Chain of Custody and Supporting Documentation

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Charleston, SC 29407		sean.leffler@mwhglobal.com	Lab Address:	2040 S	avage Road			_				_	A si soulov stoly
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	94596	Lab Name:	GELL	aboratories	, LLC									EH-E	EH - Extract/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.	c Lab Contact:	Jackie	Trudell										2	
	sean.leffler@mwhglobal.com	Lab Address:	2040	Savage Roa	P							_		- Note: V	Note: Values in the cells
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Lab Phone	Email:	sarah.vonraesfeld@mwhgli	1	ab Contact:	Jackie	Trudell				Me							трн		
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Site:	SSFL	Client Name:	Boeing	Du Di		Collector:	for: S	S. Valenzuela	zuela				ă	Boeing PM:		
Company: MWH	: MWH	Sampling Event:	-	ISRA Sampling, June 2009	une 2009	Contact #:	**						1			
Report to	Report to: Sarah Von Raesfeld	Project Number:	_	1891614.054521					8	quest	Requested Analyses	yses			ق	Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex	Fischl		_		-	_							
	Suite 600	PM Phone #:	(925)) 627-4627		_			_		_		_		3 Z	Legend: Numerical values for
	Walnut Creek	Field Contact:		Shelby Valenzuela	65		_				_				a a	analyses equate to turn around time in days
	CA	Field Contact #:	(626) 255-0503		_									I	- Hold
	94596	Lab Name:	GEL	Laboratories, LLC	TIC	_								_	: Ш 5	EH - Extract/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.c	al.c Lab Contact:	Jacki	Jackie Trudell		_		_	_		ivieta					200
	sean.leffler@mwhglobal.com	Lab Address:	2040	Savage Road	p			_		Meta		_		_		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1
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Comments:					Geotra Data	Geotracker EDF Data Validation Package	

SAMPLE RECEIPT & REVIEW FORM

Clier	nt: SSF1				STOCK DOCKET LO L. D. CHALL
-	ived By: TO				SDG/ARCOC/Work Order: 233 444
-		T	_	+76	Date Received: 7/15/09
Susp	ected Hazard Information	Yes	ž		Counts > x2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC	/Samples marked as radioactive?		7	_	kimum Counts Observed*: Wi) (pm)
Class	ified Radioactive II or III by RSO?		7		
COC	/Samples marked containing PCBs?		/		
Shipp	ped as a DOT Hazardous?		1	Haz	ard Class Shipped: UN#:
Samp	oles identified as Foreign Soil?			Ĺ	
	Sample Receipt Criteria	Yes	NA	å	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?			15	Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?				Preservation Method: tice bage blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?				
4	Sample containers intact and sealed?	Ņ			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)?			´ ·	Sample ID's and containers affected:
7	Are Encore containers present?			\checkmark	(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?	V			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	Fed EX 9457 315	5 B	0	171	
			è		
					7/15/19

Subject: FW: ISRA COCs for 7/14/09

From: Sarah Von Raesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

Date: Tue, 14 Jul 2009 16:07:25 -0600

To: Jackie Trudell < jacqueline.trudell@gel.com>

CC: Sean Leffler <Sean.S.Leffler@us.mwhglobal.com>

Hi Jackie,

Please combine these two COCs into one SDG. Also, please add dioxins to FBQW2235 and EBQW2220.

Thanks, Sarah

From: Sean Leffler

Sent: Tuesday, July 14, 2009 2:58 PM

To: Jackie Trudell Cc: Sarah Von Raesfeld

Subject: ISRA COCs for 7/14/09



BOILDING A BETTER WORLD

Sean Leffler

Environmental Scientist

MWH Americas, Inc. 9444 Farnham Street

Suite 300 San Diego, CA 92123

www.mwhglobal.com

Direct Line: 858 751 1217 Telephone: 858 751 1200

Facsimile: 858 751 1201

sean.s.leffler@us.mwhglobal.com

COC GEL ISRA 7-14-09 MMB.pdf | Content-Type:

Content-Description: COC GEL ISRA 7-14-09 MMB.pdf

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Content-Description: COC GEL ISRA 7-14-09 SV.pdf

application/pdf

Content-Encoding:

base64

Date: 7/23/09

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

To:	Jackie Trudell	Phone: 843-769-7388
Laboratory	GEL Laboratories, LLC	E-mail: Jackie.trudell@gel.com
From:	Sean Leffler	
Requestor	signature:	
Subject:	Chain-of-Custody Form Analytical Request Change	No. of Pages: 5
Subject:	Chain-of-Custody Form Analytical Request Change	No. 01 Pages: 5

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
MWHSV20 090714_00	EBQW2220 FBQW2235	7/14/09		Add Dioxins by 1613B

The reason for these changes:	
Incorrectly marked on COC form	X
Lack of sample volume	
Change in analytical request	
Other:	
Thank you	

Contractors Size		-							23	233 444		Page: 1 of
SFL	Customer	Information	Project Inform	ation		Proje	st Infor	mation				
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The California BWd	Report to:	Sarah Von Raesfeld	Project Number	f	.054521				equested Anal	yses		Instructions/
Septembries Field Contact #: (925) 527-4627 Shelf Contact #: (925) 257-9503 Shelf Contact #: (925) 255-9503 Shelf Contact #: (925) 255-9503 Shelf Contact #: (925) 255-9503 Shelf		2121 N. California Blvd	Project Manage	_	<u>-</u>							1
Field Contact #: Gich 255-0503	-	Suite 600	PM Phone #:	(925) 62	7-4627							Numerical value
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Lab Name: GEL Laboratorises, LLC Carbon Matrix Charleston, SC 28407 Charleston, S		ð	Field Contact #:	(626) 25	5-0503	T		H				H - Hold
Soil 7714/2009 1714 10 10 10 10 10 10 10		94596	Lab Name:	GEL Lat	oratories, LLC	<u> </u>						EH - Extract/Ext
Company: Charleston, SC 29407 Charlesto		sarah.vonraesfeld@mwhglobal.c	┼	Jackie T	rudell					-		
Cab Phone: Charleston, SC 29407 Charles	<u>'</u>	sean.leffler@mwhglobal.com	Lab Address:	2040 Sa	vage Road							Note: Values in I
Lab Phone: Cortainers Cor				Charlest	on, SC 29407							bellow are Turn
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SGS Environmental Services, Inc.

LG::REVW LG::REVW LG::REVW LG::REVW LG::REVW LG::REVW LG::REVW Login Date: 2009-07-16 11:08:36 Due Date: 2009-07-29 17:00:00 Status Analysis 1613 1613 1613 1613 1613 1613 1613 **LOC** W2 W2 Soil Soil Soil Water **G341-590 Date Due** 2009-07-29 2009-07-29 2009-07-29 2009-07-29 2009-07-29 2009-07-29 2009-07-29 Date Received 2009-07-16 2009-07-16 2009-07-16 2009-07-16 2009-07-16 2009-07-16 **RUSH** 2009-07-14 12:14:00 **RUSH** 2009-07-14 13:16:00 **RUSH** 2009-07-14 2009-07-14 12:14:00 2009-07-14 12:17:00 2009-07-14 12:14:00 Date Collected Client Name: General Engineering Labs PO: RUSH RUSH RUSH RUSH RUSH Cust Proj ID: SSFL 233444
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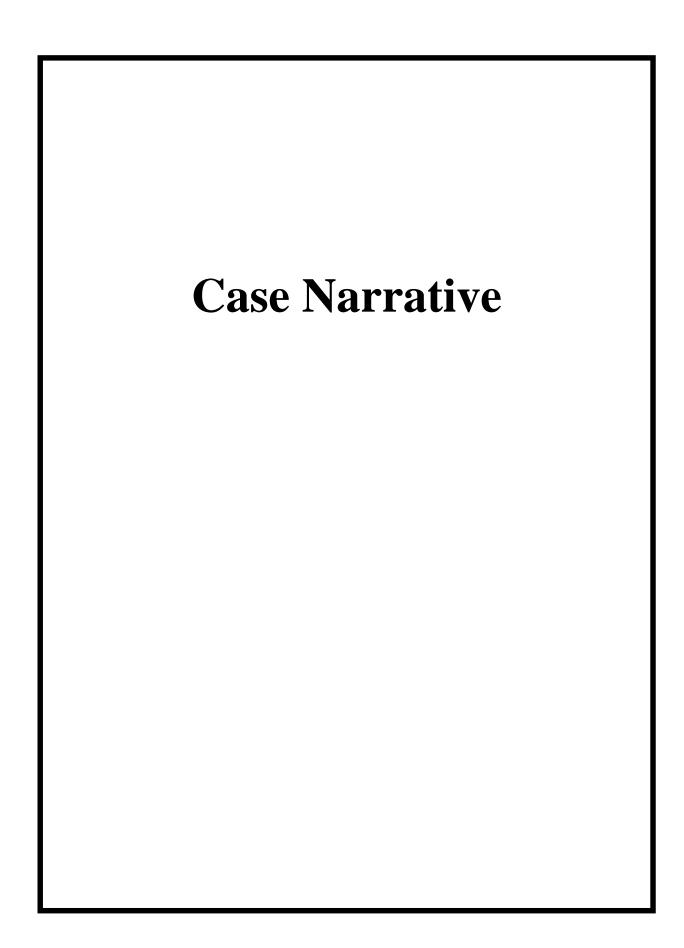
Sample Receipt Checklist (SRC) SGS Environmetal Services Inc.

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(are in appropriate container, are not damaged, and do not show signs of contamination)		· · · · · · · · · · · · · · · · · · ·	
Samples Broken / Leaking VOA Vials Checked for Air Bubbles			
5. X Chilled on Receipt* Actual Temp.(s) in °C: Ambient on Receipt Walk-in on Ice; Coming down to temp.	4.3 Notes:		
Received out of temperature protocol			
6. X Sufficient Sample SubmittedInsufficient Sample Submitted	Notes:		
7. X Samples Preserved Correctly*	Notes:		
(see preservative checklist where applicable) Improper Preservative(s)			
None recommended (N/A)			
8. X Received Within Holding Time Not Received Within Holding Time	Notes:		
N/A	·		
9. X No Discrepancies Noted Discrepancies Noted	Notes:		
Comments:			
			7
	<u>.</u>		
* = Rejection of sample is required when not market	d; Contact client se	ervices immediately	for a resolution.
	Inspected an	nd Logged in by:	
DC27.091503.3	,		hu-7/16/09 11:09

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Case Narrative for Boeing - SSFL (MWH) Work Order: 233444

SDG: 233444

July 24, 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 July 15, 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
233444001	ENBS0089S001
233444002	ENBS0090S001
233444003	ENBS0091S001
233444004	ENBS0094S001
233444005	ENBS0095S001
233444006	ENBS0096S001
233444007	HZBS0129S001
233444008	HZBS0131S001
233444009	HZBS0133S001
233444010	HZBS0135S001
233444011	HZBS0137S001
233444012	HZBS0139S001
233444013	HZBS0141S001
233444014	HZBS0143S001
233444015	B1BS0081AS001
233444016	EBQW2220
233444017	ENBS0097S001
233444018	ENBS0098S001
233444019	FBQW2235
233444020	HZBS0130S001
233444021	HZBS0132S001
233444022	HZBS0134S001
233444023	HZBS0136S001
233444024	HZBS0138S001

233444025	HZBS0140S001
233444026	HZBS0142S001
233444027	HZBS0144S001
233444028	HZBS0145S001

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.

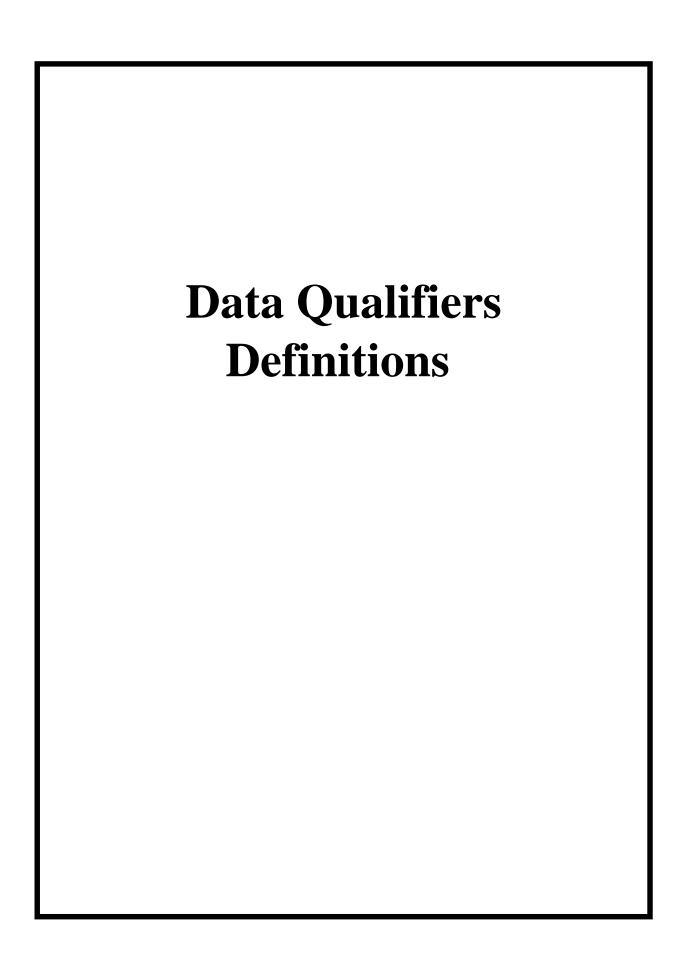
Data Package:

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: FID Flame Ionization Detector, Metals, Percent Moisture and Dioxins (SGS Laboratories).

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 Trudell

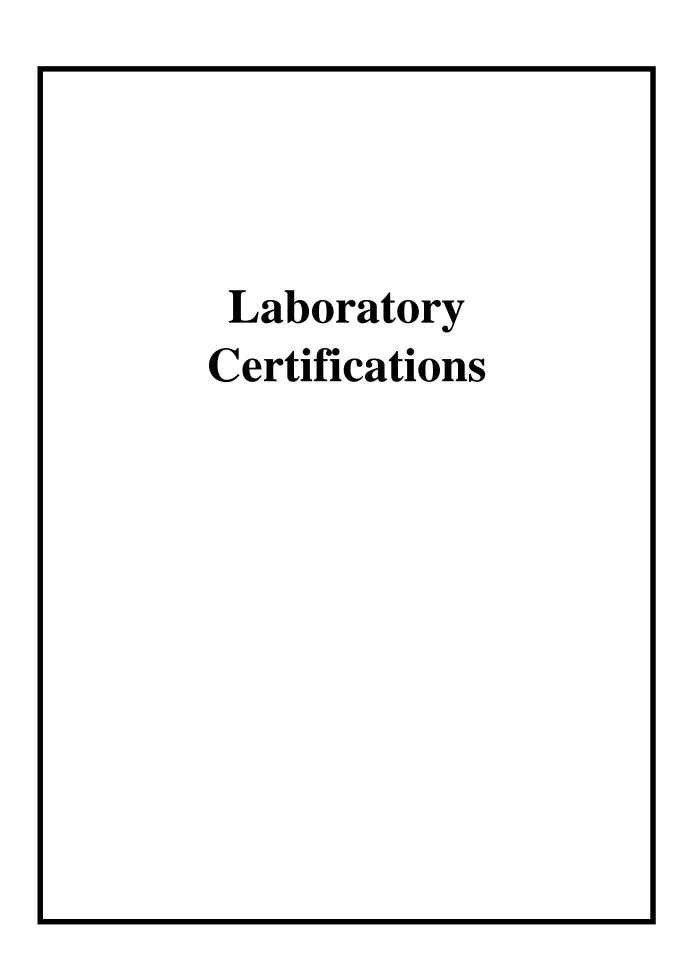
Project Manager



Data Review Qualifier Definitions

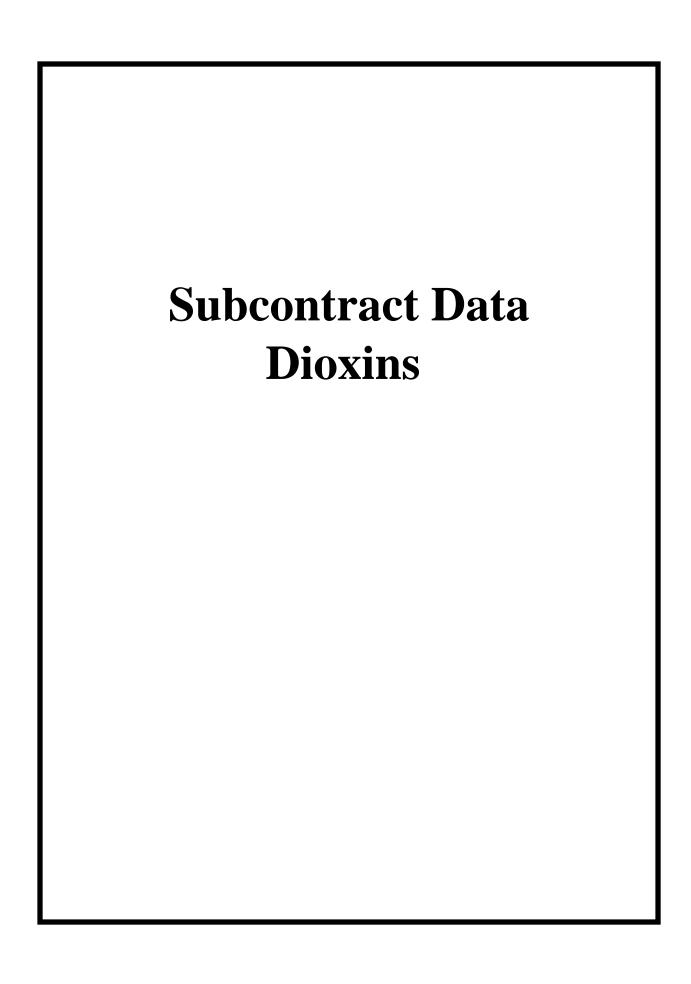
Qualifier Explanation

- * 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
- 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
- ${
 m N/A}$ 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.



List of current GEL Certifications as of 21 July 2009

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
	+





Laboratory Results

Ms. Jacqueline Trudell General Engineering Labs 2040 Savage Rd. Charleston SC 29407

Phone:

843-556-8171

Fax:

Dear Ms. Trudell:

Enclosed is a full data package containing the final results for samples received by SGS Environmental Services, Inc. on July 16, 2009 under your project name "SSFL 233444". The samples were analyzed by Method 1613 following SGS's Standard Operating Procedures and are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards.

Number of Samples Received:

Your Project Reference:

SSFL 233444

PAL Project Number:

G341-590

We appreciate your business and look forward to working with you again. Please contact me at 910-350-1903 if you have questions or need additional technical support.

Sincerely,

Lori Lockamy

Project Manager

DC138.033007.7



Case Narrative SGS Project: **G341-590** Project Name: **SSFL 233444**

For Method: 1613

• The submitted samples were accepted into the lab on July 16th, 2009 and extracted on July 20th, 2009 by methods 3520C and 3540C. The sample extracts and associated QC extracts were then processed through clean-up as prescribed in the SGS standard operating procedures and analyzed by GC/MS for method 1613.

• No analytical issues were encountered.

Tamara Morg*a*n

Marlow 7-29-09 Date

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SGS

Table of Contents

Section 1: Cover Letter/Case Narrative

Contains the Table of Contents, a project narrative, the client and SGS project identifiers, the number and type of samples, the methodology used to process the samples, and a summary table of sample results. A listing of current certifications by state, a table of abbreviations and qualifiers and the Toxic Equivalent Factors (TEF) are also supplied.

Section 2: Project Information

Contains the chain-of-custody(s), internal chain-of-custody(s) if applicable, sample login summary, sample receipt checklist, and any other project/client specific information.

Section 3: Sample Analytical Results

Contains results for client samples. Sample results include two pages of summarized analytical data and the associated raw data. The raw data includes a quantitation report from the instrumentation used that lists, ion areas, ratios, retention times, concentrations, and signal-to-noise ratios. It also has the selected ion current profiles (SICPs) for all homolog groups and any manual integrations.

Section 4: Quality Control Analytical Results

Contains results for each analytical workgroup associated with the submitted samples. A workgroup consists of the Lab Method Blank (LMB) and the Ongoing Precision and Recovery sample (OPR). All sample preparation data, including dry weight determinations, extraction logs, clean-up logs and observation notes are also documented. Any other supporting QC data will be documented here upon client request.

Section 5: Initial Calibration

Contains a table summarizing calibration data such as relative response factors, concentrations, and percent relative standard deviation. This section also contains related daily instrument QC information: GC performance data, mass resolution check, windows defining mix, and SICPs for all homolog groups and any manual integrations as well as the injection prep and instrument run logs.

Section 6: Continuing Calibration Data

Contains all daily instrument quality control information. This includes mass resolution checks, a table summarizing the window defining peaks, SICPs for the first and last eluters for each homolog group, SICPs documenting GC performance, a summary quantitation report showing RRFs for the Ccal and Ical, and SICPs for all homolog groups and any manual integrations, injection prep and instrumentation runlogs.

SGS

List of Qualifiers: Dioxin's

- B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.
- EDL "Estimated Detection Limit"
- EMPC "Estimated Maximum Possible Concentration"
- RL Report Limit
- CL Control Limit
- U Undetected
- ppt Parts-per-trillion (pg/g; ng/L)
- V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.
- # Outside quality control limits
- * Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

- A Amount detected is less than the Lower Method Calibration Limit.
- J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.
- O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.
- E Amount detected is greater than the Upper Calibration Limit.
- S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).
- Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).
- I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).
- DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1

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DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 233444

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: 233444

Project Manager: Dixie Hambrick

Matrix: water/soil

QC Level: V

No. of Samples: 28

No. of Reanalyses/Dilutions: 0 Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
D4DC0004AC004	000444045	N1/A	0-:1	7/4.4/0000 4.0-00-00 DNA	0045D
B1BS0081AS001 EBQW2220	233444015 233444016	N/A G341-590-6B	Soil Water	7/14/2009 12:29:00 PM 7/14/2009 1:16:00 PM	8015B 1613B,
EBQWZZZU	233444010	G341-390-6D	vvalei	7/14/2009 1.16.00 PW	6020 8015B
ENBS0089S001	G341-590-1B	N/A	Soil	7/14/2009 12:17:00 PM	1613B
ENBS0099S001	G341-590-1B G341-590-2B	N/A	Soil	7/14/2009 12:17:00 PM	1613B
ENBS0090S001	G341-590-2B G341-590-3B	N/A	Soil	7/14/2009 12:22:00 PM	1613B
ENBS0091S001	233444004	N/A	Soil	7/14/2009 12:14:00 FW	6020
ENBS00943001	233444005	N/A	Soil	7/14/2009 11:30:00 AM	6020
ENBS0095S001	233444006	N/A	Soil	7/14/2009 11:38:00 AM	6020
ENBS00903001	233444017	N/A	Soil	7/14/2009 11:28:00 AM	6020
ENBS0097S001	233444018	N/A	Soil	7/14/2009 11:28:00 AW	6020
FBQW2235	233444019	G341-590-7B	Water	7/14/2009 11:37:00 AW	1613B,
FBQWZZ33	233444019	G341-390-7B	vvalei	7/14/2009 1.20.00 FW	6020
					8015B
HZBS0129S001	233444007	N/A	Soil	7/14/2009 8:17:00 AM	6020
HZBS0130S001	233444020	N/A	Soil	7/14/2009 8:22:00 AM	6020
HZBS0131S001	233444008	N/A	Soil	7/14/2009 8:35:00 AM	6020
HZBS0131S001	233444021	N/A	Soil	7/14/2009 8:31:00 AM	6020
HZBS0133S001	233444009	N/A	Soil	7/14/2009 8:47:00 AM	6020
HZBS0133S001	233444022	N/A	Soil	7/14/2009 8:39:00 AM	6020
HZBS0135S001	233444010	N/A	Soil	7/14/2009 9:00:00 AM	6020
HZBS0136S001	233444023	N/A	Soil	7/14/2009 9:55:00 AM	6020
HZBS0137S001	233444011	N/A	Soil	7/14/2009 9:20:00 AM	6020
HZBS0137S001	233444024	N/A	Soil	7/14/2009 9:02:00 AM	6020
HZBS0139S001	233444012	N/A	Soil	7/14/2009 9:37:00 AM	6020
HZBS0140S001	233444025	N/A	Soil	7/14/2009 9:17:00 AM	6020
HZBS0140S001	233444013	N/A	Soil	7/14/2009 9:50:00 AM	6020
HZBS0141S001	233444026	N/A	Soil	7/14/2009 9:32:00 AM	6020
HZBS0143S001	233444014	N/A	Soil	7/14/2009 10:18:00 AM	6020
HZBS0143S001	233444027	N/A	Soil	7/14/2009 9:37:00 AM	6020
HZBS0144S001	233444028	N/A	Soil	7/14/2009 9:47:00 AM	6020
TZD301433001	Z33444UZ8	N/A	3011	7/14/2009 9:47:00 AIVI	0020

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°C ±2°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.

Data Qualifier Reference Table

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.
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

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- 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.

Qualification Code Reference Table

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

DG:

Qualification Code Reference Table Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

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.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: P. Meeks

Date Reviewed: August 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 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: OCDD and 2,3,7,8-TCDF were detected in the soil method blank at 0.462 pg/g and 0.282 pg/g, respectively. OCDD was not detected in the samples at concentration ≤5x the method blank detect or at concentrations below the reporting limit. 2,3,7,8-TCDF detected in the soil samples was qualified as nondetected, "U," at the reporting limits. There were no other no target compound detects above the EDL in the method blanks.
- 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 laboratoryestablished control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on ENBS0091S001. All recoveries and 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: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG. There were no detects above the EDL in either sample.
 - 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

Project: Boeing SSFL RFI ISRA

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.

Compound Quantification and Reported Detection Limits: Review is not applicable at a
Level V validation. EMPCs (estimated maximum possible concentration) were identified
in the samples of this SDG. Any EMPC was qualified as estimated, "UJ," in the samples
of this SDG. The laboratory calculated and reported compound-specific detection limits.
Any detect below the laboratory lower calibration level was qualified as estimated, "J."
Nondetects are valid to the estimated detection limit (EDL).

B. EPA METHODS 6010B, 6020, 7470A/7471A—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: August 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 Methods 6010B, 6020, 7470A/7471A, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: Analytical holding times, six months for ICP and ICP-MS metals and 28 days for mercury, were 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 and the aqueous RPDs were within laboratory-established QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZBS0135S001 for all analytes and on ENBS0094S001 for copper and lead only. All RPDs were within the laboratory-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZBS0135S001 for all analytes and on ENBS0094S001 for copper and lead only. Lead was recovered below the control limit in the MSD of HZBS0135S001; therefore, lead

detected in all soil samples except ENBS0094S001 was qualified as estimated, "J." All remaining recoveries and all RPDs were within laboratory-established QC limits.

- Serial Dilution: Serial dilution analyses were performed on HZBS0135S001 and FBQW2235 for all analytes and on ENBS0094S001 for copper and lead only. The copper and lead %Ds exceeded the control limit for ENBS0094S001; therefore, copper and lead detected in all soil samples except HZBS0135S001 were qualified as estimated, "J." All remaining %Ds were within laboratory-established QC limits
- 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. Due to matrix interference, copper in several soil samples was analyzed at a 10x dilution. The remaining soil analytes were reported from the laboratory's standard 2x dilution. 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: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG. There were no detects above the MDL in either sample.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 8015B—Extractable Total Fuel Hydrocarbons (EFHs)

Reviewed By: P. Meeks

Date Reviewed: August 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 Total Fuel Hydrocarbons (DVP-8, Rev. 0), EPA Method 8015B, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The aqueous samples
 were extracted within seven days of collection and the soil samples were extracted within
 14 days of collection. All samples were analyzed within 40 days of extraction.
- Calibration: Review is not applicable at a Level V validation.

Project: Boeing SSFL RFI ISRA

Blanks: Method blanks had no target compound detects above the MDL.

- Blank Spikes and Laboratory Control Samples: Recoveries and the aqueous RPDs were within laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on B1BS0081AS001. The recoveries and RPD 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: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG. There were no detects above the MDL in either sample.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Compound Identification: Review is not applicable at a Level V validation. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 233444

Analysis Method 1613B

Sample Name	EBQW2220		Matrix '	Type: Water	Result Type: Primary Result		
Lab Sample Name:	G341-590-6B	Sample	Sample Date: 7/14/2009 1:16:00 PM			Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.00326	0.0475	0.00326 ng/L	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.00184	0.0475	0.00184 ng/L	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.00248	0.0475	0.00248 ng/L	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.00201	0.0475	0.00201 ng/L	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.00131	0.0475	0.00131 ng/L	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.00196	0.0475	0.00196 ng/L	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.00137	0.0475	0.00137 ng/L	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.002	0.0475	0.002 ng/L	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.00161	0.0475	0.00161 ng/L	U	U	
1,2,3,7,8-PeCDD	40321764	0.00165	0.0475	0.00165 ng/L	U	U	
1,2,3,7,8-PeCDF	57117416	0.00104	0.0475	0.00104 ng/L	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0014	0.0475	0.0014 ng/L	U	U	
2,3,4,7,8-PeCDF	57117314	0.000989	0.0475	0.000989 ng/L	U	U	
2,3,7,8-TCDD	1746016	0.00364	0.00951	0.00364 ng/L	U	U	
2,3,7,8-TCDF	51207319	0.0019	0.00951	0.0019 ng/L	U	U	
OCDD	3268879	0.00616	0.0951	0.00616 ng/L	U	U	
OCDF	39001020	0.00477	0.0951	0.00477 ng/L	U	U	
Гotal HpCDDs	37871004	0.00326	0.0475	0.00326 ng/L	U	U	
Гotal HpCDFs	38998753	0.00213	0.0475	0.00213 ng/L	U	U	
Total HxCDDs	34465468	0.00199	0.0475	0.00199 ng/L	U	U	
Total HxCDFs	55684941	0.00142	0.0475	0.00142 ng/L	U	U	
Γotal PeCDDs	36088229	0.00165	0.0475	0.00165 ng/L	U	U	
Total PeCDFs	30402154	0.00102	0.0475	0.00102 ng/L	U	U	
Total TCDDs	41903575	0.00364	0.00951	0.00364 ng/L	U	U	
Total TCDFs	55722275	0.0019	0.00951	0.0019 ng/L	U	U	

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Sample Name	ENBS0089S001		Matrix 7	Гуре: Soil	Result Type: Primary R			
Lab Sample Name:	G341-590-1B	Sample 1	Date: 7	/14/2009 12:17:00 Pi	Validation Level: V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	25.9	4.21	0.283 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	1.9	4.21	0.166 pg/g	A	J		
1,2,3,4,7,8,9-HpCDF	55673897	0.218	4.21	0.218 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.741	4.21	0.238 pg/g	A	J		
1,2,3,4,7,8-HxCDF	70648269	0.217	4.21	0.124 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	1.14	4.21	0.237 pg/g	A	J		
1,2,3,6,7,8-HxCDF	57117449	0.215	4.21	0.215 pg/g	EMPC	UJ	*III	
1,2,3,7,8,9-HxCDD	19408743	1.22	4.21	1.22 pg/g	EMPC	UJ	*III	
1,2,3,7,8,9-HxCDF	72918219	0.172	4.21	0.172 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.48	4.21	0.136 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.148	4.21	0.0916 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.205	4.21	0.134 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.3	4.21	0.0966 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.291	0.842	0.291 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.842	0.842	0.249 pg/g	A	U	B, result changed from 0.589	
OCDD	3268879	112	8.42	0.435 pg/g				
OCDF	39001020	4.64	8.42	0.355 pg/g	A	J		
Total HpCDDs	37871004	63.5	4.21	0.283 pg/g				
Total HpCDFs	38998753	5.17	4.21	0.19 pg/g				
Total HxCDDs	34465468	17.5	4.21	0.238 pg/g				
Гotal HxCDFs	55684941	3.08	4.21	0.14 pg/g	A	J		
Total PeCDDs	36088229	4.11	4.21	0.136 pg/g	A	J		
Total PeCDFs	30402154	2.99	4.21	0.0939 pg/g	A	J		
Total TCDDs	41903575	0.364	0.842	0.291 pg/g	A	J		
Total TCDFs	55722275	2.59	0.842	0.249 pg/g				

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Sample Name	ENBS0090S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	t Type: Primary Result		
Lab Sample Name:	G341-590-2B	Sample 1	Date: 7	/14/2009 12:22:00 Pi	M V	Validation Level: V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
1,2,3,4,6,7,8-HpCDD	35822469	21.8	4.32	0.278 pg/g					
1,2,3,4,6,7,8-HpCDF	67562394	2.97	4.32	0.165 pg/g	A	J			
1,2,3,4,7,8,9-HpCDF	55673897	0.225	4.32	0.224 pg/g	A	J			
1,2,3,4,7,8-HxCDD	39227286	0.669	4.32	0.275 pg/g	A	J			
1,2,3,4,7,8-HxCDF	70648269	0.342	4.32	0.162 pg/g	A	J			
1,2,3,6,7,8-HxCDD	57653857	0.894	4.32	0.289 pg/g	A	J			
1,2,3,6,7,8-HxCDF	57117449	0.329	4.32	0.15 pg/g	A	J			
1,2,3,7,8,9-HxCDD	19408743	0.866	4.32	0.284 pg/g	A	J			
1,2,3,7,8,9-HxCDF	72918219	0.187	4.32	0.187 pg/g	U	U			
1,2,3,7,8-PeCDD	40321764	0.316	4.32	0.188 pg/g	A	J			
1,2,3,7,8-PeCDF	57117416	0.284	4.32	0.0949 pg/g	A	J			
2,3,4,6,7,8-HxCDF	60851345	0.52	4.32	0.158 pg/g	A	J			
2,3,4,7,8-PeCDF	57117314	0.716	4.32	0.093 pg/g	A	J			
2,3,7,8-TCDD	1746016	0.297	0.865	0.297 pg/g	U	U			
2,3,7,8-TCDF	51207319	0.864	0.864	0.336 pg/g	A	U	B, result changed from 0.806		
OCDD	3268879	126	8.65	0.481 pg/g					
OCDF	39001020	9.04	8.65	0.419 pg/g					
Гotal HpCDDs	37871004	57.6	4.32	0.278 pg/g					
Гotal HpCDFs	38998753	8.38	4.32	0.191 pg/g					
Total HxCDDs	34465468	16.2	4.32	0.283 pg/g					
Гotal HxCDFs	55684941	5.82	4.32	0.164 pg/g					
Гotal PeCDDs	36088229	2.55	4.32	0.379 pg/g	A	J			
Total PeCDFs	30402154	7.52	4.32	0.101 pg/g					
Total TCDDs	41903575	0.297	0.865	0.297 pg/g	U	U			
Total TCDFs	55722275	5.96	0.865	0.247 pg/g					

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Sample Name	ENBS0091S001		Matrix 7	Гуре: Soil	Resi	Result Type: Primary Result Validation Level: V		
Lab Sample Name:	G341-590-3B	Sample 1	Date: 7	/14/2009 12:14:00 PM	M V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	24.5	4.38	0.263 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	3.34	4.38	0.185 pg/g	A	J		
1,2,3,4,7,8,9-HpCDF	55673897	0.296	4.38	0.27 pg/g	A	J		
1,2,3,4,7,8-HxCDD	39227286	0.34	4.38	0.34 pg/g	EMPC	UJ	*III	
1,2,3,4,7,8-HxCDF	70648269	0.303	4.38	0.155 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	1.19	4.38	0.208 pg/g	A	J		
1,2,3,6,7,8-HxCDF	57117449	0.305	4.38	0.153 pg/g	A	J		
1,2,3,7,8,9-HxCDD	19408743	1.13	4.38	0.204 pg/g	A	J		
1,2,3,7,8,9-HxCDF	72918219	0.219	4.38	0.189 pg/g	A	J		
1,2,3,7,8-PeCDD	40321764	0.31	4.38	0.146 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.2	4.38	0.141 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.403	4.38	0.153 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.527	4.38	0.155 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.275	0.875	0.275 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.875	0.875	0.236 pg/g	A	U	B, result changed from 0.683	
OCDD	3268879	170	8.75	0.422 pg/g				
OCDF	39001020	15.8	8.75	0.401 pg/g				
Гotal HpCDDs	37871004	52.4	4.38	0.263 pg/g				
Гotal HpCDFs	38998753	10.4	4.38	0.223 pg/g				
Total HxCDDs	34465468	9.13	4.38	0.204 pg/g				
Гotal HxCDFs	55684941	5.48	4.38	0.161 pg/g				
Total PeCDDs	36088229	1.04	4.38	0.317 pg/g	A	J		
Total PeCDFs	30402154	5.24	4.38	0.148 pg/g				
Total TCDDs	41903575	0.275	0.875	0.275 pg/g	U	U		
Total TCDFs	55722275	4.46	0.875	0.236 pg/g				

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Sample Name	FBQW2235		Matrix '	Type: Water	Resi	ult Type: Pr	imary Result
Lab Sample Name:	G341-590-7B	Sample	Date: 7	7/14/2009 1:20:00 PM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.00276	0.0477	0.00276 ng/L	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.00139	0.0477	0.00139 ng/L	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.00205	0.0477	0.00205 ng/L	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.00173	0.0477	0.00173 ng/L	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.00114	0.0477	0.00114 ng/L	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.00179	0.0477	0.00179 ng/L	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.00119	0.0477	0.00119 ng/L	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.00177	0.0477	0.00177 ng/L	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.00157	0.0477	0.00157 ng/L	U	U	
1,2,3,7,8-PeCDD	40321764	0.00148	0.0477	0.00148 ng/L	U	U	
1,2,3,7,8-PeCDF	57117416	0.000941	0.0477	0.000941 ng/L	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.00118	0.0477	0.00118 ng/L	U	U	
2,3,4,7,8-PeCDF	57117314	0.000899	0.0477	0.000899 ng/L	U	U	
2,3,7,8-TCDD	1746016	0.00249	0.00954	0.00249 ng/L	U	U	
2,3,7,8-TCDF	51207319	0.00147	0.00954	0.00147 ng/L	U	U	
OCDD	3268879	0.00453	0.0954	0.00453 ng/L	U	U	
OCDF	39001020	0.00343	0.0954	0.00343 ng/L	U	U	
Total HpCDDs	37871004	0.00276	0.0477	0.00276 ng/L	U	U	
Total HpCDFs	38998753	0.00169	0.0477	0.00169 ng/L	U	U	
Total HxCDDs	34465468	0.00177	0.0477	0.00177 ng/L	U	U	
Total HxCDFs	55684941	0.00126	0.0477	0.00126 ng/L	U	U	
Total PeCDDs	36088229	0.00148	0.0477	0.00148 ng/L	U	U	
Total PeCDFs	30402154	0.000897	0.0477	0.000897 ng/L	U	U	
Total TCDDs	41903575	0.00249	0.00954	0.00249 ng/L	U	U	
Total TCDFs	55722275	0.00147	0.00954	0.00147 ng/L	U	U	

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Sample Name	EBQW2220		Matrix 7	Type: Water	Resi	ult Type: Pri	imary Result
Lab Sample Name:	233444016	Sample		/14/2009 1:16:00 PM		validation Le	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes
Arsenic	7440382	1.6	5	1.6 ug/L	U	U	
Cadmium	7440439	0.11	1	0.11 ug/L	U	U	
Copper	7440508	0.33	1	0.33 ug/L	U	U	
Lead	7439921	0.5	2	0.5 ug/L	U	U	
Zinc	7440666	3.44	10	3 ug/L	J	J	
Sample Name	ENBS0094S001		Matrix 7	Гуре: Soil	Rest	ult Type: Pri	imary Result
Lab Sample Name:	233444004	Sample	Date: 7/	/14/2009 11:23:00 A	м ,	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	52.2	0.395	0.0986 mg/kg	EN	J	A
Sample Name	ENBS0095S001		Matrix 7	Type: Soil	Result Type: Primary Re		
Lab Sample Name:	233444005	Sample	Date: 7/	/14/2009 11:30:00 A	м ,	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	24	0.403	0.101 mg/kg	EN	J	Q, A
Sample Name	ENBS0096S001		Matrix 7	Гуре: Soil	Rest	ult Type: Pri	imary Result
Lab Sample Name:	233444006	Sample	Date: 7/	/14/2009 11:38:00 A	M Validation Level: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	39.6	0.398	0.0995 mg/kg	EN	J	Q, A
Sample Name	ENBS0097S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444017	Sample	Date: 7/	/14/2009 11:28:00 A	М ,	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	14.9	1.02	0.337 mg/kg	Е	J	A
Lead	7439921	21.8	0.408	0.102 mg/kg	EN	J	Q, A
Sample Name	ENBS0098S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444018	Sample	Date: 7/	/14/2009 11:37:00 A	м ,	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	10.3	0.233	0.0767 mg/kg	Е	J	A

Sample Name	FBQW2235		Matrix 7	Type: Water	Result Type: Primary Result		
Lab Sample Name:	233444019	Sample	Date: 7	/14/2009 1:20:00 PM		Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	1.6	5	1.6 ug/L	U	U	
Cadmium	7440439	0.11	1	0.11 ug/L	U	U	
Copper	7440508	0.33	1	0.33 ug/L	U	U	
_ead	7439921	0.5	2	0.5 ug/L	U	U	
Zinc	7440666	3	10	3 ug/L	U	U	
Sample Name	HZBS0129S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444007	Sample	Date: 7	/14/2009 8:17:00 AM	1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	10.1	0.401	0.1 mg/kg	EN	J	Q, A
Sample Name	HZBS0130S001		Matrix 7	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444020	Sample	Date: 7	/14/2009 8:22:00 AM	1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	9.12	0.405	0.101 mg/kg	EN	J	Q, A
Sample Name	HZBS0131S001		Matrix 7	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444008	Sample	Date: 7	/14/2009 8:35:00 AM	1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	39.3	0.394	0.0984 mg/kg	EN	J	Q, A
Sample Name	HZBS0132S001		Matrix 7	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444021	Sample	Date: 7	/14/2009 8:31:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	33.7	0.393	0.0984 mg/kg	EN	J	Q, A
Sample Name	HZBS0133S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444009	Sample	Date: 7	/14/2009 8:47:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	40.7	0.401	0.1 mg/kg	EN	J	Q, A

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Sample Name	HZBS0134S001		Matrix 7	Type: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444022	Sample	Date: 7	/14/2009 8:39:00 AM	. .	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	48.6	0.399	0.0997 mg/kg	EN	J	Q, A	
Sample Name	HZBS0135S001		Matrix 7	Гуре: Soil	Rest	ult Type: Pr	imary Result	
Lab Sample Name:	233444010	Sample	Date: 7	/14/2009 9:00:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	12.8	0.4	0.1 mg/kg	EN	J	Q	
Sample Name	HZBS0136S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444023	Sample Date: 7/14/2009 8:55:00 AM Validation Level: V					vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	12	0.389	0.0973 mg/kg	EN	J	Q, A	
Sample Name	HZBS0137S001		Matrix Type: Soil Result Type: Primary Resu					
Lab Sample Name:	233444011	Sample	Date: 7	/14/2009 9:20:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	15.7	0.39	0.0975 mg/kg	EN	J	Q, A	
Sample Name	HZBS0138S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444024	Sample	Date: 7	/14/2009 9:02:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	51.4	0.406	0.102 mg/kg	EN	J	Q, A	
Sample Name	HZBS0139S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444012	Sample	Date: 7	/14/2009 9:37:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	19.9	0.393	0.0983 mg/kg	EN	J	Q, A	
Sample Name	HZBS0140S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444025	Sample	Date: 7	/14/2009 9:17:00 AM		/alidation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	16.5	0.393	0.0983 mg/kg	EN	J	Q, A	

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Sample Name	HZBS0141S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444013	Sample	Date: 7	/14/2009 9:50:00 AM	И	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	21.1	0.408	0.102 mg/kg	EN	J	Q, A
Sample Name	HZBS0142S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444026	Sample	Date: 7	/14/2009 9:32:00 AN	4	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	18	0.397	0.0992 mg/kg	EN	J	Q, A
Sample Name	HZBS0143S001		Matrix Type: Soil Result Type:				imary Result
Lab Sample Name:	233444014	Sample	Date: 7	//14/2009 10:18:00 A	M V	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes
Lead	7439921	33.9	0.4	0.1 mg/kg	EN	J	Q, A
Sample Name	HZBS0144S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444027	Sample	Date: 7	/14/2009 9:37:00 AN	И Т	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	7.89	1.01	0.202 mg/kg			
Cadmium	7440439	0.172	0.202	0.0202 mg/kg	J	J	
Copper	7440508	16	1.01	0.333 mg/kg	Е	J	A
Lead	7439921	9.2	0.404	0.101 mg/kg	EN	J	Q, A
Sample Name	HZBS0145S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444028	Sample	Date: 7	/14/2009 9:47:00 AN	и т	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cadmium	7440439	0.492	0.201	0.0201 mg/kg			
Lead	7439921	17.3	0.403	0.101 mg/kg	EN	J	Q, A
Zinc	7440666	65.1	2.01	0.403 mg/kg			

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Analysis Method 8015B

Sample Name	B1BS0081AS00)1	Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444015 Sample Date: 7/14/2009 12:29:00 PM Validation Level: V						vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	3.62	3.62	1.19 mg/kg	U	U	
EFH (C15 - C20)	EFHD (C15	3.62	3.62	1.19 mg/kg	U	Ŭ	
EFH (C21 - C30)	EFHD (C21	13.6	3.62	1.19 mg/kg			
EFH (C8 - C11)	EFHD (C8-	3.62	3.62	1.19 mg/kg	U	U	
Sample Name	EBQW2220	Matrix Type: Water Result Type: Primary Res					imary Result
Lab Sample Name:	233444016	Sample Date: 7/14/2009 1:16:00 PM Validation Leve				vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	95.2	95.2	31.4 ug/L	U	U	
EFH (C15 - C20)	EFHD (C15	95.2	95.2	31.4 ug/L	U	U	
EFH (C21 - C30)	EFHD (C21	95.2	95.2	31.4 ug/L	U	U	
EFH (C8 - C11)	EFHD (C8-	95.2	95.2	31.4 ug/L	U	U	
Sample Name	FBQW2235		Matrix 7	Type: Water	Resi	ılt Type: Pr	imary Result
Lab Sample Name:	233444019	Sample	Date: 7	/14/2009 1:20:00 PM	.	alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	95.2	95.2	31.4 ug/L	U	U	
EFH (C15 - C20)	EFHD (C15	95.2	95.2	31.4 ug/L	U	U	
EFH (C21 - C30)	EFHD (C21	95.2	95.2	31.4 ug/L	U	U	
EFH (C8 - C11)	EFHD (C8-	95.2	95.2	31.4 ug/L	U	U	

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DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 233444

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: 233444

Project Manager: Dixie Hambrick

Matrix: water/soil

QC Level: V

No. of Samples: 28

No. of Reanalyses/Dilutions: 0 Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
B1BS0081AS001	233444015	N/A	Soil	7/14/2009 12:29:00 PM	8015B
EBQW2220	233444016	G341-590- 6B	Water	7/14/2009 1:16:00 PM	1613B, 6020 8015B
ENBS0089S001	23344001	G341-590- 1B	Soil	7/14/2009 12:17:00 PM	1613B
ENBS0090S001	233444002	G341-590- 2B	Soil	7/14/2009 12:22:00 PM	1613B
ENBS0091S001	233444003	G341-590- 3B	Soil	7/14/2009 12:14:00 PM	1613B
ENBS0094S001	233444004	N/A	Soil	7/14/2009 11:23:00 AM	6020
ENBS0095S001	233444005	N/A	Soil	7/14/2009 11:30:00 AM	6020
ENBS0096S001	233444006	N/A	Soil	7/14/2009 11:38:00 AM	6020
LFBS0245S001	233444017	N/A	Soil	7/14/2009 11:28:00 AM	6020
LFBS0246S001	233444018	N/A	Soil	7/14/2009 11:37:00 AM	6020
FBQW2235	233444019	G341-590- 7B	Water	7/14/2009 1:20:00 PM	1613B, 6020 8015B
HZBS0129S001	233444007	N/A	Soil	7/14/2009 8:17:00 AM	6020
HZBS0130S001	233444020	N/A	Soil	7/14/2009 8:22:00 AM	6020
HZBS0131S001	233444008	N/A	Soil	7/14/2009 8:35:00 AM	6020
HZBS0132S001	233444021	N/A	Soil	7/14/2009 8:31:00 AM	6020
HZBS0133S001	233444009	N/A	Soil	7/14/2009 8:47:00 AM	6020
HZBS0134S001	233444022	N/A	Soil	7/14/2009 8:39:00 AM	6020
HZBS0135S001	233444010	N/A	Soil	7/14/2009 9:00:00 AM	6020
HZBS0136S001	233444023	N/A	Soil	7/14/2009 8:55:00 AM	6020
HZBS0137S001	233444011	N/A	Soil	7/14/2009 9:20:00 AM	6020
HZBS0138S001	233444024	N/A	Soil	7/14/2009 9:02:00 AM	6020
HZBS0139S001	233444012	N/A	Soil	7/14/2009 9:37:00 AM	6020
HZBS0140S001	233444025	N/A	Soil	7/14/2009 9:17:00 AM	6020
HZBS0141S001	233444013	N/A	Soil	7/14/2009 9:50:00 AM	6020
HZBS0142S001	233444026	N/A	Soil	7/14/2009 9:32:00 AM	6020
HZBS0143S001	233444014	N/A	Soil	7/14/2009 10:18:00 AM	6020
HZBS0144S001	233444027	N/A	Soil	7/14/2009 9:37:00 AM	6020
HZBS0145S001	233444028	N/A	Soil	7/14/2009 9:47:00 AM	6020

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DATA VALIDATION REPORT

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°C ±2°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.

Project:

Data Qualifier Reference Table

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.
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

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- 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.

Project:

Qualification Code Reference Table

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

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 technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available

Project:

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.

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III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: P. Meeks

Date Reviewed: August 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 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: OCDD and 2,3,7,8-TCDF were detected in the soil method blank at 0.462 pg/g and 0.282 pg/g, respectively. OCDD was not detected in the samples at concentration ≤5× the method blank detect or at concentrations below the reporting limit. 2,3,7,8-TCDF detected in the soil samples was qualified as nondetected, "U," at the reporting limits. Total TCDF detected in the soil samples was qualified as estimated, "J," as only a portion of the total was associated with the method blank detect. There were no other no target compound detects above the EDL in the method blanks.
- 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 laboratoryestablished control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on ENBS0091S001. All recoveries and 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: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG.
 There were no detects above the EDL in either sample.
 - o Field Duplicates: There were no field duplicate samples identified for this SDG.

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 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.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a
 Level V validation. For individual isomers identified as EMPCs, the results were qualified
 as estimated nondetects, "UJ." Totals reported as EMPCs were qualified as estimated,
 "J," as only a portion of the total was identified as an EMPC. The laboratory calculated
 and reported compound-specific detection limits. Any detect below the laboratory lower
 calibration level was qualified as estimated, "J." Nondetects are valid to the estimated
 detection limit (EDL).

B. EPA METHODS 6020—Metals

Reviewed By: P. Meeks

Date Reviewed: January 21, 2010

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the MEC^{\times} 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 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 HZBS0135S001 for all analytes and on ENBS0094S001 for arsenic, cadmium, copper, lead, and zinc. All RPDs were within the laboratory-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZBS0135S001 for all analytes and on ENBS0094S001 for arsenic, cadmium, copper, lead, and zinc. Lead was recovered below the control limit in the MSD of HZBS0135S001;

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therefore, lead detected in all soil samples except ENBS0094S001 was qualified as estimated, "J." All remaining recoveries and all RPDs were within laboratory-established QC limits.

- Serial Dilution: Serial dilution analyses were performed on HZBS0135S001 and FBQW2235 for all analytes and on ENBS0094S001 for arsenic, cadmium, copper, lead, and zinc. The cobalt, copper, and lead %Ds exceeded the control limit for ENBS0094S001; therefore, cobalt, copper, and lead detected in all soil samples except HZBS0135S001 were qualified as estimated, "J." All remaining %Ds were within laboratory-established QC limits
- 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. Due to matrix interference, copper in several soil samples was analyzed at a 10x dilution. The remaining soil analytes were reported from the laboratory's standard 2x dilution. 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: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG. There were no detects above the MDL in either sample.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 8015B—Extractable Total Fuel Hydrocarbons (EFHs)

Reviewed By: P. Meeks

Date Reviewed: August 5, 2009

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the MEC^{\times} Data Validation Procedure for Total Fuel Hydrocarbons (DVP-8, Rev. 0), EPA Method 8015B, and the National Functional Guidelines for Organic Data Review (10/99).

 Holding Times: Extraction and analytical holding times were met. The aqueous samples were extracted within seven days of collection and the soil samples were extracted within 14 days of collection. All samples were analyzed within 40 days of extraction.

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- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Recoveries and the aqueous RPDs were within laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on B1BS0081AS001. The recoveries and RPD 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 Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: FBQW2235 was the field blank and EBQW2220 was the equipment rinsate associated with the samples in this SDG. There were no detects above the MDL in either sample.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Compound Identification: Review is not applicable at a Level V validation. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 233444

Sample Name	EBQW2220		Matrix '	Гуре: Water	Res	imary Result	
Lab Sample Name:	G341-590-6B	Sample Date: 7/14/2009 1:16:00 PM			•	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.00326	0.0475	0.00326 ng/L	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.00184	0.0475	0.00184 ng/L	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.00248	0.0475	0.00248 ng/L	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.00201	0.0475	0.00201 ng/L	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.00131	0.0475	0.00131 ng/L	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.00196	0.0475	0.00196 ng/L	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.00137	0.0475	0.00137 ng/L	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.002	0.0475	0.002 ng/L	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.00161	0.0475	0.00161 ng/L	U	U	
1,2,3,7,8-PeCDD	40321764	0.00165	0.0475	0.00165 ng/L	U	U	
1,2,3,7,8-PeCDF	57117416	0.00104	0.0475	0.00104 ng/L	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0014	0.0475	0.0014 ng/L	U	U	
2,3,4,7,8-PeCDF	57117314	0.000989	0.0475	0.000989 ng/L	U	U	
2,3,7,8-TCDD	1746016	0.00364	0.00951	0.00364 ng/L	U	U	
2,3,7,8-TCDF	51207319	0.0019	0.00951	0.0019 ng/L	U	U	
OCDD	3268879	0.00616	0.0951	0.00616 ng/L	U	U	
OCDF	39001020	0.00477	0.0951	0.00477 ng/L	U	U	
Total HpCDDs	37871004	0.00326	0.0475	0.00326 ng/L	U	U	
Total HpCDFs	38998753	0.00213	0.0475	0.00213 ng/L	U	U	
Total HxCDDs	34465468	0.00199	0.0475	0.00199 ng/L	U	U	
Total HxCDFs	55684941	0.00142	0.0475	0.00142 ng/L	U	U	
Total PeCDDs	36088229	0.00165	0.0475	0.00165 ng/L	U	U	
Total PeCDFs	30402154	0.00102	0.0475	0.00102 ng/L	U	U	
Total TCDDs	41903575	0.00364	0.00951	0.00364 ng/L	U	U	
Total TCDFs	55722275	0.0019	0.00951	0.0019 ng/L	U	U	

Sample Name	ENBS0089S001		Matrix 7	Гуре: Soil	Result Type: Primary Result			
Lab Sample Name:	G341-590-1B	Sample 1	Date: 7	/14/2009 12:17:00 PI	M V	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	25.9	4.21	0.283 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	1.9	4.21	0.166 pg/g	A	J		
1,2,3,4,7,8,9-HpCDF	55673897	0.218	4.21	0.218 pg/g	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.741	4.21	0.238 pg/g	A	J		
1,2,3,4,7,8-HxCDF	70648269	0.217	4.21	0.124 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	1.14	4.21	0.237 pg/g	A	J		
1,2,3,6,7,8-HxCDF	57117449	0.215	4.21	0.215 pg/g	EMPC	UJ	*III	
1,2,3,7,8,9-HxCDD	19408743	1.22	4.21	1.22 pg/g	EMPC	UJ	*III	
1,2,3,7,8,9-HxCDF	72918219	0.172	4.21	0.172 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.48	4.21	0.136 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.148	4.21	0.0916 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.205	4.21	0.134 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.3	4.21	0.0966 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.291	0.842	0.291 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.842	0.842	0.249 pg/g	A	U	B, result changed from 0.589	
OCDD	3268879	112	8.42	0.435 pg/g				
OCDF	39001020	4.64	8.42	0.355 pg/g	A	J		
Total HpCDDs	37871004	63.5	4.21	0.283 pg/g				
Total HpCDFs	38998753	5.17	4.21	0.19 pg/g				
Total HxCDDs	34465468	17.5	4.21	0.238 pg/g		J	*111	
Total HxCDFs	55684941	3.08	4.21	0.14 pg/g	A	J	*111	
Total PeCDDs	36088229	4.11	4.21	0.136 pg/g	A	J		
Total PeCDFs	30402154	2.99	4.21	0.0939 pg/g	A	J		
Total TCDDs	41903575	0.364	0.842	0.291 pg/g	A	J		
Total TCDFs	55722275	2.59	0.842	0.249 pg/g		J	В	

Sample Name	ENBS0090S001		Matrix 1	Гуре: Soil	Result Type: Primary Result			
Lab Sample Name:	G341-590-2B	Sample l	Date: 7	/14/2009 12:22:00 PI	M V	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	21.8	4.32	0.278 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	2.97	4.32	0.165 pg/g	A	J		
1,2,3,4,7,8,9-HpCDF	55673897	0.225	4.32	0.224 pg/g	A	J		
1,2,3,4,7,8-HxCDD	39227286	0.669	4.32	0.275 pg/g	A	J		
1,2,3,4,7,8-HxCDF	70648269	0.342	4.32	0.162 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	0.894	4.32	0.289 pg/g	A	J		
1,2,3,6,7,8-HxCDF	57117449	0.329	4.32	0.15 pg/g	A	J		
1,2,3,7,8,9-HxCDD	19408743	0.866	4.32	0.284 pg/g	A	J		
1,2,3,7,8,9-HxCDF	72918219	0.187	4.32	0.187 pg/g	U	U		
1,2,3,7,8-PeCDD	40321764	0.316	4.32	0.188 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.284	4.32	0.0949 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.52	4.32	0.158 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.716	4.32	0.093 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.297	0.865	0.297 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.864	0.864	0.336 pg/g	A	U	B, result changed from 0.806	
OCDD	3268879	126	8.65	0.481 pg/g				
OCDF	39001020	9.04	8.65	0.419 pg/g				
Total HpCDDs	37871004	57.6	4.32	0.278 pg/g				
Total HpCDFs	38998753	8.38	4.32	0.191 pg/g				
Total HxCDDs	34465468	16.2	4.32	0.283 pg/g				
Fotal HxCDFs	55684941	5.82	4.32	0.164 pg/g				
Γotal PeCDDs	36088229	2.55	4.32	0.379 pg/g	A	J		
Total PeCDFs	30402154	7.52	4.32	0.101 pg/g				
Total TCDDs	41903575	0.297	0.865	0.297 pg/g	U	U		
Total TCDFs	55722275	5.96	0.865	0.247 pg/g		J	В	

Sample Name	ENBS0091S001		Matrix 7	Гуре: Soil	Result Type: Primary Result			
Lab Sample Name:	G341-590-3B	Sample 1	Date: 7	/14/2009 12:14:00 PI	M V	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	24.5	4.38	0.263 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	3.34	4.38	0.185 pg/g	A	J		
1,2,3,4,7,8,9-HpCDF	55673897	0.296	4.38	0.27 pg/g	A	J		
1,2,3,4,7,8-HxCDD	39227286	0.34	4.38	0.34 pg/g	EMPC	UJ	*Ш	
1,2,3,4,7,8-HxCDF	70648269	0.303	4.38	0.155 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	1.19	4.38	0.208 pg/g	A	J		
1,2,3,6,7,8-HxCDF	57117449	0.305	4.38	0.153 pg/g	A	J		
1,2,3,7,8,9-HxCDD	19408743	1.13	4.38	0.204 pg/g	A	J		
1,2,3,7,8,9-HxCDF	72918219	0.219	4.38	0.189 pg/g	A	J		
1,2,3,7,8-PeCDD	40321764	0.31	4.38	0.146 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.2	4.38	0.141 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.403	4.38	0.153 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.527	4.38	0.155 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.275	0.875	0.275 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.875	0.875	0.236 pg/g	A	U	B, result changed from 0.683	
OCDD	3268879	170	8.75	0.422 pg/g				
OCDF	39001020	15.8	8.75	0.401 pg/g				
Total HpCDDs	37871004	52.4	4.38	0.263 pg/g				
Total HpCDFs	38998753	10.4	4.38	0.223 pg/g				
Total HxCDDs	34465468	9.13	4.38	0.204 pg/g		J	*III	
Total HxCDFs	55684941	5.48	4.38	0.161 pg/g				
Total PeCDDs	36088229	1.04	4.38	0.317 pg/g	A	J		
Total PeCDFs	30402154	5.24	4.38	0.148 pg/g				
Total TCDDs	41903575	0.275	0.875	0.275 pg/g	U	U		
Total TCDFs	55722275	4.46	0.875	0.236 pg/g		J	В	

Sample Name	FBQW2235		Matrix Type: Water		Resi	imary Result		
Lab Sample Name:	G341-590-7B	Sample	Date: 7	/14/2009 1:20:00 PM	•	vel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	0.00276	0.0477	0.00276 ng/L	U	U		
1,2,3,4,6,7,8-HpCDF	67562394	0.00139	0.0477	0.00139 ng/L	U	U		
1,2,3,4,7,8,9-HpCDF	55673897	0.00205	0.0477	0.00205 ng/L	U	U		
1,2,3,4,7,8-HxCDD	39227286	0.00173	0.0477	0.00173 ng/L	U	U		
1,2,3,4,7,8-HxCDF	70648269	0.00114	0.0477	0.00114 ng/L	U	U		
1,2,3,6,7,8-HxCDD	57653857	0.00179	0.0477	0.00179 ng/L	U	U		
1,2,3,6,7,8-HxCDF	57117449	0.00119	0.0477	0.00119 ng/L	U	U		
1,2,3,7,8,9-HxCDD	19408743	0.00177	0.0477	0.00177 ng/L	U	U		
1,2,3,7,8,9-HxCDF	72918219	0.00157	0.0477	0.00157 ng/L	U	U		
1,2,3,7,8-PeCDD	40321764	0.00148	0.0477	0.00148 ng/L	U	U		
1,2,3,7,8-PeCDF	57117416	0.000941	0.0477	0.000941 ng/L	U	U		
2,3,4,6,7,8-HxCDF	60851345	0.00118	0.0477	0.00118 ng/L	U	U		
2,3,4,7,8-PeCDF	57117314	0.000899	0.0477	0.000899 ng/L	U	U		
2,3,7,8-TCDD	1746016	0.00249	0.00954	0.00249 ng/L	U	U		
2,3,7,8-TCDF	51207319	0.00147	0.00954	0.00147 ng/L	U	U		
OCDD	3268879	0.00453	0.0954	0.00453 ng/L	U	U		
OCDF	39001020	0.00343	0.0954	0.00343 ng/L	U	U		
Total HpCDDs	37871004	0.00276	0.0477	0.00276 ng/L	U	U		
Total HpCDFs	38998753	0.00169	0.0477	0.00169 ng/L	U	U		
Total HxCDDs	34465468	0.00177	0.0477	0.00177 ng/L	U	U		
Total HxCDFs	55684941	0.00126	0.0477	0.00126 ng/L	U	U		
Total PeCDDs	36088229	0.00148	0.0477	0.00148 ng/L	U	U		
Total PeCDFs	30402154	0.000897	0.0477	0.000897 ng/L	U	U		
Total TCDDs	41903575	0.00249	0.00954	0.00249 ng/L	U	U		
Total TCDFs	55722275	0.00147	0.00954	0.00147 ng/L	U	U		

Sample Name	EBQW2220		Matrix '	Type: Water	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233444016	Sample	Date: 7	/14/2009 1:16:00 PM	•	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Arsenic	7440382	1.6	5	1.6 ug/L	U	U		
Cadmium	7440439	0.11	1	0.11 ug/L	U	U		
Copper	7440508	0.33	1	0.33 ug/L	U	U		
Lead	7439921	0.5	2	0.5 ug/L	U	U		
Zinc	7440666	3.44	10	3 ug/L	J	J		
Sample Name	ENBS0094S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233444004	Sample Date: 7/14/2009 11:23:00 AM		M v	Validation Le	vel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	52.2	0.395	0.0986 mg/kg	EN	J	A	
Sample Name	ENBS0095S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233444005	Sample	Date: 7	/14/2009 11:30:00 A	M V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	24	0.403	0.101 mg/kg	EN	J	Q, A	
Sample Name	ENBS0096S001		Matrix '	Type: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233444006	Sample	Date: 7	/14/2009 11:38:00 A	M v	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	39.6	0.398	0.0995 mg/kg	EN	J	Q, A	
Sample Name	FBQW2235		Matrix '	Type: Water	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233444019	Sample	Date: 7	/14/2009 1:20:00 PM	•	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Arsenic	7440382	1.6	5	1.6 ug/L	U	U		
Cadmium	7440439	0.11	1	0.11 ug/L	U	U		
Copper	7440508	0.33	1	0.33 ug/L	U	U		
Lead	7439921	0.5	2	0.5 ug/L	U	U		
Zinc	7440666	3	10	3 ug/L	U	U		
	TTTT 00100001	_	Matrix '	Type: Soil	Res	ult Type: Pr	imary Result	
Sample Name	HZBS0129S001							
Sample Name Lab Sample Name:	HZBS0129S001 233444007	Sample		/14/2009 8:17:00 AM	1 1	Validation Le	vel: V	
-		Sample Result Value		/14/2009 8:17:00 AM MDL Result Units	Lab Qualifier		vel: V Validation Notes	

Sample Name	HZBS0130S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444020	Sample	Date: 7	/14/2009 8:22:00 AM	ı ı	/alidation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab		Validation Notes
Lead	7439921	9.12	0.405	0.101 mg/kg	EN	J	Q, A
Sample Name	HZBS0131S001		Matrix '	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444008	Sample	Date: 7	/14/2009 8:35:00 AM	I ,	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	39.3	0.394	0.0984 mg/kg	EN	J	Q, A
Sample Name	HZBS0132S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444021	Sample	Date: 7	/14/2009 8:31:00 AM	I 3	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	33.7	0.393	0.0984 mg/kg	EN	J	Q, A
Sample Name	HZBS0133S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444009	Sample	Date: 7	/14/2009 8:47:00 AM	I ,	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	40.7	0.401	0.1 mg/kg	EN	J	Q, A
Sample Name	HZBS0134S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444022	Sample	Date: 7	/14/2009 8:39:00 AM	I ,	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	48.6	0.399	0.0997 mg/kg	EN	J	Q, A
Sample Name	HZBS0135S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444010	Sample	Date: 7	/14/2009 9:00:00 AM	ı ,	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	12.8	0.4	0.1 mg/kg	EN	J	Q
Sample Name	HZBS0136S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	233444023	Sample	Date: 7	/14/2009 8:55:00 AM	ı ,	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
				C 22200	Quantitei	Quantities	

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Sample Name	HZBS0137S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444011	Sample	Date: 7	/14/2009 9:20:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	15.7	0.39	0.0975 mg/kg	EN	J	Q, A	
Sample Name	HZBS0138S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444024	Sample	Date: 7	/14/2009 9:02:00 AM	.	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	51.4	0.406	0.102 mg/kg	EN	J	Q, A	
Sample Name	HZBS0139S001		Matrix '	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444012	Sample	Date: 7	/14/2009 9:37:00 AM	.	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	19.9	0.393	0.0983 mg/kg	EN	J	Q, A	
Sample Name	HZBS0140S001		Matrix '	Type: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444025	Sample	Date: 7	/14/2009 9:17:00 AM	.	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	16.5	0.393	0.0983 mg/kg	EN	J	Q, A	
Sample Name	HZBS0141S001		Matrix '	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444013	Sample	Date: 7	/14/2009 9:50:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier		Validation Notes	
Lead	7439921	21.1	0.408	0.102 mg/kg	EN	J	Q, A	
Sample Name	HZBS0142S001		Matrix '	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	233444026	Sample	Date: 7	/14/2009 9:32:00 AM	,	Validation Le	vel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	18	0.397	0.0992 mg/kg	EN	J	Q, A	
					-	L TO D		
Sample Name	HZBS0143S001		Matrix '	Type: Soil	Rest	ult Type: Pr	imary Result	
	HZBS0143S001 233444014	Sample		Type: Soil /14/2009 10:18:00 AN		ult Type: Pr Validation Le		
Sample Name		Sample Result Value		• •		/alidation Le		

Sample Name	HZBS0144S001		Matrix 7	Гуре: Soil	Result Type: Primary Result				
Lab Sample Name:	233444027	Sample	Date: 7	/14/2009 9:37:00 AM	•	Validation Level: V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
Arsenic	7440382	7.89	1.01	0.202 mg/kg					
Cadmium	7440439	0.172	0.202	0.0202 mg/kg	J	J			
opper	7440508	16	1.01	0.333 mg/kg	Е	J	A		
ead	7439921	9.2	0.404	0.101 mg/kg	EN	J	Q, A		
Sample Name	HZBS0145S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result		
Lab Sample Name:	233444028	Sample	Date: 7	/14/2009 9:47:00 AM	•	Validation Le	vel: V		
nalyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
admium	7440439	0.492	0.201	0.0201 mg/kg					
ead	7439921	17.3	0.403	0.101 mg/kg	EN	J	Q, A		
nc	7440666	65.1	2.01	0.403 mg/kg					
ample Name	LFBS0245S001	Matrix Type: Soil			Resi	ult Type: Pr	imary Result		
ab Sample Name:	233444017	Sample Date: 7/14/2009 11:28:00 AM			M Validation Level: V				
nalyte	CAS No	Result	RL	MDL Result	Lab	Validation	Validation Notes		
		Value		Units	Qualifier	Qualifier			
senic	7440382	Value 9.07	1.02	Units 0.204 mg/kg	Qualifier				
	7440382 7440393		1.02		Qualifier				
rium		9.07		0.204 mg/kg	Qualifier				
rium dmium	7440393	9.07 76.7	0.408	0.204 mg/kg 0.102 mg/kg	Qualifier				
nrium ndmium nromium	7440393 7440439	9.07 76.7 0.221	0.408	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg	Qualifier		A		
rium dmium romium balt	7440393 7440439 7440473	9.07 76.7 0.221 22.8	0.408 0.204 3.06	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg	Qualifier E	Qualifier	A A		
rium dmium romium balt pper	7440393 7440439 7440473 7440484	9.07 76.7 0.221 22.8 7.79	0.408 0.204 3.06 1.02	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg		Qualifier			
rium dmium romium balt pper	7440393 7440439 7440473 7440484 7440508	9.07 76.7 0.221 22.8 7.79 14.9	0.408 0.204 3.06 1.02 1.02	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg	E	Qualifier J J	A		
rium dmium romium balt pper ad	7440393 7440439 7440473 7440484 7440508 7439921	9.07 76.7 0.221 22.8 7.79 14.9 21.8	0.408 0.204 3.06 1.02 1.02 0.408	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg 0.102 mg/kg	E	Qualifier J J	A		
rium dmium romium balt pper ad blybdenum	7440393 7440439 7440473 7440484 7440508 7439921 7439987	9.07 76.7 0.221 22.8 7.79 14.9 21.8 0.579	0.408 0.204 3.06 1.02 1.02 0.408 0.204	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg 0.102 mg/kg 0.0613 mg/kg	E	Qualifier J J	A		
rium dmium balt ppper ad plybdenum ckel	7440393 7440439 7440473 7440484 7440508 7439921 7439987 7440020	9.07 76.7 0.221 22.8 7.79 14.9 21.8 0.579 14.5	0.408 0.204 3.06 1.02 1.02 0.408 0.204 2.04	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg 0.102 mg/kg 0.0613 mg/kg 0.511 mg/kg	E EN	J J	A		
rsenic arium admium nromium obalt opper ead olybdenum ickel elenium	7440393 7440439 7440473 7440484 7440508 7439921 7439987 7440020 7782492	9.07 76.7 0.221 22.8 7.79 14.9 21.8 0.579 14.5 0.511	0.408 0.204 3.06 1.02 1.02 0.408 0.204 2.04 1.02	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg 0.102 mg/kg 0.0613 mg/kg 0.511 mg/kg 0.511 mg/kg	E EN U	J J U	A		
nrium ndmium nromium obalt opper ead olybdenum ckel elenium	7440393 7440439 7440473 7440484 7440508 7439921 7439987 7440020 7782492 7440224	9.07 76.7 0.221 22.8 7.79 14.9 21.8 0.579 14.5 0.511	0.408 0.204 3.06 1.02 1.02 0.408 0.204 2.04 1.02 0.204	0.204 mg/kg 0.102 mg/kg 0.0204 mg/kg 1.02 mg/kg 0.306 mg/kg 0.337 mg/kg 0.102 mg/kg 0.0613 mg/kg 0.511 mg/kg 0.511 mg/kg 0.0408 mg/kg	E EN U	J J U	A		

Analysis Method 6020

Sample Name	LFBS0246S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233444018	Sample	Date: 7	/14/2009 11:37:00 A	M v	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	4.97	1.16	0.233 mg/kg			
Barium	7440393	89	0.465	0.116 mg/kg			
Beryllium	7440417	0.458	0.116	0.0233 mg/kg			
Cadmium	7440439	0.651	0.233	0.0233 mg/kg			
Chromium	7440473	16.3	0.698	0.233 mg/kg			
Cobalt	7440484	9.72	0.233	0.0698 mg/kg		J	A
Copper	7440508	10.3	0.233	0.0767 mg/kg	Е	J	A
Lead	7439921	54.2	0.465	0.116 mg/kg	EN	J	Q, A
Molybdenum	7439987	0.498	0.233	0.0698 mg/kg			
Nickel	7440020	13.7	0.465	0.116 mg/kg			
Selenium	7782492	0.581	1.16	0.581 mg/kg	U	U	
Silver	7440224	0.0514	0.233	0.0465 mg/kg	J	J	
Thallium	7440280	0.337	0.233	0.0698 mg/kg			
Zinc	7440666	220	2.33	0.465 mg/kg			

Analysis Method 8015B

Sample Name	B1BS0081AS00)1	Matrix 7	Type: Soil	Rest	ult Type: Pri	imary Result
Lab Sample Name:	233444015	Sample	Date: 7/	/14/2009 12:29:00 PM	м у	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	3.62	3.62	1.19 mg/kg	U	U	
EFH (C15 - C20)	EFHD (C15	3.62	3.62	1.19 mg/kg	U	U	
EFH (C21 - C30)	EFHD (C21	13.6	3.62	1.19 mg/kg			
EFH (C8 - C11)	EFHD (C8-	3.62	3.62	1.19 mg/kg	U	U	
Sample Name	EBQW2220		Matrix 7	Type: Water	Resi	ult Type: Pri	imary Result
Lab Sample Name:	233444016	Sample	Date: 7/	/14/2009 1:16:00 PM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	95.2	95.2	31.4 ug/L	U	U	
EFH (C15 - C20)	EFHD (C15	95.2	95.2	31.4 ug/L	U	U	
EFH (C21 - C30)	EFHD (C21	95.2	95.2	31.4 ug/L	U	U	
EFH (C8 - C11)	EFHD (C8-	95.2	95.2	31.4 ug/L	U	U	
Sample Name	FBQW2235		Matrix 7	Type: Water	Resi	ult Type: Pri	imary Result
Lab Sample Name:	233444019	Sample	Date: 7/	/14/2009 1:20:00 PM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
EFH (C12 - C14)	EFHD (C12	95.2	95.2	31.4 ug/L	U	U	
EFH (C15 - C20)	EFHD (C15	95.2	95.2	31.4 ug/L	U	U	
EFH (C21 - C30)	EFHD (C21	95.2	95.2	31.4 ug/L	U	U	
EFH (C8 - C11)	EFHD (C8-	95.2	95.2	31.4 ug/L	U	U	

Chain of Custody and Supporting Documentation

CHAIN OF CUSTODY RECORD

Project Information Project Information Project Information Project Information Project Information Remarks Rema	1	(BUEING			꿄	AIN OF	CHAIN OF CUSTODY RECORD	JY RE	000	20				# 000	#		MWHMM20090715_00
Collect Information Project Information Project Information Sampling Event: SRA Sampling, June 2009 Collector: M. Milman-Barris Boeing PM: Sampling Event: SRA Sampling, June 2009 Collector: M. Milman-Barris Boeing PM: Sampling Event: SRA Sampling, June 2009 Collector: M. Milman-Barris Boeing PM: Sampling Event: SRA Sampling, June 2009 Collector: Sampling Event: SRA Sampling, June 2009 Collector:									4	356	7					Page: 1 of	
SSFL Collector Name Sampling Event ISRA Sampling June 2009 Contact # ISRA Sampling Lore 2009 C	Custome	er Information	Pro	ject Inform	ation			Proje	ct Info	rmati	uc	•					** * ** * * * * * * * * * * * * * * *
Non-Reesfeld	Site:	SSFL	Clie	nt Name:	Boeing			Collec	_	M. Miln	nan-Ba	ris				30eing PM:	
Sarah Von Raesfeld Project Number: 1891614.054521 Requirement of the contact #1 (825) 627-4627 Red Contact #2 (825) 627-4627 Red Contact #2 (825) 627-4627 Red Contact #2 (825) 627-4627 Red Contact #3 (825) 627-4627 Red Contact #4 (826) 825-0503 Red Contact #4 (826) 82	Company	: MWH	San	npling Event:	-	ampling, J	une 2009	Conta	;;								
Solite Contact Hanager: Alex Flisch Alex F	Report to		Pro	ect Number:	-	4.054521					æ	sednes	ted An	alyses	1		Instructions/TAT
Sean Fried Contact: Shelpy Valenzue Shelpy	Address:		Pro	ect Manager	_	schl											
Valent Creek		Suite 600	Md	Phone #:	(925) 6	27-4627		_									Numerical values for
CA		Walnut Creek	Fiel	d Contact:	Shelby	Valenzuel										_	analyses equate to turn around time in days
Sean, Efflet@mwhglobal.com Lab Address: Calculational Contract Lab Contract Lab Contract Lab Address: Charleston, SC 29407 Charleston, SC 2940		CA	Fiel	d Contact #:	(626) 2	55-0503								_			H - Hold
Sarah Vontraes field@mwhglobal.com Lab Contact: Jackle Trudell Alexan Leffler@mwhglobal.com Lab Address: 2040 Savage Road Accordances 2040 Savage Road Accordances 2040 Savage Road Accordances		94596	Lab	Name:	GEL LE	boratories	LLC									_	EH - Extract/Extrude & Hold
Lab Address: 2040 Savage Road Lab Address: 2040 Savage Road Lab Address: 2040 Savage Road Lab Phone: Charleston, SC 29407	Email:	sarah.vonraesfeld@mwhglo	_	Contact:	Jackie	Trudell							M	Meta	М	_	 1
Charleston, SC 29407 Lab Phone:		sean.leffler@mwhglobal.cor		Address:	2040 S	avage Roa	ъ			Meta					etals		Note: Values in the cells
Lab Phone:			-		Charles	ton, SC 29	407			ls 60					6020		bellow are Turn Around
Matrix Date Time Containers Ro. of soil No. of soil Inc. of s			Lab	Phone:	(843) 7	69-7388				20 C) Wat		60
Water 7/15/2009 13:41 3 H 10 <td>Sample N</td> <td>lame</td> <td>Mat</td> <td></td> <td>Date</td> <td>Time</td> <td>No. of Containers</td> <td></td> <td></td> <td>d Water</td> <td></td> <td></td> <td></td> <td></td> <td>er Lead</td> <td></td> <td>Comments</td>	Sample N	lame	Mat		Date	Time	No. of Containers			d Water					er Lead		Comments
Soil 7/15/2009 12:53 1 10 <td>EBQW222</td> <td></td> <td>Water</td> <td>./2</td> <td>15/2009</td> <td>13:41</td> <td>က</td> <td></td> <td>I</td> <td>┼</td> <td>⊢</td> <td>_</td> <td></td> <td>10</td> <td>9</td> <td></td> <td></td>	EBQW222		Water	./2	15/2009	13:41	က		I	┼	⊢	_		10	9		
Soil 7/15/2009 12:42 1 10 <td>HZBS0146</td> <td>S001</td> <td>Soil</td> <td>12</td> <td>15/2009</td> <td>12:53</td> <td>-</td> <td>5</td> <td>_</td> <td></td> <td>9</td> <td>╀</td> <td>₩</td> <td>0</td> <td></td> <td></td> <td></td>	HZBS0146	S001	Soil	12	15/2009	12:53	-	5	_		9	╀	₩	0			
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Soil 7/15/2009 12:27 1 10 <td>HZBS0147</td> <td>S002</td> <td>Soil</td> <td>11.</td> <td>15/2009</td> <td>12:44</td> <td>-</td> <td>Ξ</td> <td></td> <td></td> <td>Ξ</td> <td>\vdash</td> <td>-</td> <td>T</td> <td></td> <td></td> <td></td>	HZBS0147	S002	Soil	11.	15/2009	12:44	-	Ξ			Ξ	\vdash	-	T			
Soil 7/16/2009 12:34 1 H <td>HZBS0148</td> <td>S001</td> <td>Soil</td> <td>//</td> <td>15/2009</td> <td>12:27</td> <td>1</td> <td>10</td> <td></td> <td></td> <td>5</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>	HZBS0148	S001	Soil	//	15/2009	12:27	1	10			5	-	-				
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	HZBS0150	S001	Soil	12	15/2009	13:16	-	10			\vdash			0			

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Margart LiMit-15- 7/15/09 R.m. &	10/s1/t	R.m. Stellini	7/16/05				
Company: MWH	Time: (6:00	company (Time: 845	Company:	Time:	Company:	Time:
Comments:					Geo	Geotracker EDF	
					Data	Data Validation Package 🗸 Level IV	Level IV

SAMPLE RECEIPT & REVIEW FORM

Client: / 4 C-1			SDG/ARCOC/Work Order; 23-557
Client: 35F1		_	Date Received: 7/16/29
Received By: RMS	l w		*If Counts > x2 area background on samples not marked "radioactive", contact
Suspected Hazard Information	Yes	ž	the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		\	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		_	40cgn
COC/Samples marked containing PCBs?	_	4	VDV#
Shipped as a DOT Hazardous?	<u> </u>	<u> </u>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<u> </u>		
Sample Receipt Criteria	Yes	NA	Comments/Qualifiers (Required for Non-Conforming Items) Circle Applicable:
Shipping containers received intact and sealed?	/		seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within 0 ≤ 6 deg. C?	1		Preservation Method: fice base blue ice dry ice none other (describe)
Chain of custody documents included with shipment?	/		Circle Applicable:
4 Sample containers intact and sealed?	/		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#:
VOA vials free of headspace (defined a < 6mm bubble)?	s	/	Sample ID's and containers affected: (If yes, immediately deliver to Volatiles laboratory)
7 Are Encore containers present?	Ž.		Id's and tests affected:
8 Samples received within holding time?	1		Sample ID's and containers affected:
9 Sample ID's on COC match ID's on bottles?	1		Sample ID's and contained affected:
Date & time on COC match date & time on bottles?	e /		Sample ID's affected:
Number of containers received match number indicated on COC?	1		Sample ID's affected.
12 COC form is properly signed in relinquished/received sections?	1		
Comments: Fx: 9457 3158 0683			•
PM (or PMA) review: In	itials		JT Date 7 [16/09

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Sustome	Customer Information	-	Project Illionii	nation			rioject inioimanoi										
Site:	SSFL	5	Client Name:	Boeing			Collector:	tor:	B. Martasin	tasin				Boein	Boeing PM:		
Company: MWH	MWH	8	Sampling Event:		ISRA Sampling, Feb 2009	ab 2009	Contact #:	:#: ::									
Report to:	Report to: Sarah Von Raesfeld	P	Project Number:	_	1891614.050104						Requested Analyses	ted An	alyses		h	프	Instructions/TAT
Address:	Address: 2121 N. California Blvd	Ā	Project Manager:	r: Alex Fischi	schl				_	_					_		Legend:
	Sulte 600	Ē	PM Phone #:	(925)	(925) 627-4627			_			_	_				2 6	Numerical values for analyses equate to turn
	Wainut Creek	Ē	Field Contact:	Brlan	Brian Martasin			_					_		_	<u>e</u>	around time in days
	CA	Ē	Field Contact #:	-	(323) 304-4969											±₩	H - Hold EH - Extract/Extrude &
	94596	2	Lab Name:	명	GEL Laboratories, LLC	LLC										¥	무
Email:	sarah.vonraesfeld@mwhglobal.c	al.c	Lab Contact:	Chery	Cheryl Jones				Die								
	sean.leffler@mwhglobal.com		Lab Address:	2040	2040 Savage Road	P	D22		vie t							23	Note: Values in the cells
		\vdash		Charle	Charleston, SC 29407	3407	16 N		u 16		_		_			3 ⊨	Times.
		ت	Lab Phone:	(843)	(843) 769-7388		loistu		130								
Sample Name	Name	2	Matrix	Date	Time	No. of Containers	re Soil	B - Soil	Water							Ö	Comments
		lio o		4/9/2009	14:35	2	Ξ	I			_						
CNBSC1315001	TUDGE	3	1				Ţ	f			ŀ		ŀ				
EBQW2207		Water		4/9/2009	8:40	2		-	_	1	+	1	+		+	1	
HZBS0105S001	55001	Soil		4/9/2009	8:40	-	Ξ	₌	4	1	+	1	+	1	+	1	
HZBS0106S001	65001	Soll		4/9/2009	8:20	-	I	=	\dashv	1	-	1	+		+	1	
HZBS0106S002	65002	Soil		4/9/2009	8:30	-	I	Ξ	-		\dashv		1		-		
HZBS0107D001	70001	Sol		4/9/2009	0:00	1	I	I			-		-		-		
HZBS0107S001	75001	Sol		4/9/2009	8:10		I	I			\dashv		+				
HZBS0108S001	08S001	Soil		4/9/2009	14:45	2	I	I					_	_		_	

1. Relinguished by:	Date:	Date: 2. Received by:		3. Relinquished by: Date:	Date:	4. Received by: Date:	Date:
6	4/9/99	yours where a fel	4/10/09				
Company:	Time:	Campany: GEL	Time:	Company:	Time:	Company:	Tlme:
MWM							
Comments:					Geot	Geotracker EUF	
					Data	Data Validation Package 🗹 Level IV	

SAMPLE RECEIPT & REVIEW FORM

Clie	nt: SSFL-ISRA			SDG/ARCOC/Work Order: 227724 JT 7/14/04
Rece	ived By:			Date Received: 4/10/09
Susp	ected Hazard Information	Yes	ž	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC	/Samples marked as radioactive?		Х	Maximum Counts Observed*: 40CPM
Class	ified Radioactive II or III by RSO?		X	
	/Samples marked containing PCBs?		X	
	oed as a DOT Hazardous?	_	X	Hazard Class Shipped: UN#:
Sam	oles identified as Foreign Soil?	_	×	
	Sample Receipt Criteria	Yes	NA	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X		Circle Applicable: seals broken damaged container leaking container other (describe)
. 2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	X		Preservation Method: (ice bags blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	χ.		
4	Sample containers intact and sealed?	χ		Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		χ	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		X	Sample ID's and containers affected:
7	Are Encore containers present?			(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	χ		Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X		Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	χ		Sample ID's affected:
11	Number of containers received match number indicated on COC?	χ		Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	χ		
Com	ents:			
	Fedex 945	+	31	58 0731
				A
				(M) Date 4 10 09
	PM (or PMA) review: Initia	Is		Date

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1																							Page:	2 of 2
Customer	Customer Information	Project Information	mation			Project Information	Inform	ation																
Site:	SSFL	Client Name:	Boeing			Collector:		B. Martasin	Ē									ğ	Boeing PM:	ÿ				
Company: MWH	MWH	Sampling Event:		ISRA Sampling, Ju	ne 2009	Contact #:	*																	
Report to:	Report to: Sarah Von Raesfeld	Project Number: 1881614,054521	er: 18816	14,054521									Requested Analyses	ed Ane	yses							-	instructions/TAT	
Address:	Address: 2121 N. California Blvd	Project Manager: Alex Fischi	Jer. Alex F	Bchl		_																	Legend: Numerical values for analyses	oranalyses
	Sulte 600	PM Phone #:	(926)	(926) 627-4627		_			_				_				_		_			•	equals to turn around time in days	nd time in days
	Walnut Creek	Field Contact:		Brian Martesin		_			_					_		_				_			H- Hold	
	ક	Field Contact #:	_	(323) 304-4969		_		_						SI	_					_			n - Exagn & Lon	
_	94596	Lab Name:	GEL 1	GEL Laboratories,	TIC	_	Met		_			_	M	/OC		_				_	_	_		
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	Il.c Lab Contact:		Cheryl Jones								M	etals											
	sean Jeffler@mwhglobal.com	Lab Address:	Г	2040 Savage Road				Meta				tais	7470		-					_	_			
			Charl	Charleston, SC 29407	407			ls 60				6020	A W											
		Lab Phone:	(843)	(843) 769-7388				20 B	_			Wat	ater I			_	_		_			_		
Sample Name	tme.	Matrix	Date	Time	No. of Containers	B - Soil ure Soil	- Water	e Water	Water	Copper Water	Arsenic oil Lead	er Lead	Vercury Water	- Water	- Water - Water							_	Comments	
HZ8501185001		Soil	6/1/2009	8:26	-	Ψ.	Н		Ħ	H	H			\Box	\Box						-	_	MS/MSD	
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HZBS0113S001		Soff	6/1/2009	9:57	•	H	Н		П	\Box					-				\exists		\dashv			
HZBS01248001		Soil	6/1/2009	10:58	,	10 10	Н			9	9				-						\dashv			
HZBS01238001		Soil	6/1/2009	11:17	,	10 10			$\overline{}$	\Box					\dashv			\exists			-			
FBQW2231		Water	6/1/2008	14:05	10	_	10 10	9	0	9	유	2	6 5	9	라. 라		\exists	1		7	-			
EBQW2215		Water	e/1/200914:25	14:25	3		2		ę			2			-				1		+			
HZBS01158001		Soll	6/1/2009	15:16	-	5 10			-	_	_	_	_			_	_	_		_	_			

1. Relinquished by:	Chate:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
B. ()	60-1-9	6-1-09 R.M. & Wallug	62/08				
Company:	Time: 1615	company Ge /	The F	Company:	Time:	Company:	Time:
Comments:						Geotracker EDF Data Validation Package 🗹 Level IV	VI IV

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ustomer	Customer Information	Project Information	nation			Project	Project Information	-					-		disalisation of the second second second		Assemblian de l'acceptant de la company de l	
Site:	SSFL	Client Name:	Boeing			Collector:	: B. Martasin	ris							Boeing PM:			
Company: MWH	MWH	Sampling Event:	-	ISRA Sampling, June	2009	Contact #:	-											
leport to:	Report to: Sarah Von Raesfeld	Project Number: 1801614.054521	r: 189161	4.054521						2	Requested Analyses	Analyses			المستسلمانيين أفريرساليين		Instructions/TAT	TAT
Address:	2121 N. Celifornia Blvd	Project Manager: Alex Fischi	ar. Alex Fl.	schi				-									Legend: Numerical values for analyses	es for analysi
_	Suite 600	PM Phone #:	(926) 8	(925) 627-4627				_									equate to turn	Iround time Is
	Walnut Creek	Field Contact:	Brian I	Brian Martasin		-		_	_						_		PoH-H	3
	cA	Field Contact #:	\vdash	(323) 304-4969		_	_					S				_	EH - Extract &	Por
	94596	Lab Nато:	GELL	GEL Laboratories, LL	ILC		Met	_	_		М							
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	: Lab Contact:	Cheryl Jones	Jones					м			PHI	v~	_				
	sean.leffler@mwhglobal.com	Lab Address:	2040 \$	2040 Savage Road		Diox	010	Meta	etais	etals	747	by SI	· hear			_		
			Charle	Charleston, SC 29407	407	cin by	3 Wa	ils 60	602	602	DA V	N 801	SWP					
		Lab Phone:	(843)	(843) 769-7388		161	ter A	20 C	Soi	0 Wa	Vater	5BM	2600	_				
Sample Name		Matrix	Date	- EL	No. of Containers	3B - Soi ture So	e Wate uminun - Wate	e Wate u Wate	Coppe	n Wate fer Lead Arseni	- Wate	- Water	- Wate				Comments	
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HZBS01108001	Soil Soil	*	6/1/2009	9:00	-	10 10												
HZBS0109S001	Soil Soil	100	8/1/2009	8:09	1	н												
HZBS0114S001	1001 80#	***	6/1/2009	8:18	+	H												
HZBS0116S001	SOE SOE	80	6/1/2009	8:25	-	10 10												
HZBS01118001		Soll Soll	6/1/2009	8:28	-	10 10												
HZB80117S001		Soil	6/1/2009	8:41	-	I I												
HZBS0119S001		Soil	6/1/2009	8:55	-	H				=				-				
HZBS0120S001		Soil	6/1/2009	8:03	-	10 10												
HZBS01215001		Soil	6/1/2009	8:15	-	ェ												
1. Reling	1. Relinquished by:	Date:	2. Received by:	ived by:			Date:	ń	3. Relinquished by:	hed by:			Date		4. Received by:	*		Date:
Ry	J	60-1-9	0	R. M. K.		1	27	B										
Company:	*	Time: 16/5		3.	P		100 S		Company:				TIme:		Company:			Time:
TIAN I			П			-					-				1	and and and	C	ш

SAMPLE RECEIPT & REVIEW FORM

73357

Clien	#35 F1				SDG/ARCOC/Work Order: 230761 or 7/16/09
Recei	ved By: RMS	•			Date Received: 6 8 09
Suspe	cted Hazard Information	Yes	No		Counts > x2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC	Samples marked as radioactive?		>	_	imum Counts Observed*:
Classi	fied Radioactive II or III by RSO?				20,0~
COCA	Samples marked containing PCBs?			1	.1
Shipp	ed as a DOT Hazardous?			Haz	ard Class Shipped: UN#:
Sampl	es 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: tice bags blue ice dry ice none other (describe) 4, 6
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 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?	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	COC form is properly signed in relinquished/received sections?	/			
Comn	ents:				
Γx	9457 3161 5372				
	PM (or PMA) review: Initia	als		57	Date 4/2/09

Subject: FW: ISRA hold samples

From: Sarah Von Raesfeld < Sarah. E. Von Raesfeld @us. mwhglobal.com >

Date: Thu, 16 Jul 2009 11:17:49 -0600

To: Jackie Trudell < jacqueline.trudell@gel.com>

CC: Sean Leffler <Sean.S.Leffler@us.mwhglobal.com>

Hi Jackie,

Please run these samples on a 5 day TAT.

Thanks, Sarah

From: Sarah Von Raesfeld

Sent: Wednesday, July 15, 2009 9:12 AM

To: 'Jackie Trudell' Cc: Sean Leffler

Subject: ISRA hold samples

Hi Jackie,

We would like to add metals analysis the following ISRA samples (all were sent to SGS for dioxins):

HZBS0105S001 (collected 4/1) - analyze for copper and % moisture

HZBS0112S001 (collected 6/1) - analyze for copper and % moisture

HZBS0123S001 (collected 6/1) - analyze for lead, copper, and % moisture

HZBS0123D001 (collected 6/1) - analyze for lead, copper, and % moisture

Please include these samples with the ISRA samples that you will be receiving tomorrow.

Thanks, Sarah



BUILDING A BETTER WORLD

Sarah Von Raesfeld

Environmental Chemist

MWH Americas, Inc. 2121 N. California Blvd. Telephone: 925 627 4500

Suite 600 Facsimile:

Direct Line: 925 627 4654 Facsimile: 925 627 4501

12

Walnut Creek, California 94596

7/16/2009 2:12 PM

1 of 1

Date: 7/20/09

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

To:

Jackie Trudell

Phone: 843-769-7388

Laboratory

GEL Laboratories, LLC

E-mail: Jackie.trudell@gel.com

From:

Sean Leffler

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
MWHBM2 0090601_0 0	HZBS0112S001	6/1/09		Run copper
MWHBM2 0090601_0 0	HZBS0123S001	6/1/09		Run lead and copper
MWHBM2 0090601_0 0	HZBS0123D001	6/1/09		Run lead and copper

The reason for these changes:	
Incorrectly marked on COC form	
Lack of sample volume	
Change in analytical request	<u></u>
Other:	
Thank you	

2307617

MANHEAM20090001_00

50C B:

CHAIN OF CUSTODY RECORD

DNIADE ?

Legend: Numerical values for analyses equate to Turn around time in days Page: 1 of 2 Instructions/TAT H - Held CH - Ertraci & Hold Data Velidation Package 12 Level IV Comments Geotracker EDF 4. Received by: Boeing PM: VOC by SWILZBOR 3. Refinquished by: Collector: B. Martasin 6/2/09 Project Information Contact #: 10 10 (E) I 2 No. of Containers ISRA Sempling, June 2009 GEL Laboratories, LLC Charlesion, SC 29407 2040 Savage Road 12 m 1/2 Project Number: 1891814,054621 (323) 304-4980 (926) 827-4627 Brian Martash (843) 789-7388 6/1/2009 8:18 8 # Charyl Jones 8 84 12 62.3 47 7 3 2. Received by: Project Manager: Alex Fitchi Boeing 6/1/2009 6/12000 601717 6/1/2008 6/1/2008 4/1/2008 W1/2009 W12009 871200 200 Project Information Sempling Event: Field Contact #: Fleid Contact: Clant Name: 60-1-9 PM Phone #: Lab Address: Lab Contact: Lab Phone: Lab Name: Matrix Oate: sarah, vorressfeld@mwhgiobal.c 3 3 3 3 3 3 6od 3 3 sean.leffiar@mwhglobal.com 2121 N. California Blvd Report to: Sarah Von Raesfeld Wahut Creek Cuatomer information Sulte 800 94596 1. Relinquished by: **38F**L Company: MWH ర HZB801165001 42846123D001 100801108821 47850108501 HZ8601118001 HZB601208401 ample Name HZ8501198001 HZBS01148001 HZ\$801178001 HZB801218001 Comments: Address: ETTE 310

0 Cancel analysis SNL 64/08/09 2) SNR 07/01/09 3) SSL 7/20/09

14

2307617

CHAIN OF CUSTODY RECORD

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Unitomer I	Customer Information	Braine to Comment			-				76									Dane 1 - 1 - 1 - 1	
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		Ctlent Name:	Boshig		S	lector:	Collector: B. Martash	ş							-				
Company: MWH	HAM	Sampling Event: ISRA Sampling, June	IL ISRAS	mpling, June 2009	T	Contact #									ŏ	Boeing PM:			
01 TO	Report to: Samh Von Resutsig	Project Number:	180161	189 16 14,064521	T								İ						
dream:	Address: 2121 N. Californis Blvd	Project Manager: Alex Fischi	ir: Alex Fis	3	T						Reque	Requested Analyses	200					Instructions/TAT	
1	Suite 600	PM Phone #:	(926) 627-4627	7-4627	T					_			9		y.			Ceand	
= 1	Weihut Creek	Fleid Contact:	Brian Martesin	wesh	T	_			_	_		_	_					equate to turn around time in days	yee n day
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	sersh, vorressteld@mwtglobal.c Lab Contact	Lab Contact	Cheryl Jones	2008	 T		etaja			M	180			_					
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Date Vehidetion Peckage

Clevel IV 4. Received by: Company: Dele: 3. Reanquished by: 6/2/08 6-1-09 R.M. Malling 1. Relinquished by:

B SSL 7/20/09

Date: 7/23/09

Requesting Firm: MWH

Address: 9444 Farnham Suite 300

San Diego, CA 92123
Phone: 858-751-1217
Fax: 858-751-1201
F-mail: Sean leffler@1

		E-mail: Sean.leffler@mwhglobal.con
То:	Jackie Trudell	Phone: 843-769-7388
Laboratory	GEL Laboratories, LLC	E-mail: Jackie.trudell@gel.com
From: Requestor	Sean Leffler signature:	
Subject:	Chain-of-Custody Form Analytical Request Change	No. of Pages: 2

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 | Date | Originally | Change (s) and Method (s)

	ID(s)	Collected	Requested Analyses	Now Requested
MWHBM2 0090409_0 0	HZBS0105S001	4/9/09		Run Copper by 6020

The reason for these changes:		
Incorrectly marked on COC form		
Lack of sample volume		
Change in analytical request	X	
Other:		
Thank you		

7.42422

CHAIN OF CUSTODY RECORD

0.00	/ BOEING		Ü	CHAIN OF	CHAIN OF CUSTODY RECORD	DY RE	CORE	_		Š	;# 000		MWHBM20090409_00	409
Customer	t Customer Information	Project Infor	rmation	,		Projec	Project Information	nation					Page: 1	1011
Site: SSFL Company: MWH	SSFL	Client Name: Sampling Event:		Boeing ISRA Sampling, Feb 2009	Feb 2009	Confactor:	-	B. Martasin	0		Boeing PM:	- BM:		
Report to:	Report to: Sarah Von Raesfeld	Project Number:	+	1891614.050104		3	1`	>	Keque	Kequested Analyses			Instructions/TAT	AT
Address:	2121 N. California Blvd	Project Menag	ä	Alex Fischi			ענ	M					10000	
	Suite 600 Walnut Creek	PM Phone #: Field Contact:	1	(925) 627-4627 Brian Martasin			WTAIS	etals vetals	<u>ctals</u> letal				Numerical values for analyses equate to turn around time in days	for to turn
	CA	Field Contact		(323) 304-4969	<u>.</u>	1	> 002						H - Hold EH - Extract/Extrude &	ag eg
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	al.c Lab Contact:	් පි	Cheryl Jones			Die	020	020 020				P D D	
	sean.leffler@mwhglobal.com	Lab Address:		2040 Savage Road	pe pe		oxin !						Note: Values in the cells	<u> </u>
			ర్	Charleston, SC 29407	9407		by 16	lic					bellow are Turn Around Times.	round
		Lab Phone:	<u>®</u>	(843) 769-7388										
Sample Name	we	Matrix	Date	Time	No. of Containers	B - Soil ure Soil	- Water	ad	lead Yer				Comments	
CNBS0131S001		Soil	4/9/2009	14:35	2	5		0 0	<u>-</u>					
EBQW2207		Water	4/9/2008	9:40	2		ħ		0				7	
HZBS0105S001		Soit	4/9/2008	8:40	_"	(美多	1.	3.50	\vdash			_		
HZBS0106S001		Soff	4/9/2009	9 6:20	707	女女			_					
HZBS0106S002		Soil	4/8/2009	8 8:30	1 1	五年								
HZBS0107D001		Soil	4/9/2009	00:00	1	专手			_					
HZBS0107S001		Soil	4/9/2009	9 8:10	1	1								
HZBS0108S001		Soil	4/9/2009	14:45	2	I		F	-					

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:		Oate:
8,6	4/6/06	imajudin a Lel	4/10/09					
Company:	Time: 1545	Campany: GEL	Time: 00	Company:	Time:	Company:		Time:
Comments:					Geof	Geotracker EDF		
					Data	Data Validation Package [4] Level IV	Level IV	
(1) SVR 04 14 09	14 09		i :					
6356 7/23/09	3/09							

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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 Sar	mpling, Feb 2009	Start: _	2/19/2009	_ End:	2/23/2009
LTO DATE:			LTO	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:		. California Blvd. Ste. 600	Address:		040 Savage F	
	Wa	lnut Creek, CA 94596		Cha	rleston, SC 2	9407
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Cheryl Jones	
Contact Name: Phone Number:		925-627-4654	_ Lab Contact Name: _ Phone Number:		843-769-738	
Fax Number:		925-627-4501	Fax Number:		843-766-117	
E-mail Address:	Sarah.\	VonRaesfeld@mwhglobal.com	E-mail Address:		cj@gel.com	
		-	ONTAINER ORDER FORM			
Date Required:	02/19/0		Requested Analyses:	(Sr	pecify # of Sam	oles)
•			·	Water	Soil	Contingent
			Dioxins - (1613B)	5	9	14
Date Sample Pickup:	<u>NA</u>		EPA 8015M (DRO)			
0 0			EPA 8015M (JET FUEL)			
Ship Containers To:	V	(EPA 8015M (CC)			
Project Site Consultant Office	X	_ (enter "X") _ (enter "X")	EPA 8260B (VOC)			
Other Location (specify in		- (enter X)	EPA 8270C SIM (SVOC) EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)			
,		_(onto, x)	Acetone (8260B)			
Container Information	:		EPA TO-15 VOCs (SIM)			
Trip Blank (VOA only)	Yes	(Yes/No)	Metals (6010B/6020/7470A/7471A)			
Temp Blank (VOA Only)	No	(Yes/No)	Cadmium (6020)	5	15	10
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	5	5
MS/MSD Extra Bottles?	No	_(Yes/No)	% Moisture (D2216)	0	40	30
Comple Metrice			Lead (6020)	5	40	30
Sample Matrix:	V	(aalaat all annliaahla)	Copper (6020)	5 5	10	5
Soil Water	X	_ (select all applicable) _ (select all applicable)	Zinc (6020) EPA TO-14 (VOCs)	<u>ə</u>	10	
Vapor		(select all applicable)	EFA 10-14 (VOCS)[
·		_	_			
Est. Total # of Samples:	75	_ Est. Total # of EDDs	5_ EPORTING REQUIREMENTS			
Project TAT:		LABORATORT	Laboratory Results/Repo	rts Delivera	ables:	
Normal:	X	(10 Business days)	Draft Results Fax?:		(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:		_		Sarah.VonRae	sfeld@mwhgloba	al.com
.,			Send Original Reports To:		<u>, </u>	
Special Reporting Req	uireme	nts:	Project Site		(enter "X")	
Contingent Analysis?	No	(Yes/No)	Consultant Office		(enter "X")	
-	NI-	- `	Other Location (specify		- ' '	
TIC (VOC) Required? TIC (SVOC) Required?	No No	_(Yes/No) _(Yes/No)	in comments)	X	(enter "X")	
Data Validation Pckge.:		(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	_(enter X)	
- Data Validation Forgo	1101 111	_				
		SPECIAL IN	STRUCTIONS/LTO NOTES			
		CONFIRMATION	OF TRANSMITTAL & RECEIPT	-		
LTO Sent By:			LTO Received By-			
Name:	Sean Lef	fler	Name:			
	02/20/09		Date:			
Jaic.	,-0,00		Date: _			-

LABORATORY TASK ORDER (LTO) FORM (PAGE 2)

ADDITIONAL REQUIRED ANALYSES

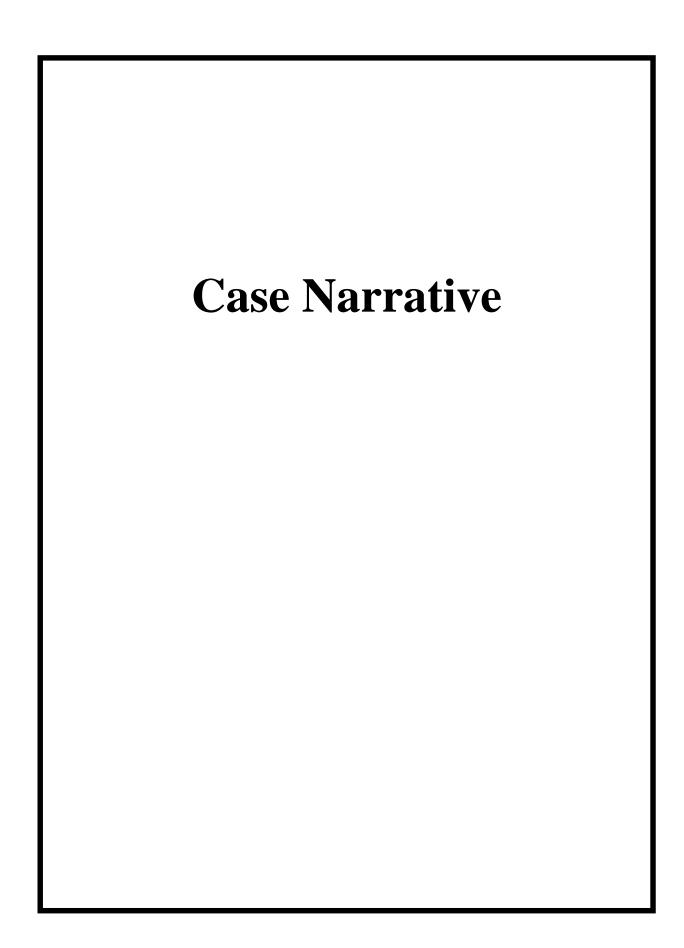
LTO DATE:		LTO NUM	/IBER:]
Consultant Name:	MWH	Contract Laboratory:	GEL	
Address:	2121 N. California Blvd. Ste. 600	Address:	2040 Savage Rd.	_
	Walnut Creek, CA 94596	_	Charleston, SC 29407	_
_				
Contact Name:	Sarah Von Raesfeld	Lab Contact Name:	Cheryl Jones	
Phone Number:	925-627-4654	Phone Number:	843-769-7388	-
Fax Number:	925-627-4501	Fax Number:	843-766-1178	_
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	<u>cj@gel.com</u>	_

SAMPLE CONTAINER ORDER FORM (CONTINUED)

Requested Analyses:		(Specify # of Samp	oles)
	Water	Soil	Contingent
Arsenic (6020)			
Lead (6020)			
Cadmium (6020)		-	
Lithium (6020)			
Sodium (6020)	-	-	
Selenium (6020)		-	
Thallium (6020)		-	
Zinc (6020)	-	ŀ	
Boron (6010B			
Vanadium (6010B)			
Copper (6020)			
Zirconium (6020)			

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	20
Laboratory Certifications	22
Percent Moisture	24
Metals Analysis	28 29 35 45 69 72 328
IVIISCEIIANEOUS	SZC



Case Narrative for Boeing - SSFL (MWH) Work Order: 233571 SDG: 233571

July 20, 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 April 10, 2009, July 16, 2009 and June 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
233571001	EBQW2221
233571002	HZBS0146S001
233571003	HZBS0147S001
233571004	HZBS0147S002
233571005	HZBS0148S001
233571006	HZBS0148S002
233571007	HZBS0149S001
233571008	HZBS0150S001
233571009	HZBS0105S001
233571010	HZBS0112S001
233571011	HZBS0123S001
233571012	HZBS0123D001

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.

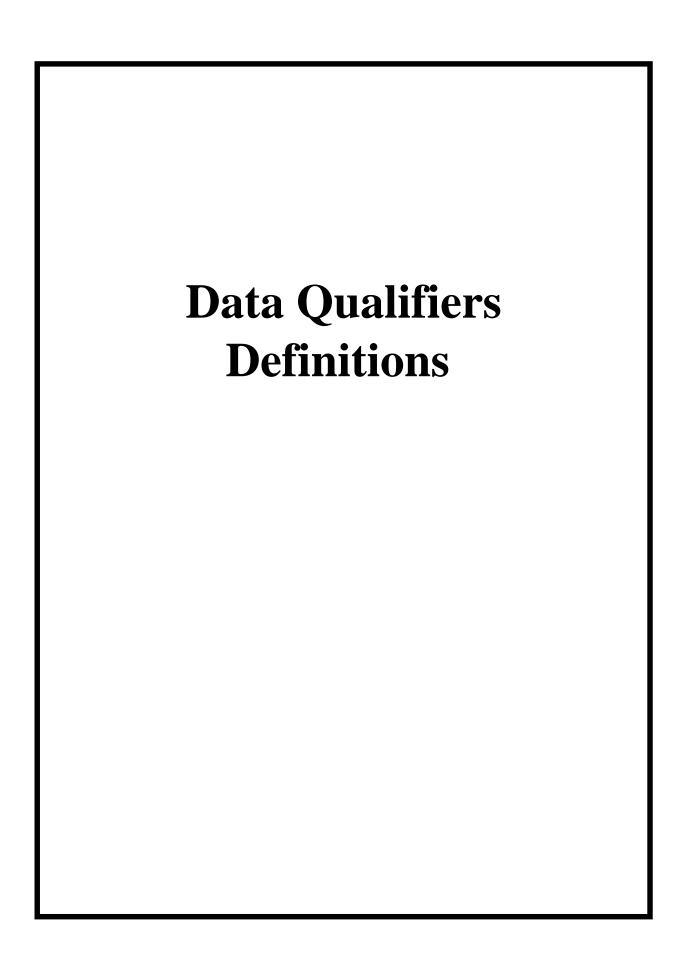
Data Package:

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 (SGS Laboratories).

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 Trudell

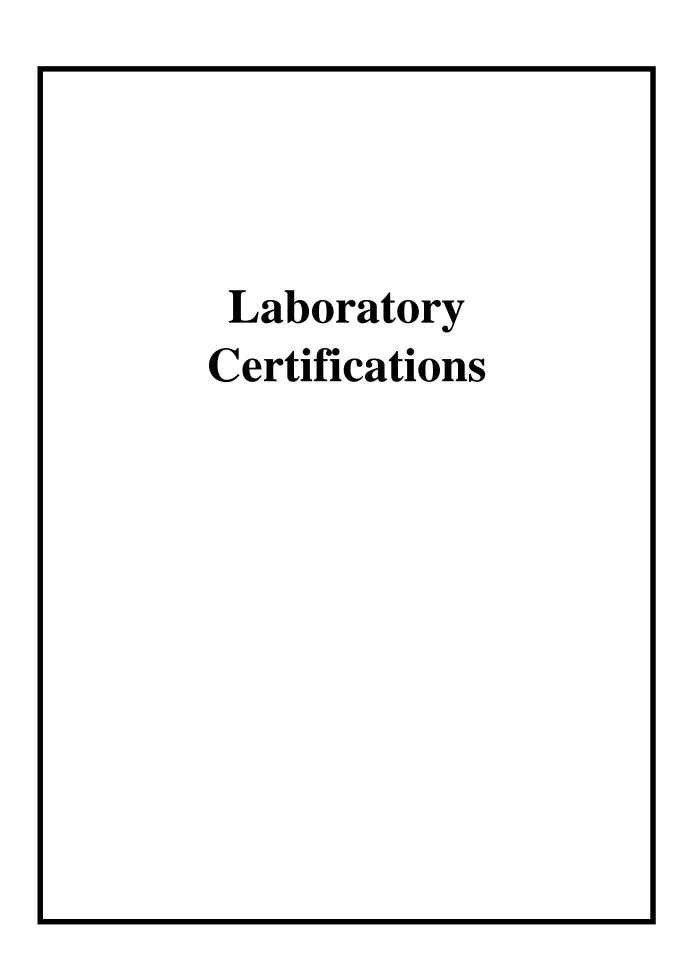
Project Manager



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
- $^{\circ}$ 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
- 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
- ${
 m N/A}$ Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ${\tt ND}$ 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.



List of current GEL Certifications as of 20 July 2009

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



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 233571

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: 233571

Project Manager: Dixie Hambrick

Matrix: water/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
EBQW2221	233571001	N/A	Water	7/15/2009 1:41:00 PM	6020
HZBS0105S001	233571009	N/A	Soil	4/9/2009 8:40:00 AM	6020
HZBS0112S001	233571010	N/A	Soil	6/1/2009 9:44:00 AM	6020
HZBS0123D001	233571012	N/A	Soil	6/1/2009	6020
HZBS0123S001	233571011	N/A	Soil	6/1/2009 11:17:00 AM	6020
HZBS0146S001	233571002	N/A	Soil	7/15/2009 12:53:00 PM	6020
HZBS0147S001	233571003	N/A	Soil	7/15/2009 12:42:00 PM	6020
HZBS0148S001	233571005	N/A	Soil	7/15/2009 12:27:00 PM	6020
HZBS0150S001	233571008	N/A	Soil	7/15/2009 1:16:00 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°C ±2°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.

Data Qualifier Reference Table

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.
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

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- 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.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
М	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 Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

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.

III. Method Analyses

A. EPA METHOD 6020—Metals

Reviewed By: P. Meeks

Date Reviewed: August 17, 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: Analytical holding times, 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 and the aqueous RPDs were within laboratory-established QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed or HZBS0146S001. The RPDs were within the laboratory-established control limit.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZBS0146S001. Both lead recoveries and the copper MS recovery were below the control limit; therefore, copper and lead detected in the soil samples were qualified as estimated, "J." All remaining recoveries and all RPDs were within laboratory-established QC limits.
- Serial Dilution: Serial dilution analyses were performed on HZBS0146S001 and EBQW2221. The lead %D exceeded the control limit for HZBS0146S001; therefore, lead detected in the soil 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. Due to matrix interference, copper in the soil samples was analyzed at either a 10x or a 50x dilution. The remaining soil analytes were analyzed at the laboratory's standard 2x dilution. 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: FBQW2229 (225106) and EBQW2207 (227874H) were the field QC samples associated with the samples collected 4/9/09, FBQW2231 (230761) and EBQW2215 (230761) were the field QC samples associated with the samples collected 6/1/09, and FBQW2235 (233444) and EBQW2221 were the field QC samples associated with the samples collected 7/15/09. There were no applicable detects in any of the field QC samples.
 - Field Duplicates: HZBS0123S001 and HZBS0123D001 were identified as field duplicate samples. Both detects were in common and both RPDs were less than 100%.

Validated Sample Result Forms: 233571

Analysis Metho	od 6020						
Sample Name	EBQW2221		Matrix 7	Гуре: Water	Res	ult Type: Pr	imary Result
Lab Sample Name:	233571001	Sample	Date: 7	/15/2009 1:41:00 PM		Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	1.6	5	1.6 ug/L	U	U	
Cadmium	7440439	0.11	1	0.11 ug/L	U	U	
Copper	7440508	0.33	1	0.33 ug/L	U	U	
Lead	7439921	0.5	2	0.5 ug/L	U	U	
Sample Name	HZBS0105S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233571009	Sample	Date: 4	/9/2009 8:40:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	44.5	1.04	0.344 mg/kg	N	J	Q
Sample Name	HZBS0112S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233571010	Sample	Date: 6	/1/2009 9:44:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	8.07	1.16	0.384 mg/kg	N	J	Q
Sample Name	HZBS0123D001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233571012	Sample	Date: 6	/1/2009	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	11.1	1.02	0.338 mg/kg	N	J	Q
Lead	7439921	16.3	0.41	0.102 mg/kg	N	J	Q, A
Sample Name	HZBS0123S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result
Lab Sample Name:	233571011	Sample	Date: 6	/1/2009 11:17:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	11.5	1.17	0.385 mg/kg	N	J	Q
Lead	7439921	17	0.467	0.117 mg/kg	N	J	Q, A

Tuesday, August 18, 2009 Page 1 of 2

Analysis Method 6020

Sample Name	HZBS0146S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233571002	Sample	Date: 7/	/15/2009 12:53:00 PM	M T	Validation Le	evel: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Arsenic	7440382	3.74	1.1	0.221 mg/kg				
Cadmium	7440439	0.28	0.221	0.0221 mg/kg				
Copper	7440508	12.5	1.1	0.364 mg/kg	N	J	Q	
Lead	7439921	8.54	0.442	0.11 mg/kg	N	J	Q, A	
Sample Name	HZBS0147S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233571003	Sample	Sample Date: 7/15/2009 12:42:00 PM			Validation Level: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Arsenic	7440382	3.67	1.04	0.208 mg/kg				
Cadmium	7440439	0.319	0.208	0.0208 mg/kg				
Copper	7440508	16	5.19	1.71 mg/kg	N	J	Q	
Lead	7439921	7.75	0.415	0.104 mg/kg	N	J	Q, A	
Sample Name	HZBS0148S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233571005	Sample	Date: 7/	/15/2009 12:27:00 PM	м •	Validation Level: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Arsenic	7440382	3.59	1.11	0.223 mg/kg				
Cadmium	7440439	0.321	0.223	0.0223 mg/kg				
Copper	7440508	17.2	5.57	1.84 mg/kg	N	J	Q	
Lead	7439921	8.19	0.446	0.111 mg/kg	N	J	Q, A	
Sample Name	HZBS0150S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	233571008	Sample Date: 7/15/2009 1:16:00 PM Validation Level:			evel: V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Lead	7439921	15.9	0.389	0.0973 mg/kg	N	J	Q, A	

Tuesday, August 18, 2009 Page 2 of 2

Chain of Custody and Supporting Documentation

SMIZE !

CHAIN OF CUSTODY RECORD

133825

COC #:

MWHAR20090721_00

Site: SSFL Company: MWH Report to: Sarah Von Raesfeld Address: 2121 N. California Bl	ation									
pany:		Project Information	tion		Project Information	Informa	tion			
Company: MWH Report to: Sarah V Address: 2121 N.		Client Name:	Boeing		Collector: A. Ruotolo	A. R.	olotor		Boeing PM:	
 		Sampling Event:	ISRA Sampling, June 2009	une 2009	Contact #:	#				
1	on Raesfeld	Project Number:	1891614.054521				Requested Analyses	Analyses		Instructions/TAT
	2121 N. California Blvd	Project Manager: A	Alex Fischl				-			Legend:
Suite 600	00	PM Phone #:	(925) 627-4627							Numerical values for
Walnut Creek	Creek	Field Contact:	Shelby Valenzuela	æ						around time in days
ક		Field Contact #:	(626) 255-0503					_		H- Hold
94296		Lab Name:	GEL Laboratories, LLC	, LLC						Hold
Email: sarah.vc	sarah.vonraesfeld@mwhglobal.c Lab Contact:	Lab Contact:	Jackie Trudell			Die				
sean.let	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road	ad		oxin b		_		Note: Values in the cells
			Charleston, SC 29407	9407	_	y 16				bellow are Turn Around Times.
		Lab Phone:	(843) 769-7388			13B -			-	
Sample Name		Matrix	Date Time	No. of Containers	B - Soil ure Soil	- Water				Comments
EBQW2222	Water		7/21/2009 9:13	2		10				
HZBS0151S001	Soil		7/21/2009 8:57	-	5 2					

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:	
Mesy My Roll	7-21-09	Rry Off Dura	7 33/08					
Company:	Time:	Company	Time: Company:	Company:	Time:	Company:	Time:	:e:
Comments			•		Geo	Geotracker EDF		
					Data	Data Validation Package 🗹 Level IV	Level IV	

SAMPLE RECEIPT & REVIEW FORM

Clien	#55F1				SDG/ARCOC/Work Order: 233835
	ved By: RMS				Date Received: 7 22 69
Suspe	ected Hazard Information	Yes	No		Counts > x2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC/	Samples marked as radioactive?		1	Max	imum Counts Observed*:
Classi	fied Radioactive II or III by RSO?		>		200pm
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?	\	. D		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 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?	/			
Fx	nents: 1.9457 3158 4211				

PM (or PMA) review: Initials

Date: 7/23/09

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

Co:	Jackie Trudell	Phone: 843-769-7388
aboratory	GEL Laboratories, LLC	E-mail: Jackie.trudell@gel.com
rom:	Sean Leffler	
equestor	signature:	
bject:	Chain-of-Custody Form Analytical Request Change	No. of Pages: 2

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
MWHAR2 0090721_0 0	HZBS0149S001	7/14/09		Run % moisture and Dioxins by 1613B on 5 day TAT

The reason for these changes:	
Incorrectly marked on COC form	
Lack of sample volume	
Change in analytical request	X
Other:	
Thank you	

CHAIN OF CUSTODY RECORD

DNISOR

MWHAR20090721_00

COC #:

Note: Values in the cells bellow are Turn Around Times. Legend:
Numerical values for analyses equate to turn around time in days H - Hold EH - Extract/Extrude & Hold 1 of 1 Instructions/TAT Comments Page: Boeing PM: Requested Analyses 7.3835 Project Information Collector: A. Ruatolo Dioxin by 1613B - Water Contact #: Dioxin by 1613B - Soil D2216 Moisture Soil No. of Containers Sampling Event: ISRA Sampling, June 2009 GEL Laboratories, LLC Charleston, SC 29407 2040 Savage Road Shetby Valenzuela Project Number: 1891614.054521 (843) 769-7388 Time (925) 627-4627 (626) 255-0503 9:13 8:57 Jackie Trudell Project Manager: Alex Fischi Boeing 7/21/2009 7/21/2009 Date Project Information Field Contact #: Field Contact: Lab Address: Client Name: PM Phone #: sarah.vonraesfeld@mwhglobal.c Lab Contact: Lab Phone: Lab Name: Matrix Water So sean.leffler@mwhglobal.com Address: 2121 N. California Blvd Report to: Sarah Von Raesfeld **Customer Information** Walnut Creek Suite 600 94596 SSFL Company: MWH 5 Sample Name HZBS0151S001 EBQW2222 Email: Site:

1. Relinquished by:	Date:	2, Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Mes 11/ John	16 7-21-09	Rry Off Own	7 22/04				
Company:	Time:		-	Ime: Company:	Time:	Company:	Time:
Comments:					Geo	Geotracker EDF	
					Dat	Data Validation Package M Level IV	Level IV

0556 7/23/09

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12-08

1/15/09

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HZ BSO1495001

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, Feb 2009	Start:_	2/19/2009	End	2/23/2009
LTO DATE:			LTO	NUMBER	1-	
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:		l. California Blvd. Ste. 600	Address:		2040 Savage	
	Wa	alnut Creek, CA 94596		Cha	arleston, SC	29407
Contact Name:	,	Sarah Von Raesfeld	Lab Contact Name:		Cheryl Jone	es
Phone Number:		925-627-4654	Phone Number:		843-769-738	
Fax Number:		925-627-4501	Fax Number:		843-766-117	
E-mail Address:	Sarah.	VonRaesfeld@mwhglobal.com	E-mail Address:		<u>cj@gel.con</u>	<u>n</u>
			CONTAINER ORDER FORM			
Date Required:	02/19/0	09	Requested Analyses:	(S Water	Specify # of San Soil	nples) Contingent
			Dioxins - (1613B)	5	9	14
Date Sample Pickup:	NA		EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site	X	(enter "X")	EPA 8260B (VOC)			
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in	1		EPA 8310 (PAH)			
comments)	·	_ (enter "X")	EPA 8082 (PCB)			
			Acetone (8260B)			
Container Information			EPA TO-15 VOCs (SIM)			
Trip Blank (VOA only)		_(Yes/No)	Metals (6010B/6020/7470A/7471A)			
Temp Blank (VOA Only)		_ (Yes/No)	Cadmium (6020)	5	15	10
DI Water Required?		_(Yes/No)	Arsenic (6020)	5	5	5
MS/MSD Extra Bottles?	No	_(Yes/No)	% Moisture (D2216)	0	40	30
Sample Matrix:			Lead (6020)	5	40	30
Sample Matrix:		(aslast all applicable)	Copper (6020)	5	10	5
Soil Water		_ (select all applicable) (select all applicable)	Zinc (6020) EPA TO-14 (VOCs)	<u> </u>	10	5
Valei		(select all applicable)	EFA 10-14 (VOCS)			
•			. E			
Est. Total # of Samples:	75	_ Est. Total # of EDD:	<u> </u>			
Project TAT:		LABORATORTI	Laboratory Results/Report	rts Delive	rables:	
Normal:	: X	(10 Business days)	Draft Results Fax?:		(Yes/No)	
RUSH:		(Specify- 24 / 48 / 72HRS)		Yes	(Yes/No)	
Other:		(Specify # of Days)	-		_(
		_(=,===,=,	Specify Fax/E-mail Contact Name, #, E-mail Address: S	Parah VanDa	esfeld@mwhglol	hal aam
Report Due Date:				saran.vonka	esieid@mwngioi	bai.com
Curriel Demontina Des			Send Original Reports To:		(anton V)	
Special Reporting Rec	-		Project Site _		(enter "X")	
Contingent Analysis?	No_	_(Yes/No)	Consultant Office		(enter "X")	
TIC (VOC) Required?		_(Yes/No)	Other Location (specify			
TIC (SVOC) Required?		_(Yes/No)	in comments) 	X	(enter "X")	
Data Validation Pckge.:	Tier III	(Boeing Tier I, II or III)	# of Copies Reports Req.: _	1	_	
		SPECIAL II	NSTRUCTIONS/LTO NOTES			
		CONFIRMATION	N OF TRANSMITTAL & RECEIPT			
LTO Sent By:			LTO Received By-			
Name:	Sean Lef	ffler	Name:			
Date:	02/20/09		 Date:			
			_			_

LABORATORY TASK ORDER (LTO) FORM (PAGE 2)

ADDITIONAL REQUIRED ANALYSES

LTO DATE:		LTO NUM	MBER:]
Consultant Name:	MWH	Contract Laboratory:	GEL	
Address:	2121 N. California Blvd. Ste. 600	Address:	2040 Savage Rd.	_
	Walnut Creek, CA 94596	_	Charleston, SC 29407	_
_				_
Contact Name:	Sarah Von Raesfeld	Lab Contact Name:	Cheryl Jones	
Phone Number:	925-627-4654	Phone Number:	843-769-7388	-
Fax Number:	925-627-4501	Fax Number:	843-766-1178	_
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	<u>cj@gel.com</u>	_

SAMPLE CONTAINER ORDER FORM (CONTINUED)

Requested Analyses:		(Specify # of Samp	oles)
	Water	Soil	Contingent
Arsenic (6020)			
Lead (6020)			
Cadmium (6020)			
Lithium (6020)			
Sodium (6020)			
Selenium (6020)			
Thallium (6020)	-		
Zinc (6020)			
Boron (6010B			
Vanadium (6010B)			
Copper (6020)			
Zirconium (6020)			

G341-594

MWHAR20090721 00

000

CHAIN OF CUSTODY RECORD

- BOEING

5 Day Ta-T. **Sample received at 5GS 50 HOLD 7/17/09 Legend:

Numerical values for
analyses equate to turn
around time in days H - Hold EH - Extract/Extrude & Hold Note: Values in the cells bellow are Turn Around Times. 1 of 1 Instructions/TAT STD. TAT Comments Page: **Boeing PM:** Requested Analyses 53832 Collector: A. Ruotolo Project Information Contact #: Dioxin by 1613B - Water Dioxin by 1613B - Soil S D2216 Moisture Soil (J) Ω Containers No. of Sampling Event: ISRA Sampling, June 2009 GEL Laboratories, LLC Charleston, SC 29407 2040 Savage Road Shelby Valenzuela 7/15/2009/ 12:08 Project Number: 1891614.054521 (925) 627-4627 (626) 255-0503 (843) 769-7388 Time Jackie Trudell 9:13 7/21/2009 - 8:57 Project Manager: | Alex Fisch| Boeing 7/21/2009~ Project Information Date Field Contact #: Client Name: Field Contact: PM Phone #: Lab Contact: Lab Address: Lab Name: Lab Phone: Matrix Soil Water sarah.vonraesfeld@mwhglobal.c Soil sean.leffler@mwhglobal.com Address: 2121 N. California Blvd Report to: Sarah Von Raesfeld) Customer Information Walnut Creek H26501495001 Suite 600 94596 SSFL Company: MWH ర Sample Name HZBS0151S001 EBQW2222 __ Site: Email:

1. Kelinquished by:	Date:	2. Received by:	Date: 3.	3. Relinquished hv.	0.00	7 00000	
`				. (ני	4. Received by:	Date:
11-8/12 IM	7-12-5	· ·		77 00 7	_		
was in facil	<u></u>		7 20	ション・データング	7/7		7536
Company:	Lines	Jananax LIV	X	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	80 27 T	ノーグ	
MWH	<u>.</u>	Company:		Company:	Time:	Company: A C	Time:
		2	Br	(S)	3	JAN 1/20 1/20 1	30:00
Comments:							
					Geotra	Geotracker EDF	
					Data V	Data Validation Package	

45 HS-1466

CHAIN OF CUSTODY RECORD

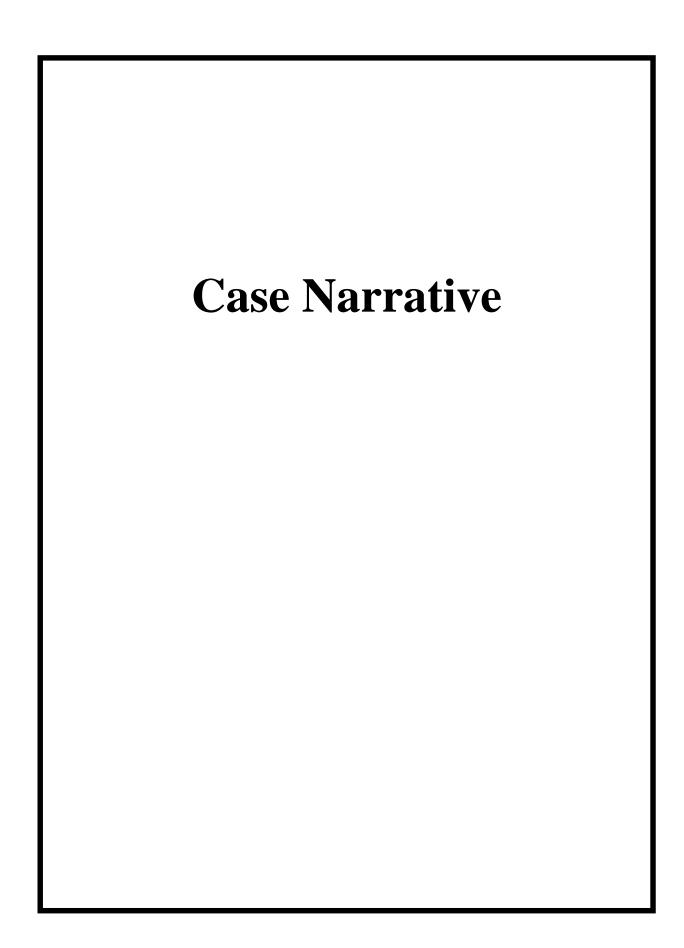
(BOEING

پ			j		CITAIN OF CUSTOD I RECORD	2	֖֖֖֭֭֭֭֡֝֞֝֝֞֝֞֝֞֝֞֝֝	֖ׅׅׅׅׅׅׅׅׅׅׅׅׅׅ֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֟֝֝֟֝֝֟֝֝֟֝֝֟֡֝				# 000	₩.			MWHMM20090715_00
			:					ر'	1755571	7						Page: 1 of 1
Custome	Customer Information	Project Information	mation			P.Q.	ect Inf	Project Information	5 5		:					
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Company: MWH	: MWH	Sampling Event:	•	ISRA Sampling, June 2009	June 2009	Contact #:	act#:	1	1		!	i	1		-	
Report to:	Report to: Sarah Von Raesfeld	Project Number:	+	1891614.054521		-			٥				4		_	
Address:	2121 N. California Blvd	Project Manager.		Alex Fischi		-	-		 			326	-	-	-	Instructions/TAT
	Suite 600	PM Phone #:	(925)	(925) 627-4627												Legend:
	Walnut Creek	Field Contact:	Shell	Shelby Valenzuela	e											Numerical values for analyses equate to turn
	క	Field Contact #:	-	(626) 255-0503		·										around time in days
	94296	Lab Name:	뜅	GEL Laboratories, LLC	s, LLC											H - Hold EH - Extract/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	Lab Contact	Jack	Jackie Trude#		<u> </u>				Me	-	Me				PS-
	sean.leffler@mwhglobal.com	Lab Address:	2040	2040 Savage Road	ad					tals 6			Metal			
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		Lab Phone:	(843)	(843) 769-7388						Soil C			20 W			Times.
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EDOMENSO					COLLIGATION	lic		-	-	ım			ead			Comments
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HZBS0146S001	S001		7/15/2009	12:53	-	5	F	T	2	2	5	- -	+	+	\prod	
HZBS0147S001	S001		7/15/2009	12:42	-	₽	+	1	=	Ę	┰	1	+		1	
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HZBS0148S002	5002 Soil		7/15/2009	12:34	-	Ξ	-	1	=	<u> </u>	+-	1	╬	+		
HZBS0149S001	Soil Soil		7/15/2009	12:08	-	Ξ	 I	T	+	I	+		+	\downarrow		
HZBS0150S001	3001 Soil		7/15/2009	13:16	-	2	+	#	+	1	=	1	+	+		

Costs of the Costs Data Validation Package 📝 Level IV Geotracker EDF Date: Time: 3. Relinquished by: Company: 7 16 03 Time: 840 Date: 2. Received by: + 7/15/01 Rm M 1. Relinquished by: Comments: Company: MWH

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	3
Data Qualifiers Definitions	10
Laboratory Certifications	12
Subcontract Data Dioxins	14



Case Narrative for Boeing - SSFL (MWH) Work Order: 233835 SDG: 233835

July 24, 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 July 16, 2009 and July 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
233835001	EBQW2222
233835002	HZBS0151S001
233835003	HZBS0149S001

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

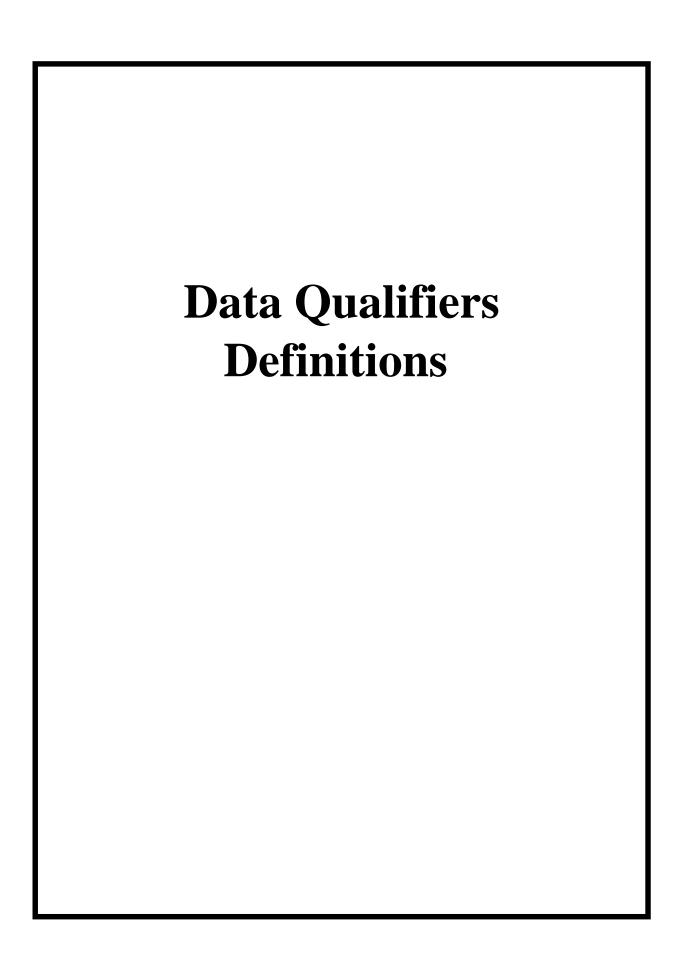
Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

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: Dioxins (SGS Laboratories).

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.

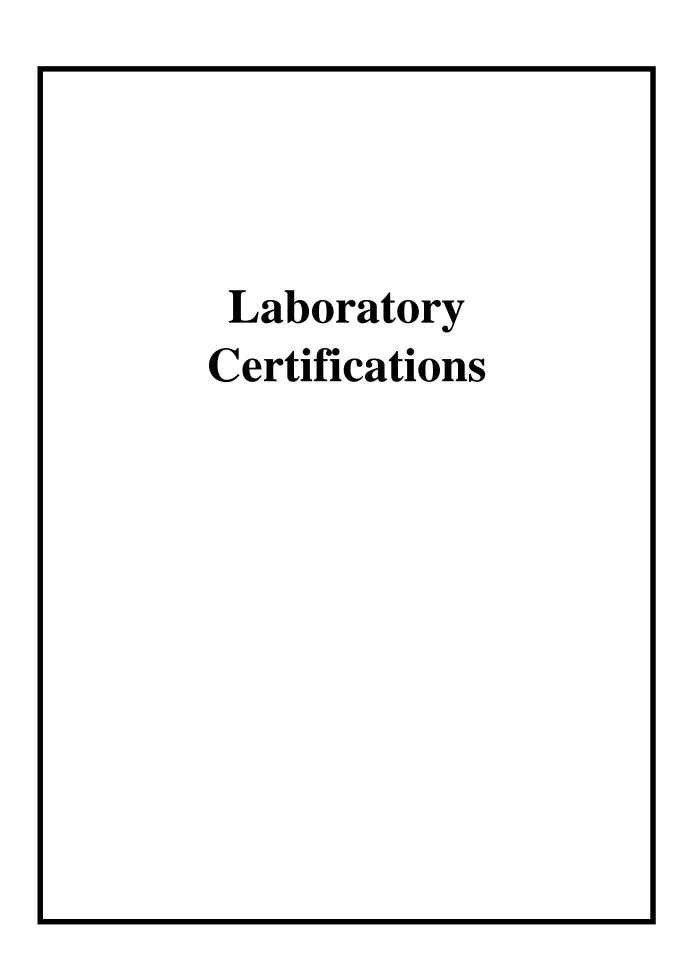
Jacqueline Trudel Project Manager



Data Review Qualifier Definitions

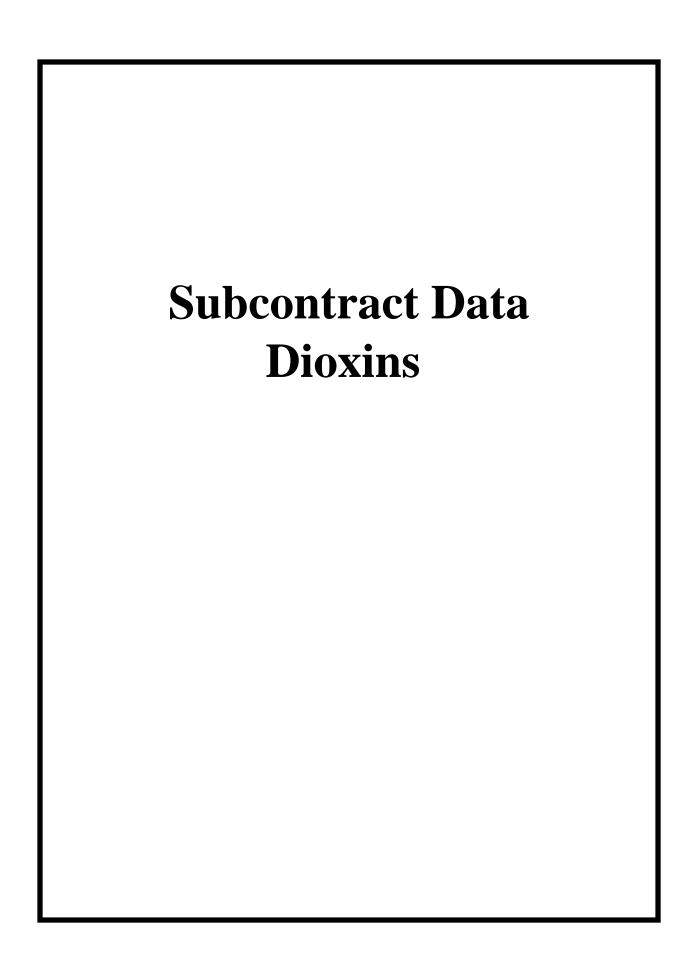
Qualifier Explanation

- * 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 ${\tt MDL/IDL} \, < \, {\tt sample} \, \, {\tt value} \, < \, {\tt PQL}$
- 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
- ${
 m N/A}$ 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.



List of current GEL Certifications as of 24 July 2009

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			





Laboratory Results

Ms. Jacqueline Trudell General Engineering Labs 2040 Savage Rd. Charleston SC 29407

Phone:

843-556-8171

Fax:

Dear Ms. Trudell:

Enclosed is a full data package containing the final results for samples received by SGS Environmental Services, Inc. on July 23, 2009 under your project name "SSFL 233835". The samples were analyzed by Method 1613 following SGS's Standard Operating Procedures and are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards.

Number of Samples Received:

Your Project Reference:

SSFL 233835

PAL Project Number:

G341-594

We appreciate your business and look forward to working with you again. Please contact me at 910-350-1903 if you have questions or need additional technical support.

Sincerely,

Lori Lockamy Project Manager 3 August 2009

DC138.033007.7



Case Narrative SGS Project: G341-594 Project Name: SSFL 233835

For Method: 1613

- The submitted samples were accepted into the lab on July 17th and July 23rd, 2009 and extracted on July 23rd, 2009 by method 3540C and July 28th, 2009 by method 3520C. The sample extracts and associated QC extracts were then processed through clean-up as prescribed in the SGS standard operating procedures and analyzed by HRGC/HRMS for method 1613.
- No analytical issues were encountered.

Date

Data Validation

SGS

Table of Contents

Section 1: Cover Letter/Case Narrative

Contains the Table of Contents, a project narrative, the client and SGS project identifiers, the number and type of samples, the methodology used to process the samples, and a summary table of sample results. A listing of current certifications by state, a table of abbreviations and qualifiers and the Toxic Equivalent Factors (TEF) are also supplied.

Section 2: Project Information

Contains the chain-of-custody(s), internal chain-of-custody(s) if applicable, sample login summary, sample receipt checklist, and any other project/client specific information.

Section 3: Sample Analytical Results

Contains results for client samples. Sample results include two pages of summarized analytical data and the associated raw data. The raw data includes a quantitation report from the instrumentation used that lists, ion areas, ratios, retention times, concentrations, and signal-to-noise ratios. It also has the selected ion current profiles (SICPs) for all homolog groups and any manual integrations.

Section 4: Quality Control Analytical Results

Contains results for each analytical workgroup associated with the submitted samples. A workgroup consists of the Lab Method Blank (LMB) and the Ongoing Precision and Recovery sample (OPR). All sample preparation data, including dry weight determinations, extraction logs, clean-up logs and observation notes are also documented. Any other supporting QC data will be documented here upon client request.

Section 5: Initial Calibration

Contains a table summarizing calibration data such as relative response factors, concentrations, and percent relative standard deviation. This section also contains related daily instrument QC information: GC performance data, mass resolution check, windows defining mix, and SICPs for all homolog groups and any manual integrations as well as the injection prep and instrument run logs.

Section 6: Continuing Calibration Data

Contains all daily instrument quality control information. This includes mass resolution checks, a table summarizing the window defining peaks, SICPs for the first and last eluters for each homolog group, SICPs documenting GC performance, a summary quantitation report showing RRFs for the Ccal and Ical, and SICPs for all homolog groups and any manual integrations, injection prep and instrumentation runlogs.

SGS

List of Qualifiers: Dioxin's

- B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.
- EDL "Estimated Detection Limit"
- EMPC "Estimated Maximum Possible Concentration"
- RL Report Limit
- CL Control Limit
- Undetected
- ppt Parts-per-trillion (pg/g; ng/L)
- V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.
- # Outside quality control limits
- * Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

- A Amount detected is less than the Lower Method Calibration Limit.
- J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.
- O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.
- E Amount detected is greater than the Upper Calibration Limit.
- S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).
- Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).
- I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).
- DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1

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DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 233835

Prepared by

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

Project: Boeing SSFL RFI ISRA SDG: 233835

DATA VALIDATION REPORT

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI ISRA

Contract Task Order: 1261.500D.00

Sample Delivery Group: 233835

Project Manager: Dixie Hambrick

Matrix: water/soil

QC Level: V

No. of Samples: 3 No. of Reanalyses/Dilutions: 0

Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
EBQW2222	G341-594-1B	N/A	Water	7/21/2009 9:13:00 AM	1613B
HZBS0149S001	G341-594-3B	N/A	Soil	7/15/2009 12:08:00 PM	1613B
HZBS0151S001	G341-594-2B	N/A	Soil	7/21/2009 8:57:00 AM	1613B

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°C ±2°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.

1

Revision 0

Project:

Data Qualifier Reference Table

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.
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

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- 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.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
М	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 Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

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.

5 Revision 0

Project: Boeing SSFL RFI ISRA SDG: 23383

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: P. Meeks

Date Reviewed: August 17, 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 a detect for OCDD at 3.13 pg/g; however, OCDD was
 detected in the soil samples above the reporting limit and at concentrations that exceeded
 5x the method blank result. Method blanks had no other target compound detects above
 the EDL.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and 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: FBQW2235 (233444) and EBQW2222 were the field QC samples associated with HZBS0151S001. FBQW2235 was the field blank associated with HZBS0149S001. HZBS0149S001 had no associated equipment rinsate. There were no detects in either of the field QC samples.
 - 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. Confirmation

DATA VALIDATION REPORT Project: Boeing SSFL RFI ISRA SDG: 233835

analyses were not performed for the 2,3,7,8-TCDF detects reported in the samples; therefore, the results for 2,3,7,8-TCDF were qualified as estimated, "J."

Compound Quantification and Reported Detection Limits: Review is not applicable at a
Level V validation. The laboratory calculated and reported compound-specific detection
limits. OCDD was reported above the upper calibration limit in both soil samples;
therefore, both results were qualified as estimated, "J." Any detect below the laboratory
lower calibration level was qualified as estimated, "J." Nondetects are valid to the
estimated detection limit (EDL).

7 Revision 0

Validated Sample Result Forms: 233835

Analysis Method 1613B

Sample Name	EBQW2222		Matrix 7	Гуре: Water	Res	ult Type: Pr	imary Result
•							
Lab Sample Name:	G341-594-1B	Sample	Date: 7	/21/2009 9:13:00 AN	A V	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822469	0.0026	0.0481	0.0026 ng/L	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.00149	0.0481	0.00149 ng/L	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.00222	0.0481	0.00222 ng/L	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.00187	0.0481	0.00187 ng/L	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.00133	0.0481	0.00133 ng/L	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.00186	0.0481	0.00186 ng/L	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.00136	0.0481	0.00136 ng/L	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.00188	0.0481	0.00188 ng/L	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.00169	0.0481	0.00169 ng/L	U	U	
1,2,3,7,8-PeCDD	40321764	0.0017	0.0481	0.0017 ng/L	U	U	
1,2,3,7,8-PeCDF	57117416	0.000896	0.0481	0.000896 ng/L	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.00141	0.0481	0.00141 ng/L	U	U	
2,3,4,7,8-PeCDF	57117314	0.000888	0.0481	0.000888 ng/L	U	U	
2,3,7,8-TCDD	1746016	0.00291	0.00962	0.00291 ng/L	U	U	
2,3,7,8-TCDF	51207319	0.00203	0.00962	0.00203 ng/L	U	U	
OCDD	3268879	0.00462	0.0962	0.00462 ng/L	U	U	
OCDF	39001020	0.00434	0.0962	0.00434 ng/L	U	U	
Total HpCDDs	37871004	0.0026	0.0481	0.0026 ng/L	U	U	
Total HpCDFs	38998753	0.00181	0.0481	0.00181 ng/L	U	U	
Гotal HxCDDs	34465468	0.00187	0.0481	0.00187 ng/L	U	U	
Гotal HxCDFs	55684941	0.00145	0.0481	0.00145 ng/L	U	U	
Гotal PeCDDs	36088229	0.0017	0.0481	0.0017 ng/L	U	U	
Total PeCDFs	30402154	0.000863	0.0481	0.000863 ng/L	U	U	
Total TCDDs	41903575	0.00291	0.00962	0.00291 ng/L	U	U	
Total TCDFs	55722275	0.00203	0.00962	0.00203 ng/L	U	U	

Tuesday, August 18, 2009 Page 1 of 3

Analysis Method 1613B

Sample Name	HZBS0149S001		Matrix 7	Гуре: Soil	Res	ult Type: Pr	imary Result	
Lab Sample Name:	G341-594-3B	Sample 1	Date: 7	/15/2009 12:08:00 PI	M V	Validation Level: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	243	4.47	0.779 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	23	4.47	0.203 pg/g				
1,2,3,4,7,8,9-HpCDF	55673897	1.57	4.47	0.307 pg/g	A	J		
1,2,3,4,7,8-HxCDD	39227286	2.74	4.47	0.212 pg/g	A	J		
1,2,3,4,7,8-HxCDF	70648269	1.31	4.47	0.173 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	10.6	4.47	0.211 pg/g				
1,2,3,6,7,8-HxCDF	57117449	0.67	4.47	0.177 pg/g	A	J		
1,2,3,7,8,9-HxCDD	19408743	5.24	4.47	0.213 pg/g				
1,2,3,7,8,9-HxCDF	72918219	0.837	4.47	0.23 pg/g	A	J		
1,2,3,7,8-PeCDD	40321764	1.2	4.47	0.152 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.458	4.47	0.115 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	1.01	4.47	0.184 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.76	4.47	0.126 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.225	0.894	0.225 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.594	0.894	0.192 pg/g	A	J	*III	
OCDD	3268879	4810	8.94	0.354 pg/g	Е	J	*III	
OCDF	39001020	92.5	8.94	0.257 pg/g				
Total HpCDDs	37871004	1020	4.47	0.779 pg/g				
Total HpCDFs	38998753	78.7	4.47	0.249 pg/g				
Total HxCDDs	34465468	78.3	4.47	0.213 pg/g				
Total HxCDFs	55684941	34.7	4.47	0.19 pg/g				
Total PeCDDs	36088229	9.25	4.47	0.152 pg/g				
Total PeCDFs	30402154	8.57	4.47	0.12 pg/g				
Total TCDDs	41903575	1.03	0.894	0.225 pg/g				
Total TCDFs	55722275	3.81	0.894	0.192 pg/g				

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Analysis Method 1613B

Sample Name	HZBS0151S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result	
Lab Sample Name:	G341-594-2B	Sample	Date: 7	/21/2009 8:57:00 AM	1	Validation Le	lation Level: V	
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
1,2,3,4,6,7,8-HpCDD	35822469	185	4.49	0.852 pg/g				
1,2,3,4,6,7,8-HpCDF	67562394	20.2	4.49	0.211 pg/g				
1,2,3,4,7,8,9-HpCDF	55673897	1.3	4.49	0.325 pg/g	A	J		
1,2,3,4,7,8-HxCDD	39227286	1.79	4.49	0.261 pg/g	A	J		
1,2,3,4,7,8-HxCDF	70648269	0.964	4.49	0.213 pg/g	A	J		
1,2,3,6,7,8-HxCDD	57653857	7.39	4.49	0.266 pg/g				
1,2,3,6,7,8-HxCDF	57117449	0.449	4.49	0.219 pg/g	A	J		
1,2,3,7,8,9-HxCDD	19408743	3.66	4.49	0.266 pg/g	A	J		
1,2,3,7,8,9-HxCDF	72918219	0.463	4.49	0.28 pg/g	A	J		
1,2,3,7,8-PeCDD	40321764	0.838	4.49	0.155 pg/g	A	J		
1,2,3,7,8-PeCDF	57117416	0.273	4.49	0.108 pg/g	A	J		
2,3,4,6,7,8-HxCDF	60851345	0.691	4.49	0.211 pg/g	A	J		
2,3,4,7,8-PeCDF	57117314	0.463	4.49	0.107 pg/g	A	J		
2,3,7,8-TCDD	1746016	0.222	0.897	0.222 pg/g	U	U		
2,3,7,8-TCDF	51207319	0.407	0.897	0.211 pg/g	A	J	*III	
OCDD	3268879	3720	8.97	0.433 pg/g	Е	J	*III	
OCDF	39001020	93.2	8.97	0.368 pg/g				
Total HpCDDs	37871004	807	4.49	0.852 pg/g				
Total HpCDFs	38998753	70.3	4.49	0.261 pg/g				
Total HxCDDs	34465468	61.2	4.49	0.265 pg/g				
Total HxCDFs	55684941	23.6	4.49	0.229 pg/g				
Total PeCDDs	36088229	6.23	4.49	0.155 pg/g				
Total PeCDFs	30402154	5.95	4.49	0.107 pg/g				
Total TCDDs	41903575	0.222	0.897	0.222 pg/g	U	U		
Total TCDFs	55722275	1.96	0.897	0.211 pg/g				

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