Chain of Custody and Supporting Documentation

239908

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091027_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Allison Ruotolo				
	CA	Field Contact #:	(626) 568-6007				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	Perchlorate 314 Water DI-WET	Perchlorate 6850 Soil	Perchlorate 6850 Water	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Comments
EBQW2250	Water	10/27/2009	15:20	10			H	H			EH		2		2		EH		EH	
FBQW2245	Water	10/27/2009	14:50	10			H	H			EH		2		2		EH		EH	
HZBS0181S001	Soil	10/27/2009	10:30	4	2	H			H	EH		2		2		EH		EH		
HZBS0181S002	Soil	10/27/2009	10:45	4	2	H			H	EH		2		2		EH		EH		
HZBS0183S001	Soil	10/27/2009	10:55	4	2	H			H	EH		2		2		EH		EH		
HZBS0183S002	Soil	10/27/2009	11:15	4	2	H			H	EH		2		2		EH		EH		
HZBS0184S001	Soil	10/27/2009	13:20	4	2	H			H	EH		2		2		EH		EH		
HZBS0184S002	Soil	10/27/2009	14:05	4	2	H			H	EH		2		2		EH		EH		
HZBS0185S001	Soil	10/27/2009	12:35	4	2	H			H	EH		2		2		EH		EH		
HZBS0185S002	Soil	10/27/2009	13:00	4	2	H			H	EH		2		2		EH		EH		

Requested Analyses

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Allan M. Rote	10-27-09	Richard Arthur	10/28/09				
Company: MWH	Time: 16:05	Company: GEL	Time: 0905	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxin analysis shipped directly CFA, and sample volume for all other analysis shipped to GEL

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL			**SDG/ARCOC/Work Order:** 239908	
Received By: Ricky Albee			**Date Received:** 10/28/09	
Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.	
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 40 cpm	
Classified Radioactive II or III by RSO?		✓		
COC/Samples marked containing PCBs?		✓		
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped:	UN#:
Samples identified as Foreign Soil?		✓		

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3°C, 4°
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: received 3 containers for each soil, 8 containers for each water
12	COC form is properly signed in relinquished/received sections?				

Comments: FedEx 9457 3163 0707- 3°C
9457 3163 0692-3°C
9457 3163 0718-4°C

PM (or PMA) review: Initials JT Date 10/28/09

239908
~~238234~~ JT 10/28/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water				Comments
1	EBQW2249	Water	10/1/2009	15:30	9			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:18	2	5	5				5			5		5					
2	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5					
2	HZBS0080AS001	Soil	10/1/2009	14:35	3	5				2	5		5	5		5					
2	HZBS0080AS002	Soil	10/1/2009	14:45	3	5				2	5		5	5		5					
	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5					
	HZBS0082AS002	Soil	10/1/2009	9:05	3	5				2	5		5	5		5					
	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5					
	HZBS0084AS002	Soil	10/1/2009	8:15	3	5				2	5		5	5		5					
✓	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5					

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

239908

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water				Comments
3 ✓	HZBS0123AS002	Soil	10/1/2009	13:30	3	5				2	5		5	5		5					
3	HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5					
3 ✓	HZBS0124AS002	Soil	10/1/2009	12:30	3	5				2	5		5	5		5					
2 ✓	HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5					
✓	HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5					
	HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5					
	HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5					
	HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5					
	HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5					

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

239908

Client: SSFL	SDG/ARCOC/Work Order: ~~238234~~ JT 10/28/09
Received By: AMS	Date Received: 10/3/09

Suspected Hazard Information	Yes	No
COC/Samples marked as radioactive?		✓
Classified Radioactive II or III by RSO?		✓
COC/Samples marked containing PCBs?		✓
Shipped as a DOT Hazardous?		✓
Samples identified as Foreign Soil?		✓

*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.

Maximum Counts Observed*: 3000 cpm

Hazard Class Shipped: UN#:

	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 ≤ 6 deg. C)?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 2.7, 3°
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?			✓	Circle Applicable: seals broken (damaged container) leaking container other (describe) received (2) broken Amber 1L ID: EBRW2249
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?	✓			

Comments:
Fx: 9457 5163 0800
" " 0795
" 3159 3957

PM (or PMA) review: Initials AMS Date 10/2/09

Date: 10/28/09

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:** **jacqueline.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
MWHBM20 091001_00	HVBF33AS01, HVBF33AS02	10/1/09		Run perchlorate by 6850 on 48 hour TAT

The reason for these changes:

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

Thank you

2398234

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	RSRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1691614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4989				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Requested Analyses

Instructions/TAT

Legend: Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010B/6020/7470A - Water	Metals by 6010B/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015B - Soil	TPH by SW8015B - Water	Metals 6010B Soil Aluminum	Metals 6010B Soil Boron	Perchlorate 6850 Soil	Comments
1	EBQW2249	Water	10/1/2009	15:30	9			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:16	2	5	5				5			5		5		2	2	2 (4)	
3	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5		2	2	2 (4)	
4	HZBS0080AS001	Soil	10/1/2009	14:35	3	5				2	5		5	5		5		20		10	
5	HZBS0080AS002	Soil	10/1/2009	14:45	3	5	5	0		2	5		5	5		5				10	
6	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5				10	
7	HZBS0082AS002	Soil	10/1/2009	9:05	3	5				2	5		5	5		5				10	
8	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5				10	
9	HZBS0084AS002	Soil	10/1/2009	8:15	3	5	5	0		2	5		5	5		5				10	
10	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5				10	

(3) B

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.A. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

(1) SSL 10/8/09 (2) SSL 10/20/09 (4) SSL 10/28/09

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94598	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7368				

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7471A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Perchlorate 8330 Soil			Comments
.3 HZBS0123AS002	Soil	10/1/2009	13:30	3	5	5	0		2	5		5	5		5		10			
.3 HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5		10			
.3 HZBS0124AS002	Soil	10/1/2009	12:30	3	5	5	0		2	5		5	5		5		10			
.2 HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5		10			
HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5		10			
HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5		10			
HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5		10			
HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5		10			
HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5		10			

(3)

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: Gel	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

OSSL 10/8/09 (3) SSC 10/27/09

Date: 11/05/09

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:** **jacqueline.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
MWHBM20 091001_00	HVBF33AS01	10/1/09		Cancel perchlorate by 6850 on 48 hour TAT

The reason for these changes:

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

Thank you

239908 ~~238234~~

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martesin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martesin				
	CA	Field Contact #:	(323) 304-4869				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7369				

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Diesels by 8015B - Soil	Diesels by 8015B - Water	Metals by 6010B/6020/7470A - Water	Metals by 6010B/6020/7471A - Soil	PCBs by SW8082 - Soil	PCBs by SW8082 - Water	Perchlorate 314 Soil DI/WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Metals 6010B Soil Aluminum	Metals 6010B Soil Boron	Perchlorate BISO 30:1	Comments
1	EBQW2249	Water	10/1/2009	15:30	6			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:16	2	5	5				5			5		5		2	2	2 ~~4~~ (5)	
2	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5		2	2	2 (4)	
3	HZBS0080AS001	Soil	10/1/2009	14:35	5	5				2	5		5	5		5		30		10	
	HZBS0080AS002	Soil	10/1/2009	14:45	3	5	5	0		2	5		5	5		5				10	
	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5				16	
	HZBS0082AS002	Soil	10/1/2009	8:05	3	5				2	5		5	5		5				10	
	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5				10	
	HZBS0084AS002	Soil	10/1/2009	8:15	3	5	5	0		2	5		5	5		5				10	
✓	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5				10	

Comments: (5)

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

Legend: Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

(1) SSL 10/8/09 (2) SSL 10/20/09 (4) SSL 10/28/09 (5) 11/5/09

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94598	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7369				

Requested Analyses

Sample Name	Matrix	Date	Time	No. of Containers	DI216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015M - Soil	TPH by SW8015M - Water	Perchlorate 8330 Soil			
HZBS0123AS002	Soil	10/1/2009	13:30	3	5	5	①		2	5		5	5		5		10			
HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5		10			
HZBS0124AS002	Soil	10/1/2009	12:30	3	5	5	①		2	5		5	5		5		10			
HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5		10			
HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5		10			
HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5		10			
HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5		10			
HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5		10			
HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5		10			

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

Comments

③

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

OSC 10/8/09 ③ SSC 10/27/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date: _____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name: _____
Date: _____

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 239908
SDG: 239908

November 04, 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 October 02, 2009 and October 28, 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 Identification	Sample Description
239908001	EBQW2250
239908002	FBQW2245
239908003	HZBS0181S001
239908004	HZBS0181S002
239908005	HZBS0183S001
239908006	HZBS0183S002
239908007	HZBS0184S001
239908008	HZBS0184S002
239908009	HZBS0185S001
239908010	HZBS0185S002
239908012	HVBF33AS02

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: General Chemistry, Perchlorates by LCMSMS..

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

Chain of Custody and Supporting Documentation

239908

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091027_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Allison Ruotolo				
	CA	Field Contact #:	(626) 568-6007				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	Perchlorate 314 Water DI-WET	Perchlorate 6850 Soil	Perchlorate 6850 Water	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Comments
EBQW2250	Water	10/27/2009	15:20	10			H	H			EH		2		2		EH		EH	
FBQW2245	Water	10/27/2009	14:50	10			H	H			EH		2		2		EH		EH	
HZBS0181S001	Soil	10/27/2009	10:30	4	2	H			H	EH		2		2		EH		EH		
HZBS0181S002	Soil	10/27/2009	10:45	4	2	H			H	EH		2		2		EH		EH		
HZBS0183S001	Soil	10/27/2009	10:55	4	2	H			H	EH		2		2		EH		EH		
HZBS0183S002	Soil	10/27/2009	11:15	4	2	H			H	EH		2		2		EH		EH		
HZBS0184S001	Soil	10/27/2009	13:20	4	2	H			H	EH		2		2		EH		EH		
HZBS0184S002	Soil	10/27/2009	14:05	4	2	H			H	EH		2		2		EH		EH		
HZBS0185S001	Soil	10/27/2009	12:35	4	2	H			H	EH		2		2		EH		EH		
HZBS0185S002	Soil	10/27/2009	13:00	4	2	H			H	EH		2		2		EH		EH		

Requested Analyses

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Allan M. Rote	10-27-09	Richard Arthur	10/28/09				
Company: MWH	Time: 16:05	Company: GEL	Time: 0905	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxin analysis shipped directly CFA, and sample volume for all other analysis shipped to GEL

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL			**SDG/ARCOC/Work Order:** 239908	
Received By: Ricky Albee			**Date Received:** 10/28/09	
Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.	
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 40 cpm	
Classified Radioactive II or III by RSO?		✓		
COC/Samples marked containing PCBs?		✓		
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped:	UN#:
Samples identified as Foreign Soil?		✓		

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3°C, 4°
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: received 3 containers for each soil, 8 containers for each water
12	COC form is properly signed in relinquished/received sections?				

Comments: FedEx 9457 3163 0707- 3°C
9457 3163 0692-3°C
9457 3163 0718-4°C

PM (or PMA) review: Initials JT Date 10/28/09

239908
~~238234~~ JT 10/28/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water				Comments
1	EBQW2249	Water	10/1/2009	15:30	9			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:18	2	5	5				5			5		5					
2	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5					
2	HZBS0080AS001	Soil	10/1/2009	14:35	3	5				2	5		5	5		5					
2	HZBS0080AS002	Soil	10/1/2009	14:45	3	5				2	5		5	5		5					
	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5					
	HZBS0082AS002	Soil	10/1/2009	9:05	3	5				2	5		5	5		5					
	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5					
	HZBS0084AS002	Soil	10/1/2009	8:15	3	5				2	5		5	5		5					
✓	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5					

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

239908

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water				Comments
3 ✓	HZBS0123AS002	Soil	10/1/2009	13:30	3	5				2	5		5	5		5					
3	HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5					
3 ✓	HZBS0124AS002	Soil	10/1/2009	12:30	3	5				2	5		5	5		5					
2 ✓	HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5					
✓	HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5					
	HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5					
	HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5					
	HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5					
	HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5					

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

239908

Client: SSFL	SDG/ARCOC/Work Order: ~~238234~~ JT 10/28/09
Received By: AMS	Date Received: 10/3/09

Suspected Hazard Information	Yes	No
COC/Samples marked as radioactive?		✓
Classified Radioactive II or III by RSO?		✓
COC/Samples marked containing PCBs?		✓
Shipped as a DOT Hazardous?		✓
Samples identified as Foreign Soil?		✓

*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.

Maximum Counts Observed*: 3000 cpm

Hazard Class Shipped: UN#:

	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 ≤ 6 deg. C)?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 2.7, 3°
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?			✓	Circle Applicable: seals broken (damaged container) leaking container other (describe) received (2) broken Amber 1L ID: EBRW2249
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?	✓			

Comments:
Fx: 9457 5163 0800
" " 0795
" 3159 3957

PM (or PMA) review: Initials AMS Date 10/2/09

Date: 10/28/09

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:** **jacqueline.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
MWHBM20 091001_00	HVBF33AS01, HVBF33AS02	10/1/09		Run perchlorate by 6850 on 48 hour TAT

The reason for these changes:

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

Thank you

2398234

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	RSRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1691614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4989				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Requested Analyses

Instructions/TAT

Legend: Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010B/6020/7470A - Water	Metals by 6010B/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015B - Soil	TPH by SW8015B - Water	Metals 6010B Soil Aluminum	Metals 6010B Soil Boron	Perchlorate 6850 Soil	Comments
1	EBQW2249	Water	10/1/2009	15:30	9			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:16	2	5	5				5			5		5		2	2	2 (4)	
3	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5		2	2	2 (4)	
4	HZBS0080AS001	Soil	10/1/2009	14:35	3	5				2	5		5	5		5		20		10	
5	HZBS0080AS002	Soil	10/1/2009	14:45	3	5	5	0		2	5		5	5		5				10	
6	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5				10	
7	HZBS0082AS002	Soil	10/1/2009	9:05	3	5				2	5		5	5		5				10	
8	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5				10	
9	HZBS0084AS002	Soil	10/1/2009	8:15	3	5	5	0		2	5		5	5		5				10	
10	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5				10	

(3) B

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.A. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

(1) SSL 10/8/09 (2) SSL 10/20/09 (4) SSL 10/28/09

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94598	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7368				

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7471A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Perchlorate 8330 Soil			Comments
.3 HZBS0123AS002	Soil	10/1/2009	13:30	3	5	5	0		2	5		5	5		5		10			
.3 HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5		10			
.3 HZBS0124AS002	Soil	10/1/2009	12:30	3	5	5	0		2	5		5	5		5		10			
.2 HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5		10			
HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5		10			
HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5		10			
HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5		10			
HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5		10			
HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5		10			

(3)

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: Gel	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

OSSL 10/8/09 (3) SSC 10/27/09

Date: 11/05/09

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:** **jacqueline.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
MWHBM20 091001_00	HVBF33AS01	10/1/09		Cancel perchlorate by 6850 on 48 hour TAT

The reason for these changes:

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

Thank you

239908 ~~238234~~

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martesin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martesin				
	CA	Field Contact #:	(323) 304-4869				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7369				

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Diesels by 8015B - Soil	Diesels by 8015B - Water	Metals by 6010B/6020/7470A - Water	Metals by 6010B/6020/7471A - Soil	PCBs by SW8082 - Soil	PCBs by SW8082 - Water	Perchlorate 314 Soil DI/WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water	Metals 6010B Soil Aluminum	Metals 6010B Soil Boron	Perchlorate BISO 30:1	Comments
1	EBQW2249	Water	10/1/2009	15:30	6			10	10			10			10		10				
2	HVBF33AS01	Soil	10/1/2009	10:16	2	5	5				5			5		5		2	2	2 ~~4~~ (5)	
2	HVBF33AS02	Soil	10/1/2009	10:40	2	5	5				5			5		5		2	2	2 (4)	
3	HZBS0080AS001	Soil	10/1/2009	14:35	5	5				2	5		5	5		5		30		10	
	HZBS0080AS002	Soil	10/1/2009	14:45	3	5	5	0		2	5		5	5		5				10	
	HZBS0082AS001	Soil	10/1/2009	8:30	3	5				2	5		5	5		5				16	
	HZBS0082AS002	Soil	10/1/2009	8:05	3	5				2	5		5	5		5				10	
	HZBS0084AS001	Soil	10/1/2009	7:50	3	5				2	5		5	5		5				10	
	HZBS0084AS002	Soil	10/1/2009	8:15	3	5	5	0		2	5		5	5		5				10	
✓	HZBS0123AS001	Soil	10/1/2009	13:15	3	5				2	5		5	5		5				10	

Comments: (5)

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

Legend: Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

(1) SSL 10/8/09 (2) SSL 10/20/09 (4) SSL 10/28/09 (5) 11/5/09

CHAIN OF CUSTODY RECORD

COC #: MWHBM20091001_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischi				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94598	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7369				

Requested Analyses

Sample Name	Matrix	Date	Time	No. of Containers	DI216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PCB by SW8082 - Soil	PCB by SW8082 - Water	Perchlorate 314 Soil DI-WET	SVOCs by SW8270C SIM - Soil	SVOCs by SW8270C SIM - Water	TPH by SW8015M - Soil	TPH by SW8015M - Water	Perchlorate 8330 Soil			
HZBS0123AS002	Soil	10/1/2009	13:30	3	5	5	①		2	5		5	5		5		10			
HZBS0124AS001	Soil	10/1/2009	11:00	3	5				2	5		5	5		5		10			
HZBS0124AS002	Soil	10/1/2009	12:30	3	5	5	①		2	5		5	5		5		10			
HZBS0175S001	Soil	10/1/2009	13:50	3	5	5			2	5		5	5		5		10			
HZBS0175S002	Soil	10/1/2009	14:10	3	5	5			2	5		5	5		5		10			
HZBS0177S001	Soil	10/1/2009	15:00	3	5	5			2	5		5	5		5		10			
HZBS0177S002	Soil	10/1/2009	15:15	3	5	5			2	5		5	5		5		10			
HZBS0180S001	Soil	10/1/2009	9:30	3	5	5			2	5		5	5		5		10			
HZBS0180S002	Soil	10/1/2009	10:00	3	5	5			2	5		5	5		5		10			

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

Comments

③

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	10/1/09	R.M. Stelling	10/2/09				
Company: MWH	Time: 1445	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

OSC 10/8/09 ③ SSC 10/27/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date: _____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name: _____
Date: _____

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 03 November 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: 239908

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:	239908
Project Manager:	Dixie Hambrick
Matrix:	water/soil
QC Level:	V
No. of Samples:	10
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
EBQW2250	239908001	N/A	WATER	10/27/2009 3:20:00 PM	314.0, 6850
FBQW2245	239908002	N/A	WATER	10/27/2009 2:50:00 PM	314.0, 6850
HZBS0181S001	239908003	N/A	SOIL	10/27/2009 10:30:00 AM	314.0-DI WET, 6850
HZBS0181S002	239908004	N/A	SOIL	10/27/2009 10:45:00 AM	314.0-DI WET, 6850
HZBS0183S001	239908005	N/A	SOIL	10/27/2009 10:55:00 AM	314.0-DI WET, 6850
HZBS0183S002	239908006	N/A	SOIL	10/27/2009 11:15:00 AM	314.0-DI WET, 6850
HZBS0184S001	239908007	N/A	SOIL	10/27/2009 1:20:00 PM	314.0-DI WET, 6850
HZBS0184S002	239908008	N/A	SOIL	10/27/2009 2:05:00 PM	314.0-DI WET, 6850
HZBS0185S001	239908009	N/A	SOIL	10/27/2009 12:35:00 PM	314.0-DI WET, 650
HZBS0185S002	239908010	N/A	SOIL	10/27/2009 1:00:00 PM	314.0-DI WET, 6850
HVBF33AS02	239908012	N/A	SOIL	10/01/2009 10:40:00 AM	6850

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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 314.0 and 6850—Perchlorate

Reviewed By: E. Wessling
Date Reviewed: November 6, 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-20, Rev. 0), EPA Methods 314.0 and 6850*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 28 days, was met for all samples with the exception of sample HZBF33AS02 which was analyzed past the holding time. The detect in this sample was qualified as estimated, "J."

- Calibration: Review is not applicable at a Level V validation.

- Blanks: Method blanks and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115% for 314.0 and 70-130% for 6850 soil recoveries and 85-115% for 6850 water recoveries.

- Laboratory Duplicates: A laboratory duplicate was performed on HZBS0181S001 with acceptable RPDs for the 314.0 analysis. No laboratory duplicate analyses were performed for the 6850 analysis.

- Matrix Spike/Matrix Spike Duplicate: Recoveries and RPDs were within method-established QC limits of 80-120% and ≤15%, respectively, for the 6850 analysis. A matrix spike was performed for the 314.0 analysis with recovery of perchlorate within the method-established limit of 80-120%.

- Sample Result Verification: The sample results reported on the Form I were verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had a field blank and equipment rinsate sample which were both free of target compound contamination by both analytical methods.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 239908

Analysis Method 314.0

Sample Name EBQW2250 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 239908001 **Sample Date:** 10/27/2009 3:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name FBQW2245 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 239908002 **Sample Date:** 10/27/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Analysis Method 314.0-DI WET

Sample Name HZBS0181S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908003 **Sample Date:** 10/27/2009 10:30:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	3.24	4		1 ug/L	J	**J**	

Sample Name HZBS0181S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908004 **Sample Date:** 10/27/2009 10:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name HZBS0183S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908005 **Sample Date:** 10/27/2009 10:55:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name HZBS0183S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908006 **Sample Date:** 10/27/2009 11:15:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name HZBS0184S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908007 **Sample Date:** 10/27/2009 1:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name HZBS0184S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908008 **Sample Date:** 10/27/2009 2:05:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Sample Name HZBS0185S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908009 **Sample Date:** 10/27/2009 12:35:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Analysis Method 314.0-DI WET

Sample Name HZBS0185S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908010 **Sample Date:** 10/27/2009 1:00:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	**U**	

Analysis Method 6850

Sample Name EBQW2250 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 239908001 **Sample Date:** 10/27/2009 3:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Sample Name FBQW2245 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 239908002 **Sample Date:** 10/27/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Sample Name HVBF33AS02 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908012 **Sample Date:** 10/1/2009 10:40:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.0605	0.2	0.05	ug/L	HJh	**J**	**H**

Sample Name HZBS0181S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908003 **Sample Date:** 10/27/2009 10:30:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.0775	0.2	0.05	ug/L	J	**J**	

Sample Name HZBS0181S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908004 **Sample Date:** 10/27/2009 10:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Sample Name HZBS0183S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908005 **Sample Date:** 10/27/2009 10:55:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.173	0.2	0.05	ug/L	J	**J**	

Sample Name HZBS0183S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908006 **Sample Date:** 10/27/2009 11:15:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Analysis Method 6850

Sample Name HZBS0184S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908007 **Sample Date:** 10/27/2009 1:20:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.72	0.2	0.05	ug/L			

Sample Name HZBS0184S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908008 **Sample Date:** 10/27/2009 2:05:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Sample Name HZBS0185S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908009 **Sample Date:** 10/27/2009 12:35:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.141	0.2	0.05	ug/L	J	**J**	

Sample Name HZBS0185S002 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 239908010 **Sample Date:** 10/27/2009 1:00:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.2	0.2	0.05	ug/L	U	**U**	

Chain of Custody and Supporting Documentation

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091029_00

240083

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:	805-764-8061		
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				
	CA	Field Contact #:	(626) 255-0503				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Energetics 8330 Soil	Energetics 8330 Water	Metals by 6010/6020/7470A - Water	Metals by 6010/6020/7471A - Soil	PAHs by SW8270C SIM - Soil	PAHs by SW8270C SIM - Water	Perchlorate 314 Soil DI-WET	Perchlorate 314 Water	pH by SW9045C - Soil				Comments
EBQW2251	Water	10/29/2009	14:50	8			10		10	10			10		10					
HZET0728S001	Soil	10/29/2009	10:50	2	10	10		10			10	10		10		10				HVS-3
HZET0729S001	Soil	10/29/2009	11:05	2	10	10		10			10	10		10		10				HVS-3
HZET0730S001	Soil	10/29/2009	11:25	2	10	10		10			10	10		10		10				HVS-3 RWQCB split
HZET0731S001	Soil	10/29/2009	11:45	2	10	10		10			10	10		10		10				HVS-3

Requested Analyses

Instructions/TAT

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. Relinquished by:	Date: 10/29/09	2. Received by: R.M. Stelly	Date: 10/30/09	3. Relinquished by:	Date:	4. Received by:	Date:
Company: MWH	Time: 1945	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSF1			**SDG/ARCOC/Work Order:** 240083	
Received By: RMS			**Date Received:** 10/30/09	
Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.	
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*:	
Classified Radioactive II or III by RSO?		✓	3000M	
COC/Samples marked containing PCBs?		✓		
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped:	UN#:
Samples identified as Foreign Soil?		✓		

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3c
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?	✓			

Comments:

Fx: 9457 3158 0580

PM (or PMA) review: Initials JT Date 10/30/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date: _____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name: _____
Date: _____

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 240083
SDG: 240083

November 09, 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 October 30, 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 Identification	Sample Description
240083001	EBQW2251
240083002	HZET0728S001
240083003	HZET0729S001
240083004	HZET0730S001
240083005	HZET0731S001

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: Explosives by LCMSMS, GC/MS Semivolatile, General Chemistry, HPLC Explosive, Metals, Percent Moisture and Dioxins (Cape Fear Analytical).

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

Jacqueline Trudell

Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 09 November 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: 240083

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:	240083
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	5
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
EBQW2251	240083001	1121001	Water	10/29/2009 2:50:00 PM	1613B, 314.0, 6010B, 6020, 7470A, 8270C, 8321A, 8330
HZET0728S001	240083002	1122001	Soil	10/29/2009 10:50:00 AM	1613B, 314.0-DI WET, 6010B, 6020, 7471A, 8270C, 8321A, 8330, 9045C
HZET0729S001	240083003	1122002	Soil	10/29/2009 11:05:00 AM	1613B, 314.0-DI WET, 6010B, 6020, 7471A, 8270C, 8321A, 8330, 9045C
HZET0730S001	240083004	1122003	Soil	10/29/2009 11:25:00 AM	1613B, 314.0-DI WET, 6010B, 6020, 7471A, 8270C, 8321A, 8330, 9045C
HZET0731S001	240083005	1122004	Soil	10/29/2009 11:45:00 AM	1613B, 314.0-DI WET, 6010B, 6020, 7471A, 8270C, 8321A, 8330, 9045C

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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: P. Meeks
Date Reviewed: November 19, 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 aqueous method blank had detects below the PQL for 16 target compounds; therefore, OCDD, 2,3,4,7,8-PeCDF, total HpCDD, and total PeCDF were qualified as nondetected, "U," at the EDL in EBQW2251. Detected results for the remaining total were qualified as estimated, "J," due to detects in the aqueous method blank. The soil method blank had detects or estimated maximum possible concentration (EMPCs) for all target compounds except 2,3,7,8-TCDD. Detects in the soil samples less than the reporting limit or less than 5× the method blank detect were qualified as nondetected, "U," at the EDL if detected below the EDL or at the level of contamination if detected above the EDL. Detected results for all totals were qualified as estimated, "J," due to detects in the soil method blank.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613. The RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0728S001. Recoveries were within the acceptance criteria listed in Table 6 of Method 1613. The RPDs were within the laboratory-established control limits.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank associated with the samples in this SDG; however, the sample was not analyzed for dioxins. EBQW2251 was identified as the equipment rinsate associated with the samples in this SDG. There were no detects above the EDL in this 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 summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed confirmation analyses for 2,3,7,8-TCDF. When the original result was reported as an estimated maximum possible concentration (EMPC), the original result was rejected, "R," in favor the confirmation result. When the original result was not reported as an EMPC, or if both the original analysis and the confirmation analysis were both reported as EMPCs, the confirmation result was rejected, "R," in favor of the initial result.

- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. (EMPCs) were identified in the sample of this SDG, as denoted by the laboratory "K," code. 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 METHOD 8330—Energetics

Reviewed By: P. Meeks
Date Reviewed: November 19, 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 Explosives, Nitroaromatics, and Nitramines (DVP-16, Rev. 0), EPA Methods 8321A and 8330*, and the *National Functional Guidelines for Organic Data Review* (10/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was 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.

- Blanks: The method blank 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 HZET0720S001. Recoveries and the aqueous RPDs were within laboratory-established QC limits.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2251 was identified as 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. The laboratory analyzed for energetic compounds by Method 8330.

- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. The reporting limits (RLs) and/or method detection limits (MDLs) were not adjusted by the laboratory for the actual sample weights extracted. The RLs and/or MDLs were adjusted by the reviewer as necessary. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

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

Reviewed By: P. Meeks
Date Reviewed: November 19, 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: Mercury was reported in the soil method blank at -0.00523 mg/kg; therefore, mercury detected in the soil samples was qualified as estimated, "J." Thallium was detected in bracketing CCBs at 0.993 and 0.594 µg/L; therefore, thallium detected in all samples was qualified as nondetected, "U," at the reporting limit if detected below the reporting limit or at the level of contamination if detected above. Method blanks and CCBs had no other 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 HZET0720S001. The RPDs for mercury and nickel exceeded the control limit; therefore, mercury and nickel detected in the soil samples were qualified as estimated, "J," and nondetects were qualified as estimated, "UJ." The remaining RPDs were within the method-established control limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0720S001. The MSD recoveries for chromium, copper, lead, and nickel exceeded the control limit; therefore, detects for these analytes in the soil samples were qualified as estimated, "J." The remaining recoveries and RPDs were within method-established QC limits.

- Serial Dilution: Serial dilution analyses were performed on HZET0720S001 and EBQW2251. The %Ds were within the method-established control 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. Some ICP-MS analytes in all soil samples were analyzed at 10× dilutions in order to report the analytes within the linear range of the instrument or due to matrix interference. The remaining soil ICP-MS analytes were reported from the laboratory's standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2251 was identified as the equipment rinsate associated with the

samples in this SDG. There were no applicable detects above the MDL in either sample.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

D. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks
Date Reviewed: November 19, 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-20, Rev. 0), EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0728S001. The RPD was within the method-established control limit of ≤15%.
- Matrix Spike/Matrix Spike Duplicate: A matrix spike was performed on HZET0728S001. The recovery was within method-established QC limits of 80-120%.
- Sample Result Verification: The sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Perchlorate in HZET0729S001 was reported from a 10× dilution due to matrix interference. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2251 was identified as the equipment rinsate associated with the samples in this SDG. Perchlorate was not detected in either sample.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

E. EPA METHOD 8270C—Semivolatile Organic Compounds (SVOCs)

Reviewed By: P. Meeks
Date Reviewed: November 19, 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 Semivolatile Organics (DVP-3, Rev. 0), EPA Method 8270C*, and the *National Functional Guidelines for Organic Data Review* (10/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was 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.

- GC/MS Tuning: Review is not applicable at a Level V validation.

- 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 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 HZET0728S001. 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: FBQW2239 (235913) was the field blank and EBQW2251 was identified as the equipment rinsate associated with the samples in this SDG. There were no reportable detects in either sample.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: Review is not applicable at a Level V validation.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for semivolatile target compounds by Method 8270C low-level.

- 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.

- Tentatively Identified Compounds: TICs were not reported by the laboratory for this SDG.

- System Performance: Review is not applicable at a Level V validation.

F. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: November 19, 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 General Minerals (DVP-6, Rev. 0), EPA Method 9045C*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding times, 24 hours from preparation for soil pH, was met.

- Calibration: Review is not applicable at a Level V validation.

- Blanks: Not applicable to this analysis.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on HZET0731S001. The RPD was within the laboratory-established control limit.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to this analysis.

- Sample Result Verification: Review is not applicable at a Level V validation. 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: Not applicable to this analysis.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 240083

Analysis Method 1613B

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 1121001 **Sample Date:** 10/29/2009 2:50:00 PM **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	1.42	24	1.3	pg/L	J	J	
1,2,3,4,6,7,8-HpCDF	67562394	0.845	24	0.845	pg/L	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	1.15	24	1.15	pg/L	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.834	24	0.834	pg/L	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.663	24	0.663	pg/L	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.976	24	0.976	pg/L	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.711	24	0.711	pg/L	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.949	24	0.949	pg/L	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.907	24	0.907	pg/L	U	U	
1,2,3,7,8-PeCDD	40321764	0.688	24	0.688	pg/L	U	U	
1,2,3,7,8-PeCDF	57117416	0.661	24	0.661	pg/L	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.653	24	0.653	pg/L	U	U	
2,3,4,7,8-PeCDF	57117314	24	24	24	pg/L	J	U	B, result changed from 0.884 and EDL from 0.647
2,3,7,8-TCDD	1746016	0.812	4.8	0.812	pg/L	U	U	
2,3,7,8-TCDF	51207319	1.17	4.8	1.17	pg/L	U	U	
OCDD	3268879	48	48	48	pg/L	J	U	B, result changed from 2.84 and EDL from 2.17
OCDF	39001020	2.02	48	2.02	pg/L	U	U	
TEQ WHO2005 ND=0 with EMPCs		0.36			pg/L			
TEQ WHO2005 ND=0.5 with EMPCs		0.8			pg/L			
Total HpCDD	37871004	24	24	24	pg/L	J	U	B, result changed from 1.42 and EDL from 1.3
Total HpCDF	38998753	0.845	24	0.743	pg/L	J	J	B
Total HxCDD	34465468	0.834	24	0.834	pg/L	U	U	
Total HxCDF	55684941	0.711	24	0.653	pg/L	J	J	B
Total PeCDD	36088229	0.688	24	0.688	pg/L	U	U	
Total PeCDF	30402154	24	24	24	pg/L	J	U	B, result changed from 0.884 and EDL from 0.647
Total TCDD	41903575	0.812	4.8	0.812	pg/L	U	U	
Total TCDFs	30402143	1.17	4.8	1.17	pg/L	U	U	

Analysis Method 1613B

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1122001 **Sample Date:** 10/29/2009 10:50:00 AM **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	52.8	2.17	0.437	pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	7.85	2.17	0.122	pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	0.873	2.17	0.2	pg/g	J	J	
1,2,3,4,7,8-HxCDD	39227286	0.414	2.17	0.263	pg/g	JK	UJ	*III
1,2,3,4,7,8-HxCDF	70648269	2.17	2.17	2.17	pg/g	J	U	B, result changed from 0.499 and EDL from 0.102
1,2,3,6,7,8-HxCDD	57653857	2.28	2.17	0.294	pg/g			
1,2,3,6,7,8-HxCDF	57117449	2.17	2.17	2.17	pg/g	J	U	B, result changed from 0.372 and EDL from 0.107
1,2,3,7,8,9-HxCDD	19408743	2.17	2.17	2.17	pg/g	J	U	B, result changed from 1.1 and EDL from 0.292
1,2,3,7,8,9-HxCDF	72918219	0.541	2.17	0.139	pg/g	JK	UJ	*III
1,2,3,7,8-PeCDD	40321764	0.231	2.17	0.12	pg/g	J	J	
1,2,3,7,8-PeCDF	57117416	2.17	2.17	2.17	pg/g	J	U	B, result changed from 0.289 and EDL from 0.162
2,3,4,6,7,8-HxCDF	60851345	0.475	2.17	0.11	pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.17	2.17	2.17	pg/g	J	U	B, result changed from 0.578 and EDL from 0.153
2,3,7,8-TCDD	1746016	0.16	0.435	0.103	pg/g	JK	UJ	*III
2,3,7,8-TCDF	51207319	0.543	0.543	0.543	pg/g		U	B, RL changed from 0.435 and EDL from 0.102
2,3,7,8-TCDF	51207319	0.595	0.435	0.204	pg/g	K	R	D
OCDD	3268879	573	4.35	0.712	pg/g			
OCDF	39001020	32.8	4.35	0.332	pg/g			
TEQ WHO2005 ND=0 with EMPCs		2			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		2			pg/g			
Total HpCDD	37871004	313	2.17	0.437	pg/g		J	B
Total HpCDF	38998753	42.7	2.17	0.122	pg/g		J	B
Total HxCDD	34465468	15.1	2.17	0.263	pg/g		J	B, *III
Total HxCDF	55684941	13.5	2.17	0.102	pg/g		J	B, *III
Total PeCDD	36088229	3.31	2.17	0.12	pg/g		J	B
Total PeCDF	30402154	10.2	2.17	0.153	pg/g		J	B
Total TCDD	41903575	0.619	0.435	0.103	pg/g		J	B, *III
Total TCDFs	30402143	5.2	0.435	0.204	pg/g		J	B, *III

Analysis Method 1613B

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1122002 **Sample Date:** 10/29/2009 11:05:00 AM **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	16.1	2.08	0.266	pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.49	2.08	0.0835	pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	0.22	2.08	0.161	pg/g	J	J	
1,2,3,4,7,8-HxCDD	39227286	2.08	2.08	2.08	pg/g	J	U	B, result changed from 0.193 and EDL from 0.153
1,2,3,4,7,8-HxCDF	70648269	2.08	2.08	2.08	pg/g	J	U	B, result changed from 0.196 and EDL from 0.131
1,2,3,6,7,8-HxCDD	57653857	0.536	2.08	0.191	pg/g	JK	UJ	*III
1,2,3,6,7,8-HxCDF	57117449	0.178	2.08	0.144	pg/g	JK	UJ	*III
1,2,3,7,8,9-HxCDD	19408743	2.08	2.08	2.08	pg/g	J	U	B, result changed from 0.263 and EDL from 0.18
1,2,3,7,8,9-HxCDF	72918219	2.08	2.08	2.08	pg/g	J	U	B, result changed from 0.14 and EDL from 0.0893
1,2,3,7,8-PeCDD	40321764	0.109	2.08	0.109	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.081	2.08	0.081	pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.2	2.08	0.164	pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	0.236	2.08	0.09	pg/g	JK	UJ	*III
2,3,7,8-TCDD	1746016	0.0946	0.416	0.0946	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.416	0.416	0.416	pg/g	J	U	B, result changed from 0.329 and EDL from 0.158
2,3,7,8-TCDF	51207319	0.467	0.416	0.113	pg/g		R	D
OCDD	3268879	212	4.16	0.426	pg/g			
OCDF	39001020	7.98	4.16	0.261	pg/g			
TEQ WHO2005 ND=0 with EMPCs		0.529			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.632			pg/g			
Total HpCDD	37871004	47.9	2.08	0.266	pg/g		J	B
Total HpCDF	38998753	6.73	2.08	0.0835	pg/g		J	B
Total HxCDD	34465468	4.06	2.08	0.153	pg/g		J	B, *III
Total HxCDF	55684941	4.39	2.08	0.0893	pg/g		J	B, *III
Total PeCDD	36088229	0.135	2.08	0.109	pg/g	J	J	B
Total PeCDF	30402154	2.85	2.08	0.081	pg/g		J	B, *III
Total TCDD	41903575	0.437	0.416	0.0946	pg/g		J	B
Total TCDFs	30402143	0.91	0.416	0.158	pg/g		J	B

Analysis Method 1613B

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1122003 **Sample Date:** 10/29/2009 11:25:00 AM **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	2.77	2.36	0.215	pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.36	2.36	2.36	pg/g	J	U	B, result changed from 1.23 and EDL from 0.106
1,2,3,4,7,8,9-HpCDF	55673897	0.194	2.36	0.194	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.143	2.36	0.143	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	2.36	2.36	2.36	pg/g	J	U	B, result changed from 0.217 and EDL from 0.0944
1,2,3,6,7,8-HxCDD	57653857	0.163	2.36	0.163	pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.151	2.36	0.0929	pg/g	JK	UJ	*III
1,2,3,7,8,9-HxCDD	19408743	0.161	2.36	0.161	pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.0992	2.36	0.0992	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.102	2.36	0.102	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	2.36	2.36	2.36	pg/g	J	U	B, result changed from 0.109 and EDL from 0.106
2,3,4,6,7,8-HxCDF	60851345	0.224	2.36	0.101	pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.36	2.36	2.36	pg/g	J	U	B, result changed from 0.254 and EDL from 0.106
2,3,7,8-TCDD	1746016	0.0926	0.471	0.0926	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.322	0.471	0.175	pg/g	JK	R	D
2,3,7,8-TCDF	51207319	0.471	0.471	0.471	pg/g	J	U	B, result changed from 0.437 and EDL from 0.171
OCDD	3268879	31.5	4.71	0.351	pg/g			
OCDF	39001020	0.89	4.71	0.287	pg/g	J	J	
TEQ WHO2005 ND=0 with EMPCs		0.221			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.347			pg/g			
Total HpCDD	37871004	8.23	2.36	0.215	pg/g		J	B
Total HpCDF	38998753	1.92	2.36	0.106	pg/g	J	J	B
Total HxCDD	34465468	0.584	2.36	0.143	pg/g	J	J	B
Total HxCDF	55684941	2.61	2.36	0.0929	pg/g		J	B, *III
Total PeCDD	36088229	0.102	2.36	0.102	pg/g	U	U	
Total PeCDF	30402154	2.52	2.36	0.106	pg/g		J	B
Total TCDD	41903575	0.172	0.471	0.0926	pg/g	J	J	B
Total TCDFs	30402143	1.14	0.471	0.175	pg/g		J	B, *III

Analysis Method 1613B

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1122004 **Sample Date:** 10/29/2009 11:45:00 AM **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	11.6	2.13	0.274	pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2.92	2.13	0.133	pg/g			
1,2,3,4,7,8,9-HpCDF	55673897	0.277	2.13	0.228	pg/g	JK	UJ	*III
1,2,3,4,7,8-HxCDD	39227286	0.132	2.13	0.132	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.361	2.13	0.119	pg/g	JK	UJ	*III
1,2,3,6,7,8-HxCDD	57653857	0.385	2.13	0.146	pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.252 and EDL from 0.121
1,2,3,7,8,9-HxCDD	19408743	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.306 and EDL from 0.146
1,2,3,7,8,9-HxCDF	72918219	0.157	2.13	0.157	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.126	2.13	0.126	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.17	2.13	0.0776	pg/g	JK	UJ	*III
2,3,4,6,7,8-HxCDF	60851345	0.305	2.13	0.123	pg/g	JK	UJ	*III
2,3,4,7,8-PeCDF	57117314	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.294 and EDL from 0.0771
2,3,7,8-TCDD	1746016	0.106	0.425	0.106	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.379	0.425	0.122	pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.425	0.425	0.425	pg/g	J	U	B, result changed from 0.366 and EDL from 0.165
OCDD	3268879	161	4.25	0.538	pg/g			
OCDF	39001020	7.16	4.25	0.294	pg/g			
TEQ WHO2005 ND=0 with EMPCs		0.489			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.62			pg/g			
Total HpCDD	37871004	35.1	2.13	0.274	pg/g		J	B
Total HpCDF	38998753	7.25	2.13	0.133	pg/g		J	B, *III
Total HxCDD	34465468	2.92	2.13	0.132	pg/g		J	B
Total HxCDF	55684941	4.12	2.13	0.119	pg/g		J	B, *III
Total PeCDD	36088229	0.49	2.13	0.126	pg/g	J	J	B
Total PeCDF	30402154	3.69	2.13	0.0771	pg/g		J	B, *III
Total TCDD	41903575	0.182	0.425	0.106	pg/g	J	J	B
Total TCDFs	30402143	0.8	0.425	0.165	pg/g		J	B

Analysis Method 314.0

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	U	

Analysis Method 314.0-DI WET

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	U	

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	40	40		10 ug/L	U	U	

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	U	

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	4	4		1 ug/L	U	U	

Analysis Method 6010B

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429905	68	200		68 ug/L	U	U	
Antimony	7440360	3	10		3 ug/L	U	U	
Boron	7440428	15	50		15 ug/L	U	U	

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429905	9210	21.2		7.22 mg/kg			
Antimony	7440360	0.713	1.06		0.35 mg/kg	J	J	
Boron	7440428	1.71	5.31		1.06 mg/kg	J	J	

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429905	7820	19.9		6.77 mg/kg			
Antimony	7440360	0.328	0.995		0.328 mg/kg	U	U	
Boron	7440428	1.95	4.98		0.995 mg/kg	J	J	

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429905	8330	22		7.48 mg/kg			
Antimony	7440360	0.363	1.1		0.363 mg/kg	U	U	
Boron	7440428	1.1	5.5		1.1 mg/kg	U	U	

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429905	7410	20.3		6.89 mg/kg			
Antimony	7440360	0.335	1.01		0.335 mg/kg	U	U	
Boron	7440428	1.01	5.07		1.01 mg/kg	U	U	

Analysis Method 6020

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** 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	
Barium	7440393	0.6	2		0.6 ug/L	U	U	
Beryllium	7440417	0.1	0.5		0.1 ug/L	U	U	
Cadmium	7440439	0.11	1		0.11 ug/L	U	U	
Chromium	7440473	2	10		2 ug/L	U	U	
Cobalt	7440484	0.1	1		0.1 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	
Molybdenum	7439987	0.167	0.5		0.167 ug/L	U	U	
Nickel	7440020	1.9	2		0.5 ug/L	J	J	E, Q
Selenium	7782492	1	5		1 ug/L	U	U	
Silver	7440224	0.2	1		0.2 ug/L	U	U	
Thallium	7440280	1	1		1 ug/L	J	U	B, result changed from 0.688 and MDL from 0.3
Vanadium	7440622	3	10		3 ug/L	U	U	
Zinc	7440666	3	10		3 ug/L	U	U	

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	3.38	1.05		0.209 mg/kg			
Barium	7440393	90	2.09		0.524 mg/kg			
Beryllium	7440417	0.272	0.524		0.105 mg/kg	J	J	
Cadmium	7440439	0.282	0.209		0.0209 mg/kg			
Chromium	7440473	12.4	3.14		1.05 mg/kg	N	J	Q
Cobalt	7440484	5.2	1.05		0.314 mg/kg			
Copper	7440508	11.3	1.05		0.346 mg/kg	N	J	Q
Lead	7439921	9.83	0.419		0.105 mg/kg	N	J	Q
Molybdenum	7439987	0.376	0.209		0.0628 mg/kg			
Nickel	7440020	8.99	2.09		0.524 mg/kg	*N	J	E, Q
Selenium	7782492	0.524	1.05		0.524 mg/kg	U	U	
Silver	7440224	0.0568	0.209		0.0419 mg/kg	J	J	
Thallium	7440280	0.296	0.296		0.296 mg/kg		U	B, RL changed from 0.209 and MDL from 0.0628
Vanadium	7440622	23.5	10.5		2.09 mg/kg			
Zinc	7440666	61.1	10.5		2.09 mg/kg			

Analysis Method 6020

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	2.8	0.991	0.198	mg/kg			
Barium	7440393	103	3.97	0.991	mg/kg			
Beryllium	7440417	0.265	0.496	0.0991	mg/kg	J	J	
Cadmium	7440439	0.719	0.198	0.0198	mg/kg			
Chromium	7440473	11.3	2.97	0.991	mg/kg	N	J	Q
Cobalt	7440484	5.28	0.991	0.297	mg/kg			
Copper	7440508	12.6	0.991	0.327	mg/kg	N	J	Q
Lead	7439921	8.64	0.397	0.0991	mg/kg	N	J	Q
Molybdenum	7439987	0.267	0.198	0.0595	mg/kg			
Nickel	7440020	8.09	1.98	0.496	mg/kg	*N	J	E, Q
Selenium	7782492	0.496	0.991	0.496	mg/kg	U	U	
Silver	7440224	0.0533	0.198	0.0397	mg/kg	J	J	
Thallium	7440280	0.271	0.271	0.271	mg/kg		U	B, RL changed from 0.198 and MDL from 0.0595
Vanadium	7440622	25.4	9.91	1.98	mg/kg			
Zinc	7440666	143	19.8	3.97	mg/kg			

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	3.05	1.08	0.217	mg/kg			
Barium	7440393	54.3	2.17	0.542	mg/kg			
Beryllium	7440417	0.326	0.542	0.108	mg/kg	J	J	
Cadmium	7440439	0.119	0.217	0.0217	mg/kg	J	J	
Chromium	7440473	12.6	3.25	1.08	mg/kg	N	J	Q
Cobalt	7440484	3.81	1.08	0.325	mg/kg			
Copper	7440508	6.13	1.08	0.358	mg/kg	N	J	Q
Lead	7439921	3.84	0.433	0.108	mg/kg	N	J	Q
Molybdenum	7439987	0.11	0.217	0.065	mg/kg	J	J	
Nickel	7440020	6.65	2.17	0.542	mg/kg	*N	J	E, Q
Selenium	7782492	0.542	1.08	0.542	mg/kg	U	U	
Silver	7440224	0.0433	0.217	0.0433	mg/kg	U	U	
Thallium	7440280	0.217	0.217	0.217	mg/kg	J	U	B, result changed from 0.216 and MDL from 0.065
Vanadium	7440622	21.4	10.8	2.17	mg/kg			
Zinc	7440666	46	10.8	2.17	mg/kg			

Analysis Method 6020

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	3.12	1.04	0.209	mg/kg			
Barium	7440393	54.2	2.09	0.522	mg/kg			
Beryllium	7440417	0.323	0.522	0.104	mg/kg	J	J	
Cadmium	7440439	0.15	0.209	0.0209	mg/kg	J	J	
Chromium	7440473	12.2	3.13	1.04	mg/kg	N	J	Q
Cobalt	7440484	3.73	1.04	0.313	mg/kg			
Copper	7440508	6.74	1.04	0.344	mg/kg	N	J	Q
Lead	7439921	6.32	0.417	0.104	mg/kg	N	J	Q
Molybdenum	7439987	0.219	0.209	0.0626	mg/kg			
Nickel	7440020	6.42	2.09	0.522	mg/kg	*N	J	E, Q
Selenium	7782492	0.522	1.04	0.522	mg/kg	U	U	
Silver	7440224	0.0417	0.209	0.0417	mg/kg	U	U	
Thallium	7440280	0.23	0.23	0.23	mg/kg		U	B, RL changed from 0.209 and MDL from 0.0626
Vanadium	7440622	20.8	10.4	2.09	mg/kg			
Zinc	7440666	49.7	10.4	2.09	mg/kg			

Analysis Method 7470A

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.066	0.2	0.066	ug/L	U	U	

Analysis Method 7471A

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0219	0.0128	0.00435	mg/kg	*	J	B, E

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0119	0.0122	0.00414	mg/kg	J*	J	B, E

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0041	0.0121	0.0041	mg/kg	U*	UJ	B, E

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0248	0.0111	0.00378	mg/kg	*	J	B, E

Analysis Method 8270C

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1-Methyl naphthalene	90120	0.192	0.192	0.0481	ug/L	U	U	
2-Methylnaphthalene	91576	0.192	0.192	0.0481	ug/L	U	U	
Acenaphthene	83329	0.192	0.192	0.0481	ug/L	U	U	
Acenaphthylene	208968	0.192	0.192	0.0481	ug/L	U	U	
Anthracene	120127	0.192	0.192	0.0481	ug/L	U	U	
Benzo(a)anthracene	56553	0.192	0.192	0.0481	ug/L	U	U	
Benzo(a)pyrene	50328	0.192	0.192	0.0481	ug/L	U	U	
Benzo(b)fluoranthene	205992	0.192	0.192	0.0481	ug/L	U	U	
Benzo(ghi)perylene	191242	0.192	0.192	0.0481	ug/L	U	U	
Benzo(k)fluoranthene	207089	0.192	0.192	0.0481	ug/L	U	U	
Chrysene	218019	0.192	0.192	0.0481	ug/L	U	U	
Dibenzo(a,h)anthracene	53703	0.192	0.192	0.0481	ug/L	U	U	
Fluoranthene	206440	0.192	0.192	0.0481	ug/L	U	U	
Fluorene	86737	0.192	0.192	0.0481	ug/L	U	U	
Indeno(1,2,3-cd)pyrene	193395	0.192	0.192	0.0481	ug/L	U	U	
Naphthalene	91203	0.192	0.192	0.0481	ug/L	U	U	
Phenanthrene	85018	0.192	0.192	0.0481	ug/L	U	U	
Pyrene	129000	0.192	0.192	0.0481	ug/L	U	U	

Analysis Method 8270C

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1-Methyl naphthalene	90120	7.22	7.22	1.81	ug/kg	U	U	
2-Methylnaphthalene	91576	7.22	7.22	1.81	ug/kg	U	U	
Acenaphthene	83329	7.22	7.22	1.81	ug/kg	U	U	
Acenaphthylene	208968	7.22	7.22	1.81	ug/kg	U	U	
Anthracene	120127	3.95	7.22	1.81	ug/kg	J	J	
Benzo(a)anthracene	56553	68.4	7.22	1.81	ug/kg			
Benzo(a)pyrene	50328	50.4	7.22	1.81	ug/kg			
Benzo(b)fluoranthene	205992	62.1	7.22	1.81	ug/kg			
Benzo(ghi)perylene	191242	20	7.22	1.81	ug/kg	J	J	
Benzo(k)fluoranthene	207089	30.8	7.22	1.81	ug/kg			
Chrysene	218019	69.3	7.22	1.81	ug/kg			
Dibenzo(a,h)anthracene	53703	7.22	7.22	1.81	ug/kg	U	U	
Fluoranthene	206440	64.8	7.22	1.81	ug/kg			
Fluorene	86737	7.22	7.22	1.81	ug/kg	U	U	
Indeno(1,2,3-cd)pyrene	193395	20.1	7.22	1.81	ug/kg			
Naphthalene	91203	7.22	7.22	1.08	ug/kg	U	U	
Phenanthrene	85018	7.44	7.22	1.81	ug/kg	J	J	
Pyrene	129000	79.2	7.22	1.81	ug/kg			

Analysis Method 8270C

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1-Methyl naphthalene	90120	6.73	6.73	1.68	ug/kg	U	U	
2-Methylnaphthalene	91576	6.73	6.73	1.68	ug/kg	U	U	
Acenaphthene	83329	1.97	6.73	1.68	ug/kg	J	J	
Acenaphthylene	208968	6.73	6.73	1.68	ug/kg	U	U	
Anthracene	120127	32	6.73	1.68	ug/kg			
Benzo(a)anthracene	56553	335	6.73	1.68	ug/kg			
Benzo(a)pyrene	50328	247	6.73	1.68	ug/kg			
Benzo(b)fluoranthene	205992	340	6.73	1.68	ug/kg			
Benzo(ghi)perylene	191242	80.3	6.73	1.68	ug/kg			
Benzo(k)fluoranthene	207089	129	6.73	1.68	ug/kg			
Chrysene	218019	351	6.73	1.68	ug/kg			
Dibenzo(a,h)anthracene	53703	6.73	6.73	1.68	ug/kg	U	U	
Fluoranthene	206440	367	6.73	1.68	ug/kg			
Fluorene	86737	1.84	6.73	1.68	ug/kg	J	J	
Indeno(1,2,3-cd)pyrene	193395	91.8	6.73	1.68	ug/kg			
Naphthalene	91203	6.73	6.73	1.01	ug/kg	U	U	
Phenanthrene	85018	76.9	6.73	1.68	ug/kg			
Pyrene	129000	421	6.73	1.68	ug/kg			

Analysis Method 8270C

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1-Methyl naphthalene	90120	7.45	7.45	1.86	ug/kg	U	U	
2-Methylnaphthalene	91576	7.45	7.45	1.86	ug/kg	U	U	
Acenaphthene	83329	7.45	7.45	1.86	ug/kg	U	U	
Acenaphthylene	208968	7.45	7.45	1.86	ug/kg	U	U	
Anthracene	120127	2.49	7.45	1.86	ug/kg	J	J	
Benzo(a)anthracene	56553	18.4	7.45	1.86	ug/kg	J	J	
Benzo(a)pyrene	50328	12.3	7.45	1.86	ug/kg	J	J	
Benzo(b)fluoranthene	205992	15	7.45	1.86	ug/kg	J	J	
Benzo(ghi)perylene	191242	3.92	7.45	1.86	ug/kg	J	J	
Benzo(k)fluoranthene	207089	7.45	7.45	1.86	ug/kg	U	U	
Chrysene	218019	16	7.45	1.86	ug/kg	J	J	
Dibenzo(a,h)anthracene	53703	7.45	7.45	1.86	ug/kg	U	U	
Fluoranthene	206440	31.7	7.45	1.86	ug/kg			
Fluorene	86737	7.45	7.45	1.86	ug/kg	U	U	
Indeno(1,2,3-cd)pyrene	193395	4.26	7.45	1.86	ug/kg	J	J	
Naphthalene	91203	7.45	7.45	1.12	ug/kg	U	U	
Phenanthrene	85018	6.7	7.45	1.86	ug/kg	J	J	
Pyrene	129000	32.6	7.45	1.86	ug/kg			

Analysis Method 8270C

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1-Methyl naphthalene	90120	7.06	7.06	1.76	ug/kg	U	U	
2-Methylnaphthalene	91576	7.06	7.06	1.76	ug/kg	U	U	
Acenaphthene	83329	7.06	7.06	1.76	ug/kg	U	U	
Acenaphthylene	208968	7.06	7.06	1.76	ug/kg	U	U	
Anthracene	120127	9.34	7.06	1.76	ug/kg	J	J	
Benzo(a)anthracene	56553	123	7.06	1.76	ug/kg			
Benzo(a)pyrene	50328	96.5	7.06	1.76	ug/kg			
Benzo(b)fluoranthene	205992	127	7.06	1.76	ug/kg			
Benzo(ghi)perylene	191242	31.3	7.06	1.76	ug/kg			
Benzo(k)fluoranthene	207089	48.2	7.06	1.76	ug/kg			
Chrysene	218019	125	7.06	1.76	ug/kg			
Dibenzo(a,h)anthracene	53703	7.06	7.06	1.76	ug/kg	U	U	
Fluoranthene	206440	144	7.06	1.76	ug/kg			
Fluorene	86737	7.06	7.06	1.76	ug/kg	U	U	
Indeno(1,2,3-cd)pyrene	193395	34.4	7.06	1.76	ug/kg			
Naphthalene	91203	7.06	7.06	1.06	ug/kg	U	U	
Phenanthrene	85018	19.3	7.06	1.76	ug/kg	J	J	
Pyrene	129000	163	7.06	1.76	ug/kg			

Analysis Method 8321A

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4-Diamino-6-nitrotoluene	6629294	1.3	1.3	0.39	ug/L	U	U	
2,6-Diamino-4-nitrotoluene	59229753	1.3	1.3	0.39	ug/L	U	U	

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4-Diamino-6-nitrotoluene	6629294	2000	2000	500	ug/Kg	U	U	
2,6-Diamino-4-nitrotoluene	59229753	2000	2000	500	ug/Kg	U	U	

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4-Diamino-6-nitrotoluene	6629294	2000	2000	500	ug/Kg	U	U	
2,6-Diamino-4-nitrotoluene	59229753	2000	2000	500	ug/Kg	U	U	

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4-Diamino-6-nitrotoluene	6629294	2000	2000	500	ug/Kg	U	U	
2,6-Diamino-4-nitrotoluene	59229753	2000	2000	500	ug/Kg	U	U	

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
2,4-Diamino-6-nitrotoluene	6629294	2000	2000	500	ug/Kg	U	U	
2,6-Diamino-4-nitrotoluene	59229753	2000	2000	500	ug/Kg	U	U	

Analysis Method 8330

Sample Name EBQW2251 **Matrix Type:** WATER **Result Type:** Lab Repeat An

Lab Sample Name: 240083001 **Sample Date:** 10/29/2009 2:50:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,3,5-Trinitrobenzene	99354	0.325	0.325	0.0649	ug/L	U	U	
2,4,6-Trinitrotoluene	118967	0.487	0.487	0.162	ug/L	U	U	
2,4-Dinitrotoluene	121142	0.487	0.487	0.162	ug/L	U	U	
2,6-Dinitrotoluene	606202	0.487	0.487	0.162	ug/L	U	U	
2-Amino-4,6-dinitrotoluene	35572782	0.487	0.487	0.162	ug/L	U	U	
3,4-Dinitrotoluene	610-39-9	103			%			
4-Amino-2,6-dinitrotoluene	19406510	0.487	0.487	0.162	ug/L	U	U	
HMX	2691410	0.487	0.487	0.162	ug/L	U	U	
m-Dinitrobenzene	99650	0.325	0.325	0.0649	ug/L	U	U	
m-Nitrotoluene	99081	0.325	0.325	0.126	ug/L	U	U	
Nitrobenzene	98953	0.325	0.325	0.0649	ug/L	U	U	
Nitroglycerin	55630	1.95	1.95	0.649	ug/L	U	U	
o-Nitrotoluene	88722	0.487	0.487	0.162	ug/L	U	U	
PETN	78115	1.95	1.95	0.649	ug/L	U	U	
p-Nitrotoluene	99990	0.487	0.487	0.162	ug/L	U	U	
RDX	121824	0.487	0.487	0.162	ug/L	U	U	
Tetryl	479458	1.46	1.46	0.487	ug/L	U	U	

Analysis Method 8330

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,3,5-Trinitrobenzene	99354	150	150		50 ug/Kg	U	U	
2,4,6-Trinitrotoluene	118967	150	150		50 ug/Kg	U	U	
2,4-Dinitrotoluene	121142	150	150		50 ug/Kg	U	U	
2,6-Dinitrotoluene	606202	150	150		50 ug/Kg	U	U	
2-Amino-4,6-dinitrotoluene	35572782	150	150		50 ug/Kg	U	U	
3,4-Dinitrotoluene	610-39-9	108			%			
4-Amino-2,6-dinitrotoluene	19406510	150	150		50 ug/Kg	U	U	
HMX	2691410	150	150		50 ug/Kg	U	U	
m-Dinitrobenzene	99650	150	150		50 ug/Kg	U	U	
m-Nitrotoluene	99081	150	150		50 ug/Kg	U	U	
Nitrobenzene	98953	150	150		50 ug/Kg	U	U	
Nitroglycerin	55630	1000	1000		250 ug/Kg	U	U	
o-Nitrotoluene	88722	150	150		50 ug/Kg	U	U	
PETN	78115	500	500		82.5 ug/Kg	U	U	
p-Nitrotoluene	99990	150	150		50 ug/Kg	U	U	
RDX	121824	150	150		50 ug/Kg	U	U	
Tetryl	479458	150	150		50 ug/Kg	U	U	

Analysis Method 8330

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Lab Repeat An

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,3,5-Trinitrobenzene	99354	150	150		50 ug/Kg	U	U	
2,4,6-Trinitrotoluene	118967	150	150		50 ug/Kg	U	U	
2,4-Dinitrotoluene	121142	150	150		50 ug/Kg	U	U	
2,6-Dinitrotoluene	606202	150	150		50 ug/Kg	U	U	
2-Amino-4,6-dinitrotoluene	35572782	150	150		50 ug/Kg	U	U	
3,4-Dinitrotoluene	610-39-9	115			%			
4-Amino-2,6-dinitrotoluene	19406510	150	150		50 ug/Kg	U	U	
HMX	2691410	150	150		50 ug/Kg	U	U	
m-Dinitrobenzene	99650	150	150		50 ug/Kg	U	U	
m-Nitrotoluene	99081	150	150		50 ug/Kg	U	U	
Nitrobenzene	98953	150	150		50 ug/Kg	U	U	
Nitroglycerin	55630	1000	1000		250 ug/Kg	U	U	
o-Nitrotoluene	88722	150	150		50 ug/Kg	U	U	
PETN	78115	500	500		82.5 ug/Kg	U	U	
p-Nitrotoluene	99990	150	150		50 ug/Kg	U	U	
RDX	121824	150	150		50 ug/Kg	U	U	
Tetryl	479458	150	150		50 ug/Kg	U	U	

Analysis Method 8330

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Lab Repeat An

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,3,5-Trinitrobenzene	99354	150	150		50 ug/Kg	U	U	
2,4,6-Trinitrotoluene	118967	150	150		50 ug/Kg	U	U	
2,4-Dinitrotoluene	121142	150	150		50 ug/Kg	U	U	
2,6-Dinitrotoluene	606202	150	150		50 ug/Kg	U	U	
2-Amino-4,6-dinitrotoluene	35572782	150	150		50 ug/Kg	U	U	
3,4-Dinitrotoluene	610-39-9	112			%			
4-Amino-2,6-dinitrotoluene	19406510	150	150		50 ug/Kg	U	U	
HMX	2691410	150	150		50 ug/Kg	U	U	
m-Dinitrobenzene	99650	150	150		50 ug/Kg	U	U	
m-Nitrotoluene	99081	150	150		50 ug/Kg	U	U	
Nitrobenzene	98953	150	150		50 ug/Kg	U	U	
Nitroglycerin	55630	1000	1000		250 ug/Kg	U	U	
o-Nitrotoluene	88722	150	150		50 ug/Kg	U	U	
PETN	78115	500	500		82.5 ug/Kg	U	U	
p-Nitrotoluene	99990	150	150		50 ug/Kg	U	U	
RDX	121824	150	150		50 ug/Kg	U	U	
Tetryl	479458	150	150		50 ug/Kg	U	U	

Analysis Method 8330

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Lab Repeat An

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,3,5-Trinitrobenzene	99354	150	150		50 ug/Kg	U	U	
2,4,6-Trinitrotoluene	118967	150	150		50 ug/Kg	U	U	
2,4-Dinitrotoluene	121142	150	150		50 ug/Kg	U	U	
2,6-Dinitrotoluene	606202	150	150		50 ug/Kg	U	U	
2-Amino-4,6-dinitrotoluene	35572782	150	150		50 ug/Kg	U	U	
3,4-Dinitrotoluene	610-39-9	113			%			
4-Amino-2,6-dinitrotoluene	19406510	150	150		50 ug/Kg	U	U	
HMX	2691410	150	150		50 ug/Kg	U	U	
m-Dinitrobenzene	99650	150	150		50 ug/Kg	U	U	
m-Nitrotoluene	99081	150	150		50 ug/Kg	U	U	
Nitrobenzene	98953	150	150		50 ug/Kg	U	U	
Nitroglycerin	55630	1000	1000		250 ug/Kg	U	U	
o-Nitrotoluene	88722	150	150		50 ug/Kg	U	U	
PETN	78115	500	500		82.5 ug/Kg	U	U	
p-Nitrotoluene	99990	150	150		50 ug/Kg	U	U	
RDX	121824	150	150		50 ug/Kg	U	U	
Tetryl	479458	150	150		50 ug/Kg	U	U	

Analysis Method 9045C

Sample Name HZET0728S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083002 **Sample Date:** 10/29/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	E-10139	5.54	0.1	0.01	PH UNI	H		

Sample Name HZET0729S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083003 **Sample Date:** 10/29/2009 11:05:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	E-10139	6.05	0.1	0.01	PH UNI	H		

Sample Name HZET0730S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083004 **Sample Date:** 10/29/2009 11:25:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	E-10139	7.56	0.1	0.01	PH UNI	H		

Sample Name HZET0731S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240083005 **Sample Date:** 10/29/2009 11:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	E-10139	6.25	0.1	0.01	PH UNI	H		

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 240254
SDG: 240254

November 11, 2009

Laboratory Identification:

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

Summary:

Sample Receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on November 03, 2009 for analysis. The sample was 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 sample:

Laboratory Identification	Sample Description
240254001	HZET0730AS001

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: GC Semivolatile PCB and Percent Moisture.

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

Jacqueline A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 11 November 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: 240254

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:	240254
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
HZET0730AS001	240254001	N/A	Soil	11/2/2009 12:46:00 PM	8082

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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 8082—PCBs

Reviewed By: P. Meeks
Date Reviewed: January 27, 2010

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Method 8082*, and the *National Functional Guidelines for Organic Data Review* (10/99).

- Holding Times: Extraction and analytical holding times were met. The soil sample was extracted within 14 days of collection and analyzed within 40 days of extraction.

- Calibration: Review is not applicable at a Level V validation.

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

- Blank Spikes and Laboratory Control Samples: Recoveries 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 the sample in this SDG. The 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: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for Aroclors by Method 8082.

- 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: 240254

Analysis Method 8082

Sample Name HZET0730AS001 **Matrix Type:** Soil **Result Type:** Primary Result

Lab Sample Name: 240254001 **Sample Date:** 11/2/2009 12:46:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aroclor-1016	12674112	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1221	11104282	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1232	11141165	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1242	53469219	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1248	12672296	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1254	11097691	3.58	3.58	1.19	ug/kg	U	U	
Aroclor-1260	11096825	3.58	3.58	1.19	ug/kg	U	U	

Chain of Custody and Supporting Documentation

240246 | 240254

CHAIN OF CUSTODY RECORD

COC #: MWHSD20091102_01

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	S. Dawson	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				Legend: Numerical values for analyses equate to turn around time in days
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				H - Hold
	CA	Field Contact #:	(626) 255-0503				EH - Extract/Extrude & Hold
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				Note: Values in the cells bellow are Turn Around Times.
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	PCB by SW8082 - Soil	RAD 901.1 Gamma Soil	RAD 905.0 Strontium-90 Soil	RAD 906.0M Tritium Soil	Comments
HZET0730AS001	Soil	11/2/2009	12:46	2	5	5	5	5	5	HVS-3

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	11/2/09	FedEx					11/3/09
Company: MWH	Time: 1500	Company:	Time:	Company:	Time:	Company: GEL	Time: 0845

Comments: Gamma Spec should include Na-22, K-40, Mn-54, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Th-228, Th-232, U-235, U-238 and Am-241.

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL	**SDG/ARCOC/Work Order:** 240246/240254
Received By: Ricky Albee	**Date Received:** 11/3/09

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 40 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 5oc
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?	✓			

Comments: FedEx 7960 8579 3766

PM (or PMA) review: Initials JT Date 11/3/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

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:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date: _____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:
Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-
Name: _____
Date: _____

Chain of Custody and Supporting Documentation

240289

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHSD20091102_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	S. Dawson	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				Legend: Numerical values for analyses equate to turn around time in days
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				
	CA	Field Contact #:	(626) 255-0503				H - Hold EH - Extract/Extrude & Hold
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				Note: Values in the cells bellow are Turn Around Times.
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Perchlorate 6850 Soil	Comments
HVBF33BS01	Soil	11/2/2009	12:56	1	5	5	HVS Borrow

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	11/2/09	FedEx					11/3/09
Company: MWH	Time: 1500	Company:	Time:	Company:	Time:	Company: GEL	Time: 0845

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL | Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL	**SDG/ARCOC/Work Order:** 240289
Received By: Ricky Albee	**Date Received:** 11/3/09

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 40 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: 5x (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?	✓			

Comments: FedEx 7960 8579 3766

PM (or PMA) review: Initials JT Date 11/3/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*

Consultant Office _____ *(enter "X")*

Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*

Temp Blank (VOA Only) No *(Yes/No)*

DI Water Required? No *(Yes/No)*

MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*

Water X *(select all applicable)*

Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)

RUSH: 5 (Specify- 24 / 48 / 72HRS)

Other : _____ (Specify # of Days)

Report Due Date:

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*

TIC (VOC) Required? No *(Yes/No)*

TIC (SVOC) Required? No *(Yes/No)*

Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)

Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*

Consultant Office _____ *(enter "X")*

Other Location (specify in comments) X *(enter "X")*

# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld

Date: 09/02/09

LTO Received By-

Name:

Date:

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 240289
SDG: 240289

November 11, 2009

Laboratory Identification:

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

Summary:

Sample Receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on November 03, 2009 for analysis. The sample was 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 sample:

Laboratory Identification	Sample Description
240289001	HVBF33BS01

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: Perchlorates by LCMSMS.

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 Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 11 November 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: 240289

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:	240289
Project Manager:	Dixie Hambrick
Matrix:	water
QC Level:	V
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
HVBF33BS01	240289001	N/A	SOIL	11/2/2009 12:56:00 PM	6850

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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 6850—Perchlorate

Reviewed By: P. Meeks
Date Reviewed: November 23, 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-20, Rev. 0), EPA Method 6850*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within the method-established QC limits of 80-120%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. The recoveries and the RPD were within method-established QC limits of 70-130% and ≤15%, respectively.
- Internal Standard: The internal standard recovery was within the laboratory-established control limits.
- Sample Result Verification: The sample results reported on the sample result summary was verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2251 was identified as the equipment rinsate associated with the samples in this SDG. Both samples were analyzed by Method 314.0. Perchlorate was not detected in either sample.
    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 240289

Analysis Method 6850

Sample Name HVBF33BS01 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 240289001 **Sample Date:** 11/2/2009 12:56:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797730	0.308	0.2	0.05	ug/L			

Chain of Custody and Supporting Documentation

240897

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091110_00

Page: 1 of 1

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	A. Goldenberg	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Requested Analyses: Dioxin by 1613B - Soil	Comments
AZET0100S001	Soil	11/10/2009	14:33	1	3	3	A2LF-1
AZET0101S001	Soil	11/10/2009	14:29	1	3	3	A2LF-1
AZET0102S001	Soil	11/10/2009	14:38	1	3	3	A2LF-1

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Company: MWH	Time:	Company:	Time:	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxins shipped directly to CFA

Geotracker EDF ☐

Data Validation Package ☑ Level IV

Date: 11/13/09

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

To: Jackie Trudell **Phone: 843-769-7388**

Laboratory GEL Laboratories, LLC **E-mail:** **Jacqueline.trudell@gel.com**

From: Sean Leffler

Requestor signature:

Subject: **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
MWHAG20091110_00	A2ET0100S001, A2ET0101S001, A2ET0102S001	11/10/09		Change IDs from AZET0100S001, AZET0101S001, AZET0102S001

The reason for these changes:

Incorrectly marked on COC form X

Lack of sample volume _____

Change in analytical request _____

Other: _____

Thank you

240897

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091110_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				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.
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				
	CA	Field Contact #:	(626) 255-0503				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Comments
~~AZET01003001~~ A2ETO100S001	Soil	11/10/2009	14:33	1	3	3	A2LF-1
~~AZET01013001~~ A2ETO101S001	Soil	11/10/2009	14:29	1	3	3	A2LF-1
~~AZET01023001~~ A2ETO102S001	Soil	11/10/2009	14:38	1	3	3	A2LF-1

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Company: MWH	Time:	Company:	Time:	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxins shipped directly to CFA

Geotracker EDF ☐

Data Validation Package ☑ Level IV

① SSL 11/13/09

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

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:**	Jackie Trudell
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:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site ____ *(enter "X")*
Consultant Office ____ *(enter "X")*
Other Location (specify in comments) ____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor ____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: (Specify # of Samples)

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : ____ (Specify # of Days)
Report Due Date: ____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: ____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site ____ *(enter "X")*
Consultant Office ____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name: ____
Date: ____

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 240897
SDG: 240897

November 18, 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 November 11, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory Identification	Sample Description
240897001	A2ET0100S001
240897002	A2ET0101S001
240897003	A2ET0102S001

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 (Cape Fear Analytical).

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

Jacqueline A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 16 November 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: 240897

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:	240897
Project Manager:	Dixie Hambrick
Matrix:	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*
A2ET0100S001	1123001	N/A	SOIL	11/10/2009 2:33:00 PM	1613B
A2ET0101S001	1123002	N/A	SOIL	11/10/2009 2:29:00 PM	1613B
A2ET0102S001	1123003	N/A	SOIL	11/10/2009 2:38:00 PM	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.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins 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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (08/02).

- Holding Times: Extraction and analytical holding times were met. The samples were extracted and analyzed within one year of collection.

- Instrument Performance: Review is not applicable at a Level V validation.

- Calibration: Review is not applicable at a Level V validation.

- Blanks: The soil method blank had detects or estimated maximum possible concentration (EMPCs) for all target compounds except 2,3,7,8-TCDD and total TCDD. Detects in the soil samples less than the reporting limit or less than 5× the method blank concentrations were qualified as nondetected, "U," at the EDL if detected below the EDL or at the level of contamination if detected above the EDL. The result for total HpCDD in sample A2ET0101S001 was qualified as nondetected, "U," since the concentration was the same as the isomer qualified as nondected for method blank contamination, and the result for total HxCDD was qualified as an estimated nondetect, "UJ," since the result was the sum of all of the isomers reported as EMPCs. Detected results for all remaining totals except TCDD were qualified as estimated, "J," due to detects in the soil method blank.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613. The RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on A2ET0100S001. Recoveries were within the acceptance criteria listed in Table 6 of Method 1613. The RPDs were within the laboratory-established control limits.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank associated with the samples in this SDG; however, the sample was not analyzed for dioxins. The samples in this SDG had no associated equipment rinsate.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed confirmation analyses for 2,3,7,8-TCDF. When the original result was reported as an EMPC, the original result was rejected, "R," in favor the confirmation result. When the original result was not reported as an EMPC, or if both the original analysis and the confirmation analysis were both reported as EMPCs, the confirmation result was rejected, "R," in favor of the initial result. In cases where the confirmation 2,3,7,8-TCDF result was retained, the reviewer changed the reported result for Total TCDF to match the confirmation result.

- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. EMPCs were identified in the sample of this SDG, as denoted by the laboratory "K," code. 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).

Validated Sample Result Forms: 240897

Analysis Method 1613B

Sample Name A2ET0100S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1123001 **Sample Date:** 11/10/2009 2:33:00 PM **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	2.21	2.21	2.21	pg/g	J	U	B, result changed from 1.02 and EDL 0.138
1,2,3,4,6,7,8-HpCDF	67562394	2.21	2.21	2.21	pg/g	JK	UJ	*III,result changed from 0.362 and EDL from 0.0815
1,2,3,4,7,8,9-HpCDF	55673897	0.131	2.21	0.131	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.119	2.21	0.119	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	2.21	2.21	2.21	pg/g	J	U	B, result changed from 0.108 and EDL 0.0759
1,2,3,6,7,8-HxCDD	57653857	2.21	2.21	2.21	pg/g	JK	UJ	*III,result changed from 0.162 and EDL from 0.138
1,2,3,6,7,8-HxCDF	57117449	0.145	2.21	0.0806	pg/g	J	J	
1,2,3,7,8,9-HxCDD	19408743	2.21	2.21	2.21	pg/g	J	U	B, result changed from 0.222 and EDL 0.135
1,2,3,7,8,9-HxCDF	72918219	0.106	2.21	0.106	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.0933	2.21	0.0933	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.132	2.21	0.0771	pg/g	J	J	
2,3,4,6,7,8-HxCDF	60851345	0.157	2.21	0.0808	pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.21	2.21	2.21	pg/g	JK	UJ	*III,result changed from 0.245 and EDL from 0.0646
2,3,7,8-TCDD	1746016	0.0917	0.441	0.0917	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.281	0.441	0.0697	pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.441	0.441	0.441	pg/g	J	U	B, result changed from 0.439 and EDL 0.194
OCDD	3268879	5.78	4.41	0.229	pg/g			
OCDF	39001020	4.41	4.41	4.41	pg/g	J	U	B, result changed from 0.494 and EDL 0.224
TEQ WHO2005 ND=0 with EMPCs		0.217			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.268			pg/g			
Total HpCDD	37871004	2.37	2.21	0.138	pg/g		J	B
Total HpCDF	38998753	0.566	2.21	0.0815	pg/g	J	J	B, *III
Total HxCDD	34465468	1.04	2.21	0.119	pg/g	J	J	B, *III
Total HxCDF	55684941	1.34	2.21	0.0759	pg/g	J	J	B
Total PeCDD	36088229	0.4	2.21	0.0933	pg/g	J	J	B
Total PeCDF	30402154	2.38	2.21	0.0646	pg/g		J	B, *III
Total TCDD	41903575	2.7	0.441	0.0917	pg/g			
Total TCDFs	30402143	1.95	0.441	0.194	pg/g		J	B

Analysis Method 1613B

Sample Name A2ET0101S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1123002 **Sample Date:** 11/10/2009 2:29:00 PM **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	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.318 and EDL 0.168
1,2,3,4,6,7,8-HpCDF	67562394	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.195 and EDL 0.0759
1,2,3,4,7,8,9-HpCDF	55673897	0.158	2.14	0.124	pg/g	J	J	
1,2,3,4,7,8-HxCDD	39227286	2.14	2.14	2.14	pg/g	JK	UJ	*III,result changed from 0.142 and EDL from 0.0957
1,2,3,4,7,8-HxCDF	70648269	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.147 and EDL 0.0657
1,2,3,6,7,8-HxCDD	57653857	2.14	2.14	2.14	pg/g	JK	UJ	*III,result changed from 0.142 and EDL from 0.11
1,2,3,6,7,8-HxCDF	57117449	2.14	2.14	2.14	pg/g	JK	UJ	*III,result changed from 0.144 and EDL from 0.0695
1,2,3,7,8,9-HxCDD	19408743	2.14	2.14	2.14	pg/g	JK	UJ	*III,result changed from 0.176 and EDL from 0.108
1,2,3,7,8,9-HxCDF	72918219	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.152 and EDL 0.0887
1,2,3,7,8-PeCDD	40321764	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.113 and EDL 0.0692
1,2,3,7,8-PeCDF	57117416	0.137	2.14	0.0565	pg/g	J	J	
2,3,4,6,7,8-HxCDF	60851345	0.164	2.14	0.0668	pg/g	J	J	
2,3,4,7,8-PeCDF	57117314	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.17 and EDL 0.0473
2,3,7,8-TCDD	1746016	0.0866	0.428	0.0866	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.428	0.428	0.428	pg/g	J	U	B, result changed from 0.236 and EDL 0.106
2,3,7,8-TCDF	51207319	0.382	0.428	0.0959	pg/g	J	R	D
OCDD	3268879	4.28	4.28	4.28	pg/g	J	U	B, result changed from 0.798 and EDL 0.228
OCDF	39001020	4.28	4.28	4.28	pg/g	J	U	B, result changed from 0.454 and EDL 0.214
TEQ WHO2005 ND=0 with EMPCs		0.306			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.349			pg/g			
Total HpCDD	37871004	2.14	2.14	2.14	pg/g	J	U	B, result changed from 0.318 and EDL 0.168
Total HpCDF	38998753	0.353	2.14	0.0759	pg/g	J	J	B
Total HxCDD	34465468	2.14	2.14	2.14	pg/g	J	UJ	B,*III,result changed from 0.461, EDL from 0.0957
Total HxCDF	55684941	0.608	2.14	0.0657	pg/g	J	J	B, *III
Total PeCDD	36088229	0.113	2.14	0.0692	pg/g	J	J	B
Total PeCDF	30402154	0.306	2.14	0.0473	pg/g	J	J	B
Total TCDD	41903575	0.089	0.428	0.0866	pg/g	J	J	
Total TCDFs	30402143	0.236	0.428	0.106	pg/g		J	B, $, result changed from 0.579

Analysis Method 1613B

Sample Name A2ET0102S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1123003 **Sample Date:** 11/10/2009 2:38:00 PM **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	0.122	1.98	0.122	pg/g	U	U	
1,2,3,4,6,7,8-HpCDF	67562394	0.0651	1.98	0.0651	pg/g	U	U	
1,2,3,4,7,8,9-HpCDF	55673897	0.11	1.98	0.11	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.0911	1.98	0.0911	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.0572	1.98	0.0572	pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.1	1.98	0.1	pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.0586	1.98	0.0586	pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.1	1.98	0.1	pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.0772	1.98	0.0772	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.058	1.98	0.058	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0585	1.98	0.0585	pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0606	1.98	0.0606	pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.052	1.98	0.052	pg/g	U	U	
2,3,7,8-TCDD	1746016	0.0734	0.396	0.0734	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.396	0.396	0.396	pg/g	J	U	B, result changed from 0.252 and EDL 0.0626
2,3,7,8-TCDF	51207319	0.244	0.396	0.0834	pg/g	JK	R	D
OCDD	3268879	3.96	3.96	3.96	pg/g	J	U	B, result changed from 0.461 and EDL 0.178
OCDF	39001020	0.144	3.96	0.144	pg/g	U	U	
TEQ WHO2005 ND=0 with EMPCs		0.0245			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.0421			pg/g			
Total HpCDD	37871004	0.122	1.98	0.122	pg/g	U	U	
Total HpCDF	38998753	0.0651	1.98	0.0651	pg/g	U	U	
Total HxCDD	34465468	0.0911	1.98	0.0911	pg/g	U	U	
Total HxCDF	55684941	0.0572	1.98	0.0572	pg/g	U	U	
Total PeCDD	36088229	0.058	1.98	0.058	pg/g	U	U	
Total PeCDF	30402154	0.052	1.98	0.052	pg/g	U	U	
Total TCDD	41903575	0.0808	0.396	0.0734	pg/g	J	J	
Total TCDFs	30402143	0.244	0.396	0.0834	pg/g	J	J	B, *III

241179

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091116_00

Page: 1 of 1

BOEING

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sean.leffler@mwhglobal.com	Lab Contact:	Jackie Trudell
	sarah.vonraesfeld@mwhglobal.c	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	A. Goldenberg	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Comments
A2ET0200S001	Soil	11/16/2009	10:50	2	3	H	3	A2LF-3
A2ET0201S001	Soil	11/16/2009	10:44	2	3	H	3	A2LF-3
A2ET0202S001	Soil	11/16/2009	10:38	2	3	H	3	A2LF-3
A2ET0203S001	Soil	11/16/2009	10:30	2	3	H	3	A2LF-3

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	11/16/09	R.M. Stelling	11/17/09				
Company: MWH	Time: 1500	Company: Gel	Time: 850	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxins shipped directly to CFA and is to be placed on hold

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFI	**SDG/ARCOC/Work Order:** 241179
Received By: RMS	**Date Received:** 11/17/09

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		✓	300cpm
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3°
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?	✓			

Comments:

Fx: 4233 4940 6022

PM (or PMA) review: Initials JT Date 11/17/09

Date: 11/19/09

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

To: Jackie Trudell **Phone: 843-769-7388**

Laboratory GEL Laboratories, LLC **E-mail:** **Jacqueline.trudell@gel.com**

From: Sean Leffler

Requestor signature:

Subject: **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
MWHAG2 009116_00	A2ET0200S001, A2ET0201S001, A2ET0202S001, A2ET0203S001	11/16/09		Run dioxins by 1613 on 3 day TAT

The reason for these changes:

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

Thank you

24179

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAG20091116_00

Page: 1 of 1

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sean.leffler@mwhglobal.com	Lab Contact:	Jackie Trudell
	sarah.vonraesfeld@mwhglobal.c	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	A. Goldenberg	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Instructions/TAT: Comments
A2ET0200S001	Soil	11/16/2009	10:50	2	3	H, 37	3	A2LF-3
A2ET0201S001	Soil	11/16/2009	10:44	2	3	H, 37	3	A2LF-3
A2ET0202S001	Soil	11/16/2009	10:38	2	3	H, 37	3	A2LF-3
A2ET0203S001	Soil	11/16/2009	10:30	2	3	H, 37	3	A2LF-3

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	11/16/09	R.M. Stelling	11/17/09				
Company: MWH	Time: 1500	Company: Gel	Time: 850	Company:	Time:	Company:	Time:

Comments: Sample volume for dioxins shipped directly to CFA and is to be placed on hold

Geotracker EDF ☐

Data Validation Package ☑ Level IV

SSL 11/19/09

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 241179
SDG: 241179

November 30, 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 November 17, 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 Identification	Sample Description
241179001	A2ET0200S001
241179002	A2ET0201S001
241179003	A2ET0202S001
241179004	A2ET0203S001

Items of Note

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

Case Narrative

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

Data Package:

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

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

Jacqueline A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 30 November 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: 241179

Prepared by

MEC^X, LP
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Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL RFI ISRA
Contract Task Order:	1261.500D.00
Sample Delivery Group:	241179
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	4
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
A2ET0200S001	241179001	1144001	SOIL	11/16/2009 10:50:00 AM	1613B, 6020
A2ET0201S001	241179002	1144002	SOIL	11/16/2009 10:44:00 AM	1613B, 6020
A2ET0202S001	241179003	1144003	SOIL	11/16/2009 10:38:00 AM	1613B, 6020
A2ET0203S001	241179004	1144004	SOIL	11/16/2009 10:30:00 AM	1613B, 6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratories within the temperature limits of 4°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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: P. Meeks
Date Reviewed: December 7, 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 method blank had detects of estimated maximum possible concentrations (EMPCs) for all analytes except 2,3,7,8-TCDD and total TCDD. Individual isomers detected below the reporting limit or at concentrations less than 5× the method blank concentration were qualified as nondetected, "U," at the estimated detection limit (EDL) if detected below the EDL or at the level of contamination if detected above. When total concentrations were the same as the individual isomer concentration, the total was also qualified as nondetected, "U," at the EDL if detected below the EDL or at the level of contamination if detected above. Remaining totals, except to total TCDD, were qualified as estimated, "J."

  Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613 and the RPDs were within the laboratory-established control limits.

- MS/MSD analyses were performed on A2ET0200S001. Recoveries and the RPDs were within the laboratory-established control limits.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

  - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was identified as the field blank associated with the samples in this SDG; however, the sample was not analyzed for dioxins. The samples in this SDG had no identified equipment rinsate.

  - Field Duplicates: There were no field duplicate samples identified for this SDG.

- Internal Standards Performance: Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The laboratory performed confirmation analyses for 2,3,7,8-TCDF. When the original result was reported as an EMPC, the original result was rejected, "R," in favor the confirmation result. When the original result was not reported as an EMPC, or if both the original analysis and the confirmation analysis were both reported as EMPCs, the confirmation result was rejected, "R," in favor of the initial result. When the confirmation analysis was retained, the total TCDF result was changed by the reviewer to match the confirmation result.

- Compound Quantification and Reported Detection Limits: EMPCs were identified in the sample of this SDG, as denoted by the laboratory "K," code. 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 EDL.

B. EPA METHOD 6020—Lead

Reviewed By: P. Meeks
Date Reviewed: December 7, 2009

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 6020,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS, was met.

- Tuning: Review is not applicable at a Level V validation.

- Calibration: Review is not applicable at a Level V validation.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Review is not applicable at a Level V validation.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on A2ET0200S001. The RPD was within the method-established control limit.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on A2ET0200S001. Recoveries and the RPD were within laboratory-established QC limits.

- Serial Dilution: A serial dilution analysis was performed on A2ET0200S001. The %D was within the method-established control limit.

- Internal Standards Performance: Review is not applicable at a Level V validation.

- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank associated with the samples in this SDG. There were no detects in this sample. The samples in this SDG had no associated equipment rinsate.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 241179

Analysis Method 1613B

Sample Name A2ET0200S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1144001 **Sample Date:** 11/16/2009 10:50:00 AM **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	2.07	2.07	2.07	pg/g	J	U	B, result changed from 2.03 and EDL from 0.232
1,2,3,4,6,7,8-HpCDF	67562394	2.07	2.07	2.07	pg/g	JK	UJ	*III, result changed from 0.341 and EDL from 0.112
1,2,3,4,7,8,9-HpCDF	55673897	0.189	2.07	0.189	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.137	2.07	0.137	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.115	2.07	0.115	pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	2.07	2.07	2.07	pg/g	JK	UJ	*III, result changed from 0.155 and EDL from 0.153
1,2,3,6,7,8-HxCDF	57117449	0.118	2.07	0.118	pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	0.152	2.07	0.152	pg/g	U	U	
1,2,3,7,8,9-HxCDF	72918219	0.17	2.07	0.17	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.114	2.07	0.114	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	2.07	2.07	2.07	pg/g	JK	UJ	*III,result changed from 0.122 and EDL from 0.0895
2,3,4,6,7,8-HxCDF	60851345	0.122	2.07	0.122	pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	2.07	2.07	2.07	pg/g	JK	UJ	*III,result changed from 0.144 and EDL from 0.0916
2,3,7,8-TCDD	1746016	0.109	0.414	0.109	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.366	0.414	0.118	pg/g	J	R	D
2,3,7,8-TCDF	51207319	0.414	0.414	0.414	pg/g	J	U	B, result changed from 0.28 and EDL from 0.169
OCDD	3268879	21	4.14	0.38	pg/g			
OCDF	39001020	1.07	4.14	0.394	pg/g	J	J	
TEQ WHO2005 ND=0 with EMPCs		0.121			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.274			pg/g			
Total HpCDD	37871004	4.21	2.07	0.232	pg/g			
Total HpCDF	38998753	0.731	2.07	0.112	pg/g	J	J	B, *III
Total HxCDD	34465468	0.423	2.07	0.137	pg/g	J	J	B, *III
Total HxCDF	55684941	0.399	2.07	0.115	pg/g	J	J	B
Total PeCDD	36088229	0.114	2.07	0.114	pg/g	U	U	
Total PeCDF	30402154	0.581	2.07	0.0895	pg/g	J	J	B, *III
Total TCDD	41903575	0.235	0.414	0.109	pg/g	J	J	B
Total TCDFs	30402143	0.414	0.414	0.414	pg/g	BJ	U	B, result changed from 0.28 and EDL from 0.169

Analysis Method 1613B

Sample Name A2ET0201S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1144002 **Sample Date:** 11/16/2009 10:40:00 AM **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	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.742 and EDL from 0.297
1,2,3,4,6,7,8-HpCDF	67562394	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.3 and EDL from 0.12
1,2,3,4,7,8,9-HpCDF	55673897	2.13	2.13	2.13	pg/g	JK	UJ	*III, result changed from 0.288 and EDL from 0.211
1,2,3,4,7,8-HxCDD	39227286	2.13	2.13	2.13	pg/g	JK	UJ	*III, result changed from 0.227 and EDL from 0.138
1,2,3,4,7,8-HxCDF	70648269	2.13	2.13	2.13	pg/g	JK	UJ	*III,result changed from 0.196 and EDL from 0.0842
1,2,3,6,7,8-HxCDD	57653857	0.423	2.13	0.152	pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.416 and EDL from 0.0877
1,2,3,7,8,9-HxCDD	19408743	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.517 and EDL from 0.152
1,2,3,7,8,9-HxCDF	72918219	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.309 and EDL from 0.129
1,2,3,7,8-PeCDD	40321764	0.208	2.13	0.106	pg/g	J	J	
1,2,3,7,8-PeCDF	57117416	2.13	2.13	2.13	pg/g	JK	UJ	*III,result changed from 0.229 and EDL from 0.0952
2,3,4,6,7,8-HxCDF	60851345	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.268 and EDL from 0.0907
2,3,4,7,8-PeCDF	57117314	2.13	2.13	2.13	pg/g	J	U	B, result changed from 0.208 and EDL from 0.0868
2,3,7,8-TCDD	1746016	0.106	0.426	0.106	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.426	0.426	0.426	pg/g	J	U	B, result changed from 0.423 and EDL from 0.157
2,3,7,8-TCDF	51207319	0.373	0.426	0.176	pg/g	JK	R	D
OCDD	3268879	5.14	4.26	0.507	pg/g			
OCDF	39001020	4.26	4.26	4.26	pg/g	JK	UJ	*III, result changed from 0.865 and EDL from 0.382
TEQ WHO2005 ND=0 with EMPCs		0.565			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.618			pg/g			
Total HpCDD	37871004	1.45	2.13	0.297	pg/g	J	J	B
Total HpCDF	38998753	0.588	2.13	0.12	pg/g	J	J	B, *III
Total HxCDD	34465468	1.17	2.13	0.138	pg/g	J	J	B, *III
Total HxCDF	55684941	1.48	2.13	0.0842	pg/g	J	J	B, *III
Total PeCDD	36088229	0.208	2.13	0.106	pg/g	J	J	B
Total PeCDF	30402154	0.865	2.13	0.0868	pg/g	J	J	B, *III
Total TCDD	41903575	0.116	0.426	0.106	pg/g	J	J	
Total TCDFs	30402143	0.423	0.426	0.176	pg/g	B	J	B, $, Result changed from 0.628

Analysis Method 1613B

Sample Name A2ET0202S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1144003 **Sample Date:** 11/16/2009 10:38:00 AM **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	1.88	1.88	1.88	pg/g	J	U	B, result changed from 0.847 and EDL from 0.2
1,2,3,4,6,7,8-HpCDF	67562394	1.88	1.88	1.88	pg/g	J	U	B, result changed from 0.147 and EDL from 0.1
1,2,3,4,7,8,9-HpCDF	55673897	0.174	1.88	0.174	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.109	1.88	0.109	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	0.089	1.88	0.089	pg/g	U	U	
1,2,3,6,7,8-HxCDD	57653857	0.118	1.88	0.118	pg/g	U	U	
1,2,3,6,7,8-HxCDF	57117449	0.0953	1.88	0.0953	pg/g	U	U	
1,2,3,7,8,9-HxCDD	19408743	1.88	1.88	1.88	pg/g	J	U	B, result changed from 0.12 and EDL from 0.119
1,2,3,7,8,9-HxCDF	72918219	0.137	1.88	0.137	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.0902	1.88	0.0902	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.0778	1.88	0.0778	pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	0.0973	1.88	0.0973	pg/g	U	U	
2,3,4,7,8-PeCDF	57117314	0.0739	1.88	0.0739	pg/g	U	U	
2,3,7,8-TCDD	1746016	0.107	0.375	0.107	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.339	0.375	0.113	pg/g	JK	R	D
2,3,7,8-TCDF	51207319	0.375	0.375	0.375	pg/g	J	U	B, result changed from 0.243 and EDL from 0.156
OCDD	3268879	7.24	3.75	0.305	pg/g			
OCDF	39001020	0.344	3.75	0.344	pg/g	U	U	
TEQ WHO2005 ND=0 with EMPCs		0.0484			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.192			pg/g			
Total HpCDD	37871004	1.71	1.88	0.2	pg/g	J	J	B
Total HpCDF	38998753	0.311	1.88	0.1	pg/g	J	J	B
Total HxCDD	34465468	0.24	1.88	0.109	pg/g	J	J	B
Total HxCDF	55684941	0.183	1.88	0.089	pg/g	J	J	B
Total PeCDD	36088229	0.0902	1.88	0.0902	pg/g	U	U	
Total PeCDF	30402154	0.123	1.88	0.0739	pg/g	J	J	B
Total TCDD	41903575	0.258	0.375	0.107	pg/g	J	J	
Total TCDFs	30402143	0.709	0.375	0.156	pg/g	B	J	B

Analysis Method 1613B

Sample Name A2ET0203S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 1144004 **Sample Date:** 11/16/2009 10:30:00 AM **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	4.8	2	0.286	pg/g			
1,2,3,4,6,7,8-HpCDF	67562394	2	2	2	pg/g	J	U	B, result changed from 0.852 and EDL from 0.125
1,2,3,4,7,8,9-HpCDF	55673897	0.221	2	0.221	pg/g	U	U	
1,2,3,4,7,8-HxCDD	39227286	0.128	2	0.128	pg/g	U	U	
1,2,3,4,7,8-HxCDF	70648269	2	2	2	pg/g	JK	UJ	*III,result changed from 0.102 and EDL from 0.0908
1,2,3,6,7,8-HxCDD	57653857	0.278	2	0.142	pg/g	J	J	
1,2,3,6,7,8-HxCDF	57117449	2	2	2	pg/g	JK	UJ	*III,result changed from 0.114 and EDL from 0.0915
1,2,3,7,8,9-HxCDD	19408743	2	2	2	pg/g	JK	UJ	*III, result changed from 0.275 and EDL from 0.141
1,2,3,7,8,9-HxCDF	72918219	0.129	2	0.129	pg/g	U	U	
1,2,3,7,8-PeCDD	40321764	0.112	2	0.112	pg/g	U	U	
1,2,3,7,8-PeCDF	57117416	0.138	2	0.138	pg/g	U	U	
2,3,4,6,7,8-HxCDF	60851345	2	2	2	pg/g	J	U	B, result changed from 0.237 and EDL from 0.0918
2,3,4,7,8-PeCDF	57117314	2	2	2	pg/g	JK	UJ	*III, result changed from 0.293 and EDL from 0.134
2,3,7,8-TCDD	1746016	0.104	0.4	0.104	pg/g	U	U	
2,3,7,8-TCDF	51207319	0.491	0.4	0.16	pg/g	K	R	D
2,3,7,8-TCDF	51207319	0.4	0.4	0.4	pg/g	JK	UJ	*III, result changed from 0.387 and EDL from 0.272
OCDD	3268879	54.6	4	0.448	pg/g			
OCDF	39001020	2.79	4	0.373	pg/g	J	J	
TEQ WHO2005 ND=0 with EMPCs		0.301			pg/g			
TEQ WHO2005 ND=0.5 with EMPCs		0.425			pg/g			
Total HpCDD	37871004	12.4	2	0.286	pg/g		J	B
Total HpCDF	38998753	2.28	2	0.125	pg/g		J	B
Total HxCDD	34465468	1.58	2	0.128	pg/g	J	J	B, *III
Total HxCDF	55684941	2.48	2	0.0908	pg/g		J	B, *III
Total PeCDD	36088229	0.112	2	0.112	pg/g	U	U	
Total PeCDF	30402154	8.31	2	0.134	pg/g		J	B, *III
Total TCDD	41903575	0.104	0.4	0.104	pg/g	U	U	
Total TCDFs	30402143	3.11	0.4	0.272	pg/g	B	J	B, *III

Analysis Method 6020

Sample Name A2ET0200S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 241179001 **Sample Date:** 11/16/2009 10:50:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	6.3	0.435	0.109	mg/kg			

Sample Name A2ET0201S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 241179002 **Sample Date:** 11/16/2009 10:44:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	6.66	0.425	0.106	mg/kg			

Sample Name A2ET0202S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 241179003 **Sample Date:** 11/16/2009 10:38:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	6.93	0.432	0.108	mg/kg			

Sample Name A2ET0203S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 241179004 **Sample Date:** 11/16/2009 10:30:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	17.3	0.417	0.104	mg/kg			

Chain of Custody and Supporting Documentation

243643H

BOEING

CHAIN OF CUSTODY RECORD

COC #: ~~243444~~ JT 01/04/10 MWHMM20090714_00

Page: 1 of 2

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	M. Milman-Barris	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Comments
ENBS0089S001	Soil	7/14/2009	12:17	1	10	10		
ENBS0090S001	Soil	7/14/2009	12:22	1	10	10		
ENBS0091S001	Soil	7/14/2009	12:14	1	10	10		MS/MSD
ENBS0094S001	Soil	7/14/2009	11:23	1	10		10	
ENBS0095S001	Soil	7/14/2009	11:30	1	10		10	
ENBS0096S001	Soil	7/14/2009	11:38	1	10		10	
HZBS0129S001	Soil	7/14/2009	8:17	1	5		5	
HZBS0131S001	Soil	7/14/2009	8:35	1	5		5	
HZBS0133S001	Soil	7/14/2009	8:47	1	5		5	
HZBS0135S001	Soil	7/14/2009	9:00	1	5		5	MS/MSD

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

243643H

BOEING

CHAIN OF CUSTODY RECORD

COC #: 233444

MWHMM20090714_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	M. Milman-Barris	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521	Requested Analyses			Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				Legend: Numerical values for analyses equate to turn around time in days
	Suite 600	PM Phone #:	(925) 627-4627				H - Hold
	Walnut Creek	Field Contact:	Shelby Valenzuela				EH - Extract/Extrude & Hold
	CA	Field Contact #:	(626) 255-0503				
	94596	Lab Name:	GEL Laboratories, LLC				Note: Values in the cells bellow are Turn Around Times.
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Comments
✓ HZBS0137S001	Soil	7/14/2009	9:20	1	5		5	
✓ HZBS0139S001	Soil	7/14/2009	9:37	1	5		5	
✓ HZBS0141S001	Soil	7/14/2009	9:50	1	5		5	
✓ HZBS0143S001	Soil	7/14/2009	10:18	1	5		5	

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	7/14/09		7/15/09				
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

243643H

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHSV20090714_00

Page: 1 of 2

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	S. Valenzuela	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water			Comments
B1BS0081AS001	Soil	7/14/2009	12:29	1	10											10				
EBQW2220	Water	7/14/2009	13:16	3		10	10						10	10	10		10			
ENBS0097S001	Soil	7/14/2009	11:28	1	10					10	10									
ENBS0098S001	Soil	7/14/2009	11:37	1	10					10	10									
FBQW2235	Water	7/14/2009	13:20	3		10	10						10	10	10		10			BLTO: 06/24/09LAPD 16:46
HZBS0130S001	Soil	7/14/2009	8:22	1	5						5									
HZBS0132S001	Soil	7/14/2009	8:31	1	5						5									
HZBS0134S001	Soil	7/14/2009	8:39	1	5						5									
HZBS0136S001	Soil	7/14/2009	8:55	1	5						5									
HZBS0138S001	Soil	7/14/2009	9:02	1	5						5									

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	7/14/09		7/15/09				
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

243643H

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHSV20090714_00

Page: 2 of 2

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Shelby Valenzuela
	CA	Field Contact #:	(626) 255-0503
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	S. Valenzuela	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water	TPH by SW8015BM - Soil	TPH by SW8015BM - Water			Comments
HZBS0140S001	Soil	7/14/2009	9:17	1	5						5									
HZBS0142S001	Soil	7/14/2009	9:32	1	5						5									
HZBS0144S001	Soil	7/14/2009	9:37	1	5			5	5	5	5									
HZBS0145S001	Soil	7/14/2009	9:47	1	5				5		5	5								

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	7/14/09		7/15/09				
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

243643H

Client: SSFL	SDG/ARCOC/Work Order: ~~235444~~ JT 1/4/10
Received By: JP	Date Received: 7/15/09

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 40 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 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?	✓			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?	✓			

Comments: Fed Ex 9457 3158 0710

PM (or PMA) review: Initials JT Date 7/15/09

Date: 1/4/10

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:** **jacqueline.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
MWHMM20 090714_00	ENBS0089S001	7/14/09		Add lead by 6020 on 3 day TAT

The reason for these changes:

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

Thank you

BOEING

CHAIN OF CUSTODY RECORD

COC #: 233444

MWHMM20090714_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	M. Milman-Barris	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				
	CA	Field Contact #:	(626) 255-0503				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Comments
✓	ENBS0089S001	Soil	7/14/2009	12:17	1	10	10	3 ①	
✓	ENBS0090S001	Soil	7/14/2009	12:22	1	10	10		
✓	ENBS0091S001	Soil	7/14/2009	12:14	1	10	10		MS/MSD
✓	ENBS0094S001	Soil	7/14/2009	11:23	1	10		10	
✓	ENBS0095S001	Soil	7/14/2009	11:30	1	10		10	
✓	ENBS0096S001	Soil	7/14/2009	11:38	1	10		10	
✓	HZBS0129S001	Soil	7/14/2009	8:17	1	5		5	
✓	HZBS0131S001	Soil	7/14/2009	8:35	1	5		5	
✓	HZBS0133S001	Soil	7/14/2009	8:47	1	5		5	
✓	HZBS0135S001	Soil	7/14/2009	9:00	1	5		5	MS/MSD

Instructions/TAT

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. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	7/14/09		7/15/09				
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

① SSL 1/4/10

BOEING

CHAIN OF CUSTODY RECORD

COC #: 233494

MWHMM20090714_00

Page: 2 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	M. Milman-Barris	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Shelby Valenzuela				
	CA	Field Contact #:	(626) 255-0503				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses: D2216 Moisture Soil	Dioxin by 1613B - Soil	Metals 6020 Soil Lead	Instructions/TAT	Comments
HZBS0137S001	Soil	7/14/2009	9:20	1	5		5	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.	
HZBS0139S001	Soil	7/14/2009	9:37	1	5		5		
HZBS0141S001	Soil	7/14/2009	9:50	1	5		5		
HZBS0143S001	Soil	7/14/2009	10:18	1	5		5		

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	7/14/09		7/15/09				
Company: MWH	Time: 1450	Company: GEL	Time: 0900	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

LABORATORY TASK ORDER (LTO) FORM

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

Event Name: ISRA Sampling, Feb 2009 **Start:** 2/19/2009 **End:** 2/23/2009

LTO DATE: **LTO NUMBER:**

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:	cj@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required: 02/19/09

Date Sample Pickup: NA

Ship Containers To:

Project Site	X	*(enter "X")*
Consultant Office		*(enter "X")*
Other Location (specify in comments)		*(enter "X")*

Container Information:

Trip Blank (VOA only)	Yes	*(Yes/No)*
Temp Blank (VOA Only)	No	*(Yes/No)*
DI Water Required?	No	*(Yes/No)*
MS/MSD Extra Bottles?	No	*(Yes/No)*

Sample Matrix:

Soil	X	*(select all applicable)*
Water	X	*(select all applicable)*
Vapor		*(select all applicable)*

Est. Total # of Samples: 75 Est. Total # of EDDs 5

Requested Analyses: (Specify # of Samples)

	Water	Soil	Contingent
Dioxins - (1613B)	**5**	**9**	**14**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
EPA 8260B (VOC)	--	--	--
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	--	--	--
Acetone (8260B)	--	--	--
EPA TO-15 VOCs (SIM)	--	--	--
Metals (6010B/6020/7470A/7471A)	--	--	--
Cadmium (6020)	**5**	**15**	**10**
Arsenic (6020)	**5**	**5**	**5**
% Moisture (D2216)	**0**	**40**	**30**
Lead (6020)	**5**	**40**	**30**
Copper (6020)	**5**	**10**	**5**
Zinc (6020)	**5**	**10**	**5**
EPA TO-14 (VOCs)	--	--	--

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal:	X	(10 Business days)
RUSH:		(Specify- 24 / 48 / 72HRS)
Other :		(Specify # of Days)
Report Due Date:		

Special Reporting Requirements:

Contingent Analysis?	No	*(Yes/No)*
TIC (VOC) Required?	No	*(Yes/No)*
TIC (SVOC) Required?	No	*(Yes/No)*
Data Validation Pckge.:	Tier III	(Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?:		(Yes/No)
Draft Results E-mail?:	Yes	(Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site		*(enter "X")*
Consultant Office		*(enter "X")*
Other Location (specify in comments)	X	*(enter "X")*
# of Copies Reports Req.:	1	

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sean Leffler

Date: 02/20/09

LTO Received By-

Name:

Date:

LABORATORY TASK ORDER (LTO) FORM (PAGE 2)

ADDITIONAL REQUIRED ANALYSES

LTO DATE: | **LTO NUMBER:**

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:	cj@gel.com

SAMPLE CONTAINER ORDER FORM (CONTINUED)

Requested Analyses: **(Specify # of Samples)**

	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)	--	--	--

Table of Contents

Case Narrative

Case Narrative
for
Boeing - SSFL (MWH)
Work Order: 243643
SDG: 243643H

January 04, 2010

Laboratory Identification:

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

Summary:

Sample Receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on July 15, 2009 for analysis. The sample was 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 sample:

Laboratory Identification	Sample Description
243643001	ENBS0089S001

Items of Note

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

Case Narrative

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

Data Package:

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

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

Jacqueline A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

List of current GEL Certifications as of 04 January 2010

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: 243643H

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:	243643H
Project Manager:	Dixie Hambrick
Matrix:	soil
QC Level:	V
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	GEL

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Sub-Lab Sample Name*	*Matrix*	*Collection*	*Method*
ENBS0089S001	243643001	N/A	Soil	7/14/09 1217	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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
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-III	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.	Not applicable
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 6020—Lead

Reviewed By: P. Meeks
Date Reviewed: January 6, 2010

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 6020,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: The method blank and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.
- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG. The RPD exceeded the control limit; therefore, lead detected in the sample was qualified as estimated, "J."
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. As the native lead concentration exceeded the amount spiked by more than 4×, the recoveries were not assessed. The RPD exceeded the control limit; therefore, lead detected in the sample was qualified as estimated, "J."
- Serial Dilution: Serial dilution analyses were performed on the sample in this SDG. The %D exceeded the control limit; therefore, lead detected in the sample was qualified as estimated, "J."
- 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. Lead was reported from the laboratory's standard 2× dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2220 (233444) was the equipment rinsate associated with the sample in this SDG. Lead was not detected in either sample.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 243643H

Analysis Method 6020

Sample Name ENBS0089S001 **Matrix Type:** Soil **Result Type:** Primary Result

Lab Sample Name: 243643001 **Sample Date:** 7/14/2009 12:17:00 PM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Lead	7439921	24.2	0.405	0.101	mg/kg	*E	J	E, *III, A