OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 17, 2014

Neil Gilham
Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 1301679.010
Laboratory Reference No. 1408-130B

Dear Neil:

Enclosed are the analytical results and associated quality control data for samples submitted on August 16, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 17, 2014
Samples Submitted: August 16, 2014
Laboratory Reference: 1408-130B
Project: 1301679.010

Case Narrative

Samples were collected on August 15, 2014 and received by the laboratory on August 16, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: September 17, 2014
Samples Submitted: August 16, 2014
Laboratory Reference: 1408-130B
Project: 1301679.010

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-130-09					
Client ID:	**GP-5-S**					
Arsenic	**ND**	13	6010C	9-15-14	9-15-14	
Barium	**89**	3.2	6010C	9-15-14	9-15-14	
Cadmium	**ND**	0.64	6010C	9-15-14	9-15-14	
Chromium	**57**	0.64	6010C	9-15-14	9-15-14	
Lead	**600**	6.4	6010C	9-15-14	9-15-14	
Mercury	**ND**	0.32	7471B	9-16-14	9-16-14	
Selenium	**ND**	13	6010C	9-15-14	9-15-14	
Silver	**3.6**	1.3	6010C	9-15-14	9-15-14	

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TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-15-14
Date Analyzed:	9-15-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0915SM1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

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TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-16-14
Date Analyzed:	9-16-14
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0916S1

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

Date of Report: September 17, 2014
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Project: 1301679.010

TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-14
Date Analyzed: 9-15-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-114-05

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**45.0**	**46.2**	3	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**31.1**	**30.0**	4	0.50	
Lead	**ND**	**ND**	NA	5.0	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

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TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-16-14
Date Analyzed: 9-16-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-143-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: September 17, 2014
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TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-14
Date Analyzed: 9-15-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-114-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.5**	96	**96.4**	96	1	
Barium	100	**145**	100	**143**	98	1	
Cadmium	50.0	**48.5**	97	**48.4**	97	0	
Chromium	100	**120**	89	**120**	89	0	
Lead	250	**239**	96	**239**	96	0	
Selenium	100	**93.2**	93	**93.5**	93	0	
Silver	25.0	**22.2**	89	**22.2**	89	0	

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TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 9-16-14
Date Analyzed: 9-16-14

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-143-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.501**	100	**0.508**	102	1	

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TCLP LEAD
EPA 1311/6010C

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-130-09					
Client ID:	**GP-5-S**					
Lead	**0.26**	0.20	6010C	9-17-14	9-17-14	

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TCLP LEAD
EPA 1311/6010C
METHOD BLANK QUALITY CONTROL

Date Prepared:	9-16-14
Date Extracted:	9-17-14
Date Analyzed:	9-17-14
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB0917TM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	0.20

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TCLP LEAD
EPA 1311/6010C
DUPLICATE QUALITY CONTROL

Date Prepared: 9-16-14
Date Extracted: 9-17-14
Date Analyzed: 9-17-14

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-143-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**0.856**	**0.820**	4	0.20	

Date of Report: September 17, 2014
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Project: 1301679.010

TCLP LEAD
EPA 1311/6010C
MS/MSD QUALITY CONTROL

Date Prepared: 9-16-14
Date Extracted: 9-17-14
Date Analyzed: 9-17-14

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-143-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	10.0	**10.3**	94	**10.2**	93	1	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-130

Company: Golder Associates
Project Number: 1301679.010
Project Name: Potala Tower
Project Manager: Neil Gilham
Sampled by: David Erickson

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals (LEAD)	HEM (oil and grease) 1664A					% Moisture
1	GP-1-S	8/15/14	15:55	S	5			/	/	/																X
2	GP-1-5		16:05		5			/	/	/																X
3	GP-2-S		16:35		5			/	/	/																X
4	GP-2-5		16:40		5			/	/	/																X
5	GP-3-S		18:00		5			/	/	/																X
6	GP-3-5		18:10		5			/	/	/																X
7	GP-4-S		18:20		5			/	/	/																X
8	GP-4-5		18:30		5			/	/	/																X
9	GP-5-S		18:53		5			/	/	/								(X)		O						X
10	GP-5-5		19:15		5			/	/	/																X

	Signature	Company	Date	Time
Relinquished		Golder	8/16/14	11:45
Received		Golder Ea	8/16/14	11:45
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
(X) Added 9/15/14. DB (3 day TAT)
O Added 9/16/14. 5:30pm (SAME DAY)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

Chain of Custody

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Company: Golder Associates
Project Number: 1301679.010
Project Name: Potala Tower
Project Manager: Neil Gilham
Sampled by: David Erickson

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 08-130

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
11	GP-6-S	8/15/14	19:25	S	5			/	/	/												X
12	GP-6-5	↓	19:35	S	5			/	/	/												X

	Signature	Company	Date	Time
Relinquished		Golder	8/16/14	11:45
Received		Golder FE	8/16/14	1145
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____