	
1,2,3,7,8,9-HxCDF	72918219	2.47	2.47	2.47 pg/g	JK	UJ	*III, result changed from 0.294 and	
1,2,3,7,8-PeCDD	40321764	2.47	2.47	2.47 pg/g	J	U	B, result changed from 0.363 and EDL from	
1,2,3,7,8-PeCDF	57117416	2.47	2.47	2.47 pg/g	JK	UJ	*III, result changed from 0.268 and	
2,3,4,6,7,8-HxCDF	60851345	0.434	2.47	0.136 pg/g	J	J		
2,3,4,7,8-PeCDF	57117314	2.47	2.47	2.47 pg/g	1	U	B, result changed from 0.44 and EDL from	
2,3,7,8-TCDD	1746016	0.158	0.494	0.158 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.596	0.494	0.215 pg/g				
2,3,7,8-TCDF	51207319	0.456	0.494	0.187 pg/g	J	R	D	
OCDD	3268879	969	4.94	1.21 pg/g				
OCDF	39001020	17.1	4.94	0.537 pg/g				

Total HpCDD	37871004	219	2.47	0.555 pg/g		J	В
Total HpCDF	38998753	17.6	2.47	0.152 pg/g		J	В
Total HxCDD	34465468	16.3	2.47	0.172 pg/g		J	В
Total HxCDF	55684941	11.2	2.47	0.124 pg/g		J	B, *III
Total PeCDD	36088229	2.16	2.47	0.146 pg/g	J	J	В
Total PeCDF	30402154	4.78	2.47	0.0784 pg/g		J	B, *III
Total TCDD	41903575	0.231	0.494	0.158 pg/g	J	J	В
Total TCDFs	55722275	2.45	0.494	0.215 pg/g	В		

Sample Name	HZET0101S001	Ν	Matrix T	'ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1068003	Sample	9/	21/2009 9:35:00 AM	ı v	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	2.4	2.38	0.331 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.38	2.38	2.38 pg/g	J	U	B, result changed from 0.375 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.269	2.38	0.269 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.204	2.38	0.204 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.12	2.38	0.12 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.215	2.38	0.215 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.121	2.38	0.121 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.221	2.38	0.221 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.175	2.38	0.175 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.155	2.38	0.155 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.125	2.38	0.125 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.123	2.38	0.123 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.119	2.38	0.119 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.157	0.476	0.157 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.348	0.476	0.229 pg/g	J	J	
2,3,7,8-TCDF	51207319	0.368	0.476	0.161 pg/g	J	R	D
OCDD	3268879	41.1	4.76	0.95 pg/g			
OCDF	39001020	1.01	4.76	0.638 pg/g	J	J	
Total HpCDD	37871004	8.52	2.38	0.331 pg/g		J	В
Total HpCDF	38998753	0.885	2.38	0.154 pg/g	J	J	В
Total HxCDD	34465468	0.67	2.38	0.204 pg/g	J	J	В
Total HxCDF	55684941	0.68	2.38	0.12 pg/g	J	J	В
Total PeCDD	36088229	0.155	2.38	0.155 pg/g	U	U	
Total PeCDF	30402154	0.665	2.38	0.076 pg/g	J	J	В
Total TCDD	41903575	0.32	0.476	0.157 pg/g	J	J	В
Total TCDFs	55722275	1.25	0.476	0.229 pg/g	В		

Sample Name	HZET0101S002	ľ	Matrix T	ype: Soil	Res	Result Type: Primary			
Lab Sample Name:	1068004	Sample	9/	21/2009 1:10:00 PM	, T	alidation	V		
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822469	2.46	2.46	2.46 pg/g	JK	UJ	*III, result changed from 0.769 and		
1,2,3,4,6,7,8-HpCDF	67562394	2.46	2.46	2.46 pg/g	J	U	B, result changed from 0.234 and EDL from		
1,2,3,4,7,8,9-HpCDF	55673897	0.287	2.46	0.287 pg/g	U	U			
1,2,3,4,7,8-HxCDD	39227286	0.191	2.46	0.191 pg/g	U	U			
1,2,3,4,7,8-HxCDF	70648269	0.131	2.46	0.131 pg/g	U	U			
1,2,3,6,7,8-HxCDD	57653857	0.214	2.46	0.214 pg/g	U	U			
1,2,3,6,7,8-HxCDF	57117449	0.136	2.46	0.136 pg/g	U	U			
1,2,3,7,8,9-HxCDD	19408743	0.212	2.46	0.212 pg/g	U	U			
1,2,3,7,8,9-HxCDF	72918219	0.202	2.46	0.202 pg/g	U	U			
1,2,3,7,8-PeCDD	40321764	0.154	2.46	0.154 pg/g	U	U			
1,2,3,7,8-PeCDF	57117416	0.127	2.46	0.127 pg/g	U	U			
2,3,4,6,7,8-HxCDF	60851345	0.143	2.46	0.143 pg/g	U	U			
2,3,4,7,8-PeCDF	57117314	0.128	2.46	0.128 pg/g	U	U			
2,3,7,8-TCDD	1746016	0.166	0.491	0.166 pg/g	U	U			
2,3,7,8-TCDF	51207319	0.317	0.491	0.173 pg/g	J	J			
2,3,7,8-TCDF	51207319	0.259	0.491	0.197 pg/g	JK	R	D		
OCDD	3268879	7.75	4.91	0.588 pg/g					
OCDF	39001020	0.615	4.91	0.615 pg/g	U	U			
Total HpCDD	37871004	2.22	2.46	0.336 pg/g	J	J	B, *III		
Total HpCDF	38998753	0.493	2.46	0.159 pg/g	J	J	В		
Total HxCDD	34465468	0.191	2.46	0.191 pg/g	U	U			
Total HxCDF	55684941	0.232	2.46	0.131 pg/g	J	J	В		
Total PeCDD	36088229	0.154	2.46	0.154 pg/g	U	U			
Total PeCDF	30402154	0.472	2.46	0.0859 pg/g	J	J	В		
Total TCDD	41903575	0.166	0.491	0.166 pg/g	U	U			
Total TCDFs	55722275	0.727	0.491	0.197 pg/g	В	J	*III		

Sample Name	HZET0102S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1068005	Sample	9/2	21/2009 12:55:00 PM	м у	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	2.47	2.47	2.47 pg/g	Κ	UJ	*III, RL changed from 2.45 and EDL from
1,2,3,4,6,7,8-HpCDF	67562394	2.45	2.45	2.45 pg/g	J	U	B, result changed from 0.412 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.406	2.45	0.406 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.212	2.45	0.212 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.155	2.45	0.155 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.247	2.45	0.247 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.162	2.45	0.162 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.241	2.45	0.241 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.241	2.45	0.241 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.173	2.45	0.173 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.136	2.45	0.136 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.172	2.45	0.172 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.141	2.45	0.141 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.172	0.49	0.172 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.314	0.49	0.231 pg/g	JK	R	D
2,3,7,8-TCDF	51207319	0.314	0.49	0.157 pg/g	J	J	
OCDD	3268879	39.4	4.9	0.973 pg/g			
OCDF	39001020	1.16	4.9	0.708 pg/g	J	J	
Total HpCDD	37871004	8.95	2.45	0.412 pg/g		J	B, *III
Total HpCDF	38998753	0.922	2.45	0.214 pg/g	J	J	В
Total HxCDD	34465468	0.249	2.45	0.212 pg/g	J	J	В
Total HxCDF	55684941	0.208	2.45	0.155 pg/g	J	J	В
Total PeCDD	36088229	0.173	2.45	0.173 pg/g	U	U	
Total PeCDF	30402154	0.145	2.45	0.0996 pg/g	J	J	В
Total TCDD	41903575	0.172	0.49	0.172 pg/g	U	U	
Total TCDFs	55722275	0.61	0.49	0.231 pg/g	В	J	*III

Sample Name	HZET0103S001	Matrix Type: Soil			Res	ult Type: Pr	imary
Lab Sample Name:	1068006	Sample	9/	21/2009 12:45:00 PM	И	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	14.5	2.48	0.432 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.48	2.48	2.48 pg/g	J	U	B, result changed from 1.48 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.323	2.48	0.323 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.208	2.48	0.208 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	2.48	2.48	2.48 pg/g	JK	UJ	*III, result changed from 0.165 and
1,2,3,6,7,8-HxCDD	57653857	0.706	2.48	0.232 pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	0.126	2.48	0.126 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	2.48	2.48	2.48 pg/g	JK	UJ	*III, result changed from 0.456 and
1,2,3,7,8,9-HxCDF	72918219	0.19	2.48	0.19 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.141	2.48	0.141 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.145	2.48	0.145 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	2.48	2.48	2.48 pg/g	JK	UJ	*III, result changed from 0.161 and
2,3,4,7,8-PeCDF	57117314	0.142	2.48	0.142 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.174	0.496	0.174 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.311	0.496	0.232 pg/g	J	J	
2,3,7,8-TCDF	51207319	0.365	0.496	0.172 pg/g	J	R	D
OCDD	3268879	337	4.96	1.01 pg/g			
OCDF	39001020	5.02	4.96	0.87 pg/g			
Total HpCDD	37871004	70.6	2.48	0.432 pg/g		J	В
Total HpCDF	38998753	4.61	2.48	0.181 pg/g		J	В
Total HxCDD	34465468	5.28	2.48	0.208 pg/g		J	B, *III
Total HxCDF	55684941	2.73	2.48	0.123 pg/g		J	B, *III
Total PeCDD	36088229	0.272	2.48	0.141 pg/g	J	J	В
Total PeCDF	30402154	0.543	2.48	0.0864 pg/g	J	J	В
Total TCDD	41903575	0.174	0.496	0.174 pg/g	U	U	
Total TCDFs	55722275	1.24	0.496	0.232 pg/g	В		

Sample Name	HZET0103S002	I	Matrix T	ype: Soil	Result Type: Primary		
Lab Sample Name:	1068007	Sample	9/	21/2009 1:25:00 PM	I I	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	2.43	2.43	2.43 pg/g	JK	UJ	*III, result changed from 1.13 and EDL
1,2,3,4,6,7,8-HpCDF	67562394	2.43	2.43	2.43 pg/g	JK	UJ	*III, result changed from 0.725 and
1,2,3,4,7,8,9-HpCDF	55673897	0.816	2.43	0.816 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.449	2.43	0.449 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.381	2.43	0.288 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	0.492	2.43	0.492 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	2.43	2.43	2.43 pg/g	JK	UJ	*III, result changed from 0.365 and
1,2,3,7,8,9-HxCDD	19408743	0.494	2.43	0.494 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	2.43	2.43	2.43 pg/g	J	U	B, result changed from 0.704 and EDL from
1,2,3,7,8-PeCDD	40321764	0.282	2.43	0.282 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	2.43	2.43	2.43 pg/g	JK	UJ	*III, result changed from 0.299 and
2,3,4,6,7,8-HxCDF	60851345	0.564	2.43	0.375 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.43	2.43	2.43 pg/g	J	U	B, result changed from 0.389 and EDL from
2,3,7,8-TCDD	1746016	0.315	0.486	0.315 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.348	0.486	0.348 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.299	0.486	0.278 pg/g	J	R	D
OCDD	3268879	5.32	5.32	5.32 pg/g	К	UJ	*III, RL changed from 4.86 and EDL from 3.09
OCDF	39001020	2.66	4.86	2.66 pg/g	U	U	
Tuesday, October 20, 200	9						Page 10 of 1

Tuesday, October 20, 2009

Page 10 of 14

Total HpCDD	37871004	1.13	2.43	0.941 pg/g	J	J	В
Total HpCDF	38998753	0.725	2.43	0.488 pg/g	J	J	B, *III
Total HxCDD	34465468	0.449	2.43	0.449 pg/g	U	U	
Total HxCDF	55684941	2.01	2.43	0.288 pg/g	J	J	B, *III
Total PeCDD	36088229	0.282	2.43	0.282 pg/g	U	U	
Total PeCDF	30402154	0.688	2.43	0.251 pg/g	J	J	B, *III
Total TCDD	41903575	0.315	0.486	0.315 pg/g	U	U	
Total TCDFs	55722275	0.348	0.486	0.348 pg/g	U	U	

Sample Name	HZET0100D001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imarv
Lab Sample Name:	237620001	Sample		21/2009 9:25:00 AM		alidation	V
Analyte	CAS No	Result Value	RL	MDL Result			Validation Notes
Cadmium	7440439	0.223	0.215	0.0215 mg/kg			
Lead	7439921	6.55	0.43	0.107 mg/kg		J	А
Zinc	7440666	59	10.7	2.15 mg/kg			
Sample Name	HZET0100S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620002	Sample	9/2	21/2009 9:25:00 AM		alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.329	0.204	0.0204 mg/kg			
Lead	7439921	9.43	0.409	0.102 mg/kg		J	А
Zinc	7440666	69.4	10.2	2.04 mg/kg			
Sample Name	HZET0101S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620003	Sample	9/2	21/2009 9:35:00 AM		alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.254	0.22	0.022 mg/kg			
Lead	7439921	5.93	0.439	0.11 mg/kg		J	А
Zinc	7440666	61.1	11	2.2 mg/kg			
Sample Name	HZET0101S002	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620004	Sample	9/2	21/2009 1:10:00 PM	7	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.125	0.211	0.0211 mg/kg	J	J	
Lead	7439921	5.02	0.422	0.106 mg/kg		J	А
Zinc	7440666	48.5	10.6	2.11 mg/kg			
Sample Name	HZET0102S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620005	Sample	9/2	21/2009 12:55:00 PN	4	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.158	0.213	0.0213 mg/kg	J	J	
Lead	7439921	5.53	0.427	0.107 mg/kg		J	А
Zinc	7440666						

Analysis Method 6020

Sample Name	HZET0103S001	I	Matrix T	'ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620006	Sample	9/	21/2009 12:45:00 PM	4	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.226	0.245	0.0245 mg/kg	J	J	
Lead	7439921	6.69	0.49	0.122 mg/kg		J	А
Zinc	7440666	82.2	12.2	2.45 mg/kg			
Sample Name	HZET0103S002	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620007	Sample	9/	21/2009 1:25:00 PM	۲	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.149	0.202	0.0202 mg/kg	J	J	
Lead	7439921	5.3	0.403	0.101 mg/kg		J	А
Zinc	7440666	53.3	10.1	2.02 mg/kg			
Sample Name	HZET0600D001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620008	Sample	9/	21/2009 9:00:00 AM	[\	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.113	0.214	0.0214 mg/kg	J	J	
Lead	7439921	5.45	0.427	0.107 mg/kg		J	А
Zinc	7440666	53	10.7	2.14 mg/kg			
Sample Name	HZET0600S001	1	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620009	Sample	9/	21/2009 9:00:00 AM		alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.0846	0.213	0.0213 mg/kg	J	J	
Lead	7439921	4.39	0.426	0.107 mg/kg		J	А
Zinc	7440666	47.9	10.7	2.13 mg/kg			
Sample Name	HZET0601S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620010	Sample	9/	21/2009 10:40:00 Al	М	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.146	0.218	0.0218 mg/kg	J	J	
Lead	7439921	6.03	0.437	0.109 mg/kg		J	А
Zinc	7440666	46.6	10.9	2.18 mg/kg			

Analysis Method 6020

Sample Name	HZET0602S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620011	Sample	9/2	21/2009 9:05:00 AM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.109	0.216	0.0216 mg/kg	J	J	
Lead	7439921	4.36	0.433	0.108 mg/kg		J	А
Zinc	7440666	38.8	10.8	2.16 mg/kg			
Sample Name	HZET0603S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620012	Sample	9/2	21/2009 10:50:00 AN	M	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.173	0.213	0.0213 mg/kg	J	J	
Lead	7439921	6.64	0.426	0.107 mg/kg		J	А
Zinc	7440666	48.8	10.7	2.13 mg/kg			
Sample Name	HZET0604S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620013	Sample	9/2	21/2009 11:08:00 AM	M	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.153	0.2	0.02 mg/kg	J	J	
Lead	7439921	8	0.4	0.0999 mg/kg		J	А
Zinc	7440666	51.9	9.99	2 mg/kg			
Sample Name	HZET0605S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237620014	Sample	9/2	21/2009 11:00:00 AN	M	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Cadmium	7440439	0.216	0.2	0.02 mg/kg			
Lead	7439921	10.1	0.4	0.1 mg/kg		J	А
Zinc	7440666	45.1	10	2 mg/kg			

Analysis Method 6020

Chain of Custody and Supporting Documentation

							2.2	、そっそそをて			Page: 1 of
Custome	Customer Information	Project Information	tion		Project	Infor	Project Information				
Site:	SSFL	Client Name:	Boeing		Collector:		A. Goldenberg		Boe	Boeing PM:	
Company:	HWH	Sampling Event:	ISRA Sampling	ISRA Sampling, August 2009	Contact #:	#					
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	2			å	Requested Analyses	se		Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl								
	Suite 600	PM Phone #:	(925) 627-4627								Numerical values for
	Walnut Creek	Field Contact:	Benjamin Stewart	art							analyses equate to turn around time in days
	CA	Field Contact #:	(818) 266-1378	3	_						H - Hold
	94596	Lab Name:	GEL Laboratories, LLC	ies, LLC							EH - Extract/Extrude & Hold
Email:	sarah.vonraesfeld@mwhglobal.c	I.c Lab Contact:	Jackie Trudell								
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road	Road		Metal					Note: Values in the
			Charleston, SC 29407	29407	-	s 602					bellow are Turn Around Times.
		Lab Phone:	(843) 769-7388			20 S					2
Sample Name	ame	Matrix	Date Time	No. of Containers	B - Soil	oil Lead					Comments
CNET0100S001		Soil 9/2	9/23/2009 9:33	-	+	5					
HZET0800S001		Soil 9/2	9/23/2009 10:10	-	5 5						
HZET0801S001		Soil 9/2	9/23/2009 10:15	-	5 5						
HZET0802S001		Soil 9/2	9/23/2009 9:10	1	5 5						
HZET0803S001		Soil 9/	9/23/2009 10:50	٢	5 5						
HZET0804S001		Soil 9/	9/23/2009 10:40	1	5 5						
HZET0805D001		Soil 9/	9/23/2009 10:25	1	5 5						
HZET0805S001		Soil 9/	9/23/2009 10:25	1	5 5	-					
HZET0806S001		Soil 9/	9/23/2009 9:20	-	5 5						
			·								
1. Relinqu	1. Relinquished by: Date:	2. Received by:		Date:	3. Relinquished by:	luishe	í by:	Date:	4. Received by:	ed by:	Date:
Allo.	Allon m. R.I.C.) 9-23-09	-09 12. M. M. Collin,	Um.	9/24/09							
Company: MWH	: Time: 10:27		Q	Time: QoO	Company:	÷		Time:	Company:		Time:
Comments:	ts:							Geo	Geotracker EDF		

GEL Laboratories LLC

.

SAMPLE RECEIPT & REVIEW FORM

.

	1: 3551				SDG/ARCOC/Work Order: 237767
	ived By: RMS				Date Received: 9 24 8
	ected Hazard Information	Yes	°N	*If (the H	Counts $> x2$ area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC	/Samples marked as radioactive?		5		imum Counts Observed*:
Class	ified Radioactive II or III by RSO?		/		40cpm
COC	/Samples marked containing PCBs?				
Shipp	ed as a DOT Hazardous?			Haza	ard Class Shipped: UN#:
Samp	les identified as Foreign Soil?		/		
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	~			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?				Preservation Method: blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		1		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7	Are Encore containers present?			/	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	1		£	Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11	Number of containers received match number indicated on COC?	/			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	C			
Comn Fx:	nents: 9457 3163 0979				

Date 9/24/07

JT

Date: 10/12/09

Requesting Firm: MWH Address: 9444 Farnham Suite 300 San Diego, CA 92123 Phone: 858-751-1217 Fax: 858-751-1201 E-mail: Sean.leffler@mwhglobal.com

2

To:	Jackie Trudell
Laboratory	GEL Laboratories, LLC
From:	Sean Leffler
Requestor	signature:

Chain-of-Custody Form Analytical Request Change

Phone: 843-769-7388

No. of Pages: 2

E-mail: jacqueline.trudell@gel.com

Per Request:

Subject:

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	Client Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MWHAG2 0090923_0 0	CNET0100S00 1	9/23/09		Add copper by 6020
	0			

The reason for these changes:

Incorrectly marked on COC form
Lack of sample volume
Change in analytical request
X
Other:

Thank you

Project Information Collector: A. Goldenberg Collector: A. Goldenberg Contract #: Requested Analyses Metal Contract #: Dist Date: Oata 0 0 0 Bate: A. Reiling Diate: A. Reiling	t								4	3	237767%		Page:	1 of 1
Str. Str. Collections Collections Comparity: MiNI Sampling Event: ISA Sampling. Event: ISA Sampling. Event: ISA Sampling. Event: Comparity: MiNI Sampling Event: ISA Sampling. Event: ISA Sampling. Event: ISA Sampling. Event: Adress: 221:10. Proper Anargen: ISA Sampling. Event: ISA Sampling. Event: ISA Sampling. Event: Adress: 221:10. Page Prines ISA Sampling. Function: ISA Sampling. Event: ISA Sampling. ISA Samp	Custome	r Information	Project Inform	ation		-	roject	Informa	tion					
Company: Multi Sampling Lowit: ISNA Sampling, August 2009 Contracts Sampling August 2009 Contract Au Report to: Starth Von Reasteld Project Number: (825) 527-467 Requested Au Report to: Starth Von Reasteld Project Number: (825) 527-467 Requested Au National Euror Project Number: (825) 527-467 (825) 527-467 Requested Au Reader National Euror Project Number: (825) 527-467 Requested Au Reader Project Number: (815) 526-1378 Requested Au Requested Au Reader Reader Reader Reader Reader Reader Enail: sample Name: (815) 756-738 (815) 756-738 Reader Reader Enail: sample Name: (816) 700-010 Lab Phones: (816) 700-01 (816) 700-01 (816) 700-01 Reader Reader Reader Reader (817) 769-738 (816) 700-01 (816) 700-01 Sample Name: Sample Name: Sample Name: Sample Name: (816) 700-01	Site:	SSFL	Client Name:	Boeing		-	collector	<	oldenbe	Ð		Boeing PM:		
Request to: Stant Von Teaseled Project Number: 1431164 Project Number: 1431164 Project Number: 1431164 Address: 2121 N. Gatifinia Eliod Project Number: 1431173 Address: 2221 N. Gatifinia Eliod Project Number: Address: 2221 N. Gatifinia Eliod Project Number: Requested Address: 2121 N. Gatifinia Eliod Project Number: Eliol Stratt Address: 2221 N. Gatifinia Eliod Address: 2321 N. Gatifinia Eliod Flaid Contracts: Eliol Stratt Address: 223 Address: Requested Address: 2450 Stratt Ch Eliol Stratt Ch Eliol Stratt Address: Eliol Stratt Address: 2450 Stratt Ch Eliol Stratt Ch Eliol Stratt Eliol Stratt Address: 2450 Stratt Ch Eliol Stratt Ch Eliol Stratt Eliol Stratt Address: 2450 Stratt Ch Eliol Stratt Eliol Stratt Eliol Stratt Address: 2400 Stratt Eliol Stratt Eliol Stratt Eliol Stratt Eliol Stratt Address: 2500 Stratt Ch Eliol Stratt Eliol Stratt Eliol Stratt Address: 2500 Stratt Eliol Stratt Eliol	Company:	MWH	Sampling Event		pling, August 2(contact i							
Address: 2121 N. California Eluci Project Manager: Austration Xeldress: 2010 600 PN Honore #: Respiration Number Creek Field Conntact: Respiration Suite 600 End H Respiration Ch Page Manager: Austration Ch Page Manager: Respiration Ch Page Manager: Respiration Ch Page Mana: Ch Page Manager: Ch Page Mana: Ch Page Manager: Rinall: Serrith-worrearting@mwhydoalcic. Lab Phones: Ch Manager: Sample Mana Sample Mana Matrix Data Page Manager: Sample Mana Matrix Data Time Contacting Sample Mana Matrix Data Time Contacting Concresci Salo Strazooo Sci Sci Concresci Salo Sci Sci Sci Erronscioni Salo Sci Sci Sci Perronscioni Salo Sci Sci Sci Erronscioni Salo Sci Sci Sci Sci Erronscioni Salo Sci Sci Sci Sci	Report to:	Sarah Von Raesfeld	Project Number		05462	<u>i 1</u>				Reques	ed Analyse	8	Instructions/TAT	STAT
Ide 600 PM Phone #: (825) 827-4627 Althouse Field Contact:: Benjamin Stewart Althouse Field Contact:: Benjamin Stewart Althouse Clip Laborations:: Benjamin Stewart Clip Contact:: Lab Name: Clip Laborations:: Biold Clip Laborations:: Lab Name: Clip Contact:: Lab Name: Clip Laborations: Biold Clip Laborations: Lab Name: Clip Contact:: Lab Name: Clip Laborations: I an Infinencement Lab Name: Clip Laborations: Lab Name: I an Infinencement Lab Name: Clip Laborations: Lab Name: I an Infinencement Lab Name: Clip Laborations: Lab Name: I an Infinencement Lab Name: Clip Laborations: Lab Name: I an Infinencement Matrix Date Time Contations: I an Infinencement Said 9222000 1 5 5 1 I and Said 9222000 1 5 5 1 I and Name: Said 9222000 1 5 5 1 I and Said 9222000 920 1 5 5 1 <td>Address:</td> <td></td> <td>Project Manage</td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Legend:</td> <td></td>	Address:		Project Manage				_						Legend:	
Mill Field Contact: Benjamin Stewart A Field Contact: Benjamin Stewart A Field Contact: Benjamin Stewart B66 Lab Name: GEL Laboratories, LLC arxivorraestatio@mmnglobalc.com Lab Name: GEL Laboratories, LLC arxivorraestatio@mmnglobalc.com Lab Name: GEL Laboratories, LLC arxivorraestatio@mmnglobalc.com Lab Nater, Laboratories, LLC Jackie Frudetii arxivorraestatio@mmnglobalc.com Lab Phone: (Classes 20ad OT) B61 Altores: 2040 Sanege Road Milet B61 B61 9737550 1 5 0 B61 861 8737550 1 5 0 0 B61 8232006 10:10 1 5 0 0 S61 92322006 10:50 1 5 0 0 Mr 7.1 5 <		Suite 600	PM Phone #:	(925) 627	4627								Numerical values for	lues for
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Walnut Creek	Field Contact:	Benjamin	Stewart			h					around time	n days
Image: Constract of the Name: CEL Laboratories, LLC rath.normaestald@mmWrglobal.com Lab Name: CEL Laboratories, LLC rath.inflier@mwYglobal.com Lab Contact: Lab Contact: Lab Phone: Charleston: 2040 Sange Road Lab Phone: Charleston: Charleston: Lab Phone: Charleston: Charleston: Soli Soli 9232000 9:10 1 5 Soli 9232000 10:10 1 5 0 Month Soli 9232000 9:10 1 5 0 Month Soli 9232000 10:10 1 5 0 Month Soli 9232000 9:10 1 5 0 Month Soli 9232000 10:10 1 5 0 Month Soli 9232000 10:20 1 5 0 Month Soli 9232000 10:10 1 5 5 1 Soli 9232000 10:20 1 5 5 1 Soli 9232000 10:20 1 5 5 1 Soli 9232000 10:20 1 5 5 <t< td=""><td></td><td>G</td><td>Field Contact #:</td><td>(818) 266</td><td>-1378</td><td></td><td></td><td>letc</td><td></td><td></td><td></td><td></td><td>Hold</td><td></td></t<>		G	Field Contact #:	(818) 266	-1378			letc					Hold	
Rath vortrassfet(d)min/tgiobal.com Lab Forniact: Jackie Trudeil rath.instret@min/tgiobal.com Lab Phones: 2040 Savege Road Lab Phone: Chartestion, SC 28407 Chartestion, SC 28407 Lab Phone: Chartestion, SC 28407 Chartestion, SC 28407 Solid Solid Solid 9222000 Solid Solid Solid 1 5 5 Solid Solid 9222000 100 1 5 5 Solid Solid 9222000 100 1 5 5 7 Solid 9222000 100 1 5 5 7 7 Solid 9222000 1025 1 5 5 7 7 Matrix Date: 1 5 5 5 7 7 Solid 922000 1025 1 5 5 7 7 Mit Time: 0 1		94596	Lab Name:	GEL Labo	ratories, LLC			45					EH - Extract/Extrude & Hold	Extrude
ann leftler@finnwirg(obalt.com Lab Address: 2040 Savege Road I.ab Prhone: Charleston, SC 29407 Charleston, SC 29407 I.ab Prhone: Charleston, SC 29407 Charleston, SC 29407 I.ab Prhone: Charleston, SC 29407 Charleston, SC 29407 Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci Sci	Email:	sarah.vonraesfeld@mwhglobal.c	+	Jackie Tn	Idell			60						
Matrix Date Charteston, SC 29407 Lab Phone: Lab Phone: (43) 769-7363 Lab Phone: (43) 769-7363 Soli 9732000 9.333 1 0 0 0 Soli 9732000 9.333 1 0		sean.leffler@mwhglobal.com	Lab Address:	2040 Sav	age Road	T		<u>Metal</u>					Note: Values	in the c
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				Charlesto	n, SC 29407		-						bellow are Turn Around Times.	ırn Arou
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			Lab Phone:	(843) 769	-7388									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Sample N	ame	Matrix		<u> </u>	of							Comments	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	CNET0100			<u> </u>	9:33 1		5		Ь					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0800													
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0801												,	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0802													
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0803						-							
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0804				10:40									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	HZET0805						-							
solsol923/20098:20151ad by:Date:2. Received by:Date:3. Relinquished by:Date:av \mathcal{R} <t< td=""><td>HZET0805</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	HZET0805													
Date: 2. Received by: Date: 3. Relinquished by: Date: A 2.4 A 2.4 A 2.4 Time: Coppany: Time: Company: Time: 1.U:27 Coppany: A 2.4	HZET0806													
2009 12/09 12/09			3 Borelind 5		Data Data	~	Dollari	lehod hv			Date:	A Decelued for	Ċ	
ITIMO: COMPANY A 24 PC Company: ITIMO: 10:27 COMPANY A 24 PC Company: ITIMO: 10:27 COMPANY A 2000 COMPANY: ITIMO: 10:27 A 2000 COMPANY: ITIMO: ILU:27 COMPANY A 2000 COMPANY A 2000 COMPANY: ITIMO: ILU:27 COMPANY A 2000 COMPANY: ITIMO: ILU:27 COMPANY A 2000 COMPANY: ILU:27 COMPANY A 2000 COMP		K		VV		_							i	
t company d Time: Company: Time:	XLLO	Å		"Inn"	424									
	Company MWH			δ			ompany				Time:	Company:	F	Time:
	Commen	lis:									Geo	tracker EDF		
											Datz	Natidation Package	Level IV	
	V	10/2/09						y y						
	5					a								

ω

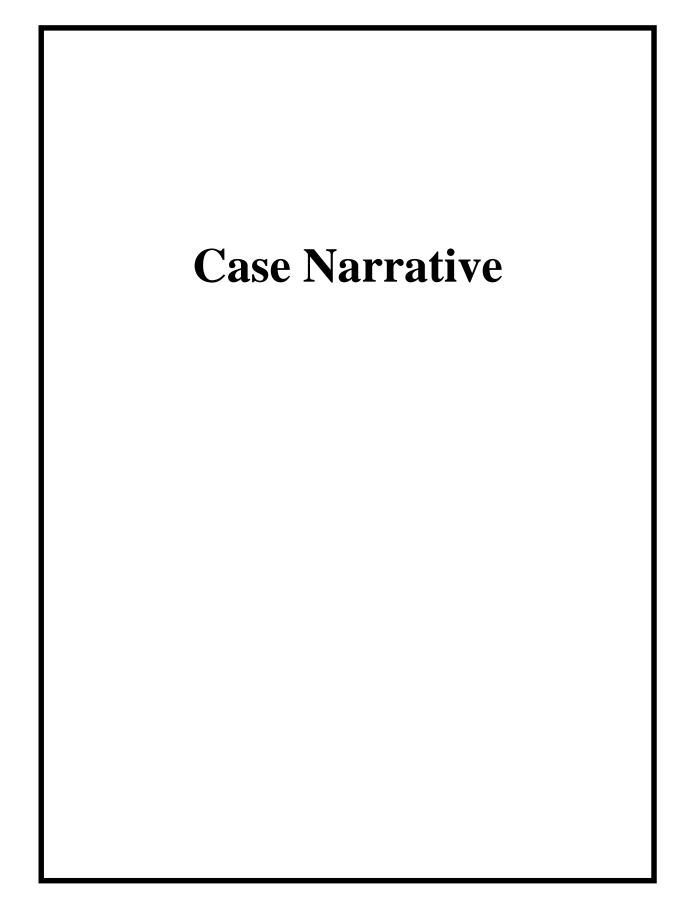
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	ampling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
	2121	N. California Blvd. Ste. 600		20	040 Savage F	Rd.
	W	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
		· · · · · · · · · · · · · · · · · · ·				
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	I
Phone Number:		925-627-4654	Phone Number:		843-769-738	3
Fax Number:		925-627-4501	Fax Number:		843-766-1178	3
E-mail Address:	<u>Sarah</u>	.VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	<u>gel.com</u>
		SAMPLE C	ONTAINER ORDER FORM			
Date Required:			Requested Analyses:	(Sp	pecify # of Samp	oles)
	-		. , , ,	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_ ` ` `	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information	:		Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	-	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?		(Yes/No)	% Moisture (D2216)	0	170	0
		(100,110)	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	х	(select all applicable)	Zinc (6020)	5	20	0
Water	<u>X</u>	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)		J	25	0
ναροι						
Est. Total # of Samples:	175	Est. Total # of EDDs				
Project TAT:		LABORATORY R	EPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablacy	
Project TAT:	v	(40 During and share)	Draft Results Fax?:	rts Delivera		
Normal:		(10 Business days)	-		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Rec	uirem	ents:	Project Site		(enter "X")	
Contingent Analysis?	-	(Yes/No)	Consultant Office		(enter "X")	
Contingent Analysis			-			
TIC (VOC) Required?	No	_(Yes/No)	Other Location (specify in comments)			
TIC (SVOC) Required?		(Yes/No)	-	Х	(enter "X")	
Data Validation Pckge.:	Tier II	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
-	Corola	ion Dooofold	•			
	-	on Raesfeld	Name:			
Date:	09/02/0	9	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	10
Laboratory Certifications	12
Subcontract Data Dioxins	14
Percent Moisture	563
Metals Analysis Case Narrative Sample Data Summary Raw Data Miscellaneous	567 568 573 592 665



Case Narrative for Boeing - SSFL (MWH) Work Order: 237767 SDG: 237767

October 08, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 24, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237767001	CNET0100S001
237767002	HZET0800S001
237767003	HZET0801S001
237767004	HZET0802S001
237767005	HZET0803S001
237767006	HZET0804S001
237767007	HZET0805D001
237767008	HZET0805S001
237767009	HZET0806S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals, Percent Moisture and

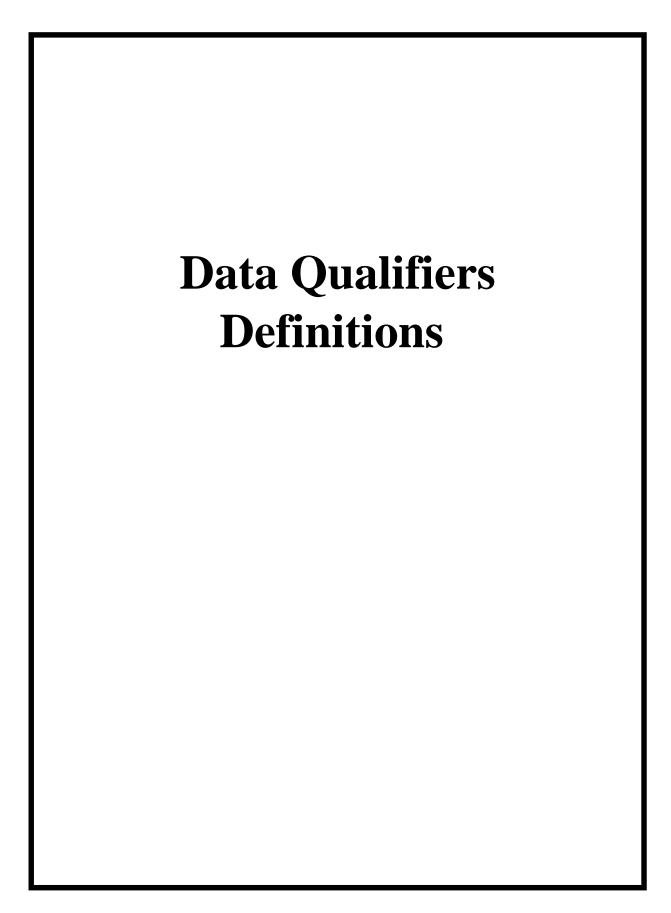
Dioxins (Cape Fear Analytical).

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline a Judel

Jacqueline Trudell

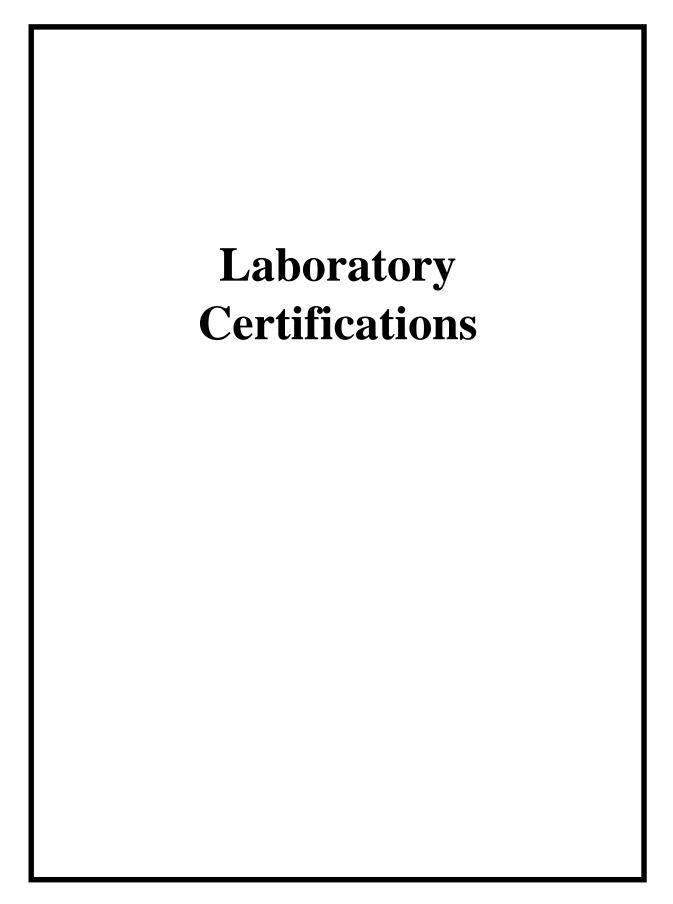
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

List of current GEL Certifications as of 30 September 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237767

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL RFI ISRA
Contract Task Order:	1261.500D.00
Sample Delivery Group:	237767
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	9
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
CNET01005001	007767001	N/A	2011	0/22/2000 0.22.00 AM	6020
CNET0100S001	237767001		SOIL	9/23/2009 9:33:00 AM	6020
HZET0800S001	1072009	N/A	SOIL	9/23/2009 10:10:00 AM	1613B
HZET0801S001	1072002	N/A	SOIL	9/23/2009 10:10:00 AM	1613B
HZET0802S001	1072003	N/A	SOIL	9/23/2009 10:15:00 AM	1613B
HZET0803S001	1072004	N/A	SOIL	9/23/2009 9:10:00 AM	1613B
HZET0804S001	1072005	N/A	SOIL	9/23/2009 10:50:00 AM	1613B
HZET0805D001	1072006	N/A	SOIL	9/23/2009 10:40:00 AM	1613B
HZET0805S001	1072007	N/A	SOIL	9/23/2009 10:25:00 AM	1613B
HZET0806S001	1072008	N/A	SOIL	9/23/2009 10:25:00 AM	1613B

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratories within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Ν	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.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
T- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	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 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: P. Meeks Date Reviewed: October 19, 209

The samples listed in Table 1 for this analysis were 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 (08/02).

- Holding Times: Extraction and analytical holding times were met. The samples were extracted and analyzed within one year of collection.
- Instrument Performance: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Detects or EMPCs were reported for all but three target compounds in the method blank. All detects not qualified as EMPCs (see Compound Quantification and Reported Detection Limits) for 1,2,3,6,7,8-HxCDD, TCDF, 1,2,3,7,8-PeCDF, 2,3,4,7,8-PeCDF, and 1,2,3,6,7,8-HxCDF and all detects for 1,2,3,4,6,7,8-HpCDF except for HZET0802S001 were qualified as nondetected, "U," at the level of contamination if detected below the EDL or at the EDL if detected above. Detects for all totals were qualified as estimated, "J," due to detects in the soil method blank.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613. RPDs were within the laboratory-established control limits.
- 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: FBQW2239 (235913) was identified as the field blank associated with the samples in this SDG; however, this sample was not analyzed for dioxins. This SDG had no identified equipment rinsate.
 - Field Duplicates: HZET0805S001 and HZET0805D001 were identified as field duplicate samples. There were common detects above the EDL for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,7,8-HxCDF, OCDD, and OCDF with RPDs of 32%, %, 59%, and 70%, respectively.
- Internal Standards Performance: Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result

summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed and reported confirmation analyses for all TCDF detects. As the confirmation analyses resulted in results similar to the original analyses, the reviewer rejected, "R," the confirmation analyses in all samples except HZET0801S001 in favor of the original analyses. The original TCDF result for HZET0801S001 was reported as an estimated maximum possible concentration (EMPC); however, as the confirmation result was not reported as an EMPC, the reviewer rejected, "R," the original result in favor of the confirmation result in HZET0801S001.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. The laboratory calculated and reported compound-specific detection limits. EMPCs were identified in the samples of this SDG and qualified with a "K" by the laboratory. Any EMPC was qualified as estimated, "UJ," in the samples of this SDG. EMPCs reported as totals were qualified as estimated, "J," as only a portion of the total was identified as an EMPC. Any detect below the laboratory lower calibration level was qualified as estimated, "J." Nondetects are valid to the estimated detection limit (EDL).

B. EPA METHOD 6020—Metals

Reviewed By: P. Meeks Date Reviewed: October 19, 2009

The sample listed in Table 1 for this analysis were 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 Methods 6010B, 6020, 7470A/7471A, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were 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: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the sample in this SDG was validated at Level V, the QC information necessary to make an absolute determination of bias in the sample was not reviewed; therefore, when qualifications were applied, no bias was assigned. The sample in this SDG was analyzed at the laboratory's standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was identified as the field blank associated with the sample in this SDG. There were no detects in this sample. This SDG had no identified equipment rinsate.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 237767

Analysis Method 1613B

Sample Name	HZET0800S001	Matrix Type: Soil			Res	Result Type: Primary		
Lab Sample Name:	1072009	Sample	9/	23/2009 10:10:00 A	м	alidation	V	
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	2.08	2.08	2.08 pg/g	JK	UJ	*III, result changed from 0.38 and EDL	
1,2,3,4,6,7,8-HpCDF	67562394	0.101	2.08	0.101 pg/g	U	U		
1,2,3,4,7,8,9-HpCDF	55673897	0.187	2.08	0.187 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.123	2.08	0.123 pg/g	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.0678	2.08	0.0678 pg/g	U	U		
1,2,3,6,7,8-HxCDD	57653857	0.134	2.08	0.134 pg/g	U	U		
1,2,3,6,7,8-HxCDF	57117449	0.0698	2.08	0.0698 pg/g	U	U		
1,2,3,7,8,9-HxCDD	19408743	0.135	2.08	0.135 pg/g	U	U		
1,2,3,7,8,9-HxCDF	72918219	0.104	2.08	0.104 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.0959	2.08	0.0959 pg/g	U	U		
1,2,3,7,8-PeCDF	57117416	0.0801	2.08	0.0801 pg/g	U	U		
2,3,4,6,7,8-HxCDF	60851345	0.0761	2.08	0.0761 pg/g	U	U		
2,3,4,7,8-PeCDF	57117314	2.08	2.08	2.08 pg/g	JK	UJ	*III, result changed from 0.103 and	
2,3,7,8-TCDD	1746016	0.103	0.416	0.103 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.408	0.416	0.128 pg/g	J	R	D	
2,3,7,8-TCDF	51207319	0.416	0.416	0.416 pg/g	J	U	B, result changed from 0.403 and EDL from	
OCDD	3268879	2.4	4.16	0.55 pg/g	J	J		
OCDF	39001020	0.385	4.16	0.385 pg/g	U	U		
Total HpCDD	37871004	0.75	2.08	0.185 pg/g	J	J	B, *III	
Total HpCDF	38998753	0.101	2.08	0.101 pg/g	U	U		
Total HxCDD	34465468	0.123	2.08	0.123 pg/g	U	U		
Total HxCDF	55684941	0.0999	2.08	0.0678 pg/g	J	J	В	
Total PeCDD	36088229	0.0959	2.08	0.0959 pg/g	U	U		
Total PeCDF	30402154	0.103	2.08	0.0458 pg/g	J	J	B, *III	
Total TCDD	41903575	0.138	0.416	0.103 pg/g	J	J		
Total TCDFs	55722275	0.776	0.416	0.154 pg/g	В	J	В	

Sample Name	HZET0801S001	Matrix Type: Soil			Result Type: Primary		
Lab Sample Name:	1072002	Sample	9/	23/2009 10:15:00 A	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.465	2.06	0.244 pg/g	J	J	
1,2,3,4,6,7,8-HpCDF	67562394	2.06	2.06	2.06 pg/g	JK	UJ	*III, result changed from 0.163 and
1,2,3,4,7,8,9-HpCDF	55673897	0.185	2.06	0.185 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.131	2.06	0.131 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.0757	2.06	0.0757 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.143	2.06	0.143 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.0852	2.06	0.0852 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.144	2.06	0.144 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.135	2.06	0.135 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.0772	2.06	0.0772 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0823	2.06	0.0823 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.091	2.06	0.091 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	2.06	2.06	2.06 pg/g	J	U	B, result changed from 0.0824 and EDL from
2,3,7,8-TCDD	1746016	0.0951	0.412	0.0951 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.246	0.412	0.132 pg/g	JK	R	D
2,3,7,8-TCDF	51207319	0.412	0.412	0.412 pg/g	J	U	B, result changed from 0.279 and EDL from
OCDD	3268879	5.32	4.12	0.465 pg/g			
OCDF	39001020	0.516	4.12	0.516 pg/g	U	U	
Total HpCDD	37871004	1.2	2.06	0.244 pg/g	J	J	В
Total HpCDF	38998753	0.163	2.06	0.112 pg/g	J	J	B, *III
Total HxCDD	34465468	0.131	2.06	0.131 pg/g	U	U	
Total HxCDF	55684941	0.106	2.06	0.0757 pg/g	J	J	В
Total PeCDD	36088229	0.0772	2.06	0.0772 pg/g	U	U	
Total PeCDF	30402154	0.0824	2.06	0.0503 pg/g	J	J	В
Total TCDD	41903575	0.246	0.412	0.0951 pg/g	J	J	
Total TCDFs	55722275	0.503	0.412	0.132 pg/g	В	J	B, *III

Sample Name	HZET0802S001	Matrix Type: Soil Sample 9/23/2009 9:10:00 AM				ult Type: Pr	
Lab Sample Name:	1072003	Sample	9/	23/2009 9:10:00 AN	1	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	95.1	2.09	0.469 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	5.65	2.09	0.128 pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	0.495	2.09	0.242 pg/g	J	J	
1,2,3,4,7,8-HxCDD	39227286	0.642	2.09	0.121 pg/g	J	J	
1,2,3,4,7,8-HxCDF	70648269	2.09	2.09	2.09 pg/g	JK	UJ	*III, result changed from 0.279 and
1,2,3,6,7,8-HxCDD	57653857	2.09	2.09	2.09 pg/g	J	U	B, result changed from 1.81 and EDL from
1,2,3,6,7,8-HxCDF	57117449	2.09	2.09	2.09 pg/g	J	U	B, result changed from 0.241 and EDL from
1,2,3,7,8,9-HxCDD	19408743	1	2.09	0.132 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.301	2.09	0.2 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	2.09	2.09	2.09 pg/g	ЈК	UJ	*III, result changed from 0.247 and
1,2,3,7,8-PeCDF	57117416	2.09	2.09	2.09 pg/g	ЈК	UJ	*III, result changed from 0.139 and
2,3,4,6,7,8-HxCDF	60851345	0.324	2.09	0.161 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.09	2.09	2.09 pg/g	J	U	B, result changed from 0.324 and EDL from
2,3,7,8-TCDD	1746016	0.116	0.418	0.116 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.356	0.418	0.125 pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.418	0.418	0.418 pg/g	J	U	B, result changed from 0.366 and EDL from
OCDD	3268879	1280	4.18	0.722 pg/g			
OCDF	39001020	37.6	4.18	0.391 pg/g			

Total HpCDD	37871004	392	2.09	0.469 pg/g		J	В
Total HpCDF	38998753	23.8	2.09	0.128 pg/g		J	В
Total HxCDD	34465468	22	2.09	0.121 pg/g		J	В
Total HxCDF	55684941	6.58	2.09	0.133 pg/g		J	B, *III
Total PeCDD	36088229	2.06	2.09	0.0842 pg/g	J	J	B, *III
Total PeCDF	30402154	3.08	2.09	0.0503 pg/g		J	B, *III
Total TCDD	41903575	0.528	0.418	0.116 pg/g			
Total TCDFs	55722275	2.25	0.418	0.149 pg/g	В	J	В

Sample Name HZET0803S001			Matrix T	ype: Soil	Result Type: Primary		
Lab Sample Name:	1072004	Sample	9/	23/2009 10:50:00 A	M V	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	2.48	2.35	0.293 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.35	2.35	2.35 pg/g	J	U	B, result changed from 0.611 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.282	2.35	0.282 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.17	2.35	0.17 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.171	2.35	0.111 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	2.35	2.35	2.35 pg/g	JK	UJ	*III, result changed from 0.227 and
1,2,3,6,7,8-HxCDF	57117449	2.35	2.35	2.35 pg/g	JK	UJ	*III, result changed from 0.261 and
1,2,3,7,8,9-HxCDD	19408743	2.35	2.35	2.35 pg/g	JK	UJ	*III, result changed from 0.216 and
1,2,3,7,8,9-HxCDF	72918219	0.197	2.35	0.197 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.132	2.35	0.132 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	2.35	2.35	2.35 pg/g	JK	UJ	*III, result changed from 0.128 and
2,3,4,6,7,8-HxCDF	60851345	0.38	2.35	0.135 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.35	2.35	2.35 pg/g	J	U	B, result changed from 0.712 and EDL from
2,3,7,8-TCDD	1746016	0.107	0.47	0.107 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.172	0.47	0.172 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.374	0.47	0.143 pg/g	JK	R	D
OCDD	3268879	31.2	4.7	0.904 pg/g			
OCDF	39001020	1.72	4.7	0.971 pg/g	J	J	
Total HpCDD	37871004	6.25	2.35	0.293 pg/g		J	В
Total HpCDF	38998753	1.23	2.35	0.167 pg/g	J	J	В

Total HxCDD	34465468	1.25	2.35	0.17 pg/g	J	J	B, *III
Total HxCDF	55684941	4.58	2.35	0.111 pg/g		J	B, *III
Total PeCDD	36088229	0.314	2.35	0.132 pg/g	J	J	В
Total PeCDF	30402154	7.59	2.35	0.0552 pg/g		J	B, *III
Total TCDD	41903575	0.256	0.47	0.107 pg/g	J	J	
Total TCDFs	55722275	3.33	0.47	0.172 pg/g	В	J	В

Sample Name Lab Sample Name:	HZET0804S001	N Sample	Aatrix T	`ype: Soil 23/2009 10:40:00 A		ult Type: Pr Validation	imary V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	3.79	2.05	0.207 pg/g	-		
1,2,3,4,6,7,8-HpCDF	67562394	2.05	2.05	2.05 pg/g	J	U	B, result changed from 0.769 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.177	2.05	0.177 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.167	2.05	0.167 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	2.05	2.05	2.05 pg/g	ЈК	UJ	*III, result changed from 0.133 and
1,2,3,6,7,8-HxCDD	57653857	2.05	2.05	2.05 pg/g	ЈК	UJ	*III, result changed from 0.226 and
1,2,3,6,7,8-HxCDF	57117449	2.05	2.05	2.05 pg/g	J	U	B, result changed from 0.167 and EDL from
1,2,3,7,8,9-HxCDD	19408743	0.19	2.05	0.19 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	2.05	2.05	2.05 pg/g	ЈК	UJ	*III, result changed from 0.213 and
1,2,3,7,8-PeCDD	40321764	0.0859	2.05	0.0859 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.124	2.05	0.124 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	2.05	2.05	2.05 pg/g	JK	UJ	*III, result changed from 0.208 and
2,3,4,7,8-PeCDF	57117314	2.05	2.05	2.05 pg/g	J	U	B, result changed from 0.299 and EDL from
2,3,7,8-TCDD	1746016	0.107	0.41	0.107 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.41	0.41	0.41 pg/g	J	U	B, result changed from 0.39 and EDL from 0.2

2,3,7,8-TCDF	51207319	0.384	0.41	0.133 pg/g	J	R	D
OCDD	3268879	44.4	4.1	0.431 pg/g			
OCDF	39001020	3.18	4.1	0.323 pg/g	J	J	
Total HpCDD	37871004	11.6	2.05	0.207 pg/g		J	В
Total HpCDF	38998753	1.88	2.05	0.0932 pg/g	J	J	В
Total HxCDD	34465468	1.23	2.05	0.167 pg/g	J	J	B, *III
Total HxCDF	55684941	2.16	2.05	0.0959 pg/g		J	B, *III
Total PeCDD	36088229	0.0859	2.05	0.0859 pg/g	U	U	
Total PeCDF	30402154	2.36	2.05	0.0482 pg/g		J	В
Total TCDD	41903575	0.321	0.41	0.107 pg/g	J	J	
Total TCDFs	55722275	1.66	0.41	0.2 pg/g	В	J	В

Sample Name	HZET0805D001			Sype: Soil			pe: Primary tion V	
Lab Sample Name:	1072006	Sample		23/2009 10:25:00 Al		alidation		
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	5.43	2.12	0.201 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	2.12	2.12	2.12 pg/g	J	U	B, result changed from 1.27 and EDL from	
1,2,3,4,7,8,9-HpCDF	55673897	0.188	2.12	0.188 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.139	2.12	0.139 pg/g	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.245	2.12	0.0723 pg/g	J	J		
1,2,3,6,7,8-HxCDD	57653857	2.12	2.12	2.12 pg/g	J	U	B, result changed from 0.269 and EDL from	
1,2,3,6,7,8-HxCDF	57117449	2.12	2.12	2.12 pg/g	JK	UJ	*III, result changed from 0.22 and EDL	
1,2,3,7,8,9-HxCDD	19408743	2.12	2.12	2.12 pg/g	JK	UJ	*III, result changed from 0.261 and	
1,2,3,7,8,9-HxCDF	72918219	2.12	2.12	2.12 pg/g	JK	UJ	*III, result changed from 0.173 and	
1,2,3,7,8-PeCDD	40321764	0.0988	2.12	0.0988 pg/g	U	U		
1,2,3,7,8-PeCDF	57117416	2.12	2.12	2.12 pg/g	JK	UJ	*III, result changed from 0.188 and	
2,3,4,6,7,8-HxCDF	60851345	2.12	2.12	2.12 pg/g	JK	UJ	*III, result changed from 0.227 and	
2,3,4,7,8-PeCDF	57117314	2.12	2.12	2.12 pg/g	J	U	B, result changed from 0.405 and EDL from	
2,3,7,8-TCDD	1746016	0.0917	0.423	0.0917 pg/g	U	U		

Analysis Method	1613B						
2,3,7,8-TCDF	51207319	0.432	0.432	0.432 pg/g		U	B, RL changed from 0.423 and EDL from
2,3,7,8-TCDF	51207319	0.405	0.423	0.117 pg/g	J	R	D
OCDD	3268879	75.4	4.23	0.462 pg/g			
OCDF	39001020	5.13	4.23	0.347 pg/g			
Total HpCDD	37871004	16.4	2.12	0.201 pg/g		J	В
Total HpCDF	38998753	3.26	2.12	0.109 pg/g		J	В
Total HxCDD	34465468	2.01	2.12	0.139 pg/g	J	J	B, *III
Total HxCDF	55684941	3.19	2.12	0.0723 pg/g		J	B, *III
Total PeCDD	36088229	0.14	2.12	0.0988 pg/g	J	J	В
Total PeCDF	30402154	4.29	2.12	0.045 pg/g		J	B, *III
Total TCDD	41903575	0.579	0.423	0.0917 pg/g			
Total TCDFs	55722275	2.47	0.423	0.191 pg/g	В	J	В
Total HpCDF Total HxCDD Total HxCDF Total PeCDD Total PeCDF Total TCDD	38998753 34465468 55684941 36088229 30402154 41903575	3.26 2.01 3.19 0.14 4.29 0.579	2.12 2.12 2.12 2.12 2.12 2.12 0.423	0.109 pg/g 0.139 pg/g 0.0723 pg/g 0.0988 pg/g 0.045 pg/g 0.0917 pg/g	J	1 1 1 1 1	B B, *III B, *III B B, *III

Sample Name Lab Sample Name:	HZET0805S001	N Sample		Sype: Soil 23/2009 10:25:00 Al		ult Type: Pr Validation	imary V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	3.94	2.25	0.209 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.25	2.25	2.25 pg/g	ЈК	UJ	*III, result changed from 0.895 and
1,2,3,4,7,8,9-HpCDF	55673897	0.172	2.25	0.172 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.142	2.25	0.142 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.233	2.25	0.086 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.267 and EDL from
1,2,3,6,7,8-HxCDF	57117449	2.25	2.25	2.25 pg/g	JK	UJ	*III, result changed from 0.211 and
1,2,3,7,8,9-HxCDD	19408743	0.234	2.25	0.158 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.269	2.25	0.13 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	0.106	2.25	0.106 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.206 and EDL from
2,3,4,6,7,8-HxCDF	60851345	2.25	2.25	2.25 pg/g	JK	UJ	*III, result changed from 0.28 and EDL
2,3,4,7,8-PeCDF	57117314	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.503 and EDL from
2,3,7,8-TCDD	1746016	0.113	0.451	0.113 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.628	0.628	0.628 pg/g		U	B, RL changed from 0.451 and EDL from
2,3,7,8-TCDF	51207319	0.566	0.451	0.146 pg/g		R	D
OCDD	3268879	41.1	4.51	0.35 pg/g			
OCDF	39001020	2.48	4.51	0.426 pg/g	J	J	
Tuesday, October 20, 200	09						

Total HpCDD	37871004	10.5	2.25	0.209 pg/g		J	В
Total HpCDF	38998753	1.74	2.25	0.0862 pg/g	J	J	B, *III
Total HxCDD	34465468	1.7	2.25	0.142 pg/g	J	J	В
Total HxCDF	55684941	3.12	2.25	0.086 pg/g		J	B, *III
Total PeCDD	36088229	0.184	2.25	0.106 pg/g	J	J	В
Total PeCDF	30402154	4.88	2.25	0.0474 pg/g		J	В
Total TCDD	41903575	0.747	0.451	0.113 pg/g			
Total TCDFs	55722275	4.5	0.451	0.245 pg/g	В	J	В

Sample Name Lab Sample Name:	HZET0806S001	N Sample		Sype: Soil 23/2009 9:20:00 AM		u lt Type: Pr / alidation	imary V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF	35822469 67562394	19.5 2.13	2.13 2.13	0.334 pg/g 2.13 pg/g	J	U	B, result changed from 1.87 and EDL from
1,2,3,4,7,8,9-HpCDF	55673897	0.175	2.13	0.175 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.276	2.13	0.158 pg/g	J	J	
1,2,3,4,7,8-HxCDF	70648269	0.175	2.13	0.102 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	2.13	2.13	2.13 pg/g	J	U	B, result changed from 1.09 and EDL from 0.16
1,2,3,6,7,8-HxCDF	57117449	2.13	2.13	2.13 pg/g	JK	UJ	*III, result changed from 0.165 and
1,2,3,7,8,9-HxCDD	19408743	0.714	2.13	0.167 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.37	2.13	0.161 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	2.13	2.13	2.13 pg/g	JK	UJ	*III, result changed from 0.189 and
1,2,3,7,8-PeCDF	57117416	2.13	2.13	2.13 pg/g	JK	UJ	*III, result changed from 0.133 and
2,3,4,6,7,8-HxCDF	60851345	0.204	2.13	0.116 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.13	2.13	2.13 pg/g	J	U	B, result changed from 0.278 and EDL from
2,3,7,8-TCDD	1746016	0.105	0.426	0.105 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.426	0.426	0.426 pg/g	J	U	B, result changed from 0.342 and EDL from
2,3,7,8-TCDF	51207319	0.317	0.426	0.136 pg/g	J	R	D
OCDD	3268879	346	4.26	0.608 pg/g			
OCDF	39001020	7.77	4.26	0.55 pg/g			
T O O O							

Total HpCDD	37871004	61.9	2.13	0.334 pg/g		J	В
Total HpCDF	38998753	5.78	2.13	0.0937 pg/g		J	В
Total HxCDD	34465468	6.17	2.13	0.158 pg/g		J	В
Total HxCDF	55684941	4.08	2.13	0.102 pg/g		J	B, *III
Total PeCDD	36088229	0.716	2.13	0.109 pg/g	J	J	B, *III
Total PeCDF	30402154	2.53	2.13	0.0487 pg/g		J	B, *III
Total TCDD	41903575	0.322	0.426	0.105 pg/g	J	J	
Total TCDFs	55722275	1.99	0.426	0.184 pg/g	В	J	В

Sample Name	CNET0100S001	ľ	Matrix T	ype: Soil	Res	ult Type: Pri	mary
Lab Sample Name:	237767001	Sample	9/2	23/2009 9:33:00 AM	۲	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Lead	7439921	4.03	0.418	0.105 mg/kg			

Analysis Method 6020

Chain of Custody and Supporting Documentation

								237	237844	Page:	1 of 2
Customer	Customer Information	Project Information	tion		Project II	Project Information					
Site:	SSFL	Client Name:	Boeing		Collector:	A. Goldenberg	erg		Boeing PM:		
Company: MWH	HWH	Sampling Event:	ISRA Sampling, August 2009	, August 2009	Contact #:						
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				Request	Requested Analyses		Instructions/TAT	IS/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl							Legend:	
	Suite 600	PM Phone #:	(925) 627-4627							Numerical values for	alues for
_	Walnut Creek	Field Contact:	Benjamin Stewart	art						around time in days	in days
	CA	Field Contact #:	(818) 266-1378							H - Hold	
	94596	Lab Name:	GEL Laboratories, LLC	ies, LLC						EH - Extract/Extrude & Hold	/Extrude
Email:	sarah.vonraesfeld@mwhglobal.c	.c Lab Contact:	Jackie Trudell			Ме					
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road	Road		tals 6				Note: Value	s in the c
			Charleston, SC 29407	29407		5020	_			bellow are Turn Around Times.	urn Arou
		Lab Phone:	(843) 769-7388			Soil					
Sample Name		Matrix	Date Time	No. of Containers	B - Soil ure Soil	Copper				Comments	5
HZET0700S001		Soil 9/2	9/24/2009 13:39	2	5 5	5				HVS-3	
HZET0701S001		Soil 9/2	9/24/2009 13:41	2	5 5	5				HVS-3	
HZET0702S001		Soil 9/2	9/24/2009 13:42	2	5 5	5				HVS-3	
HZET0703S001		Soil 9/2	9/24/2009 13:45	2	5 5	5				E-SVH	
HZET0704S001		Soil 9/2	9/24/2009 13:47	2	5 5	5				HVS-3	
HZET0705S001		Soil 9/2	9/24/2009 13:15	2	5 5	5				HVS-3	
HZET0706S001		Soil 9/2	9/24/2009 11:25	2	5 5	5				HVS-3	
HZET0707S001		Soil 9/2	9/24/2009 11:10	2	5 5	5				HVS-3	
HZET0708S001		Soil 9/2	9/24/2009 11:05	2	5 5	5				HVS-3	
HZET0709S001		Soil 9/	9/24/2009 11:00	2	5 5	5				HVS-3	
1. Relinquished by:	shed by: Date:	2. Received by:		Date:	3. Relinquished by:	ished by:		Date:	4. Received by:		Date:
Allon my.R	m. Radit 9-24-09		-Miner	9 25 09							
Company: MWH	Time: 15.55	1 1	5	Time: BSO	Company:			Time:	Company:	-	Time:
Comments	comments: Sample volume for dioxin analysis shipped directly to CFA, sample volume for metals analysis shipped to GEL	alysis shipped directly t	o CFA, sample v	olume for metals	analysis ship	ped to GEL		Geot	Geotracker EDF		
								Data	Data Validation Packade	V Level IV	

C BOEING	THING.		CHA	VIN OF	CHAIN OF CUSTODY RECORD	Y RE	S	ູ			COC #:		MWHAG	MWHAG20090924_00
Ļ											Р,	137844	Page:	2 of 2
Custome	Customer Information	Project Information	tion			Proje	ct Info	Project Information	_					
Site:	SSFL	Client Name:	Boeing		•	Collector:	tor:	A. Goldenberg	nberg			Boeing PM:		
Company: MWH	HWM	Sampling Event:		ISRA Sampling, August 2009	Igust 2009	Contact #:	ct #:							
Report to:	Report to: Sarah Von Raesfeld	Project Number:	1891614.05462	4.05462					Req	Requested Analyses	lyses		Instruct	Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	: Alex Fischl	chl									ecend:	
	Suite 600	PM Phone #:	(925) 627-4627	27-4627		-							Numerica	Numerical values for
	Walnut Creek	Field Contact:	Benjam.	Benjamin Stewart			-	-					around ti	around time in days
	CA	Field Contact #:	(818) 26	(818) 266-1378									H - Hold	
	94596	Lab Name:	GEL La	GEL Laboratories, LLC	TLC								EH - EXtr Hold	EH - Extract/Extrude & Hold
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	Lab Contact:	Jackie Trudell	Trudell										
	sean.leffler@mwhglobal.com	Lab Address:	2040 St	2040 Savage Road	-								Note: Va	Note: Values in the cells
			Charles	Charleston, SC 29407	407								bellow ar Times.	bellow are Turn Around Times.
		Lab Phone:	(843) 7((843) 769-7388										
Sample Name	ame	Matrix	Date	Time	No. of Containers	ure Soil	Copper B - Soil						Comments	nts
HZET0711S001	S001 Soil	/6	9/24/2009	10:55	2	5	5 5						HVS-3	
HZET0712S001	S001 Soil	/6	9/24/2009	10:40	2	5	5 5						HVS-3	
HZET0713S001	S001 Soil	/6	9/24/2009	10:35	2	5	5 5						E-SVH	
HZET0714S001	S001 Soil	/6	9/24/2009	9:45	4	5	5 5						E-SVH DSM/SM	HVS-3
HZET0715S001	S001 Soil	/6	9/24/2009	13:37	2	5	5 5						E-SVH	
HZET0716S001	S001 Soil	/6	9/24/2009	13:40	2	2	5 5						E-SVH	

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Xllon of Star 9:24-09 R.M. Hellin	9-24-09		9 25 09				
Company: MWH	Time: 1 5:55		Time: I BSS 0	Company:	Time:	Company:	Time:
Comments: Sample volume for	dioxin analysis	Comments: Sample volume for dioxin analysis shipped directly to CFA, sample volume for metals analysis shipped to GEL	olume for metals	analysis shipped to GEL	Geotr	Geotracker EDF	
					Data	Data Validation Package 🖌 Level IV	Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: 55P1			SDG/ARCOC/Work Order: 237844
Received By: RMS			Date Received: 9 25 09
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		1	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		1	BOCPM
COC/Samples marked containing PCBs?			
Shipped as a DOT Hazardous? Samples identified as Foreign Soil?		4	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?			
Sample Receipt Criteria	Yes	NA	2 Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	5		Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within $0 \le 6$ deg. C?	1		Preservation Method: pice bags blue ice dry ice none other (describe)
3 Chain of custody documents included with shipment?	~		
4 Sample containers intact and sealed?	<		Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		1	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		1	Sample ID's and containers affected:
7 Are Encore containers present?			(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	1		Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	/		Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	1		Sample ID's affected:
11 Number of containers received match number indicated on COC?			Sample ID's affected: only received 1 container Hzero 7145001 received
12 COC form is properly signed in relinquished/received sections?	1		0 Hzeto7145001 receive
Comments: Fx: 9457 3163 095	7		
PM (or PMA) review. Initia	1.		J[Date 9/25/09

るこ

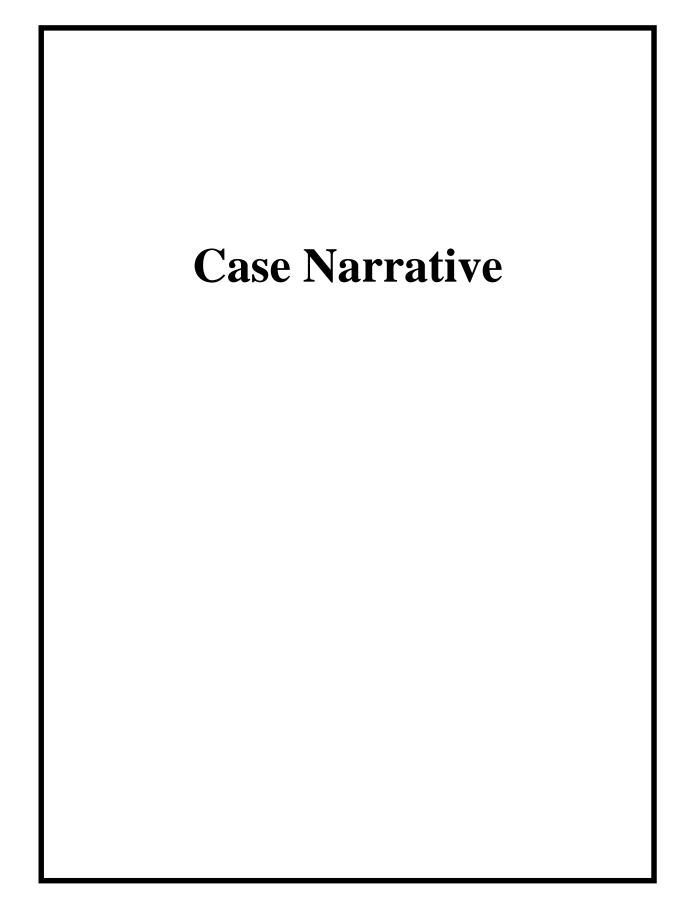
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	mpling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTC	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:	2121 N	I. California Blvd. Ste. 60		20	040 Savage F	Rd.
	Wa	alnut Creek, CA 94596		Cha	rleston, SC 2	9407
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	
Phone Number:		925-627-4654	Phone Number:		843-769-738	
Fax Number:		925-627-4501	Fax Number: _		843-766-1178	
E-mail Address:	<u>Sarah</u>	VonRaesfeld@mwhglobal.com	E-mail Address:	jacque	line.trudell@g	gel.com
Date Required:		SAMPLE	CONTAINER ORDER FORM Requested Analyses:	(6)	nacify # of Com	
Date Required.			Tequested Analyses.	Water	becify # of Samp Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		_(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in		_, ,	EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information			Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	No	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?	No	(Yes/No)	% Moisture (D2216)	0	170	0
		_	Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil	Х	(select all applicable)	Zinc (6020)	5	20	0
Water	Х	(select all applicable)	Mercury by 7471A/7470A	5	25	0
Vapor		(select all applicable)				
Est. Total # of Samples:	175	Est. Total # of EDD	9s <u>40</u>			
		LABORATORY	REPORTING REQUIREMENTS Laboratory Results/Repo	rte Dolivor	ablaci	
Project TAT: Normal:	х	(10 Business days)	Draft Results Fax?:	Its Delivera	(Yes/No)	
RUSH:		<u> </u>	Draft Results E-mail?:	Yes	(Yes/No)	
		(Specify- 24 / 48 / 72HRS)		Tes	(res/NO)	
Other :		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:			Name, #, E-mail Address:	Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Req	luireme	ents:	Project Site		(enter "X")	
Contingent Analysis?	No	(Yes/No)	Consultant Office		(enter "X")	
TIC (VOC) Required?	No	(Yes/No)	- Other Location (specify		_	
TIC (SVOC) Required?	No	_(Yes/No)	in comments)	Х	(enter "X")	
Data Validation Pckge.:			- # of Copies Reports Req.:	1	_()	
			NSTRUCTIONS/LTO NOTES		-	
		CONFIRMATIO	N OF TRANSMITTAL & RECEIPT	-		
LTO Sent By:			LTO Received By-			
Name:	Sarah V	on Raesfeld	Name:			
Date:	09/02/09)	Date:			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	9
Laboratory Certifications	11
Subcontract Data Dioxins	13
Percent Moisture	914
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	918 919 925 942 960 963 1140



Case Narrative for Boeing - SSFL (MWH) Work Order: 237844 SDG: 237844

October 12, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 25, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
237844001	HZET0700S001
237844002	HZET0701S001
237844003	HZET0702S001
237844004	HZET0703S001
237844005	HZET0704S001
237844006	HZET0705S001
237844007	HZET0706S001
237844008	HZET0707S001
237844009	HZET0708S001
237844010	HZET0709S001
237844011	HZET0711S001
237844012	HZET0712S001
237844013	HZET0713S001
237844014	HZET0714S001
237844015	HZET0715S001
237844016	HZET0716S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

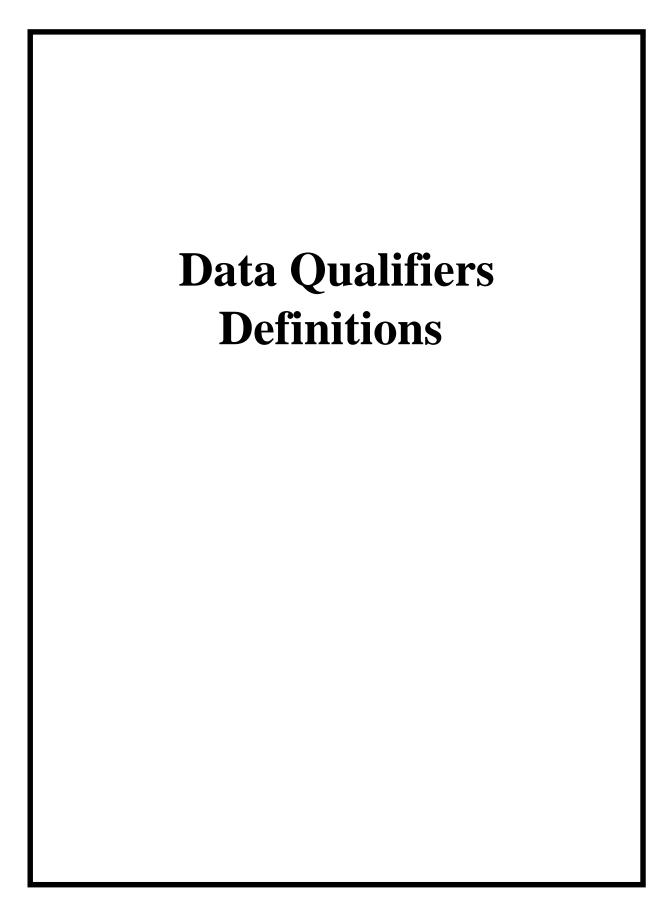
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals, Percent Moisture and Dioxins (Cape Fear Analytical).

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Gaequeline a Judel

Jacqueline Trudell

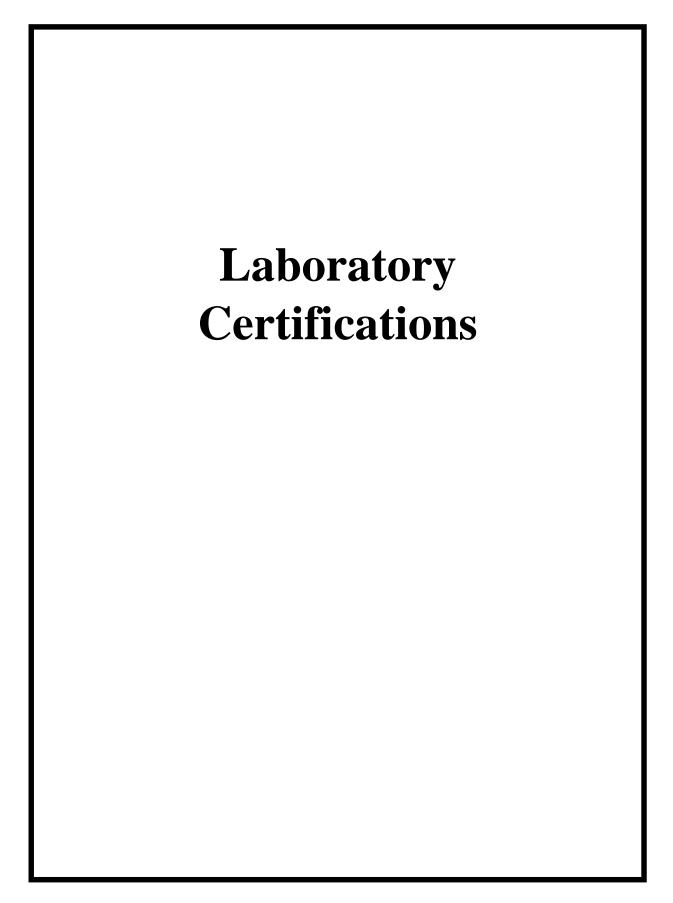
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL</p>
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



State	Certification		
Arizona	AZ0668		
Arkansas	88-0651		
CLIA	42D0904046		
California – NELAP	01151CA		
Colorado	GEL		
Connecticut	PH-0169		
Dept. of Navy	NFESC 413		
EPA Region 5	WG-15J		
Florida – NELAP	E87156		
Georgia	E87156 (FL/NELAP)		
Georgia DW	967		
Hawaii	N/A		
ISO 17025	2567.01		
Idaho	SC00012		
Illinois – NELAP	200029		
Indiana	C-SC-01		
Kansas – NELAP	E-10332		
Kentucky	90129		
Louisiana – NELAP	-		
Maryland	270		
Massachusetts	M-SC012		
Nevada	SC00012		
New Jersey – NELAP	SC002		
New Mexico	FL NELAP E87156		
New York – NELAP	11501		
North Carolina	233		
North Carolina DW	45709		
Oklahoma	9904		
Pennsylvania – NELAP	68-00485		
South Carolina	10120001/10120002		
Tennessee	Tennessee TN 02934		
Texas – NELAP	T104704235-07B-TX		
U.S. Dept. of Agriculture	S-52597		
Utah – NELAP	Utah – NELAP GEL		
Vermont	VT87156		
Virginia	00151		
Washington	C1641		

List of current GEL Certifications as of 02 October 2009



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 237844

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Contract Task Order: Sample Delivery Group:	Boeing SSFL RFI ISRA 1261.500D.00 237844
Project Manager: Matrix:	Dixie Hambrick soil
QC Level:	V
No. of Samples:	16
No. of Reanalyses/Dilutions:	0 GEI
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZET0700S001	237844001	1073001	Soil	9/24/2009 1:39:00 PM	1613B, 6020
HZET0701S001	237844002	1073002	Soil	9/24/2009 1:41:00 PM	1613B, 6020
HZET0702S001	237844003	1073003	Soil	9/24/2009 1:42:00 PM	1613B, 6020
HZET0703S001	237844004	1073004	Soil	9/24/2009 1:45:00 PM	1613B, 6020
HZET0704S001	237844005	1073005	Soil	9/24/2009 1:47:00 PM	1613B, 6020
HZET0705S001	237844006	1073006	Soil	9/24/2009 1:15:00 PM	1613B, 6020
HZET0706S001	237844007	1073007	Soil	9/24/2009 11:25:00 AM	1613B, 6020
HZET0707S001	237844008	1073008	Soil	9/24/2009 11:10:00 AM	1613B, 6020
HZET0708S001	237844009	1073009	Soil	9/24/2009 11:05:00 AM	1613B, 6020
HZET0709S001	237844010	1073010	Soil	9/24/2009 11:00:00 AM	1613B, 6020
HZET0711S001	237844011	1073011	Soil	9/24/2009 10:55:00 AM	1613B, 6020
HZET0712S001	237844012	1073012	Soil	9/24/2009 10:40:00 AM	1613B, 6020
HZET0713S001	237844013	1073013	Soil	9/24/2009 10:35:00 AM	1613B, 6020
HZET0714S001	237844014	1073014	Soil	9/24/2009 9:45:00 AM	1613B, 6020
HZET0715S001	237844015	1073015	Soil	9/24/2009 1:37:00 PM	1613B, 6020
HZET0716S001	237844016	1073016	Soil	9/24/2009 1:40:00 PM	1613B, 6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratories within the temperature limits of $4^{\circ}C \pm 2^{\circ}C$. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Qualifie	r 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 or PCB congeners.	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.
Τ-Ι	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Data Qualifier Reference Table

T-II	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.	Not applicable
Т- III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
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.

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.
Ι	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
А	Not applicable.	ICP Serial Dilution %D were not within control limits.
Μ	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.

Qualification Code Reference Table

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.
Ρ	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*11, *111	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: P. Meeks Date Reviewed: October 21, 2009

The samples listed in Table 1 for this analysis were 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 (08/02).

- Holding Times: Extraction and analytical holding times were met. The samples were extracted and analyzed within one year of collection.
- Instrument Performance: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: The soil method blank associated with samples HZET0700S001 through HZET0708S001 had detects for all but two individual isomers and all totals except total TCDD. The method blank associated with the remaining samples had detects for all but four individual isomers and all totals, except TCDD and HxCDD. Individual isomers detected below the reporting limit or at concentrations less than 5× the method blank concentration were qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. When total concentrations were the same as the individual isomer concentration, the total was also qualified as nondetected, "U," at the reporting limit or at the level of contamination if detected below the reporting limit or at the reporting limit if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected below the reporting limit or at the level of contamination if detected above. Remaining totals were qualified as estimated, "J."
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and the RPDs were within the laboratory-established control limits.
- MS/MSD analyses were performed on HZET0714S001. Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and the RPDs were within the laboratory-established control limits.
- 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: (235913) was identified as the field blank associated with the samples in this SDG; however, the sample was not analyzed for dioxins. The samples in this SDG had no identified equipment rinsate.

- Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed and reported confirmation analyses for all TCDF detects. As the confirmation analyses yielded results similar to the original analyses, the reviewer rejected, "R," the confirmation analyses in all samples except HZET0705S001, HZET0708S001, and HZET0714S001 in favor of the original analyses. The original TCDF results for HZET0705S001, HZET0708S001, and HZET0714S001 were reported as estimated maximum possible concentrations (EMPCs); however, as the confirmation results were not reported as EMPCs, the reviewer rejected, "R," the original results in favor of the confirmation results for HZET0708S001, HZET0708S001, HZET0708S001, and HZET0708S001.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. The laboratory calculated and reported compound-specific detection limits. EMPCs were identified in the samples of this SDG and qualified with a "K" by the laboratory. Any EMPC was qualified as estimated, "UJ," in the samples of this SDG. EMPCs reported as totals were qualified as estimated, "J," as only a portion of the total was identified as an EMPC. Totals were qualified even when the individual isomer results were not retained. Any detect below the laboratory lower calibration level was qualified as estimated, "J." Nondetects are valid to the estimated detection limit (EDL).

B. EPA METHOD 6020—Copper

Reviewed By: P. Meeks Date Reviewed: October 21, 2009

The samples listed in Table 1 for this analysis were 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 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0714S001. The RPD was within the method-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0714S001. The MS recovery was above the control limit and the RPD exceeded the control limit; therefore, copper detected in the samples was qualified as estimated, "J." The MSD recovery was within laboratory-established QC limits.
- Serial Dilution: A serial dilution analysis was performed on HZET0714S001. The %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. The samples in this SDG were analyzed at the laboratory's standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." 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: FBQW2239 (235913) was the field blank associated with the samples in this SDG. Copper was not detected in this sample. The samples in this SDG had no identified equipment rinsate.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 237844

Sample Name Lab Sample Name:	HZET0700S001	N Sample	Matrix Type: Soil ample 9/24/2009 1:39:00 PM			ı lt Type: Pr 7 alidation	'rimary V		
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822469	10.9	2.17	0.265 pg/g					
1,2,3,4,6,7,8-HpCDF	67562394	1.49	2.17	0.0989 pg/g	J	J			
1,2,3,4,7,8,9-HpCDF	55673897	0.189	2.17	0.189 pg/g	U	U			
1,2,3,4,7,8-HxCDD	39227286	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.126 and EDL from 0.125		
1,2,3,4,7,8-HxCDF	70648269	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.109 and EDL from 0.0733		
1,2,3,6,7,8-HxCDD	57653857	2.17	2.17	2.17 pg/g	J	U	B, result changed from 0.504 and EDL from 0.144		
1,2,3,6,7,8-HxCDF	57117449	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.102 and EDL from 0.0771		
1,2,3,7,8,9-HxCDD	19408743	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.459 and EDL from 0.141		
1,2,3,7,8,9-HxCDF	72918219	0.12	2.17	0.12 pg/g	U	U			
1,2,3,7,8-PeCDD	40321764	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.123 and EDL from 0.0809		
1,2,3,7,8-PeCDF	57117416	0.103	2.17	0.103 pg/g	U	U			
2,3,4,6,7,8-HxCDF	60851345	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.126 and EDL from 0.087		
2,3,4,7,8-PeCDF	57117314	2.17	2.17	2.17 pg/g	J	U	B, result changed from 0.107 and EDL from 0.107		
2,3,7,8-TCDD	1746016	0.106	0.433	0.106 pg/g	U	U			
2,3,7,8-TCDF	51207319	0.397	0.433	0.117 pg/g	J	R	D		
2,3,7,8-TCDF	51207319	0.433	0.433	0.433 pg/g	J	U	B, result changed from 0.31 and EDL from 0.142		
OCDD	3268879	131	4.33	0.532 pg/g					
OCDF	39001020	8.1	4.33	0.589 pg/g					
Total HpCDD	37871004	38.7	2.17	0.265 pg/g		J	В		
Total HpCDF	38998753	4.43	2.17	0.0989 pg/g		J	В		
Total HxCDD	34465468	4.26	2.17	0.125 pg/g		J	B, *III		
Total HxCDF	55684941	1.59	2.17	0.0733 pg/g	J	J	B, *III		
Total PeCDD	36088229	0.374	2.17	0.0809 pg/g	J	J	B, *III		
Total PeCDF	30402154	0.547	2.17	0.0504 pg/g	J	J	В		
Total TCDD	41903575	0.535	0.433	0.106 pg/g					
Total TCDFs	55722275	1.09	0.433	0.142 pg/g	В	J	В		

Sample Name	HZET0701S001	Matrix Type: Soil			Res	ult Type: Pi	imary
Lab Sample Name:	1073002	Sample	9/24/2009 1:41:00 PM			Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	47.7	1.99	0.37 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	5.7	1.99	0.116 pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	1.99	1.99	1.99 pg/g	JK	UJ	*III, result changed from 0.289 and EDL from 0.218
1,2,3,4,7,8-HxCDD	39227286	1.99	1.99	1.99 pg/g	ЈК	UJ	*III, result changed from 0.372 and EDL from 0.197
1,2,3,4,7,8-HxCDF	70648269	0.205	1.99	0.0942 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	1.99	1.99	1.99 pg/g	J	U	B, result changed from 1.27 and EDL from 0.21
1,2,3,6,7,8-HxCDF	57117449	1.99	1.99	1.99 pg/g	J	U	B, result changed from 0.191 and EDL from 0.1
1,2,3,7,8,9-HxCDD	19408743	0.887	1.99	0.214 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.149	1.99	0.149 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.178	1.99	0.127 pg/g	J	J	
1,2,3,7,8-PeCDF	57117416	1.99	1.99	1.99 pg/g	J	U	B, result changed from 0.106 and EDL from 0.0861
2,3,4,6,7,8-HxCDF	60851345	0.195	1.99	0.0988 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	1.99	1.99	1.99 pg/g	J	U	B, result changed from 0.189 and EDL from 0.074
2,3,7,8-TCDD	1746016	0.11	0.397	0.11 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.156	0.397	0.156 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.356	0.397	0.109 pg/g	J	R	D
OCDD	3268879	556	3.97	0.725 pg/g			
OCDF	39001020	31.5	3.97	0.454 pg/g			
Total HpCDD	37871004	171	1.99	0.37 pg/g		J	В
Total HpCDF	38998753	19.1	1.99	0.116 pg/g		J	B, *III
Total HxCDD	34465468	13.6	1.99	0.197 pg/g		J	B, *III
Total HxCDF	55684941	4.32	1.99	0.0942 pg/g		J	В
Total PeCDD	36088229	0.728	1.99	0.127 pg/g	J	J	В
Total PeCDF	30402154	1.65	1.99	0.0489 pg/g	J	J	В
Total TCDD	41903575	0.11	0.397	0.11 pg/g	U	U	
Total TCDFs	55722275	1.68	0.397	0.156 pg/g	В	J	В

Sample Name	HZET0702S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073003	Sample	9/2	24/2009 1:42:00 PM	И	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	613	2.17	1.29 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	77.5	2.17	0.296 pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	3.31	2.17	0.567 pg/g			
1,2,3,4,7,8-HxCDD	39227286	12.6	2.17	0.365 pg/g			
1,2,3,4,7,8-HxCDF	70648269	0.927	2.17	0.15 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	5.46	2.17	0.395 pg/g			
1,2,3,6,7,8-HxCDF	57117449	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 0.675 and EDL from 0.169
1,2,3,7,8,9-HxCDD	19408743	8.67	2.17	0.4 pg/g			
1,2,3,7,8,9-HxCDF	72918219	0.231	2.17	0.231 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	2.42	2.17	0.121 pg/g			
1,2,3,7,8-PeCDF	57117416	2.17	2.17	2.17 pg/g	J	U	B, result changed from 0.202 and EDL from 0.102
2,3,4,6,7,8-HxCDF	60851345	2.17	2.17	2.17 pg/g	JK	UJ	*III, result changed from 1.2 and EDL 0.173
2,3,4,7,8-PeCDF	57117314	2.17	2.17	2.17 pg/g	J	U	B, result changed from 0.393 and EDL from 0.0932
2,3,7,8-TCDD	1746016	0.487	0.435	0.164 pg/g			
2,3,7,8-TCDF	51207319	0.555	0.435	0.134 pg/g		R	D
2,3,7,8-TCDF	51207319	0.518	0.518	0.518 pg/g		U	B, RL changed from 0.435 and EDL from 0.195
OCDD	3268879	6360	4.35	1.13 pg/g			
OCDF	39001020	412	4.35	0.555 pg/g			
Total HpCDD	37871004	2190	2.17	1.29 pg/g		J	В
Total HpCDF	38998753	289	2.17	0.296 pg/g		J	В
Total HxCDD	34465468	171	2.17	0.365 pg/g		J	В
Total HxCDF	55684941	38.5	2.17	0.15 pg/g		J	B, *III
Total PeCDD	36088229	24.2	2.17	0.121 pg/g		J	В
Total PeCDF	30402154	4.23	2.17	0.0567 pg/g		J	В
Total TCDD	41903575	7.76	0.435	0.164 pg/g			
Total TCDFs	55722275	2.08	0.435	0.195 pg/g	В	J	В

Sample Name	HZET0703S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073004	Sample	9/2	24/2009 1:45:00 PM	V	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	4.22	2.18	0.228 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	0.583	2.18	0.0916 pg/g	J	J	
1,2,3,4,7,8,9-HpCDF	55673897	0.168	2.18	0.168 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.149	2.18	0.149 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.0888	2.18	0.0888 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.169	2.18	0.169 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	2.18	2.18	2.18 pg/g	J	U	B, result changed from 0.12 and EDL from 0.0951
1,2,3,7,8,9-HxCDD	19408743	0.167	2.18	0.167 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.132	2.18	0.132 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.104	2.18	0.104 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0858	2.18	0.0858 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.106	2.18	0.0949 pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.18	2.18	2.18 pg/g	ЈК	UJ	*III, result changed from 0.118 and EDL from 0.0778
2,3,7,8-TCDD	1746016	0.116	0.435	0.116 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.245	0.435	0.122 pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.435	0.435	0.435 pg/g	J	U	B, result changed from 0.24 and EDL from 0.143
OCDD	3268879	46.8	4.35	0.432 pg/g			
OCDF	39001020	4.35	4.35	4.35 pg/g	ЈК	UJ	*III, result changed from 2.77 and EDL from 0.477
Total HpCDD	37871004	13.8	2.18	0.228 pg/g		J	В
Total HpCDF	38998753	1.66	2.18	0.0916 pg/g	J	J	В
Total HxCDD	34465468	0.905	2.18	0.149 pg/g	J	J	В
Total HxCDF	55684941	0.63	2.18	0.0888 pg/g	J	J	В
Total PeCDD	36088229	0.104	2.18	0.104 pg/g	U	U	
Total PeCDF	30402154	0.118	2.18	0.0487 pg/g	J	J	B, *III
Total TCDD	41903575	0.116	0.435	0.116 pg/g	U	U	
Total TCDFs	55722275	0.439	0.435	0.143 pg/g	В	J	В

Sample Name	HZET0704S001	Matrix Type: Soil			Res	Result Type: Primary			
Lab Sample Name:	1073005	Sample	9/24/2009 1:47:00 PM		V	alidation	V		
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822469	29.5	2.11	0.495 pg/g					
1,2,3,4,6,7,8-HpCDF	67562394	3.71	2.11	0.125 pg/g					
1,2,3,4,7,8,9-HpCDF	55673897	0.25	2.11	0.25 pg/g	U	U			
1,2,3,4,7,8-HxCDD	39227286	1.13	2.11	0.153 pg/g	J	J			
1,2,3,4,7,8-HxCDF	70648269	2.11	2.11	2.11 pg/g	ЈК	UJ	*III, result changed from 0.235 and EDL from 0.0945		
1,2,3,6,7,8-HxCDD	57653857	2.11	2.11	2.11 pg/g	J	U	B, result changed from 0.365 and EDL from 0181		
1,2,3,6,7,8-HxCDF	57117449	2.11	2.11	2.11 pg/g	J	U	B, result changed from 0.226 and EDL from 0.101		
1,2,3,7,8,9-HxCDD	19408743	0.875	2.11	0.174 pg/g	J	J			
1,2,3,7,8,9-HxCDF	72918219	0.157	2.11	0.145 pg/g	J	J			
1,2,3,7,8-PeCDD	40321764	0.176	2.11	0.129 pg/g	J	J			
1,2,3,7,8-PeCDF	57117416	0.0882	2.11	0.0882 pg/g	U	U			
2,3,4,6,7,8-HxCDF	60851345	0.206	2.11	0.103 pg/g	J	J			
2,3,4,7,8-PeCDF	57117314	2.11	2.11	2.11 pg/g	ЈК	UJ	*III, result changed from 0.152 and EDL from 0.0784		
2,3,7,8-TCDD	1746016	0.103	0.423	0.103 pg/g	U	U			
2,3,7,8-TCDF	51207319	0.248	0.423	0.11 pg/g	J	R	D		
2,3,7,8-TCDF	51207319	0.423	0.423	0.423 pg/g	J	U	B, result changed from 0.215 and EDL from 0.176		
OCDD	3268879	625	4.23	0.708 pg/g					
OCDF	39001020	18.1	4.23	0.439 pg/g					
Total HpCDD	37871004	117	2.11	0.495 pg/g		J	В		
Total HpCDF	38998753	11.6	2.11	0.125 pg/g		J	В		
Total HxCDD	34465468	8.22	2.11	0.153 pg/g		J	В		
Total HxCDF	55684941	4.49	2.11	0.0945 pg/g		J	B, *III		
Total PeCDD	36088229	0.575	2.11	0.129 pg/g	J	J	В		
Total PeCDF	30402154	1.19	2.11	0.0571 pg/g	J	J	B, *III		
Total TCDD	41903575	0.169	0.423	0.103 pg/g	J	J			
Total TCDFs	55722275	0.392	0.423	0.176 pg/g	BJ	J	В		

Sample Name	HZET0705S001	Γ	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073006	Sample	9/	24/2009 1:15:00 PM	v	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	9.36	2.21	0.422 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	1.15	2.21	0.141 pg/g	J	J	
1,2,3,4,7,8,9-HpCDF	55673897	0.258	2.21	0.258 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	2.21	2.21	2.21 pg/g	ЈК	UJ	*III, result changed from 0.503 and EDL from 0.203
1,2,3,4,7,8-HxCDF	70648269	0.0953	2.21	0.0893 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	0.224	2.21	0.224 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.0966	2.21	0.0966 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.224	2.21	0.224 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.156	2.21	0.156 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.109	2.21	0.109 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0973	2.21	0.0973 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.105	2.21	0.105 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	2.21	2.21	2.21 pg/g	ЈК	UJ	*III, result changed from 0.111 and EDL from 0.0846
2,3,7,8-TCDD	1746016	0.112	0.441	0.112 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.222	0.441	0.147 pg/g	JK	R	D
2,3,7,8-TCDF	51207319	0.441	0.441	0.441 pg/g	J	U	B, result changed from 0.254 and EDL from 0.108
OCDD	3268879	305	4.41	0.962 pg/g			
OCDF	39001020	5.47	4.41	1.02 pg/g			
Total HpCDD	37871004	54.5	2.21	0.422 pg/g		J	В
Total HpCDF	38998753	3.65	2.21	0.141 pg/g		J	В
Total HxCDD	34465468	2.6	2.21	0.203 pg/g		J	B, *III
Total HxCDF	55684941	1.65	2.21	0.0893 pg/g	J	J	В
Total PeCDD	36088229	0.109	2.21	0.109 pg/g	U	U	
Total PeCDF	30402154	0.464	2.21	0.0607 pg/g	J	J	B, *III
Total TCDD	41903575	0.365	0.441	0.112 pg/g	J	J	
Total TCDFs	55722275	0.403	0.441	0.147 pg/g	BJ	J	B, *III

Sample Name	HZET0706S001	Matrix Type: Soil		Res	ult Type: Pr	imary	
Lab Sample Name:	1073007	Sample	9/2	24/2009 11:25:00 A	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	14.7	1.97	0.444 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	1.5	1.97	0.149 pg/g	J	J	
1,2,3,4,7,8,9-HpCDF	55673897	0.285	1.97	0.285 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.721	1.97	0.194 pg/g	J	J	
1,2,3,4,7,8-HxCDF	70648269	0.104	1.97	0.0887 pg/g	J	J	
1,2,3,6,7,8-HxCDD	57653857	1.97	1.97	1.97 pg/g	JK	UJ	*III, result changed from 0.313 and EDL from 0.208
1,2,3,6,7,8-HxCDF	57117449	0.0955	1.97	0.0955 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	1.97	1.97	1.97 pg/g	JK	UJ	*III, result changed from 0.499 and EDL from 0.211
1,2,3,7,8,9-HxCDF	72918219	0.138	1.97	0.138 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	1.97	1.97	1.97 pg/g	JK	UJ	*III, result changed from 0.123 and EDL from 0.105
1,2,3,7,8-PeCDF	57117416	0.0979	1.97	0.0979 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0979	1.97	0.0979 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.082	1.97	0.082 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.115	0.393	0.115 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.304	0.393	0.104 pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.393	0.393	0.393 pg/g	J	U	B, result changed from 0.252 and EDL from 0.167
OCDD	3268879	474	3.93	0.771 pg/g			
OCDF	39001020	7.11	3.93	0.626 pg/g			
Total HpCDD	37871004	78.1	1.97	0.444 pg/g		J	В
Total HpCDF	38998753	4.56	1.97	0.149 pg/g		J	В
Total HxCDD	34465468	4.59	1.97	0.194 pg/g		J	B, *III
Total HxCDF	55684941	1.81	1.97	0.0887 pg/g	J	J	В
Total PeCDD	36088229	0.304	1.97	0.105 pg/g	J	J	B, *III
Total PeCDF	30402154	0.165	1.97	0.0552 pg/g	J	J	В
Total TCDD	41903575	0.115	0.393	0.115 pg/g	U	U	

Total TCDFs	55722275	0.485	0.393	0.167 pg/g	В	J	В
Sample Name	HZET0707S001			ype: Soil		ult Type: Pr	
Lab Sample Name:	1073008	Sample		24/2009 11:10:00 A		Validation	V
Lab Sample Mame:	1075008	Sample	9/.	24/2009 11:10:00 A		vanuation	v
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.951	2	0.275 pg/g	J	J	
1,2,3,4,6,7,8-HpCDF	67562394	2	2	2 pg/g	JK	UJ	*III, result changed from 0.202 and EDL from 0.129
1,2,3,4,7,8,9-HpCDF	55673897	0.253	2	0.253 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.15	2	0.15 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.0943	2	0.0943 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.165	2	0.165 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.1	2	0.1 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.165	2	0.165 pg/g	U	\mathbf{U}	
1,2,3,7,8,9-HxCDF	72918219	0.144	2	0.144 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.093	2	0.093 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.101	2	0.101 pg/g	U	\mathbf{U}	
2,3,4,6,7,8-HxCDF	60851345	0.104	2	0.104 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.0896	2	0.0896 pg/g	U	\mathbf{U}	
2,3,7,8-TCDD	1746016	0.119	0.4	0.119 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.4	0.4	0.4 pg/g	J	U	B, result changed from 0.221 and EDL from 0.176
2,3,7,8-TCDF	51207319	0.234	0.4	0.107 pg/g	J	R	D
OCDD	3268879	17.8	4	1.35 pg/g			
OCDF	39001020	0.509	4	0.509 pg/g	U	U	
Total HpCDD	37871004	3.84	2	0.275 pg/g		J	В
Total HpCDF	38998753	0.387	2	0.129 pg/g	J	J	B, *III
Total HxCDD	34465468	0.15	2	0.15 pg/g	U	U	
Total HxCDF	55684941	0.157	2	0.0943 pg/g	J	J	В
Total PeCDD	36088229	0.093	2	0.093 pg/g	U	U	
Total PeCDF	30402154	0.134	2	0.0607 pg/g	J	J	В
Total TCDD	41903575	0.119	0.4	0.119 pg/g	U	U	
Total TCDFs	55722275	0.4	0.4	0.4 pg/g	BJ	U	B, result changed from

changed from 0.221 and

EDL from 0.176

Sample Name	HZET0708S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073009	Sample	9/	24/2009 11:05:00 A	м	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.273	2.1	0.273 pg/g	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.133	2.1	0.133 pg/g	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.258	2.1	0.258 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.159	2.1	0.159 pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.0953	2.1	0.0953 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.17	2.1	0.17 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.104	2.1	0.104 pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.173	2.1	0.173 pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.151	2.1	0.151 pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.116	2.1	0.116 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.112	2.1	0.112 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.101	2.1	0.101 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.0884	2.1	0.0884 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.138	0.421	0.138 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.421	0.421	0.421 pg/g	J	U	B, result changed from 0.236 and EDL from 0.121
2,3,7,8-TCDF	51207319	0.288	0.421	0.168 pg/g	JK	R	D
OCDD	3268879	1.78	4.21	0.636 pg/g	J	J	
OCDF	39001020	0.518	4.21	0.518 pg/g	U	U	
Total HpCDD	37871004	0.355	2.1	0.273 pg/g	J	J	В
Total HpCDF	38998753	0.133	2.1	0.133 pg/g	U	U	
Total HxCDD	34465468	0.159	2.1	0.159 pg/g	U	U	
Total HxCDF	55684941	0.0953	2.1	0.0953 pg/g	U	U	
Total PeCDD	36088229	0.116	2.1	0.116 pg/g	U	U	
Total PeCDF	30402154	0.0672	2.1	0.0672 pg/g	U	U	
Total TCDD	41903575	0.138	0.421	0.138 pg/g	U	U	
Total TCDFs	55722275	0.537	0.421	0.168 pg/g	В	J	B, *III

Sample Name	HZET0709S001	I	Matrix T	ype: Soil	Result Type: Pri		imary
Lab Sample Name:	1073010	Sample	9/2	24/2009 11:00:00 A	M	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	68.6	2.44	0.417 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	10	2.44	0.133 pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	0.674	2.44	0.247 pg/g	J	J	
1,2,3,4,7,8-HxCDD	39227286	1.88	2.44	0.152 pg/g	J	J	
1,2,3,4,7,8-HxCDF	70648269	2.44	2.44	2.44 pg/g	J	U	B, result changed from 0.561 and EDL from 0.1
1,2,3,6,7,8-HxCDD	57653857	0.727	2.44	0.162 pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	0.563	2.44	0.103 pg/g	J	J	
1,2,3,7,8,9-HxCDD	19408743	1.32	2.44	0.165 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.323	2.44	0.139 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	2.44	2.44	2.44 pg/g	ЈК	UJ	*III, result changed from 0.396 and EDL from 0.125
1,2,3,7,8-PeCDF	57117416	2.44	2.44	2.44 pg/g	J	U	B, result changed from 0.427 and EDL from 0.135
2,3,4,6,7,8-HxCDF	60851345	2.44	2.44	2.44 pg/g	J	U	B, result changed from 0.575 and EDL from 0.108
2,3,4,7,8-PeCDF	57117314	2.44	2.44	2.44 pg/g	ЈК	UJ	*III, result changed from 0.495 and EDL from 0.149
2,3,7,8-TCDD	1746016	0.128	0.487	0.128 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.516	0.516	0.516 pg/g		U	B, RL changed from 0.487 and EDL from 0.226
2,3,7,8-TCDF	51207319	0.359	0.487	0.148 pg/g	J	R	D
OCDD	3268879	799	4.87	0.561 pg/g			
OCDF	39001020	42.3	4.87	0.366 pg/g			
Total HpCDD	37871004	227	2.44	0.417 pg/g		J	В
Total HpCDF	38998753	32.6	2.44	0.133 pg/g		J	В
Total HxCDD	34465468	18.2	2.44	0.152 pg/g			
Total HxCDF	55684941	11.8	2.44	0.1 pg/g		J	В
Total PeCDD	36088229	2.11	2.44	0.125 pg/g	J	J	B, *III
Total PeCDF	30402154	5.22	2.44	0.0579 pg/g		J	B, *III
Total TCDD	41903575	0.128	0.487	0.128 pg/g	U	U	
Total TCDFs	55722275	2.65	0.487	0.226 pg/g	В	J	В

Sample Name	HZET0711S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073011	Sample	9/2	24/2009 10:55:00 A	М	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	2.44	2.44	2.44 pg/g	J	U	B, result changed from 2.11 and EDL from 0.191
1,2,3,4,6,7,8-HpCDF	67562394	2.44	2.44	2.44 pg/g	J	U	B, result changed from 0.338 and EDL from 0.104
1,2,3,4,7,8,9-HpCDF	55673897	0.183	2.44	0.183 pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	2.44	2.44	2.44 pg/g	ЈК	UJ	*III, result changed from 0.5 and EDL from 0.16
1,2,3,4,7,8-HxCDF	70648269	0.0811	2.44	0.0811 pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.182	2.44	0.182 pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.561	2.44	0.0801 pg/g	J	J	
1,2,3,7,8,9-HxCDD	19408743	0.633	2.44	0.179 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.227	2.44	0.117 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	0.093	2.44	0.093 pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0932	2.44	0.0932 pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0813	2.44	0.0813 pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.0901	2.44	0.0901 pg/g	U	U	
2,3,7,8-TCDD	1746016	0.112	0.489	0.112 pg/g	U	U	
2,3,7,8-TCDF	51207319	0.489	0.489	0.489 pg/g	J	U	B, result changed from 0.297 and EDL from 0.133
2,3,7,8-TCDF	51207319	0.293	0.489	0.124 pg/g	J	R	D
OCDD	3268879	21.4	4.89	0.352 pg/g			
OCDF	39001020	4.89	4.89	4.89 pg/g	JK	UJ	*III, result changed from 0.825 and EDL from 0.334
Total HpCDD	37871004	5.99	2.44	0.191 pg/g		J	В
Total HpCDF	38998753	0.835	2.44	0.104 pg/g	J	J	В
Total HxCDD	34465468	1.59	2.44	0.16 pg/g	J	J	*III
Total HxCDF	55684941	1.21	2.44	0.0801 pg/g	J	J	В
Total PeCDD	36088229	0.093	2.44	0.093 pg/g	U	U	
Total PeCDF	30402154	0.0555	2.44	0.0555 pg/g	U	U	
Total TCDD	41903575	0.112	0.489	0.112 pg/g	U	U	
Total TCDFs	55722275	0.547	0.489	0.133 pg/g	В	J	В

Sample Name	HZET0712S001	N	Matrix T	ype: Soil	Res	ult Type: P	Primary	
Lab Sample Name:	1073012	Sample	9/2	24/2009 10:40:00	AM	Validation	V	
Analyte	CAS No	Result Value	RL	MDL Result	t Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	2.34	2.34	2.34 pg/g	1	U	B, result changed from 0.325 and EDL from 0.176	
1,2,3,4,6,7,8-HpCDF	67562394	2.34	2.34	2.34 pg/g	JK	UJ	*III, result changed from 0.185 and EDL from 0.0948	
1,2,3,4,7,8,9-HpCDF	55673897	0.174	2.34	0.174 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.132	2.34	0.132 pg/g	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.0864	2.34	0.0864 pg/g	U	U		
1,2,3,6,7,8-HxCDD	57653857	0.148	2.34	0.148 pg/g	U	U		
1,2,3,6,7,8-HxCDF	57117449	0.0898	2.34	0.0851 pg/g	J	J		
1,2,3,7,8,9-HxCDD	19408743	0.147	2.34	0.147 pg/g	U	U		
1,2,3,7,8,9-HxCDF	72918219	0.127	2.34	0.123 pg/g	J	J		
1,2,3,7,8-PeCDD	40321764	0.103	2.34	0.103 pg/g	U	U		
1,2,3,7,8-PeCDF	57117416	0.0845	2.34	0.0845 pg/g	U	U		
2,3,4,6,7,8-HxCDF	60851345	0.0911	2.34	0.0911 pg/g	U	U		
2,3,4,7,8-PeCDF	57117314	0.0845	2.34	0.0845 pg/g	U	U		
2,3,7,8-TCDD	1746016	0.161	0.468	0.161 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.34	0.468	0.106 pg/g	J	R	D	
2,3,7,8-TCDF	51207319	0.468	0.468	0.468 pg/g	J	U	B, result changed from 0.325 and EDL from 0.148	
OCDD	3268879	4.68	4.68	4.68 pg/g	J	U	B, result changed from 2.64 and EDL from 0.38	
OCDF	39001020	0.367	4.68	0.367 pg/g	U	U		
Total HpCDD	37871004	0.739	2.34	0.176 pg/g	J	J	В	
Total HpCDF	38998753	0.185	2.34	0.0948 pg/g	J	J	B, *III	
Total HxCDD	34465468	0.132	2.34	0.132 pg/g	U	U		
Total HxCDF	55684941	0.327	2.34	0.0851 pg/g	J	J	В	
Total PeCDD	36088229	0.103	2.34	0.103 pg/g	U	U		
Total PeCDF	30402154	0.0578	2.34	0.0578 pg/g	U	U		
Total TCDD	41903575	0.161	0.468	0.161 pg/g	U	U		
Total TCDFs	55722275	0.595	0.468	0.149 pg/g	В	J	В	

Sample Name	HZET0713S001	1	Matrix T	ype: Soil	Res	ult Type: Pr	Primary	
Lab Sample Name:	1073013	Sample	9/2	24/2009 10:35:00 Al	М	Validation	V	
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	2.42	2.42	2.42 pg/g	JK	UJ	*III, result changed from 0.219 and EDL from 0.196	
1,2,3,4,6,7,8-HpCDF	67562394	2.42	2.42	2.42 pg/g	J	U	B, result changed from 0.173 and EDL from 0.0964	
1,2,3,4,7,8,9-HpCDF	55673897	0.174	2.42	0.174 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.127	2.42	0.127 pg/g	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.077	2.42	0.077 pg/g	U	U		
1,2,3,6,7,8-HxCDD	57653857	0.149	2.42	0.149 pg/g	U	U		
1,2,3,6,7,8-HxCDF	57117449	0.0832	2.42	0.0832 pg/g	U	U		
1,2,3,7,8,9-HxCDD	19408743	0.145	2.42	0.145 pg/g	U	U		
1,2,3,7,8,9-HxCDF	72918219	0.125	2.42	0.125 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.0937	2.42	0.0937 pg/g	U	U		
1,2,3,7,8-PeCDF	57117416	0.0846	2.42	0.0846 pg/g	U	U		
2,3,4,6,7,8-HxCDF	60851345	0.0865	2.42	0.0865 pg/g	U	U		
2,3,4,7,8-PeCDF	57117314	2.42	2.42	2.42 pg/g	J	U	B, result changed from 0.0931 and EDL from 0.0873	
2,3,7,8-TCDD	1746016	0.104	0.485	0.104 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.27	0.485	0.113 pg/g	J	R	D	
2,3,7,8-TCDF	51207319	0.485	0.485	0.485 pg/g	J	U	B, result changed from 0.252 and EDL from 0.143	
OCDD	3268879	4.85	4.85	4.85 pg/g	J	U	B, result changed from 1.42 and EDL from 0.518	
OCDF	39001020	0.334	4.85	0.334 pg/g	U	U		
Total HpCDD	37871004	0.456	2.42	0.196 pg/g	J	J	B, *III	
Total HpCDF	38998753	2.42	2.42	2.42 pg/g	J	U	B, result changed from 0.173 and EDL from 0.0964	
Total HxCDD	34465468	0.127	2.42	0.127 pg/g	U	U		
Total HxCDF	55684941	0.077	2.42	0.077 pg/g	U	U		
Total PeCDD	36088229	0.0937	2.42	0.0937 pg/g	U	U		
Total PeCDF	30402154	2.42	2.42	2.42 pg/g	J	U	B, result changed from 0.0931 and EDL from 0.0846	
Total TCDD	41903575	0.153	0.485	0.104 pg/g	J	J		
Total TCDFs	55722275	0.468	0.485	0.143 pg/g	BJ	J	В	

Sample Name	HZET0714S001	ľ	Matrix T	ype: Soil	Result Type:		Primary	
Lab Sample Name:	1073014	Sample	9/2	24/2009 9:45:00 AM	, T	alidation	V	
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	9.55	2.25	0.346 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	2.25	2.25	2.25 pg/g	ЈК	UJ	*III, result changed from 0.896 and EDL from 0.153	
1,2,3,4,7,8,9-HpCDF	55673897	0.292	2.25	0.292 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.207	2.25	0.207 pg/g	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.142	2.25	0.142 pg/g	U	U		
1,2,3,6,7,8-HxCDD	57653857	0.213	2.25	0.213 pg/g	U	U		
1,2,3,6,7,8-HxCDF	57117449	0.147	2.25	0.147 pg/g	U	U		
1,2,3,7,8,9-HxCDD	19408743	0.236	2.25	0.22 pg/g	J	J		
1,2,3,7,8,9-HxCDF	72918219	0.209	2.25	0.209 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.127	2.25	0.127 pg/g	U	U		
1,2,3,7,8-PeCDF	57117416	0.104	2.25	0.104 pg/g	U	U		
2,3,4,6,7,8-HxCDF	60851345	0.152	2.25	0.152 pg/g	U	U		
2,3,4,7,8-PeCDF	57117314	0.0879	2.25	0.0879 pg/g	U	U		
2,3,7,8-TCDD	1746016	0.134	0.451	0.134 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.451	0.451	0.451 pg/g	J	U	B, result changed from 0.335 and EDL from 0.121	
2,3,7,8-TCDF	51207319	0.328	0.451	0.154 pg/g	JK	R	D	
OCDD	3268879	94.5	4.51	0.726 pg/g				
OCDF	39001020	4.51	4.51	4.51 pg/g	ЈК	UJ	*III, result changed from 0.784 and EDL from 0.562	
Total HpCDD	37871004	29.1	2.25	0.346 pg/g		J	В	
Total HpCDF	38998753	2.75	2.25	0.153 pg/g		J	B, *III	
Total HxCDD	34465468	1.96	2.25	0.207 pg/g	J	J		
Total HxCDF	55684941	2.03	2.25	0.142 pg/g	J	J	В	
Total PeCDD	36088229	0.127	2.25	0.127 pg/g	U	U		
Total PeCDF	30402154	0.276	2.25	0.0661 pg/g	J	J	В	
Total TCDD	41903575	0.134	0.451	0.134 pg/g	U	U		
Total TCDFs	55722275	0.629	0.451	0.154 pg/g	В	J	B, *III	

Sample Name	HZET0715S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	pe: Primary	
Lab Sample Name:	1073015	Sample	9/2	24/2009 1:37:00 PM	V	Validation	V	
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	29.4	2.29	0.371 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	4.44	2.29	0.123 pg/g				
1,2,3,4,7,8,9-HpCDF	55673897	0.241	2.29	0.241 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	1.02	2.29	0.142 pg/g	J	J		
1,2,3,4,7,8-HxCDF	70648269	2.29	2.29	2.29 pg/g	J	U	B, result changed from 0.366 and EDL from 0.102	
1,2,3,6,7,8-HxCDD	57653857	0.386	2.29	0.164 pg/g	J	J		
1,2,3,6,7,8-HxCDF	57117449	0.318	2.29	0.107 pg/g	J	J		
1,2,3,7,8,9-HxCDD	19408743	0.808	2.29	0.16 pg/g	J	J		
1,2,3,7,8,9-HxCDF	72918219	0.254	2.29	0.146 pg/g	J	J		
1,2,3,7,8-PeCDD	40321764	2.29	2.29	2.29 pg/g	ЈК	UJ	*III, result changed from 0.265 and EDL from 0.165	
1,2,3,7,8-PeCDF	57117416	2.29	2.29	2.29 pg/g	J	U	B, result changed from 0.247 and EDL from 0.159	
2,3,4,6,7,8-HxCDF	60851345	2.29	2.29	2.29 pg/g	J	U	B, result changed from 0.371 and EDL from 0.113	
2,3,4,7,8-PeCDF	57117314	2.29	2.29	2.29 pg/g	ЈК	UJ	*III, result changed from 0.382 and EDL from 0.156	
2,3,7,8-TCDD	1746016	0.118	0.457	0.118 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.457	0.457	0.457 pg/g	J	U	B, result changed from 0.399 and EDL from 0.229	
2,3,7,8-TCDF	51207319	0.435	0.457	0.161 pg/g	J	R	D	
OCDD	3268879	408	4.57	0.611 pg/g				
OCDF	39001020	17.4	4.57	0.336 pg/g				
Total HpCDD	37871004	104	2.29	0.371 pg/g		J	В	
Total HpCDF	38998753	13.2	2.29	0.123 pg/g		J	В	
Total HxCDD	34465468	9.69	2.29	0.142 pg/g				
Total HxCDF	55684941	6.58	2.29	0.102 pg/g		J	В	
Total PeCDD	36088229	1.73	2.29	0.165 pg/g	J	J	B, *III	
Total PeCDF	30402154	4.34	2.29	0.0574 pg/g		J	B, *III	
Total TCDD	41903575	0.57	0.457	0.118 pg/g				
Total TCDFs	55722275	3.71	0.457	0.229 pg/g	В	J	В	

Sample Name	HZET0716S001	I	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	1073016	Sample	9/2	24/2009 1:40:00 PM	۲	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	47.4	2.25	0.49 pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	7.62	2.25	0.122 pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	2.25	2.25	2.25 pg/g	JK	UJ	*III, result changed from 0.615 and EDL from 0.227
1,2,3,4,7,8-HxCDD	39227286	1.35	2.25	0.166 pg/g	J	J	
1,2,3,4,7,8-HxCDF	70648269	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.97 and EDL from 0.182
1,2,3,6,7,8-HxCDD	57653857	0.712	2.25	0.195 pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	0.485	2.25	0.187 pg/g	J	J	
1,2,3,7,8,9-HxCDD	19408743	1.04	2.25	0.189 pg/g	J	J	
1,2,3,7,8,9-HxCDF	72918219	0.279	2.25	0.265 pg/g	J	J	
1,2,3,7,8-PeCDD	40321764	2.25	2.25	2.25 pg/g	JK	UJ	*III, result changed from 0.458 and EDL from 0.187
1,2,3,7,8-PeCDF	57117416	2.25	2.25	2.25 pg/g	J	U	B, result changed from 1.61 and EDL from 0.148
2,3,4,6,7,8-HxCDF	60851345	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.478 and EDL from 0.198
2,3,4,7,8-PeCDF	57117314	2.25	2.25	2.25 pg/g	J	U	B, result changed from 0.845 and EDL from 0.147
2,3,7,8-TCDD	1746016	0.125	0.451	0.125 pg/g	U	U	
2,3,7,8-TCDF	51207319	2.84	0.451	0.389 pg/g			
2,3,7,8-TCDF	51207319	1.49	0.451	0.162 pg/g		R	D
OCDD	3268879	569	4.51	0.685 pg/g			
OCDF	39001020	27.5	4.51	0.434 pg/g		т	D
Total HpCDD	37871004	190 24.2	2.25	0.49 pg/g		J J	B P *III
Total HpCDF	38998753	24.2	2.25	0.122 pg/g		J	B, *III
Total HxCDD	34465468	17.3	2.25	0.166 pg/g		т	D
Total HxCDF Total PeCDD	55684941 36088229	11.8 2.46	2.25 2.25	0.182 pg/g 0.187 pg/g		J J	B B, *III
Total PeCDF	30402154	2.46 12.5	2.25	0.187 pg/g 0.0618 pg/g		J	B, *111 B
Total TCDD	41903575	0.431	0.451	0.0018 pg/g 0.125 pg/g	J	J	
Total TCDFs	55722275	13.7	0.451	0.123 pg/g 0.389 pg/g	J	J	В
				P88		-	

Analysis Method 6020

Sample Name	HZET0700S001		Matrix T	ype: Soil	Res	sult Type: Pr	imary
Lab Sample Name:	237844001	Sample	9/2	24/2009 1:39:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Copper	7440508	6.74	0.207	0.0684 mg/kg	*N	J	Q, *III
Sample Name	HZET0701S001		Matrix T	ype: Soil	Res	sult Type: Pr	imary
Lab Sample Name:	237844002	Sample	9/2	24/2009 1:41:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
Copper	7440508	28.7	0.44	0.145 mg/kg	*N	J	Q, *III
Sample Name	HZET0702S001		Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844003	Sample	9/2	24/2009 1:42:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
Copper	7440508	11.9	0.214	0.0705 mg/kg	*N	J	Q, *III
Sample Name	HZET0703S001		Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844004	Sample	9/2	24/2009 1:45:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
Copper	7440508	5.49	0.2	0.0659 mg/kg	*N	J	Q, *III
Sample Name	HZET0704S001		Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844005	Sample	9/2	24/2009 1:47:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier		Validation Notes
Copper	7440508	5.13	0.193	0.0637 mg/kg	*N	J	Q, *III
Sample Name	HZET0705S001		Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844006	Sample	9/2	24/2009 1:15:00 PM		Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Copper	7440508	5.53	0.206	0.0679 mg/kg	*N	J	Q, *III
Sample Name	HZET0706S001		Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844007	Sample	9/2	24/2009 11:25:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Copper	7440508	7.06	0.203	0.067 mg/kg	*N	J	Q, *III

Analysis Method 6020

Sample Name	HZET0707S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844008	Sample	9/	24/2009 11:10:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	5.26	0.195	0.0642 mg/kg	*N	J	Q, *III
Sample Name	HZET0708S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844009	Sample	9/	24/2009 11:05:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	8.34	0.205	0.0678 mg/kg	*N	J	Q, *III
Sample Name	HZET0709S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844010	Sample	9/	24/2009 11:00:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	23.1	0.392	0.129 mg/kg	*N	J	Q, *III
Sample Name	HZET0711S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844011	Sample	9/	24/2009 10:55:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	11.2	0.201	0.0664 mg/kg	*N	J	Q, *III
Sample Name	HZET0712S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844012	Sample	9/	24/2009 10:40:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	9.03	0.209	0.0688 mg/kg	*N	J	Q, *III
Sample Name	HZET0713S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844013	Sample	9/	24/2009 10:35:00 AN	М	Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	9.99	0.21	0.0694 mg/kg	*N	J	Q, *III
Sample Name	HZET0714S001	I	Matrix T	ype: Soil		Result Type: Pr	imary
Lab Sample Name:	237844014	Sample	9/	24/2009 9:45:00 AM	[Validation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualif		Validation Notes
Copper	7440508	6.49	0.216	0.0713 mg/kg	*N	J	Q, *III

,,							
Sample Name	HZET0715S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844015	Sample	9/2	24/2009 1:37:00 PM	V	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Copper	7440508	6.57	0.198	0.0652 mg/kg	*N	J	Q, *III
Sample Name	HZET0716S001	Ν	Matrix T	ype: Soil	Res	ult Type: Pr	imary
Lab Sample Name:	237844016	Sample	9/2	24/2009 1:40:00 PM	V	alidation	V
Analyte	CAS No	Result Value	RL	MDL Result	Lab Qualifier	Validation	Validation Notes
Copper	7440508	7.83	0.216	0.0713 mg/kg	*N	J	Q, *III

Analysis Method 6020