CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421

www.capefearanalytical.com

October 04, 2019

Mr. Jeffrey Parker
Pacific Groundwater Group
2377 Eastlake Avenue E
Seattle, Washington 98102

Re: Swan Island Lagoon Sediment Investigation
Work Order: 15469
SDG: 2006-00115_2

Dear Mr. Parker:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2019. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

Other CF

CFA WO #15469

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/27/2019 – 8/28/2019	COC No: 3 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	*standard*			
206 329 0141 Phone	TAT if different from Below _____			SDG No.
206 329 6968 FAX	[x] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	#	Dioxins/Furans 1613B	Archive	Sample Specific Notes:
J6-SC1b-20to30-828 19	8/28/19	0920		S	1		X		3.8°
J6-SC1b-30to40-828 19	8/28/19	0925		S	1		X		
J6-SC1b-40to50-828 19	8/28/19	1025		S	1		X		
J6-SC1b-50to60-828 19	8/28/19	1030		S	1		X		
J6-SC1b-60to70-828 19	8/28/19	1035		S	1		X		
J6-SC1b-70to80-828 19	8/28/19	1040		S	1		X		3.3°
J6-SC1b-80to90-828 19	8/28/19	1155		S	1		X		
J6-SC1b-90to100-828 19	8/28/19	1200		S	1		X		
J6-SC1b-100to110-828 19	8/28/19	1205		S	1		X		
J6-SC1b-110to120-828 19	8/28/19	1210		S	1		X		
J6-SC1b-00to10-82719	8/27/19	1930		S	1			X	
J6-SC1b-10to20-82719	8/27/19	1935		S	1			X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [ ] Disposal By Lab [x] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	8/29/19 1300	Fedex		
Relinquished by: Fedex	Company:	Date/Time:	Received by:	Company: CH4	Date/Time: 9/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other CF

CFA WO #15469

Chain of Custody Record

Client Contact	Project Manager: Janet Knox	Site Contact/Sampler: Jeff Parker	Date: 8/28/2019	COC No: 4 of 8 COCs
Jeff Parker & Janet Knox	Tel/Fax:	Lab Contact:	Carrier:	
Pacific Groundwater Group	Analysis Turnaround Time			Job No. 2006-00115
2377 Eastlake Ave E, Seattle WA 98102	standard			
206 329 0141 Phone	TAT if different from Below			SDG No.
206 329 6968 FAX	[X] standard			
Swan Island Lagoon Sediment Investigation	[ ] 1 week			
Site:	[ ] 2 days			
P O #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Dioxins/Furans 1613B	Archive	Sample Specific Notes:
H3-SC1b-20to30-8[illegible]19	8/[illegible]/19	2015		S	1	X		5.2"
H3-SC1b-30to40-8[illegible]19	8/28/19	[illegible] 0825		S	1	X		
H3-SC1b-40to50-8[illegible]19	8/29/19	0830		S	1	X		
H3-SC1b-50to60-8[illegible]19	8/29/19	0835		S	1	X		
H3-SC1b-60to70-8[illegible]19	8/29/19	0900		S	1	X		
H3-SC1b-70to80-8[illegible]19	8/29/19	0905		S	1	X		
H3-SC1b-80to90-8[illegible]19	8/29/19	0930		S	1	X		
H3-SC1b-90to100-8[illegible]19	8/29/19	0935		S	1	X		
H3-SC1b-100to110-8[illegible]19	8/29/19	0950		S	1	X		
H3-SC1b-00to10-82819	8/28/19	2005		S	1	[illegible]	X	
H3-SC1b-10-20-82819	8/28/19	2010		S	1		X	
	8/ /19			S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant Poison B [ ] Unknown [ ]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [ ] Disposal By Lab [X] Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PGG	8/29/19 1300	Fedex		
Relinquished by: Fedex	Company:	Date/Time:	Received by: [signature]	Company: CFA	Date/Time: 8/30/19 9:55
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: Pacific Groundwater Group	Work Order: 15469
Shipping Company: FedEx	Date/Time Received: 30AUG19 0955

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	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	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) Temperature Blank present: (Yes) No 3.9°-0.1=3.8° 5.3°-0.1=5.2° 3.4°-0.1=3.3°
5	Aqueous samples found to have visible solids?			✓	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 on both water containers If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: See below *
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 2-1L NMAG received for 711-82719 75-4 oz amber glass soil jars No containers received for 712-82819
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

* Sample ID discrepancies:

COC	Label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-82719	J6-SC1-10to20-82719
L3-SC1b-00to10-82619	CR 30AUG19 L3-SC2-00to10-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Checklist performed by: Initials: CL for RO Date: 30AUG19

CF-UD-F-7

Subject: RE: Swan Island sample receipt 30AUG19
From: "Jeff S. Parker" <JParker@PGWG.COM>
Date: 8/30/2019, 5:55 PM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
CC: Janet Knox <janet@PGWG.COM>

WO #15469

Hi Cynde,
Good catch.
Re: H3-SC1b-30to40-82919 ("29" is the correct ID), so the COC date of "28" is wrong and should be "29"

Thanks,
Jeff

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 2:52 PM
To: Jeff S. Parker <JParker@PGWG.COM>
Cc: Janet Knox <janet@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Jeff,

I have found one more discrepancy for you to look at. The ID and date on the label for this sample was marked through/corrected to -82919 and 8/29/19, but the COC has 8/28/19 as the collection date and it is difficult to discern the date in the ID: H3-SC1b-30to40-82919 (or -82819).

Thank you,
Cynde

On 8/30/2019 3:08 PM, Jeff S. Parker wrote:

> That'll work!
>
> **From:** Cynde Larkins <Cynde.larkins@cfanalytical.com>
> **Sent:** Friday, August 30, 2019 12:05 PM
> **To:** Jeff S. Parker <JParker@PGWG.COM>
> **Cc:** Janet Knox <janet@PGWG.COM>
> **Subject:** Re: Swan Island sample receipt 30AUG19
>
> Yes sir, I'll send you our Sample Receipt Notification form and the COC's as soon as I finish logging them.
> I was going to split them up into 4 (more easily manageable) SDG's if that is okay?
>
> Chris mentioned SRM's to me this morning, I'll make sure he contacts you about that.
>
> Thank you!

Cynde

On 8/30/2019 3:02 PM, Jeff S. Parker wrote:

> HI Cynde,
>
> Can you send me copies of the COCs or the login file when you get a chance. We taped the COCs in the cooler before making copies and I didn't get a count of the # analyzed. We may need to remove a couple if we're way over our scope.
>
> Also, I need to communicate with Chris about ordering the EDF-5183 (Cambridge SRM) to run with this batch. So, please hold the samples until we get those ordered and added too.
>
> Thanks!
> Jeff

From: Jeff S. Parker
Sent: Friday, August 30, 2019 11:55 AM
To: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Subject: RE: Swan Island sample receipt 30AUG19

No problems, thanks!

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:42 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Re: Swan Island sample receipt 30AUG19

Thank you!

By the way - that "00to20" was my mistake. The COC and the label have "00to10". My apologies!

On 8/30/2019 2:36 PM, Jeff S. Parker wrote:

> HI Cynde,
> I'm glad you got them without too much ice melt! Here are the answers to the login questions:
>
> 1. D6-SC1b-10to20-82619 is archive, 411-SC1b-50to60-82619 is analyze.
> 2. We misplaced those in a cooler to another lab and will get those

to you asap.

3. The ID on the COC are correct (highlighted are correct) for those samples with one exception where both are incorrect. The first L3 sample should be "00to10" instead of "00to20":

ID on COC	
J6-SC1b-00to10-82719	J(
J6-SC1b-10to20-082719	J(
L3-SC1b-00to20-82619	L:
L3-SC1b-10to20-82619	L:
D6-SC1b-10to20-82619	D

Thanks,
Jeff

Jeffrey Parker, LG | Environmental Geologist
Pacific Groundwater Group **Water Resource & Environmental Consulting**
(360) 570-8244 | jparker@pgwg.com |
www.pgwg.com

From: Cynde Larkins <Cynde.larkins@cfanalytical.com>
Sent: Friday, August 30, 2019 11:28 AM
To: Jeff S. Parker <JParker@PGWG.COM>
Subject: Swan Island sample receipt 30AUG19

Good afternoon,

CFA received your samples today for the Swan Island Lagoon project in good condition and within temperature. There are several discrepancies listed below that I need to your help to resolve.

1. Sample D6-SC1b-10to20-82619, collected 8/26/19 at 12:10, is marked on the COC for both 1613B analysis and Archive. The sample listed beneath this one, 411-SC1b-50to60-82619, collected 8/26/19 at 15:00 is not marked for either 1613B or Archive. It looks like one of the X's is on the wrong line perhaps? Please advise.

2. There were no bottles received for sample 712-82819. Two containers were received for 711-82719.

3. There are sample ID discrepancies between the COC and the labels

for the samples listed in the table below (collection dates and times match). Please verify which ID should be used for log in.

ID on COC	ID on label
J6-SC1b-00to10-82719	J6-SC1-00to10-82719
J6-SC1b-10to20-082719	J6-SC1-10to20-82719
L3-SC1b-00to20-82619	L3-SC2-00to20-82619
L3-SC1b-10to20-82619	L3-SC2-10to20-82619
D6-SC1b-10to20-82619	D6-SC2-10to20-82619

Thank you!

--
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Project Manager
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--
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feedback@cfanalytical.com
http://www.gellaboratories.com

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Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, NC 28405
(910) 795-0421

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Pacific Groundwater Group (PGWG)
SDG 2006-00115_2
Work Order 15469

Method/Analysis Information

Product: **Dioxins/Furans by EPA Method 1613B in Solids**
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 41747
Clean Up Batch Number: 41746
Extraction Batch Number: 41745

Sample Analysis

Samples were received at 3.8°C (15469001, 15469002, 15469003, 15469004, 15469005) , 3.3°C (15469006, 15469007, 15469008, 15469009, 15469010, 15469011, 15469012) and 5.2°C (15469013, 15469014, 15469015, 15469016, 15469017, 15469018, 15469019, 15469020, 15469021, 15469022, 15469023). The following samples were analyzed using the analytical protocol as established in Method 1613B:

Sample ID	Client ID
12024792	Method Blank (MB)
12024793	Laboratory Control Sample (LCS)
12024794	Laboratory Control Sample Duplicate (LCSD)
12024795	15469001(J6-SC1b-20to30-82819) Matrix Spike (MS)
12024796	15469001(J6-SC1b-20to30-82819) Matrix Spike Duplicate (MSD)
15469001	J6-SC1b-20to30-82819
15469002	J6-SC1b-30to40-82819
15469003	J6-SC1b-40to50-82819
15469004	J6-SC1b-50to60-82819
15469005	J6-SC1b-60to70-82819
15469006	J6-SC1b-70to80-82819
15469007	J6-SC1b-80to90-82819
15469008	J6-SC1b-90to100-82819
15469009	J6-SC1b-100to110-82819
15469010	J6-SC1b-110to120-82819
15469011	J6-SC1b-00to10-82719
15469012	J6-SC1b-10to20-82719
15469013	H3-SC1b-20to30-82819
15469014	H3-SC1b-30to40-82919

15469015	H3-SC1b-40to50-82919
15469016	H3-SC1b-50to60-82919
15469017	H3-SC1b-60to70-82919
15469018	H3-SC1b-70to80-82919
15469019	H3-SC1b-80to90-82919
15469020	H3-SC1b-90to100-82919
15469021	H3-SC1b-100to110-82919
15469022	H3-SC1b-00to10-82819
15469023	H3-SC1b-10-20-82819

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 15.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 15469001 (J6-SC1b-20to30-82819)- Batch 41747 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12024795 (J6-SC1b-20to30-82819) and 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 647562 12024795 (J6-SC1b-20to30-82819) and 12024796 (J6-SC1b-20to30-82819)- Batch 41747.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation
No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

PGWG001 Pacific Groundwater Group

Client SDG: 2006-00115_2 CFA Work Order: 15469

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Heather Patterson**

Date: 04 OCT 2019 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 01:26**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.527	pg/g	0.189	0.988
40321-76-4	1,2,3,7,8-PeCDD	J	1.27	pg/g	0.171	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.859	pg/g	0.371	4.94
57653-85-7	1,2,3,6,7,8-HxCDD		7.87	pg/g	0.360	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.53	pg/g	0.373	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		171	pg/g	0.998	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2630	pg/g	1.79	9.88
51207-31-9	2,3,7,8-TCDF	B	1.57	pg/g	0.371	0.988
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.792	pg/g	0.200	4.94
57117-31-4	2,3,4,7,8-PeCDF	J	1.73	pg/g	0.174	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	J	3.01	pg/g	0.181	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.96	pg/g	0.189	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.55	pg/g	0.202	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.889	pg/g	0.203	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		35.3	pg/g	0.381	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.61	pg/g	0.508	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		109	pg/g	0.648	9.88
41903-57-5	Total TeCDD	JK	4.10	pg/g	0.189	0.988
36088-22-9	Total PeCDD	J	10.8	pg/g	0.171	4.94
34465-46-8	Total HxCDD	J	57.7	pg/g	0.360	4.94
37871-00-4	Total HpCDD		382	pg/g	0.998	4.94
30402-14-3	Total TeCDF	JK	15.9	pg/g	0.371	0.988
30402-15-4	Total PeCDF	J	30.3	pg/g	0.0794	4.94
55684-94-1	Total HxCDF	JK	58.0	pg/g	0.181	4.94
38998-75-3	Total HpCDF	J	128	pg/g	0.381	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.68	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.68	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	198	pg/g	75.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	198	pg/g	83.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	198	pg/g	87.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		135	198	pg/g	68.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		188	198	pg/g	95.1	(23%-140%)
13C-OCDD		402	395	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		136	198	pg/g	69.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		154	198	pg/g	77.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	198	pg/g	78.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	198	pg/g	74.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	198	pg/g	70.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		141	198	pg/g	71.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	198	pg/g	81.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 01:26**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		154	198	pg/g	77.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		187	198	pg/g	94.9	(26%-138%)
37Cl-2,3,7,8-TCDD		18.6	19.8	pg/g	94.2	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469001**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 16:31**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.2 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.41	pg/g	0.187	0.988

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469002**	**Date Collected:**	**08/28/2019 09:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.6**
Client ID:	**J6-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.303	pg/g	0.141	0.966
40321-76-4	1,2,3,7,8-PeCDD	J	0.622	pg/g	0.185	4.83
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.585	pg/g	0.352	4.83
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.71	pg/g	0.326	4.83
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.10	pg/g	0.348	4.83
35822-46-9	1,2,3,4,6,7,8-HpCDD		110	pg/g	0.666	4.83
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1320	pg/g	1.02	9.66
51207-31-9	2,3,7,8-TCDF	BJ	0.894	pg/g	0.261	0.966
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.481	pg/g	0.120	4.83
57117-31-4	2,3,4,7,8-PeCDF	J	1.03	pg/g	0.111	4.83
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.32	pg/g	0.148	4.83
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.74	pg/g	0.163	4.83
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.42	pg/g	0.166	4.83
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.464	pg/g	0.188	4.83
67562-39-4	1,2,3,4,6,7,8-HpCDF		24.6	pg/g	0.240	4.83
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.83	pg/g	0.311	4.83
39001-02-0	1,2,3,4,6,7,8,9-OCDF		94.8	pg/g	0.359	9.66
41903-57-5	Total TeCDD	JK	1.90	pg/g	0.141	0.966
36088-22-9	Total PeCDD	JK	5.52	pg/g	0.185	4.83
34465-46-8	Total HxCDD	JK	32.8	pg/g	0.326	4.83
37871-00-4	Total HpCDD		222	pg/g	0.666	4.83
30402-14-3	Total TeCDF	JK	7.69	pg/g	0.261	0.966
30402-15-4	Total PeCDF	JK	15.3	pg/g	0.0616	4.83
55684-94-1	Total HxCDF	JK	36.8	pg/g	0.148	4.83
38998-75-3	Total HpCDF	J	99.9	pg/g	0.240	4.83
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.46	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.46	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	193	pg/g	78.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	193	pg/g	87.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	193	pg/g	84.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		138	193	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	193	pg/g	96.4	(23%-140%)
13C-OCDD		393	386	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		139	193	pg/g	72.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	193	pg/g	81.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		160	193	pg/g	82.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		152	193	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	193	pg/g	67.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	193	pg/g	72.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	193	pg/g	81.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469002**	**Date Collected:**	**08/28/2019 09:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**45.6**
Client ID:	**J6-SC1b-30to40-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:51**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.04 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	193	pg/g	80.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		185	193	pg/g	95.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.8	19.3	pg/g	97.4	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469003**	**Date Collected:**	**08/28/2019 10:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J6-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 04:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.297	pg/g	0.149	0.972
40321-76-4	1,2,3,7,8-PeCDD	J	0.533	pg/g	0.147	4.86
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.632	pg/g	0.235	4.86
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.00	pg/g	0.237	4.86
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.82	pg/g	0.241	4.86
35822-46-9	1,2,3,4,6,7,8-HpCDD		95.0	pg/g	0.665	4.86
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1220	pg/g	1.01	9.72
51207-31-9	2,3,7,8-TCDF	BJ	0.746	pg/g	0.420	0.972
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.484	pg/g	0.155	4.86
57117-31-4	2,3,4,7,8-PeCDF	JK	1.03	pg/g	0.140	4.86
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.03	pg/g	0.143	4.86
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.62	pg/g	0.148	4.86
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	1.28	pg/g	0.155	4.86
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.550	pg/g	0.183	4.86
67562-39-4	1,2,3,4,6,7,8-HpCDF		18.9	pg/g	0.247	4.86
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.44	pg/g	0.317	4.86
39001-02-0	1,2,3,4,6,7,8,9-OCDF		59.5	pg/g	0.410	9.72
41903-57-5	Total TeCDD	JK	1.57	pg/g	0.149	0.972
36088-22-9	Total PeCDD	JK	4.79	pg/g	0.147	4.86
34465-46-8	Total HxCDD	J	29.5	pg/g	0.235	4.86
37871-00-4	Total HpCDD		196	pg/g	0.665	4.86
30402-14-3	Total TeCDF	JK	6.20	pg/g	0.420	0.972
30402-15-4	Total PeCDF	JK	14.4	pg/g	0.0614	4.86
55684-94-1	Total HxCDF	JK	30.7	pg/g	0.143	4.86
38998-75-3	Total HpCDF	J	72.3	pg/g	0.247	4.86
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.96	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.96	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	194	pg/g	83.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	194	pg/g	95.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	194	pg/g	85.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	194	pg/g	77.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		198	194	pg/g	102	(23%-140%)
13C-OCDD		422	389	pg/g	108	(17%-157%)
13C-2,3,7,8-TCDF		150	194	pg/g	77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		174	194	pg/g	89.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		173	194	pg/g	89.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	194	pg/g	83.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	194	pg/g	70.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	194	pg/g	76.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	194	pg/g	86.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469003**	**Date Collected:**	**08/28/2019 10:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**44.6**
Client ID:	**J6-SC1b-40to50-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 04:40**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		161	194	pg/g	82.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		197	194	pg/g	101	(26%-138%)
37Cl-2,3,7,8-TCDD		19.7	19.4	pg/g	101	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 05:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.439	pg/g	0.160	0.922
40321-76-4	1,2,3,7,8-PeCDD	J	0.982	pg/g	0.240	4.61
39227-28-6	1,2,3,4,7,8-HxCDD	JK	1.12	pg/g	0.387	4.61
57653-85-7	1,2,3,6,7,8-HxCDD		6.56	pg/g	0.369	4.61
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.96	pg/g	0.387	4.61
35822-46-9	1,2,3,4,6,7,8-HpCDD		169	pg/g	0.793	4.61
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1830	pg/g	1.39	9.22
51207-31-9	2,3,7,8-TCDF	B	1.62	pg/g	0.387	0.922
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.936	pg/g	0.203	4.61
57117-31-4	2,3,4,7,8-PeCDF	J	1.76	pg/g	0.188	4.61
70648-26-9	1,2,3,4,7,8-HxCDF		5.79	pg/g	0.230	4.61
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.68	pg/g	0.240	4.61
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.51	pg/g	0.256	4.61
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	1.05	pg/g	0.282	4.61
67562-39-4	1,2,3,4,6,7,8-HpCDF		54.1	pg/g	0.470	4.61
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.45	pg/g	0.592	4.61
39001-02-0	1,2,3,4,6,7,8,9-OCDF		184	pg/g	0.441	9.22
41903-57-5	Total TeCDD	JK	2.94	pg/g	0.160	0.922
36088-22-9	Total PeCDD	JK	7.38	pg/g	0.240	4.61
34465-46-8	Total HxCDD	JK	42.6	pg/g	0.369	4.61
37871-00-4	Total HpCDD		329	pg/g	0.793	4.61
30402-14-3	Total TeCDF	JK	17.3	pg/g	0.387	0.922
30402-15-4	Total PeCDF	J	26.6	pg/g	0.0669	4.61
55684-94-1	Total HxCDF	J	71.2	pg/g	0.230	4.61
38998-75-3	Total HpCDF	J	206	pg/g	0.470	4.61
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		7.28	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		7.28	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		143	184	pg/g	77.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		165	184	pg/g	89.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	184	pg/g	91.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		133	184	pg/g	71.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		188	184	pg/g	102	(23%-140%)
13C-OCDD		404	369	pg/g	110	(17%-157%)
13C-2,3,7,8-TCDF		136	184	pg/g	73.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	184	pg/g	82.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	184	pg/g	83.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	184	pg/g	82.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	184	pg/g	69.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	184	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	184	pg/g	84.6	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 05:28**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	184	pg/g	83.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		190	184	pg/g	103	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	18.4	pg/g	91.1	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469004**	**Date Collected:**	**08/28/2019 10:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**42.2**
Client ID:	**J6-SC1b-50to60-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:36**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-6**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.77 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.28	pg/g	0.182	0.922

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 06:17**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.507	pg/g	0.193	0.928
40321-76-4	1,2,3,7,8-PeCDD	J	1.17	pg/g	0.185	4.64
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.81	pg/g	0.260	4.64
57653-85-7	1,2,3,6,7,8-HxCDD		7.77	pg/g	0.297	4.64
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.88	pg/g	0.284	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD		208	pg/g	0.709	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2250	pg/g	1.09	9.28
51207-31-9	2,3,7,8-TCDF	B	0.937	pg/g	0.308	0.928
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.911	pg/g	0.202	4.64
57117-31-4	2,3,4,7,8-PeCDF	J	1.73	pg/g	0.197	4.64
70648-26-9	1,2,3,4,7,8-HxCDF		5.98	pg/g	0.236	4.64
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.75	pg/g	0.251	4.64
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.23	pg/g	0.243	4.64
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	1.13	pg/g	0.197	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		75.5	pg/g	0.329	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	4.54	pg/g	0.436	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF		276	pg/g	0.433	9.28
41903-57-5	Total TeCDD	J	3.90	pg/g	0.193	0.928
36088-22-9	Total PeCDD	JKQ	11.5	pg/g	0.185	4.64
34465-46-8	Total HxCDD	J	64.9	pg/g	0.260	4.64
37871-00-4	Total HpCDD		406	pg/g	0.709	4.64
30402-14-3	Total TeCDF	JK	12.9	pg/g	0.308	0.928
30402-15-4	Total PeCDF	JKQ	34.1	pg/g	0.0538	4.64
55684-94-1	Total HxCDF	JK	98.7	pg/g	0.197	4.64
38998-75-3	Total HpCDF	J	287	pg/g	0.329	4.64
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		8.80	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		8.80	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		142	186	pg/g	76.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		151	186	pg/g	81.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		167	186	pg/g	89.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		106	186	pg/g	57.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		184	186	pg/g	99.1	(23%-140%)
13C-OCDD		387	371	pg/g	104	(17%-157%)
13C-2,3,7,8-TCDF		136	186	pg/g	73.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	186	pg/g	78.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	186	pg/g	78.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		176	186	pg/g	95.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		106	186	pg/g	57.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	186	pg/g	73.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		127	186	pg/g	68.4	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 06:17**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		153	186	pg/g	82.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		190	186	pg/g	102	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	18.6	pg/g	90.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469005**	**Date Collected:**	**08/28/2019 10:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**J6-SC1b-60to70-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.95 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	BJ	0.754	pg/g	0.172	0.928

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469006**	**Date Collected:**	**08/28/2019 10:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31.2**
Client ID:	**J6-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.39 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.092	pg/g	0.092	0.945
40321-76-4	1,2,3,7,8-PeCDD	U	0.0992	pg/g	0.0992	4.72
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.139	pg/g	0.139	4.72
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.148	pg/g	0.148	4.72
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.147	pg/g	0.147	4.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	0.941	pg/g	0.181	4.72
3268-87-9	1,2,3,4,6,7,8,9-OCDD		11.9	pg/g	0.285	9.45
51207-31-9	2,3,7,8-TCDF	BJ	0.367	pg/g	0.153	0.945
57117-41-6	1,2,3,7,8-PeCDF	U	0.13	pg/g	0.130	4.72
57117-31-4	2,3,4,7,8-PeCDF	U	0.108	pg/g	0.108	4.72
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.108	pg/g	0.108	4.72
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.112	pg/g	0.112	4.72
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.114	pg/g	0.114	4.72
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.152	pg/g	0.152	4.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.478	pg/g	0.164	4.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.225	pg/g	0.225	4.72
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	1.21	pg/g	0.244	9.45
41903-57-5	Total TeCDD	BJK	0.108	pg/g	0.0495	0.945
36088-22-9	Total PeCDD	U	0.0992	pg/g	0.0992	4.72
34465-46-8	Total HxCDD	BJK	0.414	pg/g	0.139	4.72
37871-00-4	Total HpCDD	J	2.14	pg/g	0.181	4.72
30402-14-3	Total TeCDF	BJ	0.586	pg/g	0.153	0.945
30402-15-4	Total PeCDF	BJ	0.253	pg/g	0.075	4.72
55684-94-1	Total HxCDF	BJK	0.608	pg/g	0.108	4.72
38998-75-3	Total HpCDF	BJ	1.67	pg/g	0.164	4.72
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0548	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.216	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	189	pg/g	78.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	189	pg/g	89.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	189	pg/g	85.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		134	189	pg/g	71.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	189	pg/g	96.9	(23%-140%)
13C-OCDD		384	378	pg/g	102	(17%-157%)
13C-2,3,7,8-TCDF		136	189	pg/g	72.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		135	189	pg/g	71.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	189	pg/g	82.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	189	pg/g	76.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	189	pg/g	69.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	189	pg/g	73.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	189	pg/g	81.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469006**	**Date Collected:**	**08/28/2019 10:40**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31.2**
Client ID:	**J6-SC1b-70to80-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:05**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.39 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		152	189	pg/g	80.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	189	pg/g	95.9	(26%-138%)
37Cl-2,3,7,8-TCDD		17.7	18.9	pg/g	93.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469007**	**Date Collected:**	**08/28/2019 11:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.8**
Client ID:	**J6-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.199	pg/g	0.199	0.965
40321-76-4	1,2,3,7,8-PeCDD	U	0.187	pg/g	0.187	4.82
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.233	pg/g	0.233	4.82
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.216	pg/g	0.216	4.82
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.23	pg/g	0.230	4.82
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	3.71	pg/g	0.438	4.82
3268-87-9	1,2,3,4,6,7,8,9-OCDD		37.7	pg/g	0.417	9.65
51207-31-9	2,3,7,8-TCDF	BJ	0.293	pg/g	0.278	0.965
57117-41-6	1,2,3,7,8-PeCDF	U	0.162	pg/g	0.162	4.82
57117-31-4	2,3,4,7,8-PeCDF	U	0.145	pg/g	0.145	4.82
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.139	pg/g	0.139	4.82
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.146	pg/g	0.146	4.82
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.154	pg/g	0.154	4.82
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.19	pg/g	0.190	4.82
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	1.24	pg/g	0.130	4.82
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.174	pg/g	0.174	4.82
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	3.74	pg/g	0.446	9.65
41903-57-5	Total TeCDD	U	0.199	pg/g	0.199	0.965
36088-22-9	Total PeCDD	U	0.187	pg/g	0.187	4.82
34465-46-8	Total HxCDD	BJ	1.02	pg/g	0.216	4.82
37871-00-4	Total HpCDD	J	7.11	pg/g	0.438	4.82
30402-14-3	Total TeCDF	BJ	0.604	pg/g	0.278	0.965
30402-15-4	Total PeCDF	BJK	0.612	pg/g	0.104	4.82
55684-94-1	Total HxCDF	BJK	1.45	pg/g	0.139	4.82
38998-75-3	Total HpCDF	J	4.62	pg/g	0.130	4.82
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0913	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.375	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	193	pg/g	83.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	193	pg/g	95.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	193	pg/g	87.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	193	pg/g	75.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		196	193	pg/g	102	(23%-140%)
13C-OCDD		404	386	pg/g	105	(17%-157%)
13C-2,3,7,8-TCDF		151	193	pg/g	78.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	193	pg/g	91.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	193	pg/g	91.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	193	pg/g	81.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	193	pg/g	71.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	193	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	193	pg/g	85.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469007**	**Date Collected:**	**08/28/2019 11:55**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**28.8**
Client ID:	**J6-SC1b-80to90-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 07:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.56 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		164	193	pg/g	84.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		197	193	pg/g	102	(26%-138%)
37Cl-2,3,7,8-TCDD		18.9	19.3	pg/g	97.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469008**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31**
Client ID:	**J6-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 08:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.33	pg/g	0.330	0.977
40321-76-4	1,2,3,7,8-PeCDD	U	0.282	pg/g	0.282	4.89
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.282	pg/g	0.282	4.89
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.287	pg/g	0.287	4.89
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.291	pg/g	0.291	4.89
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.569	pg/g	0.569	4.89
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	0.833	pg/g	0.833	9.77
51207-31-9	2,3,7,8-TCDF	U	0.573	pg/g	0.573	0.977
57117-41-6	1,2,3,7,8-PeCDF	U	0.199	pg/g	0.199	4.89
57117-31-4	2,3,4,7,8-PeCDF	U	0.191	pg/g	0.191	4.89
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.213	pg/g	0.213	4.89
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.219	pg/g	0.219	4.89
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.227	pg/g	0.227	4.89
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.332	pg/g	0.332	4.89
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.297	pg/g	0.297	4.89
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.452	pg/g	0.452	4.89
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.14	pg/g	1.14	9.77
41903-57-5	Total TeCDD	U	0.33	pg/g	0.330	0.977
36088-22-9	Total PeCDD	U	0.282	pg/g	0.282	4.89
34465-46-8	Total HxCDD	U	0.282	pg/g	0.282	4.89
37871-00-4	Total HpCDD	U	0.569	pg/g	0.569	4.89
30402-14-3	Total TeCDF	U	0.573	pg/g	0.573	0.977
30402-15-4	Total PeCDF	U	0.191	pg/g	0.191	4.89
55684-94-1	Total HxCDF	U	0.213	pg/g	0.213	4.89
38998-75-3	Total HpCDF	U	0.297	pg/g	0.297	4.89
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.466	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	195	pg/g	76.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	195	pg/g	88.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	195	pg/g	85.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		160	195	pg/g	81.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		196	195	pg/g	100	(23%-140%)
13C-OCDD		395	391	pg/g	101	(17%-157%)
13C-2,3,7,8-TCDF		142	195	pg/g	72.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	195	pg/g	83.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	195	pg/g	82.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		163	195	pg/g	83.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	195	pg/g	77.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		155	195	pg/g	79.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	195	pg/g	81.8	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469008**	**Date Collected:**	**08/28/2019 12:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**31**
Client ID:	**J6-SC1b-90to100-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 08:42**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.83 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	195	pg/g	85.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	195	pg/g	99.5	(26%-138%)
37Cl-2,3,7,8-TCDD		17.6	19.5	pg/g	90.2	(35%-197%)

Comments:

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469009**	**Date Collected:**	**08/28/2019 12:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.5**
Client ID:	**J6-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 09:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.58 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0979	pg/g	0.0979	0.924
40321-76-4	1,2,3,7,8-PeCDD	U	0.114	pg/g	0.114	4.62
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.116	pg/g	0.116	4.62
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.112	pg/g	0.112	4.62
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.116	pg/g	0.116	4.62
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.246	pg/g	0.246	4.62
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	0.722	pg/g	0.578	9.24
51207-31-9	2,3,7,8-TCDF	BJ	0.301	pg/g	0.170	0.924
57117-41-6	1,2,3,7,8-PeCDF	U	0.0903	pg/g	0.0903	4.62
57117-31-4	2,3,4,7,8-PeCDF	U	0.0792	pg/g	0.0792	4.62
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0901	pg/g	0.0901	4.62
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0981	pg/g	0.0981	4.62
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0997	pg/g	0.0997	4.62
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.151	pg/g	0.151	4.62
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.111	pg/g	0.110	4.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.188	pg/g	0.188	4.62
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.495	pg/g	0.495	9.24
41903-57-5	Total TeCDD	U	0.0979	pg/g	0.0979	0.924
36088-22-9	Total PeCDD	U	0.114	pg/g	0.114	4.62
34465-46-8	Total HxCDD	U	0.112	pg/g	0.112	4.62
37871-00-4	Total HpCDD	U	0.246	pg/g	0.246	4.62
30402-14-3	Total TeCDF	BJ	0.519	pg/g	0.170	0.924
30402-15-4	Total PeCDF	U	0.0792	pg/g	0.0792	4.62
55684-94-1	Total HxCDF	U	0.0901	pg/g	0.0901	4.62
38998-75-3	Total HpCDF	BJ	0.111	pg/g	0.110	4.62
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0314	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.192	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	185	pg/g	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		141	185	pg/g	76.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	185	pg/g	78.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		158	185	pg/g	85.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		154	185	pg/g	83.2	(23%-140%)
13C-OCDD		229	369	pg/g	61.9	(17%-157%)
13C-2,3,7,8-TCDF		137	185	pg/g	73.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		137	185	pg/g	74.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		135	185	pg/g	73.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	185	pg/g	82.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		149	185	pg/g	80.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	185	pg/g	79.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	185	pg/g	78.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469009**	**Date Collected:**	**08/28/2019 12:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**30.5**
Client ID:	**J6-SC1b-100to110-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 09:56**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.58 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		151	185	pg/g	81.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		145	185	pg/g	78.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	18.5	pg/g	91.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469010**	**Date Collected:**	**08/28/2019 12:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.1**
Client ID:	**J6-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 10:44**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0786	pg/g	0.0786	0.889
40321-76-4	1,2,3,7,8-PeCDD	U	0.0672	pg/g	0.0672	4.44
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.086	pg/g	0.086	4.44
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0775	pg/g	0.0775	4.44
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0827	pg/g	0.0827	4.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.203	pg/g	0.203	4.44
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	0.731	pg/g	0.327	8.89
51207-31-9	2,3,7,8-TCDF	BJ	0.245	pg/g	0.116	0.889
57117-41-6	1,2,3,7,8-PeCDF	U	0.0731	pg/g	0.0731	4.44
57117-31-4	2,3,4,7,8-PeCDF	U	0.0629	pg/g	0.0629	4.44
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.064	pg/g	0.064	4.44
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0652	pg/g	0.0652	4.44
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0699	pg/g	0.0699	4.44
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.112	pg/g	0.112	4.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.0978	pg/g	0.0777	4.44
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.132	pg/g	0.132	4.44
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.368	pg/g	0.368	8.89
41903-57-5	Total TeCDD	U	0.0786	pg/g	0.0786	0.889
36088-22-9	Total PeCDD	U	0.0672	pg/g	0.0672	4.44
34465-46-8	Total HxCDD	U	0.0775	pg/g	0.0775	4.44
37871-00-4	Total HpCDD	U	0.203	pg/g	0.203	4.44
30402-14-3	Total TeCDF	BJ	0.478	pg/g	0.116	0.889
30402-15-4	Total PeCDF	U	0.0556	pg/g	0.0556	4.44
55684-94-1	Total HxCDF	U	0.064	pg/g	0.064	4.44
38998-75-3	Total HpCDF	BJ	0.0978	pg/g	0.0777	4.44
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0257	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.139	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		141	178	pg/g	79.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		131	178	pg/g	73.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		132	178	pg/g	74.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	178	pg/g	79.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		143	178	pg/g	80.2	(23%-140%)
13C-OCDD		220	356	pg/g	61.9	(17%-157%)
13C-2,3,7,8-TCDF		124	178	pg/g	69.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		122	178	pg/g	68.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		123	178	pg/g	69.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		135	178	pg/g	75.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	178	pg/g	78.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	178	pg/g	75.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		132	178	pg/g	74.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469010**	**Date Collected:**	**08/28/2019 12:10**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.1**
Client ID:	**J6-SC1b-110to120-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 10:44**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.22 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		141	178	pg/g	79.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		134	178	pg/g	75.6	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	17.8	pg/g	94.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**

J **Value is estimated**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/25/2019 02:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP750**
Data File:	**A24SEP19A_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.62	pg/g	0.557	0.953

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

B The target analyte was detected in the associated blank.
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
Q Quantitative Interference; value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 11:32**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.761	pg/g	0.223	0.953
40321-76-4	1,2,3,7,8-PeCDD	JK	1.84	pg/g	0.236	4.77
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.51	pg/g	0.471	4.77
57653-85-7	1,2,3,6,7,8-HxCDD		13.6	pg/g	0.460	4.77
19408-74-3	1,2,3,7,8,9-HxCDD		5.97	pg/g	0.475	4.77
35822-46-9	1,2,3,4,6,7,8-HpCDD		315	pg/g	1.13	4.77
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	3870	pg/g	2.35	9.53
51207-31-9	2,3,7,8-TCDF	B	1.66	pg/g	0.471	0.953
57117-41-6	1,2,3,7,8-PeCDF	J	1.95	pg/g	0.275	4.77
57117-31-4	2,3,4,7,8-PeCDF		10.7	pg/g	0.238	4.77
70648-26-9	1,2,3,4,7,8-HxCDF		10.4	pg/g	0.328	4.77
57117-44-9	1,2,3,6,7,8-HxCDF		11.6	pg/g	0.345	4.77
60851-34-5	2,3,4,6,7,8-HxCDF		11.2	pg/g	0.336	4.77
72918-21-9	1,2,3,7,8,9-HxCDF	J	2.32	pg/g	0.454	4.77
67562-39-4	1,2,3,4,6,7,8-HpCDF		230	pg/g	0.608	4.77
55673-89-7	1,2,3,4,7,8,9-HpCDF		8.92	pg/g	0.778	4.77
39001-02-0	1,2,3,4,6,7,8,9-OCDF		408	pg/g	1.03	9.53
41903-57-5	Total TeCDD	JK	24.5	pg/g	0.223	0.953
36088-22-9	Total PeCDD	JKQ	31.3	pg/g	0.236	4.77
34465-46-8	Total HxCDD	J	106	pg/g	0.460	4.77
37871-00-4	Total HpCDD		697	pg/g	1.13	4.77
30402-14-3	Total TeCDF	JK	69.5	pg/g	0.471	0.953
30402-15-4	Total PeCDF	JKQ	210	pg/g	0.130	4.77
55684-94-1	Total HxCDF	J	276	pg/g	0.328	4.77
38998-75-3	Total HpCDF	JK	621	pg/g	0.608	4.77
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		18.6	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		18.6	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		122	191	pg/g	64.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	191	pg/g	63.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		164	191	pg/g	86.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	191	pg/g	77.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		197	191	pg/g	103	(23%-140%)
13C-OCDD		412	381	pg/g	108	(17%-157%)
13C-2,3,7,8-TCDF		131	191	pg/g	68.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		115	191	pg/g	60.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		112	191	pg/g	58.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	191	pg/g	87.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	191	pg/g	70.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	191	pg/g	76.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		126	191	pg/g	66.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469013**	**Date Collected:**	**08/28/2019 20:15**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**40**
Client ID:	**H3-SC1b-20to30-82819**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 11:32**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**17.47 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		177	191	pg/g	93.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		214	191	pg/g	112	(26%-138%)
37Cl-2,3,7,8-TCDD		13.6	19.1	pg/g	71.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469014**	**Date Collected:**	**08/29/2019 08:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.7**
Client ID:	**H3-SC1b-30to40-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 00:38**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-2**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.158	pg/g	0.158	0.969
40321-76-4	1,2,3,7,8-PeCDD	U	0.161	pg/g	0.161	4.84
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.225	pg/g	0.225	4.84
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.229	pg/g	0.229	4.84
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.233	pg/g	0.233	4.84
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	4.29	pg/g	0.372	4.84
3268-87-9	1,2,3,4,6,7,8,9-OCDD		52.6	pg/g	0.740	9.69
51207-31-9	2,3,7,8-TCDF	BJ	0.475	pg/g	0.347	0.969
57117-41-6	1,2,3,7,8-PeCDF	U	0.202	pg/g	0.202	4.84
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.378	pg/g	0.183	4.84
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.316	pg/g	0.181	4.84
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.649	pg/g	0.188	4.84
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.382	pg/g	0.188	4.84
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.242	pg/g	0.242	4.84
67562-39-4	1,2,3,4,6,7,8-HpCDF		10.8	pg/g	0.345	4.84
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.455	pg/g	0.455	4.84
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	6.35	pg/g	0.661	9.69
41903-57-5	Total TeCDD	BJK	0.262	pg/g	0.158	0.969
36088-22-9	Total PeCDD	JK	0.469	pg/g	0.161	4.84
34465-46-8	Total HxCDD	BJ	1.82	pg/g	0.225	4.84
37871-00-4	Total HpCDD	J	9.69	pg/g	0.372	4.84
30402-14-3	Total TeCDF	JK	2.51	pg/g	0.347	0.969
30402-15-4	Total PeCDF	JK	5.94	pg/g	0.105	4.84
55684-94-1	Total HxCDF	JK	8.96	pg/g	0.181	4.84
38998-75-3	Total HpCDF		18.7	pg/g	0.345	4.84
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.464	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.675	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		137	194	pg/g	70.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		159	194	pg/g	82.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		143	194	pg/g	74.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		128	194	pg/g	65.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	194	pg/g	83.9	(23%-140%)
13C-OCDD		328	388	pg/g	84.7	(17%-157%)
13C-2,3,7,8-TCDF		126	194	pg/g	64.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		150	194	pg/g	77.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		148	194	pg/g	76.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		130	194	pg/g	67.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		124	194	pg/g	64.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		127	194	pg/g	65.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		143	194	pg/g	73.9	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469014**	**Date Collected:**	**08/29/2019 08:25**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**26.7**
Client ID:	**H3-SC1b-30to40-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 00:38**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-2**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		138	194	pg/g	71.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	194	pg/g	83.6	(26%-138%)
37Cl-2,3,7,8-TCDD		18.0	19.4	pg/g	92.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469015**	**Date Collected:**	**08/29/2019 08:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**25.9**
Client ID:	**H3-SC1b-40to50-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:09**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.46 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0962	pg/g	0.0962	0.934
40321-76-4	1,2,3,7,8-PeCDD	JK	0.325	pg/g	0.108	4.67
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.261	pg/g	0.132	4.67
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.08	pg/g	0.134	4.67
19408-74-3	1,2,3,7,8,9-HxCDD	BJ	0.859	pg/g	0.136	4.67
35822-46-9	1,2,3,4,6,7,8-HpCDD		34.2	pg/g	0.325	4.67
3268-87-9	1,2,3,4,6,7,8,9-OCDD		559	pg/g	1.00	9.34
51207-31-9	2,3,7,8-TCDF	BJ	0.803	pg/g	0.166	0.934
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.562	pg/g	0.0831	4.67
57117-31-4	2,3,4,7,8-PeCDF	J	2.10	pg/g	0.0739	4.67
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.72	pg/g	0.132	4.67
57117-44-9	1,2,3,6,7,8-HxCDF		6.08	pg/g	0.141	4.67
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.88	pg/g	0.136	4.67
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.527	pg/g	0.173	4.67
67562-39-4	1,2,3,4,6,7,8-HpCDF		94.2	pg/g	0.218	4.67
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	1.18	pg/g	0.310	4.67
39001-02-0	1,2,3,4,6,7,8,9-OCDF		45.4	pg/g	0.349	9.34
41903-57-5	Total TeCDD	JK	1.61	pg/g	0.0962	0.934
36088-22-9	Total PeCDD	JKQ	4.90	pg/g	0.108	4.67
34465-46-8	Total HxCDD	J	17.4	pg/g	0.132	4.67
37871-00-4	Total HpCDD		87.7	pg/g	0.325	4.67
30402-14-3	Total TeCDF	JK	14.9	pg/g	0.166	0.934
30402-15-4	Total PeCDF	JKQ	50.2	pg/g	0.0457	4.67
55684-94-1	Total HxCDF	J	75.2	pg/g	0.132	4.67
38998-75-3	Total HpCDF	J	170	pg/g	0.218	4.67
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.97	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		4.02	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		131	187	pg/g	70.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		115	187	pg/g	61.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	187	pg/g	82.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	187	pg/g	73.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	187	pg/g	99.9	(23%-140%)
13C-OCDD		347	373	pg/g	93.0	(17%-157%)
13C-2,3,7,8-TCDF		134	187	pg/g	72.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		108	187	pg/g	57.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		110	187	pg/g	58.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	187	pg/g	79.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	187	pg/g	70.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	187	pg/g	72.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		136	187	pg/g	72.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469015**	**Date Collected:**	**08/29/2019 08:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**25.9**
Client ID:	**H3-SC1b-40to50-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:09**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-7**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**14.46 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		163	187	pg/g	87.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		187	187	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		15.4	18.7	pg/g	82.7	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469016**	**Date Collected:**	**08/29/2019 08:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29.8**
Client ID:	**H3-SC1b-50to60-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0716	pg/g	0.0716	0.927
40321-76-4	1,2,3,7,8-PeCDD	U	0.0736	pg/g	0.0736	4.64
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0979	pg/g	0.0979	4.64
57653-85-7	1,2,3,6,7,8-HxCDD	BJK	0.217	pg/g	0.095	4.64
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0985	pg/g	0.0985	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.96	pg/g	0.200	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD		24.9	pg/g	0.363	9.27
51207-31-9	2,3,7,8-TCDF	BJ	0.282	pg/g	0.131	0.927
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.113	pg/g	0.0671	4.64
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.213	pg/g	0.0593	4.64
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.202	pg/g	0.064	4.64
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.655	pg/g	0.0666	4.64
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.319	pg/g	0.0686	4.64
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.089	pg/g	0.089	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		10.3	pg/g	0.110	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.174	pg/g	0.174	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	3.05	pg/g	0.265	9.27
41903-57-5	Total TeCDD	BJK	0.167	pg/g	0.0716	0.927
36088-22-9	Total PeCDD	JK	0.395	pg/g	0.0736	4.64
34465-46-8	Total HxCDD	BJK	1.60	pg/g	0.095	4.64
37871-00-4	Total HpCDD	J	4.94	pg/g	0.200	4.64
30402-14-3	Total TeCDF	JK	2.07	pg/g	0.131	0.927
30402-15-4	Total PeCDF	JK	6.06	pg/g	0.0428	4.64
55684-94-1	Total HxCDF	J	8.49	pg/g	0.064	4.64
38998-75-3	Total HpCDF		16.7	pg/g	0.110	4.64
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.366	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.454	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		136	185	pg/g	73.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		126	185	pg/g	68.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	185	pg/g	81.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		132	185	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		167	185	pg/g	89.9	(23%-140%)
13C-OCDD		283	371	pg/g	76.3	(17%-157%)
13C-2,3,7,8-TCDF		127	185	pg/g	68.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		117	185	pg/g	62.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		118	185	pg/g	63.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	185	pg/g	78.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	185	pg/g	69.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		132	185	pg/g	71.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	185	pg/g	76.7	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469016**	**Date Collected:**	**08/29/2019 08:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**29.8**
Client ID:	**H3-SC1b-50to60-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 13:58**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-8**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**15.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		151	185	pg/g	81.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		163	185	pg/g	88.1	(26%-138%)
37Cl-2,3,7,8-TCDD		16.3	18.5	pg/g	88.0	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469017**	**Date Collected:**	**08/29/2019 09:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.1**
Client ID:	**H3-SC1b-60to70-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 14:46**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.48 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0733	pg/g	0.0733	0.949
40321-76-4	1,2,3,7,8-PeCDD	J	0.271	pg/g	0.108	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	JK	0.178	pg/g	0.118	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.22	pg/g	0.118	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	BJK	0.509	pg/g	0.120	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD		24.1	pg/g	0.321	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD		373	pg/g	0.944	9.49
51207-31-9	2,3,7,8-TCDF	BJK	0.389	pg/g	0.143	0.949
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.253	pg/g	0.0706	4.75
57117-31-4	2,3,4,7,8-PeCDF	J	1.13	pg/g	0.0632	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.862	pg/g	0.0883	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.16	pg/g	0.0966	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.41	pg/g	0.0987	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	BJK	0.247	pg/g	0.119	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF		43.6	pg/g	0.183	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	0.592	pg/g	0.281	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF		28.6	pg/g	0.380	9.49
41903-57-5	Total TeCDD	BJK	0.625	pg/g	0.0733	0.949
36088-22-9	Total PeCDD	JKQ	2.73	pg/g	0.108	4.75
34465-46-8	Total HxCDD	JK	11.3	pg/g	0.118	4.75
37871-00-4	Total HpCDD		62.6	pg/g	0.321	4.75
30402-14-3	Total TeCDF	JK	8.61	pg/g	0.143	0.949
30402-15-4	Total PeCDF	JKQ	28.7	pg/g	0.0454	4.75
55684-94-1	Total HxCDF	JK	35.8	pg/g	0.0883	4.75
38998-75-3	Total HpCDF	J	81.3	pg/g	0.183	4.75
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2.12	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.16	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		131	190	pg/g	69.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	190	pg/g	63.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		143	190	pg/g	75.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		132	190	pg/g	69.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	190	pg/g	85.8	(23%-140%)
13C-OCDD		283	380	pg/g	74.6	(17%-157%)
13C-2,3,7,8-TCDF		125	190	pg/g	65.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		114	190	pg/g	59.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		115	190	pg/g	60.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	190	pg/g	73.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		124	190	pg/g	65.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		129	190	pg/g	68.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		129	190	pg/g	68.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469017**	**Date Collected:**	**08/29/2019 09:00**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.1**
Client ID:	**H3-SC1b-60to70-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 14:46**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-9**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.48 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		147	190	pg/g	77.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	190	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		15.5	19.0	pg/g	81.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469018**	**Date Collected:**	**08/29/2019 09:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**48.9**
Client ID:	**H3-SC1b-70to80-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 15:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**20.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0882	pg/g	0.0882	0.974
40321-76-4	1,2,3,7,8-PeCDD	JK	0.234	pg/g	0.169	4.87
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.163	pg/g	0.163	4.87
57653-85-7	1,2,3,6,7,8-HxCDD	BJK	0.386	pg/g	0.163	4.87
19408-74-3	1,2,3,7,8,9-HxCDD	BJK	0.456	pg/g	0.167	4.87
35822-46-9	1,2,3,4,6,7,8-HpCDD		5.54	pg/g	0.208	4.87
3268-87-9	1,2,3,4,6,7,8,9-OCDD		57.1	pg/g	0.580	9.74
51207-31-9	2,3,7,8-TCDF	BJK	0.732	pg/g	0.155	0.974
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.335	pg/g	0.191	4.87
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.614	pg/g	0.163	4.87
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.563	pg/g	0.115	4.87
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.802	pg/g	0.123	4.87
60851-34-5	2,3,4,6,7,8-HxCDF	BJ	0.540	pg/g	0.116	4.87
72918-21-9	1,2,3,7,8,9-HxCDF	QU	0.163	pg/g	0.163	4.87
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.08	pg/g	0.130	4.87
55673-89-7	1,2,3,4,7,8,9-HpCDF	BJ	0.356	pg/g	0.182	4.87
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	5.78	pg/g	0.358	9.74
41903-57-5	Total TeCDD	JK	2.35	pg/g	0.0882	0.974
36088-22-9	Total PeCDD	JKQ	2.47	pg/g	0.169	4.87
34465-46-8	Total HxCDD	JK	5.20	pg/g	0.163	4.87
37871-00-4	Total HpCDD		14.0	pg/g	0.208	4.87
30402-14-3	Total TeCDF	JK	9.53	pg/g	0.155	0.974
30402-15-4	Total PeCDF	JKQ	9.93	pg/g	0.0508	4.87
55684-94-1	Total HxCDF	JKQ	9.91	pg/g	0.115	4.87
38998-75-3	Total HpCDF	J	17.3	pg/g	0.130	4.87
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.944	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.00	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		127	195	pg/g	65.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		109	195	pg/g	56.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	195	pg/g	85.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	195	pg/g	73.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		185	195	pg/g	95.1	(23%-140%)
13C-OCDD		349	390	pg/g	89.6	(17%-157%)
13C-2,3,7,8-TCDF		131	195	pg/g	67.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		107	195	pg/g	54.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		105	195	pg/g	53.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	195	pg/g	80.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		128	195	pg/g	65.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	195	pg/g	74.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF	Q	115	195	pg/g	59.0	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469018**	**Date Collected:**	**08/29/2019 09:05**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**48.9**
Client ID:	**H3-SC1b-70to80-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 15:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-10**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**20.11 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		166	195	pg/g	85.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		192	195	pg/g	98.8	(26%-138%)
37Cl-2,3,7,8-TCDD		13.9	19.5	pg/g	71.3	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
Q **Quantitative Interference; value is estimated**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469019**	**Date Collected:**	**08/29/2019 09:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.1**
Client ID:	**H3-SC1b-80to90-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 16:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.65 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0673	pg/g	0.0673	0.943
40321-76-4	1,2,3,7,8-PeCDD	U	0.109	pg/g	0.109	4.71
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.126	pg/g	0.126	4.71
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.131	pg/g	0.131	4.71
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.132	pg/g	0.132	4.71
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.04	pg/g	0.140	4.71
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	8.95	pg/g	0.341	9.43
51207-31-9	2,3,7,8-TCDF	BJ	0.413	pg/g	0.106	0.943
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.117	pg/g	0.083	4.71
57117-31-4	2,3,4,7,8-PeCDF	BJK	0.111	pg/g	0.0717	4.71
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	0.141	pg/g	0.0698	4.71
57117-44-9	1,2,3,6,7,8-HxCDF	BJK	0.100	pg/g	0.0713	4.71
60851-34-5	2,3,4,6,7,8-HxCDF	BJK	0.083	pg/g	0.0753	4.71
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0975	pg/g	0.0975	4.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.685	pg/g	0.0734	4.71
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.115	pg/g	0.115	4.71
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.368	pg/g	0.275	9.43
41903-57-5	Total TeCDD	BJ	0.571	pg/g	0.0673	0.943
36088-22-9	Total PeCDD	JK	0.287	pg/g	0.109	4.71
34465-46-8	Total HxCDD	BJK	1.00	pg/g	0.126	4.71
37871-00-4	Total HpCDD	J	2.61	pg/g	0.140	4.71
30402-14-3	Total TeCDF	JK	1.90	pg/g	0.106	0.943
30402-15-4	Total PeCDF	BJK	0.824	pg/g	0.0455	4.71
55684-94-1	Total HxCDF	BJK	0.892	pg/g	0.0698	4.71
38998-75-3	Total HpCDF	BJ	1.19	pg/g	0.0734	4.71
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.131	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.244	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		135	189	pg/g	71.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		117	189	pg/g	62.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	189	pg/g	80.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	189	pg/g	77.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		179	189	pg/g	94.6	(23%-140%)
13C-OCDD		313	377	pg/g	82.9	(17%-157%)
13C-2,3,7,8-TCDF		133	189	pg/g	70.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		107	189	pg/g	56.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		111	189	pg/g	58.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	189	pg/g	78.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		138	189	pg/g	72.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	189	pg/g	73.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	189	pg/g	75.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469019**	**Date Collected:**	**08/29/2019 09:30**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**43.1**
Client ID:	**H3-SC1b-80to90-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 16:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-11**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**18.65 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		159	189	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		176	189	pg/g	93.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.0	18.9	pg/g	84.8	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469020**	**Date Collected:**	**08/29/2019 09:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.6**
Client ID:	**H3-SC1b-90to100-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 17:11**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0459	pg/g	0.0459	0.933
40321-76-4	1,2,3,7,8-PeCDD	U	0.0664	pg/g	0.0664	4.66
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.104	pg/g	0.104	4.66
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.102	pg/g	0.102	4.66
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.105	pg/g	0.105	4.66
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJK	0.496	pg/g	0.150	4.66
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	3.59	pg/g	0.276	9.33
51207-31-9	2,3,7,8-TCDF	BJ	0.405	pg/g	0.119	0.933
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.097	pg/g	0.0638	4.66
57117-31-4	2,3,4,7,8-PeCDF	U	0.0567	pg/g	0.0567	4.66
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	0.0485	pg/g	0.0405	4.66
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0429	pg/g	0.0429	4.66
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0448	pg/g	0.0448	4.66
72918-21-9	1,2,3,7,8,9-HxCDF	BJ	0.0653	pg/g	0.061	4.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.127	pg/g	0.0543	4.66
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0852	pg/g	0.0852	4.66
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.214	pg/g	0.214	9.33
41903-57-5	Total TeCDD	BJK	0.367	pg/g	0.0459	0.933
36088-22-9	Total PeCDD	JK	0.0746	pg/g	0.0664	4.66
34465-46-8	Total HxCDD	BJK	0.636	pg/g	0.102	4.66
37871-00-4	Total HpCDD	BJK	1.23	pg/g	0.150	4.66
30402-14-3	Total TeCDF	BJK	0.854	pg/g	0.119	0.933
30402-15-4	Total PeCDF	BJK	0.356	pg/g	0.0311	4.66
55684-94-1	Total HxCDF	BJ	0.201	pg/g	0.0405	4.66
38998-75-3	Total HpCDF	BJ	0.127	pg/g	0.0543	4.66
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0621	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.147	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	187	pg/g	80.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		134	187	pg/g	71.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	187	pg/g	88.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	187	pg/g	80.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		178	187	pg/g	95.2	(23%-140%)
13C-OCDD		297	373	pg/g	79.7	(17%-157%)
13C-2,3,7,8-TCDF		142	187	pg/g	76.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		126	187	pg/g	67.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		127	187	pg/g	68.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	187	pg/g	84.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		145	187	pg/g	77.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		147	187	pg/g	78.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	187	pg/g	83.5	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469020**	**Date Collected:**	**08/29/2019 09:35**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**36.6**
Client ID:	**H3-SC1b-90to100-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 17:11**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-12**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.91 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		162	187	pg/g	87.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	187	pg/g	92.9	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	18.7	pg/g	90.6	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469021**	**Date Collected:**	**08/29/2019 09:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35**
Client ID:	**H3-SC1b-100to110-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 18:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0634	pg/g	0.0634	0.940
40321-76-4	1,2,3,7,8-PeCDD	U	0.0741	pg/g	0.0741	4.70
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0784	pg/g	0.0784	4.70
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0765	pg/g	0.0765	4.70
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.079	pg/g	0.079	4.70
35822-46-9	1,2,3,4,6,7,8-HpCDD	BJ	1.03	pg/g	0.142	4.70
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	9.18	pg/g	0.376	9.40
51207-31-9	2,3,7,8-TCDF	BJ	0.352	pg/g	0.0833	0.940
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.0545	pg/g	0.0449	4.70
57117-31-4	2,3,4,7,8-PeCDF	U	0.0408	pg/g	0.0408	4.70
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.0446	pg/g	0.0446	4.70
57117-44-9	1,2,3,6,7,8-HxCDF	BJ	0.047	pg/g	0.0451	4.70
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0464	pg/g	0.0464	4.70
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0692	pg/g	0.0692	4.70
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	0.416	pg/g	0.0489	4.70
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0829	pg/g	0.0829	4.70
39001-02-0	1,2,3,4,6,7,8,9-OCDF	BJ	0.323	pg/g	0.222	9.40
41903-57-5	Total TeCDD	BJ	0.284	pg/g	0.0634	0.940
36088-22-9	Total PeCDD	JK	0.299	pg/g	0.0741	4.70
34465-46-8	Total HxCDD	BJK	0.980	pg/g	0.0765	4.70
37871-00-4	Total HpCDD	J	2.73	pg/g	0.142	4.70
30402-14-3	Total TeCDF	BJK	0.893	pg/g	0.0833	0.940
30402-15-4	Total PeCDF	BJK	0.367	pg/g	0.0301	4.70
55684-94-1	Total HxCDF	BJK	0.451	pg/g	0.0446	4.70
38998-75-3	Total HpCDF	BJ	0.782	pg/g	0.0489	4.70
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0588	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.154	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	188	pg/g	79.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		140	188	pg/g	74.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	188	pg/g	83.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	188	pg/g	78.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		168	188	pg/g	89.4	(23%-140%)
13C-OCDD		263	376	pg/g	70.0	(17%-157%)
13C-2,3,7,8-TCDF		137	188	pg/g	72.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		132	188	pg/g	70.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		134	188	pg/g	71.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	188	pg/g	79.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	188	pg/g	75.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		142	188	pg/g	75.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	188	pg/g	80.3	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**15469021**	**Date Collected:**	**08/29/2019 09:50**	**Matrix:**	**SOIL**
Client Sample:	**1613B Soil**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**35**
Client ID:	**H3-SC1b-100to110-82919**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/23/2019 18:00**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a-13**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**16.36 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		157	188	pg/g	83.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		161	188	pg/g	85.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.0	18.8	pg/g	90.5	(35%-197%)

Comments:

B **The target analyte was detected in the associated blank.**
J **Value is estimated**
K **Estimated Maximum Possible Concentration**
U **Analyte was analyzed for, but not detected above the specified detection limit.**

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024793	LCS for batch 41745	13C-2,3,7,8-TCDD		77.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		72.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		73.5	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		74.9	(22%-166%)
		13C-OCDD		56.6	(13%-199%)
		13C-2,3,7,8-TCDF		66.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		70.1	(21%-192%)
		13C-2,3,4,7,8-PeCDF		66.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		75.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.4	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		70.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		70.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		70.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		69.8	(20%-186%)
		37Cl-2,3,7,8-TCDD		94.4	(31%-191%)
15469009	J6-SC1b-100to110-82819	13C-2,3,7,8-TCDD		80.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.2	(23%-140%)
		13C-OCDD		61.9	(17%-157%)
		13C-2,3,7,8-TCDF		73.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		73.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.3	(35%-197%)
15469010	J6-SC1b-110to120-82819	13C-2,3,7,8-TCDD		79.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		73.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.2	(23%-140%)
		13C-OCDD		61.9	(17%-157%)
		13C-2,3,7,8-TCDF		69.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		69.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		74.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.5	(35%-197%)
15469013	H3-SC1b-20to30-82819	13C-2,3,7,8-TCDD		64.2	(25%-164%)

Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469013	H3-SC1b-20to30-82819	13C-1,2,3,7,8-PeCDD		63.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		108	(17%-157%)
		13C-2,3,7,8-TCDF		68.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		60.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		87.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		66.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		93.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		112	(26%-138%)
		37Cl-2,3,7,8-TCDD		71.3	(35%-197%)
15469015	H3-SC1b-40to50-82919	13C-2,3,7,8-TCDD		70.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		61.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.9	(23%-140%)
		13C-OCDD		93.0	(17%-157%)
		13C-2,3,7,8-TCDF		72.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		57.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.7	(35%-197%)
15469016	H3-SC1b-50to60-82919	13C-2,3,7,8-TCDD		73.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		68.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.9	(23%-140%)
		13C-OCDD		76.3	(17%-157%)
		13C-2,3,7,8-TCDF		68.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		62.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		63.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.0	(35%-197%)
15469017	H3-SC1b-60to70-82919	13C-2,3,7,8-TCDD		69.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		63.9	(25%-181%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469017	H3-SC1b-60to70-82919	13C-1,2,3,4,7,8-HxCDD		75.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		69.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.8	(23%-140%)
		13C-OCDD		74.6	(17%-157%)
		13C-2,3,7,8-TCDF		65.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		59.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		60.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		65.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		68.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.5	(35%-197%)
15469018	H3-SC1b-70to80-82919	13C-2,3,7,8-TCDD		65.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		56.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.1	(23%-140%)
		13C-OCDD		89.6	(17%-157%)
		13C-2,3,7,8-TCDF		67.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		54.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		53.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		65.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF	Q	59.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		71.3	(35%-197%)
15469019	H3-SC1b-80to90-82919	13C-2,3,7,8-TCDD		71.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		62.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.6	(23%-140%)
		13C-OCDD		82.9	(17%-157%)
		13C-2,3,7,8-TCDF		70.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		56.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		58.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		93.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.8	(35%-197%)
15469020	H3-SC1b-90to100-82919	13C-2,3,7,8-TCDD		80.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		71.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		88.8	(32%-141%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469020	H3-SC1b-90to100-82919	13C-1,2,3,6,7,8-HxCDD		80.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.2	(23%-140%)
		13C-OCDD		79.7	(17%-157%)
		13C-2,3,7,8-TCDF		76.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		67.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		68.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		92.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.6	(35%-197%)
15469021	H3-SC1b-100to110-82919	13C-2,3,7,8-TCDD		79.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		74.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.4	(23%-140%)
		13C-OCDD		70.0	(17%-157%)
		13C-2,3,7,8-TCDF		72.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		70.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		71.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		85.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.5	(35%-197%)
12024794	LCSD for batch 41745	13C-2,3,7,8-TCDD		82.4	(20%-175%)
		13C-1,2,3,7,8-PeCDD		76.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		78.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		86.1	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		86.7	(22%-166%)
		13C-OCDD		68.1	(13%-199%)
		13C-2,3,7,8-TCDF		74.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		75.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		72.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		83.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		81.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		86.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		93.4	(31%-191%)
12024792	MB for batch 41745	13C-2,3,7,8-TCDD		84.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.4	(28%-130%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024792	MB for batch 41745	13C-1,2,3,4,6,7,8-HpCDD		84.5	(23%-140%)
		13C-OCDD		65.7	(17%-157%)
		13C-2,3,7,8-TCDF		74.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		72.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.7	(35%-197%)
15469014	H3-SC1b-30to40-82919	13C-2,3,7,8-TCDD		70.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		65.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(23%-140%)
		13C-OCDD		84.7	(17%-157%)
		13C-2,3,7,8-TCDF		64.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		65.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.6	(35%-197%)
15469001	J6-SC1b-20to30-82819	13C-2,3,7,8-TCDD		75.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		68.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.1	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		69.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		78.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		94.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.2	(35%-197%)
12024795	J6-SC1b-20to30-82819(15469001MS)	13C-2,3,7,8-TCDD		77.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		91.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		69.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.4	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12024795	J6-SC1b-20to30-82819(15469001MS)	13C-OCDD		105	(17%-157%)
		13C-2,3,7,8-TCDF		71.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		79.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.8	(35%-197%)
12024796	J6-SC1b-20to30-82819(15469001MSD)	13C-2,3,7,8-TCDD		81.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		107	(17%-157%)
		13C-2,3,7,8-TCDF		75.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
		37Cl-2,3,7,8-TCDD		96.3	(35%-197%)
15469002	J6-SC1b-30to40-82819	13C-2,3,7,8-TCDD		78.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.4	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		72.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.4	(35%-197%)
15469003	J6-SC1b-40to50-82819	13C-2,3,7,8-TCDD		83.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		108	(17%-157%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469003	J6-SC1b-40to50-82819	13C-2,3,7,8-TCDF		77.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		101	(26%-138%)
		37Cl-2,3,7,8-TCDD		101	(35%-197%)
15469004	J6-SC1b-50to60-82819	13C-2,3,7,8-TCDD		77.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		91.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		110	(17%-157%)
		13C-2,3,7,8-TCDF		73.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		83.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.1	(35%-197%)
15469005	J6-SC1b-60to70-82819	13C-2,3,7,8-TCDD		76.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		57.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		99.1	(23%-140%)
		13C-OCDD		104	(17%-157%)
		13C-2,3,7,8-TCDF		73.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		78.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		95.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		57.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		102	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.5	(35%-197%)
15469006	J6-SC1b-70to80-82819	13C-2,3,7,8-TCDD		78.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.9	(23%-140%)
		13C-OCDD		102	(17%-157%)
		13C-2,3,7,8-TCDF		72.0	(24%-169%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: 2006-00115_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
15469006	J6-SC1b-70to80-82819	13C-1,2,3,7,8-PeCDF		71.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.7	(35%-197%)
15469007	J6-SC1b-80to90-82819	13C-2,3,7,8-TCDD		83.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		105	(17%-157%)
		13C-2,3,7,8-TCDF		78.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		102	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.7	(35%-197%)
15469008	J6-SC1b-90to100-82819	13C-2,3,7,8-TCDD		76.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		101	(17%-157%)
		13C-2,3,7,8-TCDF		72.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		99.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.2	(35%-197%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 41745
Matrix: SOIL
Lab Sample ID: 12024793
Instrument: HRP763
Analysis Date: 09/21/2019 22:43
Dilution: 1
Analyst: MLS
Prep Batch ID: 41745
Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	18.1	90.3	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	99.8	99.8	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	97.2	97.2	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	102	102	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	106	106	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	201	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.9	104	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	106	106	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	107	107	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	105	105	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	112	112	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	109	109	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	107	107	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	110	110	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	106	106	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	204	102	63-170

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 41745 **Matrix:** SOIL

Lab Sample ID: 12024794

Instrument: HRP763 **Analysis Date:** 09/24/2019 09:35 **Dilution:** 1

Analyst: MLS **Prep Batch ID:** 41745

Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	17.7	88.7	67-158	1.79	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	102	102	70-142	1.96	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	99.1	99.1	70-164	2.02	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	106	106	76-134	3.61	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	108	108	64-162	1.69	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	107	107	70-140	4.39	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	207	104	78-144	2.72	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.5	107	75-158	2.64	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	108	108	80-134	1.99	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	110	110	68-160	2.78	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	109	109	72-134	3.98	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	118	118	84-130	4.81	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	115	115	70-156	5.75	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	112	112	78-130	4.25	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	111	111	82-122	0.851	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	110	110	78-138	3.27	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	212	106	63-170	4.17	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Client ID: J6-SC1b-20to30-82819(15469001MS)
Lab Sample ID: 12024795
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 47.3
Analysis Date: 09/28/2019 02:14
Prep Batch ID: 41745
Batch ID: 41747

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	MS	2,3,7,8-TCDD	19.9	J	19.9	97.7	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	99.3	J	104	103	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	99.3	J	102	101	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	99.3		122	114	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	99.3	J	119	117	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	99.3		487	319 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	199		5860	1620 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	19.9	B	23.7	111	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	99.3	BJ	105	105	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	99.3	J	109	108	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	99.3	J	108	105	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	99.3	J	118	115	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	99.3	J	113	111	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	99.3	BJ	105	105	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	99.3		184	150 *	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	99.3	J	110	108	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	199		470	182 *	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: 2006-00115_2
Client ID: J6-SC1b-20to30-82819(15469001MSD)
Lab Sample ID: 12024796
Instrument: HRP763
Analyst: MLS

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 47.3
Analysis Date: 09/28/2019 03:03
Dilution: 1
Prep Batch ID: 41745
Batch ID: 41747

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD	2,3,7,8-TCDD	19.9	J	18.9	92.7	70-130	5.13	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	99.3	J	102	101	70-130	1.97	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	99.3	J	97.1	96.9	70-130	4.60	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	99.3		107	100	70-130	12.6	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	99.3	J	110	108	70-130	7.98	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	99.3		202	31.2 *	70-130	82.8 *	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	199		1640	-498 *	70-130	112 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.9	B	21.5	101	70-130	9.60	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	99.3	BJ	103	103	70-130	2.42	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	99.3	J	104	103	70-130	4.96	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	99.3	J	109	107	70-130	1.77	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	99.3	J	105	102	70-130	11.4	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	99.3	J	109	107	70-130	3.17	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	99.3	BJ	105	105	70-130	0.112	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	99.3		123	88.1	70-130	40.0 *	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	99.3	J	103	101	70-130	7.22	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	199		267	79.9	70-130	54.9 *	0-20

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_2**	**Sample Type:**	**Matrix Spike**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**	**Matrix:**	**SOIL**
Lab Sample ID:	**12024795**	**%Moisture:**	**47.3**
Instrument:	**HRP763**	**Analysis Date:**	**09/30/2019 16:53**
Analyst:	**MLS**	**Prep Batch ID:**	**41745**
		Batch ID:	**41747**

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
51207-31-9	MS	2,3,7,8-TCDF	19.9	B	24.4	116	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number:	**2006-00115_2**	**Sample Type:**	**Matrix Spike Duplicate**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD)**	**Matrix:**	**SOIL**
Lab Sample ID:	**12024796**	**%Moisture:**	**47.3**
Instrument:	**HRP763**	**Analysis Date:**	**09/30/2019 17:15**
Analyst:	**MLS**	**Prep Batch ID:**	**41745**
		Batch ID:	**41747**

Dilution: 1

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
51207-31-9	MSD	2,3,7,8-TCDF	19.9	B	22.6	107	70-130	7.64	0-20

Method Blank Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 41745**	**Instrument ID:**	**HRP763**	**Data File:**	**b23sep19a_3-4**
Lab Sample ID:	**12024792**	**Prep Date:**	**16-SEP-19**	**Analyzed:**	**09/24/19 10:23**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 41745	12024793	b21sep19a_2-1	09/21/19	2243
02	J6-SC1b-100to110-82819	15469009	b23sep19a-3	09/23/19	0956
03	J6-SC1b-110to120-82819	15469010	b23sep19a-4	09/23/19	1044
04	H3-SC1b-20to30-82819	15469013	b23sep19a-5	09/23/19	1132
05	H3-SC1b-40to50-82919	15469015	b23sep19a-7	09/23/19	1309
06	H3-SC1b-50to60-82919	15469016	b23sep19a-8	09/23/19	1358
07	H3-SC1b-60to70-82919	15469017	b23sep19a-9	09/23/19	1446
08	H3-SC1b-70to80-82919	15469018	b23sep19a-10	09/23/19	1535
09	H3-SC1b-80to90-82919	15469019	b23sep19a-11	09/23/19	1623
10	H3-SC1b-90to100-82919	15469020	b23sep19a-12	09/23/19	1711
11	H3-SC1b-100to110-82919	15469021	b23sep19a-13	09/23/19	1800
12	LCSD for batch 41745	12024794	b23sep19a_3-3	09/24/19	0935
13	H3-SC1b-20to30-82819	15469013	A24SEP19A_3-4	09/25/19	0245
14	H3-SC1b-30to40-82919	15469014	b26sep19a_5-2	09/28/19	0038
15	J6-SC1b-20to30-82819	15469001	b26sep19a_5-3	09/28/19	0126
16	J6-SC1b-20to30-82819(15469001MS)	12024795	b26sep19a_5-4	09/28/19	0214
17	J6-SC1b-20to30-82819(15469001MSD)	12024796	b26sep19a_5-5	09/28/19	0303
18	J6-SC1b-30to40-82819	15469002	b26sep19a_5-6	09/28/19	0351
19	J6-SC1b-40to50-82819	15469003	b26sep19a_5-7	09/28/19	0440
20	J6-SC1b-50to60-82819	15469004	b26sep19a_5-8	09/28/19	0528
21	J6-SC1b-60to70-82819	15469005	b26sep19a_5-9	09/28/19	0617
22	J6-SC1b-70to80-82819	15469006	b26sep19a_5-10	09/28/19	0705
23	J6-SC1b-80to90-82819	15469007	b26sep19a_5-11	09/28/19	0753
24	J6-SC1b-90to100-82819	15469008	b26sep19a_5-12	09/28/19	0842
25	J6-SC1b-20to30-82819	15469001	b30sep19a_2-3	09/30/19	1631
26	J6-SC1b-20to30-82819(15469001MS)	12024795	b30sep19a_2-4	09/30/19	1653
27	J6-SC1b-20to30-82819(15469001MSD)	12024796	b30sep19a_2-5	09/30/19	1715
28	J6-SC1b-50to60-82819	15469004	b30sep19a_2-6	09/30/19	1736
29	J6-SC1b-60to70-82819	15469005	b30sep19a_2-7	09/30/19	1758

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024792**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**MB for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 10:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0684	pg/g	0.0684	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0744	pg/g	0.0744	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.102	pg/g	0.102	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.104	pg/g	0.0958	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.132	pg/g	0.100	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.192	pg/g	0.155	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.614	pg/g	0.276	10.0
51207-31-9	2,3,7,8-TCDF	J	0.188	pg/g	0.120	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.118	pg/g	0.073	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.080	pg/g	0.0664	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.138	pg/g	0.0672	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.112	pg/g	0.0688	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.132	pg/g	0.0724	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.188	pg/g	0.111	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.160	pg/g	0.0756	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.178	pg/g	0.129	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.426	pg/g	0.350	10.0
41903-57-5	Total TeCDD	J	0.106	pg/g	0.0684	1.00
36088-22-9	Total PeCDD	U	0.0744	pg/g	0.0744	5.00
34465-46-8	Total HxCDD	J	0.236	pg/g	0.0958	5.00
37871-00-4	Total HpCDD	J	0.192	pg/g	0.155	5.00
30402-14-3	Total TeCDF	J	0.188	pg/g	0.120	1.00
30402-15-4	Total PeCDF	JK	0.198	pg/g	0.0564	5.00
55684-94-1	Total HxCDF	JK	0.570	pg/g	0.0672	5.00
38998-75-3	Total HpCDF	J	0.338	pg/g	0.0756	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.133	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.209	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		152	200	pg/g	76.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		152	200	pg/g	76.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		165	200	pg/g	82.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	200	pg/g	84.5	(23%-140%)
13C-OCDD		263	400	pg/g	65.7	(17%-157%)
13C-2,3,7,8-TCDF		149	200	pg/g	74.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		150	200	pg/g	74.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	200	pg/g	72.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	200	pg/g	80.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	200	pg/g	76.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	200	pg/g	79.2	(29%-147%)

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024792**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**MB for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 10:23**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		168	200	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	200	pg/g	80.8	(26%-138%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.7	(35%-197%)

Comments:

J **Value is estimated**

K **Estimated Maximum Possible Concentration**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024793**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**LCS for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/21/2019 22:43**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b21sep19a_2-1**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.1	pg/g	0.082	1.00
40321-76-4	1,2,3,7,8-PeCDD		99.8	pg/g	0.166	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		97.2	pg/g	0.340	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		102	pg/g	0.332	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		106	pg/g	0.342	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	0.526	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		201	pg/g	1.48	10.0
51207-31-9	2,3,7,8-TCDF		20.9	pg/g	0.131	1.00
57117-41-6	1,2,3,7,8-PeCDF		106	pg/g	0.159	5.00
57117-31-4	2,3,4,7,8-PeCDF		107	pg/g	0.148	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		105	pg/g	0.368	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		112	pg/g	0.392	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.406	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	0.654	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		110	pg/g	0.450	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		106	pg/g	0.796	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		204	pg/g	1.11	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	200	pg/g	77.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		144	200	pg/g	72.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		147	200	pg/g	73.5	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		160	200	pg/g	80.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		150	200	pg/g	74.9	(22%-166%)
13C-OCDD		226	400	pg/g	56.6	(13%-199%)
13C-2,3,7,8-TCDF		133	200	pg/g	66.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		140	200	pg/g	70.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		133	200	pg/g	66.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		150	200	pg/g	75.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		145	200	pg/g	72.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		141	200	pg/g	70.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		141	200	pg/g	70.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		140	200	pg/g	70.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		140	200	pg/g	69.8	(20%-186%)
37Cl-2,3,7,8-TCDD		18.9	20.0	pg/g	94.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024794**			**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**				
Client ID:	**LCSD for batch 41745**			**Prep Basis:**	**As Received**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/24/2019 09:35**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b23sep19a_3-3**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.7	pg/g	0.0818	1.00
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.132	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		99.1	pg/g	0.246	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		106	pg/g	0.246	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	0.252	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	0.402	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	0.916	10.0
51207-31-9	2,3,7,8-TCDF		21.5	pg/g	0.110	1.00
57117-41-6	1,2,3,7,8-PeCDF		108	pg/g	0.163	5.00
57117-31-4	2,3,4,7,8-PeCDF		110	pg/g	0.142	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.244	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		118	pg/g	0.258	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		115	pg/g	0.266	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		112	pg/g	0.406	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		111	pg/g	0.350	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		110	pg/g	0.590	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		212	pg/g	0.992	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	200	pg/g	82.4	(20%-175%)
13C-1,2,3,7,8-PeCDD		152	200	pg/g	76.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		158	200	pg/g	78.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	86.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		173	200	pg/g	86.7	(22%-166%)
13C-OCDD		272	400	pg/g	68.1	(13%-199%)
13C-2,3,7,8-TCDF		149	200	pg/g	74.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		150	200	pg/g	75.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		145	200	pg/g	72.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		166	200	pg/g	83.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		163	200	pg/g	81.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		159	200	pg/g	79.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		162	200	pg/g	80.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		172	200	pg/g	86.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		167	200	pg/g	83.7	(20%-186%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.4	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024795**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 02:14**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.9	pg/g	0.207	0.993
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	0.437	4.97
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	0.719	4.97
57653-85-7	1,2,3,6,7,8-HxCDD		122	pg/g	0.721	4.97
19408-74-3	1,2,3,7,8,9-HxCDD		119	pg/g	0.739	4.97
35822-46-9	1,2,3,4,6,7,8-HpCDD		487	pg/g	1.48	4.97
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5860	pg/g	1.77	9.93
51207-31-9	2,3,7,8-TCDF		23.7	pg/g	0.505	0.993
57117-41-6	1,2,3,7,8-PeCDF		105	pg/g	0.342	4.97
57117-31-4	2,3,4,7,8-PeCDF		109	pg/g	0.302	4.97
70648-26-9	1,2,3,4,7,8-HxCDF		108	pg/g	0.447	4.97
57117-44-9	1,2,3,6,7,8-HxCDF		118	pg/g	0.477	4.97
60851-34-5	2,3,4,6,7,8-HxCDF		113	pg/g	0.483	4.97
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.473	4.97
67562-39-4	1,2,3,4,6,7,8-HpCDF		184	pg/g	0.397	4.97
55673-89-7	1,2,3,4,7,8,9-HpCDF		110	pg/g	0.614	4.97
39001-02-0	1,2,3,4,6,7,8,9-OCDF		470	pg/g	0.697	9.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		153	199	pg/g	77.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	199	pg/g	85.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		181	199	pg/g	91.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		138	199	pg/g	69.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		182	199	pg/g	91.4	(23%-140%)
13C-OCDD		416	397	pg/g	105	(17%-157%)
13C-2,3,7,8-TCDF		142	199	pg/g	71.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	199	pg/g	79.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		159	199	pg/g	79.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	199	pg/g	78.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	199	pg/g	70.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	199	pg/g	72.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	199	pg/g	80.1	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		167	199	pg/g	83.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		181	199	pg/g	91.0	(26%-138%)
37Cl-2,3,7,8-TCDD		17.8	19.9	pg/g	89.8	(35%-197%)

Comments:

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024795**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 16:53**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-4**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.09 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		24.4	pg/g	0.236	0.993

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

E **Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**

U **Analyte was analyzed for, but not detected above the specified detection limit.**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024796**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/28/2019 03:03**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b26sep19a_5-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	0.212	0.993
40321-76-4	1,2,3,7,8-PeCDD		102	pg/g	0.340	4.96
39227-28-6	1,2,3,4,7,8-HxCDD		97.1	pg/g	0.540	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		107	pg/g	0.554	4.96
19408-74-3	1,2,3,7,8,9-HxCDD		110	pg/g	0.560	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		202	pg/g	0.826	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1640	pg/g	1.65	9.93
51207-31-9	2,3,7,8-TCDF		21.5	pg/g	0.385	0.993
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	0.332	4.96
57117-31-4	2,3,4,7,8-PeCDF		104	pg/g	0.300	4.96
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	0.429	4.96
57117-44-9	1,2,3,6,7,8-HxCDF		105	pg/g	0.447	4.96
60851-34-5	2,3,4,6,7,8-HxCDF		109	pg/g	0.453	4.96
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	0.540	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		123	pg/g	0.542	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF		103	pg/g	0.741	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		267	pg/g	0.610	9.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	199	pg/g	81.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	199	pg/g	93.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		175	199	pg/g	87.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	199	pg/g	75.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		199	199	pg/g	100	(23%-140%)
13C-OCDD		425	397	pg/g	107	(17%-157%)
13C-2,3,7,8-TCDF		150	199	pg/g	75.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	199	pg/g	85.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		172	199	pg/g	86.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	199	pg/g	78.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	199	pg/g	72.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		148	199	pg/g	74.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		170	199	pg/g	85.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		167	199	pg/g	84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		204	199	pg/g	103	(26%-138%)
37Cl-2,3,7,8-TCDD		19.1	19.9	pg/g	96.3	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**2006-00115_2**	**Client:**	**PGWG001**	**Project:**	**PGWG00119**
Lab Sample ID:	**12024796**	**Date Collected:**	**08/28/2019 09:20**	**Matrix:**	**SOIL**
Client Sample:	**QC for batch 41745**	**Date Received:**	**08/30/2019 09:55**	**%Moisture:**	**47.3**
Client ID:	**J6-SC1b-20to30-82819(15469001MSD**			**Prep Basis:**	**Dry Weight**
Batch ID:	**41747**	**Method:**	**EPA Method 1613B**		
Run Date:	**09/30/2019 17:15**	**Analyst:**	**MLS**	**Instrument:**	**HRP763**
Data File:	**b30sep19a_2-5**			**Dilution:**	**1**
Prep Batch:	**41745**	**Prep Method:**	**SW846 3540C**		
Prep Date:	**16-SEP-19**	**Prep Aliquot:**	**19.1 g**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		22.6	pg/g	0.182	0.993

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.