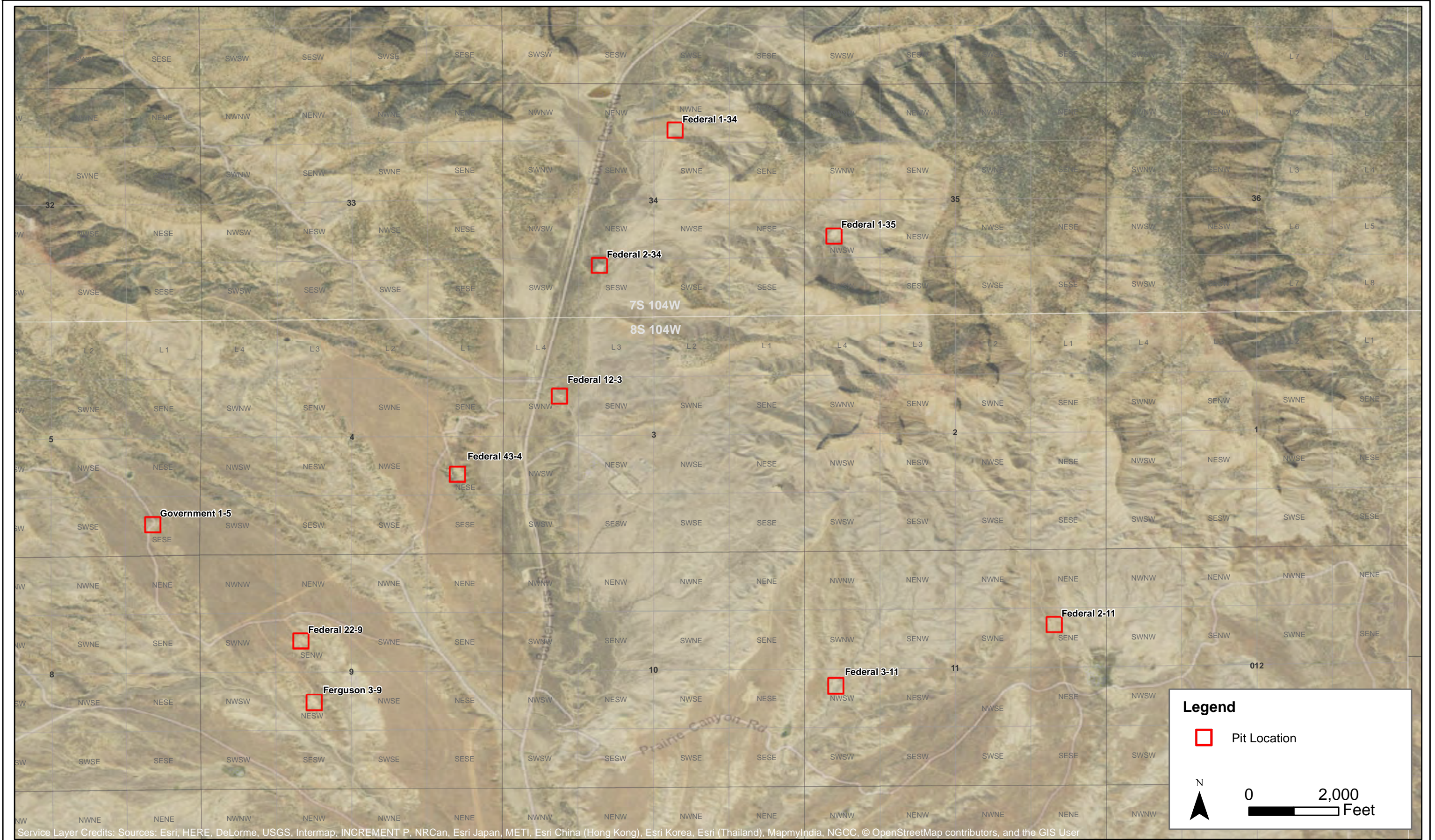


## FIGURES





Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

DATE:	September 2016
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Tasman Geosciences, Inc.  
6899 Pecos Street - Unit C  
Denver, CO 80221

Foundation Energy Management, LLC  
Western Slope Pit Assessment  
Garfield County, Colorado

Site Locations Overview  
Map

Figure  
1





DATE:	November 22, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Cavinder



**Foundation Energy Management, LLC**  
**Federal 1-35**  
NWSW, Section 35, Township 7 South, Range 104 West  
Garfield County, Colorado

Excavation and Soil Sample  
Location Map

**FIGURE**  
**2**

## **ANALYTICAL TABLE**

TABLE 1

**Former National Fuel Corporation Federal 1-35 Pit  
Soil Sample Analytical Results  
Foundation Energy Management**

Sample ID	Date Sampled	BTEX				TPH		pH	EC (mmhos/cm)	SAR
		Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)			
Table 910-1 Allowable Concentrations		0.17	85	100	175	500		6 - 9	< 4	< 12
Fed 1-35:N @ 5'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.05	7.86	-
Fed 1-35: W @ 7'	12/01/2016	0.0031	< 0.0050	0.037	0.081	4.8	54	7.73	6.72	-
Fed 1-35: S @ 5'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.79	6.30	-
Fed 1-35: E @ 2'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.96	5.62	-
Fed 1-35: C @ 3'	12/01/2016	0.044	< 0.0050	0.30	0.018	9.1	88	7.90	2.60	0.250
R-E-B01@5'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	7.84	3.13	-
R-E-N01@4'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	7.79	2.89	-
R-E-S01@4'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	7.70	3.14	-
R-E-E01@4'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	7.65	3.12	-
R-E-W01@4'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	7.62	2.70	-

**Red Text** = Constituent concentration exceeds COGCC Table 910-1 standard

**Bold Text** = Constituent concentration exceeds COGCC Table 910-1 inorganic standard; material located and/or backfilled below the designated root zone

< = Constituent concentration less than the listed laboratory reporting limit

- = Constituent not analyzed

mg/kg = Milligram per Kilogram

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

EC = Electrical Conductivity

mmhos/cm = millimhos per centimeter

SAR = Sodium Adsorption Ratio

**ATTACHMENT A  
LABORATORY  
ANALYTICAL REPORTS**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 27, 2016

Bob Cornez  
Tasman Geosciences  
6899 Pecos Street  
Denver, CO 80221  
RE: Western Slope Pit Assessment

Enclosed are the results of analyses for samples received by Summit Scientific on 12/05/16 11:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 1-35: N @ 5'	1612028-01	Soil	12/01/16 11:13	12/05/16 11:38
Fed 1-35: W @ 7'	1612028-02	Soil	12/01/16 11:21	12/05/16 11:38
Fed 1-35: S @ 5'	1612028-03	Soil	12/01/16 11:39	12/05/16 11:38
Fed 1-35: E @ 2'	1612028-04	Soil	12/01/16 11:46	12/05/16 11:38
Fed 1-35: C @ 3'	1612028-05	Soil	12/01/16 12:18	12/05/16 11:38

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Corneze

Reported:  
12/27/16 16:18

# Summit Scientific

1612028.1

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 1 of X2

Client: Foundation Energy / Tasman Project Manager: ZMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit assessment  
Sampler Name: Bob Corneze Project Number: \_\_\_\_\_

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table (10-2)	GBTEX	TEH-DRC	EC	PH		A's-Only
1	Feed 1-34: E@8'	12/15/16	0820	1						X				X	X	X	X		
2	Feed 1-34: N@8'		0856	1										X	X	X	X		
3	Feed 1-34: S@6'		0921	1										X	X	X	X		
4	Feed 1-34: E@5'		0941	2										X	X	X	X		
5	Feed 1-34: W@6'		0955	1										X	X	X	X		
6	North Camp		1518	1													X		
7	Feed 1-35: N@5'		1113	1										X	X	X	X		01
8	Feed 1-35: W@7'		1121	1										X	X	X	X		02
9	Feed 1-35: S@5'		1139	1										X	X	X	X		03
10	Feed 1-35: E@2'	✓	1146	1										X	X	X	X		04

Relinquished by: \_\_\_\_\_ Date/Time: 12/15/16 10:10 Received by: E. Corneze Date/Time: 12-5-16 10:10

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turn Around Time (Check)  
Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
24 hours \_\_\_\_\_ Standard ✓  
48 hours \_\_\_\_\_

Sample Integrity:  
Temperature Upon Receipt: 1.6°C  
Intact: Yes No

Notes:

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

# Summit Scientific

1612028.2

S<sub>2</sub>

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

2 of 2

Page 8 of 8

Client: Foundation Energy / Tasman Project Manager: RMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit Assessment  
Sampler Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	FULL TABLE	GC/MS	TPH-SO	EC	PH		As-Only
1	Fed 1-35: C@ 3'	12-1-16	12:10	2						X			X						65
2	Fed 2-34: E@ 8'		1357	1									X	X	X	X			
3	Fed 2-34: C@ 4'		1351	2									X						
4	Fed 2-34: S@ 8'		1420	1									X	X	X	X			
5	Fed 2-34: W@ 8'		1451	1									X	X	X	X			
6	Fed 2-34: N@ 8'		1534	1									X	X	X	X			
7	Fed 4-3: F@ 4'		1637	1									X	X	X	X			
8	Fed 4-3: F@ 6'		1655	2									X	X	X	X			
9	Fed 4-3: S@ 6'		1705	1									X	X	X	X			
10	Fed 4-3: W@ 2'	12-5-16	0708	1						X			X	X	X	X			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/5/16 10:10</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12-5-16 10:10</u>	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <u>X</u> 48 hours _____	Notes:
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>1.6°C</u> Intact: <u>Yes</u> No	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

www.s2scientific.com



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

### Sample Receipt Checklist

S2 Work Order: 1612028

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	<u>1.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita  
Custodian Printed Name

MA  
Signature or Initials of Custodian

12/5/16 1200  
Date/Time





Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: N @ 5'**  
**1612028-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 11:13									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 11:13									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 11:13									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/01/16 11:13									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 11:13									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.86	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	
pH	8.05	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: N @ 5'**  
**1612028-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

---

---

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: W @ 7'**  
**1612028-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>54</b>	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0031</b>	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.037</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.081</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4.8</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.8 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.6 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.73</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
<b>Specific Conductance (EC)</b>	<b>6.72</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: S @ 5'**  
**1612028-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.79</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	<b>6.30</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: E @ 2'**  
**1612028-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.96</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	<b>5.62</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>88</b>	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.3 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	<b>0.044</b>	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	<b>0.30</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	<b>0.018</b>	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>9.1</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		166 %	21-167		"	"	"	"	

#### Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

### Summit Scientific

#### Semivolatile Organic Compounds by EPA Method 8270D SIM

<b>Benzo (b) fluoranthene</b>	<b>0.00615</b>	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"
<b>Chrysene</b>	<b>0.00804</b>	0.00500	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"
<b>Fluoranthene</b>	<b>0.00574</b>	0.00500	"	"	"	"	"	"
<b>Fluorene</b>	<b>0.00755</b>	0.00500	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"
<b>Naphthalene</b>	<b>0.232</b>	0.0500	"	10	"	"	"	"
Pyrene	ND	0.00500	"	1	"	"	"	"

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.7 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.9 %	30-150		"	"	"	"	

#### Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>6.64</b>	0.245	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>25.7</b>	0.490	"	"	"	"	"	"	
<b>Arsenic</b>	<b>6.64</b>	0.245	"	"	"	"	"	"	
<b>Boron</b>	<b>1.92</b>	1.22	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
<b>Barium</b>	<b>25.7</b>	0.490	"	"	"	"	"	"	
<b>Chromium</b>	<b>5.09</b>	0.612	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
<b>Copper</b>	<b>6.59</b>	0.612	"	"	"	"	"	"	
<b>Lead</b>	<b>8.41</b>	0.245	"	"	"	"	"	"	
<b>Chromium</b>	<b>5.09</b>	0.612	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.95</b>	0.122	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.717</b>	0.490	"	"	"	"	"	"	
<b>Copper</b>	<b>6.59</b>	0.612	"	"	"	"	"	"	
Silver	ND	0.122	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

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12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

<b>Zinc</b>	<b>35.0</b>	12.2	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
<b>Lead</b>	<b>8.41</b>	0.245	"	"	"	"	"	"
<b>Nickel</b>	<b>9.95</b>	0.122	"	"	"	"	"	"
<b>Selenium</b>	<b>0.717</b>	0.490	"	"	"	"	"	"
<b>Silver</b>	<b>ND</b>	0.122	"	"	"	"	"	"
<b>Zinc</b>	<b>35.0</b>	12.2	"	"	"	"	"	"

**Total Mercury by EPA Method 7471**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0612	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Trivalent Chromium</b>	<b>5.09</b>	0.979	mg/kg dry	1	[CALC]	12/07/16	12/08/16	EPA 7196/3060A	
Chromium, Hexavalent	ND	0.300	"	"	1612064	"	"	EPA 7196	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>1190</b>	12.2	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>200</b>	6.12	"	"	"	"	"	"	
<b>Sodium</b>	<b>34.8</b>	6.12	"	"	"	"	"	"	
<b>Sodium Adsorption Ratio</b>	<b>0.250</b>		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

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**Physical Parameters by APHA/ASTM/EPA Methods**

Specific Conductance (EC)	2.60	0.0100 mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B
pH	7.90	0.100 pH Units	"	1612086	12/07/16	12/07/16	EPA 9045
% Solids	81.7	%	"	1612069	12/07/16	12/07/16	% calculation

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612033 - EPA 3550A**

**Blank (1612033-BLK1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

**LCS (1612033-BS1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO) 485 50 mg/kg 499 97.2 73-134

Surrogate: o-Terphenyl 15.6 " 12.5 125 30-150

**Matrix Spike (1612033-MS1)**

Source: 1612026-01

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO) 464 50 mg/kg 497 12.9 90.8 50-148

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

**Matrix Spike Dup (1612033-MSD1)**

Source: 1612026-01

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO) 464 50 mg/kg 492 12.9 91.6 50-148 0.0604 20

Surrogate: o-Terphenyl 15.0 " 12.3 122 30-150

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Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612057 - EPA 5030 Soil MS**

**Blank (1612057-BLK1)**

Prepared & Analyzed: 12/06/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

**LCS (1612057-BS1)**

Prepared & Analyzed: 12/06/16

Benzene	0.114	0.0020	mg/kg	0.100		114	58-130			
Toluene	0.112	0.0050	"	0.100		112	61-134			
Ethylbenzene	0.113	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.219	0.010	"	0.200		110	73-137			
o-Xylene	0.113	0.0050	"	0.0980		116	73-141			
Xylenes (total)	0.332	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.93	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

**Matrix Spike (1612057-MS1)**

Source: 1612009-01

Prepared & Analyzed: 12/06/16

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	30-131			
Toluene	0.105	0.0050	"	0.100	ND	105	30-134			
Ethylbenzene	0.102	0.0050	"	0.0992	ND	103	22-153			
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	10-159			
o-Xylene	0.103	0.0050	"	0.0980	ND	105	31-151			
Xylenes (total)	0.301	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	1.74	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612057 - EPA 5030 Soil MS**

Matrix Spike Dup (1612057-MSD1)		Source: 1612009-01			Prepared & Analyzed: 12/06/16					
Benzene	0.102	0.0020	mg/kg	0.100	ND	102	30-131	5.67	34	
Toluene	0.0984	0.0050	"	0.100	ND	98.4	30-134	6.63	30	
Ethylbenzene	0.0967	0.0050	"	0.0992	ND	97.5	22-153	5.26	24	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.3	10-159	7.14	68	
o-Xylene	0.0959	0.0050	"	0.0980	ND	97.9	31-151	7.41	38	
Xylenes (total)	0.280	0.0050	"		ND		30-150	7.23	20	
Gasoline Range Hydrocarbons	1.62	0.50	"		ND		30-150	6.95	20	
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.0	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612049 - EPA 5030 Soil MS**

**Blank (1612049-BLK1)**

Prepared: 12/06/16 Analyzed: 12/08/16

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Naphthalene	ND	0.00500	"
Pyrene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

**LCS (1612049-BS1)**

Prepared: 12/06/16 Analyzed: 12/08/16

Acenaphthene	0.0338	0.00500	mg/kg	0.0333	101	48-131
Anthracene	0.0382	0.00500	"			48-135
Benzo (a) anthracene	0.0376	0.00500	"			37-142
Benzo (b) fluoranthene	0.0386	0.00500	"			35-139
Benzo (k) fluoranthene	0.0337	0.00500	"			30-139
Benzo (a) pyrene	0.0370	0.00500	"			41-132
Chrysene	0.0324	0.00500	"			30-136
Dibenz (a,h) anthracene	0.0345	0.00500	"			24-127
Fluoranthene	0.0346	0.00500	"			50-139
Fluorene	0.0358	0.00500	"			50-130
Indeno (1,2,3-cd) pyrene	0.0304	0.00500	"			26-139
Naphthalene	0.0321	0.00500	"			40-135
Pyrene	0.0342	0.00500	"	0.0333	103	39-141

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612049 - EPA 5030 Soil MS**

Matrix Spike (1612049-MS1)				Source: 1612026-04		Prepared: 12/06/16		Analyzed: 12/08/16		
Acenaphthene	0.0600	0.00500	mg/kg	0.0333	ND	180	27-140			QM-07
Anthracene	0.0389	0.00500	"		ND		23-144			
Benzo (a) anthracene	0.0364	0.00500	"		ND		12-168			
Benzo (b) fluoranthene	0.0438	0.00500	"		ND		10-170			
Benzo (k) fluoranthene	0.0355	0.00500	"		ND		11-150			
Benzo (a) pyrene	0.0379	0.00500	"		ND		11-162			
Chrysene	0.0393	0.00500	"		0.00974		10-167			
Dibenz (a,h) anthracene	0.0291	0.00500	"		ND		10-128			
Fluoranthene	0.0391	0.00500	"		ND		18-157			
Fluorene	0.0692	0.00500	"		0.0432		37-133			
Indeno (1,2,3-cd) pyrene	0.0255	0.00500	"		ND		10-161			
Naphthalene	ND	0.00500	"		ND		10-157			
Pyrene	0.0366	0.00500	"	0.0333	0.00168	105	10-166			
Surrogate: 2-Methylnaphthalene-d10	0.0276		"	0.0333		82.9	50-150			
Surrogate: Fluoranthene-d10	0.0373		"	0.0333		112	50-150			

Matrix Spike Dup (1612049-MSD1)				Source: 1612026-04		Prepared: 12/06/16		Analyzed: 12/08/16		
Acenaphthene	0.0611	0.00500	mg/kg	0.0333	ND	183	27-140	1.76	15	QM-07
Anthracene	0.0396	0.00500	"		ND		23-144	1.68	29	
Benzo (a) anthracene	0.0384	0.00500	"		ND		12-168	5.33	65	
Benzo (b) fluoranthene	0.0462	0.00500	"		ND		10-170	5.25	18	
Benzo (k) fluoranthene	0.0370	0.00500	"		ND		11-150	4.33	32	
Benzo (a) pyrene	0.0400	0.00500	"		ND		11-162	5.49	27	
Chrysene	0.0389	0.00500	"		0.00974		10-167	1.08	88	
Dibenz (a,h) anthracene	0.0298	0.00500	"		ND		10-128	2.36	20	
Fluoranthene	0.0393	0.00500	"		ND		18-157	0.502	31	
Fluorene	0.0750	0.00500	"		0.0432		37-133	8.05	16	
Indeno (1,2,3-cd) pyrene	0.0274	0.00500	"		ND		10-161	6.97	22	
Naphthalene	ND	0.00500	"		ND		10-157		24	
Pyrene	0.0373	0.00500	"	0.0333	0.00168	107	10-166	1.84	57	
Surrogate: 2-Methylnaphthalene-d10	0.0322		"	0.0333		96.5	50-150			
Surrogate: Fluoranthene-d10	0.0365		"	0.0333		110	50-150			

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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612062 - EPA 3050B**

**Blank (1612062-BLK1)**

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Arsenic	ND	0.200	"
Boron	ND	1.00	"
Barium	ND	0.400	"
Cadmium	ND	0.100	"
Chromium	ND	0.500	"
Cadmium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.200	"
Chromium	ND	0.500	"
Nickel	ND	0.100	"
Selenium	ND	0.400	"
Copper	ND	0.500	"
Silver	ND	0.100	"
Zinc	ND	10.0	"
Lead	ND	0.200	"
Nickel	ND	0.100	"
Selenium	ND	0.400	"
Silver	ND	0.100	"
Zinc	ND	10.0	"

**LCS (1612062-BS1)**

Prepared & Analyzed: 12/07/16

Arsenic	127	0.500	mg/kg wet	132	96.5	82.6-117
Barium	183	1.00	"	228	80.3	72.8-127
Boron	94.4	2.50	"	120	78.7	77.1-123
Arsenic	127	0.500	"	132	96.5	82.6-117
Barium	183	1.00	"	228	80.3	72.8-127
Cadmium	118	0.250	"	122	96.7	80.3-120
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Copper	195	1.25	"	212	91.9	85.4-115
Cadmium	118	0.250	"	122	96.7	80.3-120
Lead	94.7	0.500	"	108	87.7	81.1-119
Nickel	264	0.250	"	284	92.8	88-112
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Silver	55.6	0.250	"	73.5	75.6	69.8-130
Copper	195	1.25	"	212	91.9	85.4-115

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612062 - EPA 3050B**

**LCS (1612062-BS1)**

Prepared & Analyzed: 12/07/16

Zinc	195	25.0	mg/kg wet	203	96.1	77.8-122
Lead	94.7	0.500	"	108	87.7	81.1-119
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Silver	55.6	0.250	"	73.5	75.6	69.8-130
Zinc	195	25.0	"	203	96.1	77.8-122

**Duplicate (1612062-DUP1)**

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Boron	1.00	1.04	"	1.15	13.9	20	
Arsenic	1.02	0.207	"	0.898	12.6	20	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
Copper	2.83	0.518	"	2.29	21.0	20	QR-03
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Lead	12.0	0.207	"	9.99	18.5	20	
Nickel	2.48	0.104	"	2.01	21.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
Selenium	0.313	0.415	"	0.302	3.61	20	
Silver	0.0280	0.104	"	0.0250	11.2	20	
Copper	2.83	0.518	"	2.29	21.0	20	QR-03
Zinc	15.1	10.4	"	9.58	44.9	20	QR-03
Lead	12.0	0.207	"	9.99	18.5	20	
Nickel	2.48	0.104	"	2.01	21.1	20	QR-03
Selenium	0.313	0.415	"	0.302	3.61	20	
Silver	0.0280	0.104	"	0.0250	11.2	20	
Zinc	15.1	10.4	"	9.58	44.9	20	QR-03

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612062 - EPA 3050B**

Matrix Spike (1612062-MS1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
Arsenic	39.2	0.207	"	39.0	0.898	98.3	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
Copper	38.9	0.518	"	39.0	2.29	94.0	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Lead	31.8	0.207	"	19.5	9.99	112	75-125			
Nickel	37.7	0.104	"	39.0	2.01	91.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
Selenium	3.95	0.415	"	3.90	0.302	93.5	75-125			
Silver	1.83	0.104	"	1.95	0.0250	92.5	75-125			
Copper	38.9	0.518	"	39.0	2.29	94.0	75-125			
Zinc	83.4	10.4	"	39.0	9.58	189	75-125			QM-07
Lead	31.8	0.207	"	19.5	9.99	112	75-125			
Nickel	37.7	0.104	"	39.0	2.01	91.6	75-125			
Selenium	3.95	0.415	"	3.90	0.302	93.5	75-125			
Silver	1.83	0.104	"	1.95	0.0250	92.5	75-125			
Zinc	83.4	10.4	"	39.0	9.58	189	75-125			QM-07

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	25	
Arsenic	42.6	0.207	"	40.5	0.898	103	75-125	8.37	25	
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25	
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25	
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25	
Lead	33.4	0.207	"	20.2	9.99	116	75-125	4.91	25	
Nickel	41.4	0.104	"	40.5	2.01	97.3	75-125	9.36	25	
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25	
Selenium	4.29	0.415	"	4.05	0.302	98.6	75-125	8.46	25	
Silver	1.97	0.104	"	2.02	0.0250	96.2	75-125	7.66	25	
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612062 - EPA 3050B**

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Zinc	59.7	10.4	mg/kg dry	40.5	9.58	124	75-125	33.0	25	QM-07
Lead	33.4	0.207	"	20.2	9.99	116	75-125	4.91	25	
Nickel	41.4	0.104	"	40.5	2.01	97.3	75-125	9.36	25	
Selenium	4.29	0.415	"	4.05	0.302	98.6	75-125	8.46	25	
Silver	1.97	0.104	"	2.02	0.0250	96.2	75-125	7.66	25	
Zinc	59.7	10.4	"	40.5	9.58	124	75-125	33.0	25	QM-07

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612034 - EPA 7471A**

**Blank (1612034-BLK1)**

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury ND 0.0500 mg/kg wet

**LCS (1612034-BS1)**

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.525 0.0500 mg/kg wet 0.500 105 80-120

**Duplicate (1612034-DUP1)**

**Source: 1612006-01**

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

**Matrix Spike (1612034-MS1)**

**Source: 1612006-01**

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.474 0.0460 mg/kg dry 0.460 0.00399 102 80-120

**Matrix Spike Dup (1612034-MSD1)**

**Source: 1612006-01**

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.455 0.0444 mg/kg dry 0.444 0.00399 102 80-120 4.00 20

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

### Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch 1612064 - 3060A\_Mod

##### Blank (1612064-BLK1)

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg wet

##### LCS (1612064-BS1)

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 18.7 0.300 mg/kg wet 19.9 93.7 85-115

##### Duplicate (1612064-DUP1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

##### Matrix Spike (1612064-MS1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry 23.9 ND 85-115

##### Matrix Spike (1612064-MS2)

Source: 1612036-01

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 3.25 0.300 mg/kg dry 22.5 ND 14.4 85-115

##### Post Spike (1612064-PS1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 0.00400 mg/kg 0.498 0.00 0.802 85-115

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612063 - General Preparation**

**Blank (1612063-BLK1)**

Prepared & Analyzed: 12/07/16

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

**LCS (1612063-BS1)**

Prepared & Analyzed: 12/07/16

Calcium	590	10.0	mg/kg wet	500	118	82.9-118
Magnesium	610	5.00	"	500	122	77.1-123
Sodium	588	5.00	"	500	118	71-129

**Duplicate (1612063-DUP1)**

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	1440	12.0	mg/kg dry	1370	4.57	200
Magnesium	192	6.00	"	190	0.644	200
Sodium	59.9	6.00	"	47.8	22.5	200

**Matrix Spike (1612063-MS1)**

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	2060	12.0	mg/kg dry	600	1370	115	75-125
Magnesium	902	6.00	"	600	190	119	75-125
Sodium	688	6.00	"	600	47.8	107	75-125

**Matrix Spike Dup (1612063-MSD1)**

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	2040	12.0	mg/kg dry	600	1370	112	75-125	0.803	25
Magnesium	921	6.00	"	600	190	122	75-125	2.12	25
Sodium	705	6.00	"	600	47.8	110	75-125	2.31	25

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612069 - General Preparation**

<b>Duplicate (1612069-DUP1)</b>	<b>Source: 1612014-01</b>			Prepared & Analyzed: 12/07/16						
% Solids	92.3		%		93.0			0.756	20	

**Batch 1612086 - General Preparation**

<b>LCS (1612086-BS1)</b>				Prepared & Analyzed: 12/07/16						
pH	6.01	0.100	pH Units	6.00	100	95-105				
<b>Duplicate (1612086-DUP1)</b>	<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/07/16						
pH	7.73	0.100	pH Units		7.16			7.66	20	

**Batch 1612087 - General Preparation**

<b>Blank (1612087-BLK1)</b>				Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
<b>LCS (1612087-BS1)</b>				Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.3	90-110				
<b>Duplicate (1612087-DUP1)</b>	<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	0.283	0.0100	mmhos/cm		0.266			6.26	20	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

### Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

July 21, 2017

Bob Cornez  
Foundation Energy, LLC  
15 E 15th St  
Tulsa, OK 74103  
RE: Federal 1-35

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/17 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President





Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
R-E-B01@5'	1707151-01	Soil	07/19/17 17:10	07/20/17 16:30
R-E-N01@4'	1707151-02	Soil	07/19/17 17:15	07/20/17 16:30
R-E-S01@4'	1707151-03	Soil	07/19/17 17:20	07/20/17 16:30
R-E-E01@4'	1707151-04	Soil	07/19/17 17:25	07/20/17 16:30
R-E-W01@4'	1707151-05	Soil	07/19/17 17:30	07/20/17 16:30

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

# Summit Scientific 1767151

S<sub>2</sub>

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: Foundation Energy

Project Manager: Bob Cornez

Address:

E-Mail: rcornez@fzaman-geo.com

City/State/Zip:

Phone:

Fax:

Project Name: Federal 1-35

Sampler Name: Paul Downey

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	TPH-GRD	TPH-DAO	PH	EC		
1	R-E-B01@5'	7/19/17	17:10				X			X				X	X	X	X		
2	R-E-N01@4'		17:15				X			X				X	X	X	X		
3	R-E-S01@4'		17:20				X			X				X	X	X	X		
4	R-E-E01@4'		17:25				X			X				X	X	X	X		
5	R-E-W01@4'	X	17:30				X			X				X	X	X	X		
6																			
7																			
8																			
9																			
10																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/20/17 16:15</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7-20-17 1615</u>	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: <u>ONIC</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>12.0</u> Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

### Sample Receipt Checklist

S2 Work Order: 1707151

Client: Foundation Client Project ID: Federal 1-35

Shipped Via: \_\_\_\_\_ Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	<u>16.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			<u>see</u>
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Logan S.  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

7/20/17 16:30  
Date/Time



Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**R-E-B01@5'**  
**1707151-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 07/19/17 17:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707186	07/20/17	07/21/17	8015M	

Date Sampled: 07/19/17 17:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 07/19/17 17:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707183	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 17:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 07/19/17 17:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.13	0.0100	mmhos/cm	1	1707191	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**R-E-B01@5'**  
**1707151-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.84	0.100	pH Units	1	1707188	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**R-E-N01@4'**  
**1707151-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707186	07/20/17	07/21/17	8015M	

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		111 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707183	07/20/17	07/21/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.89	0.0100	mmhos/cm	1	1707191	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**R-E-N01@4'**  
**1707151-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.79	0.100	pH Units	1	1707188	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**R-E-S01@4'**  
**1707151-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 07/19/17 17:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707186	07/20/17	07/21/17	8015M	

Date Sampled: 07/19/17 17:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 07/19/17 17:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707183	07/20/17	07/21/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 17:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 07/19/17 17:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.14	0.0100	mmhos/cm	1	1707191	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**R-E-S01@4'**  
**1707151-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	<b>7.70</b>	0.100	pH Units	1	1707188	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**R-E-E01@4'**  
**1707151-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707186	07/20/17	07/21/17	8015M	

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		112 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707183	07/20/17	07/21/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.12	0.0100	mmhos/cm	1	1707191	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**R-E-E01@4'**  
**1707151-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.65	0.100	pH Units	1	1707188	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**R-E-W01@4'**  
**1707151-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707186	07/20/17	07/21/17	8015M	

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		111 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707183	07/20/17	07/21/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.70	0.0100	mmhos/cm	1	1707191	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**R-E-W01@4'**  
**1707151-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/19/17 17:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.62	0.100	pH Units	1	1707188	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1707186 - EPA 3550A**

**Blank (1707186-BLK1)**

Prepared: 07/20/17 Analyzed: 07/21/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 14.0 " 12.5 112 30-150

**LCS (1707186-BS1)**

Prepared: 07/20/17 Analyzed: 07/21/17

C10-C28 (DRO) 567 50 mg/kg 499 114 73-134

Surrogate: o-Terphenyl 17.8 " 12.5 142 30-150

**Matrix Spike (1707186-MS1)**

**Source: 1707150-01**

Prepared: 07/20/17 Analyzed: 07/21/17

C10-C28 (DRO) 507 50 mg/kg 499 13.1 99.0 50-148

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

**Matrix Spike Dup (1707186-MSD1)**

**Source: 1707150-01**

Prepared: 07/20/17 Analyzed: 07/21/17

C10-C28 (DRO) 497 50 mg/kg 499 13.1 97.1 50-148 1.97 20

Surrogate: o-Terphenyl 14.5 " 12.5 116 30-150

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1707183 - EPA 5030 Soil MS**

**Blank (1707183-BLK1)**

Prepared: 07/20/17 Analyzed: 07/21/17

Benzene	ND	0.10	mg/kg							
Toluene	ND	10	"							
Ethylbenzene	ND	10	"							
Xylenes (total)	ND	10	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0465		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

**LCS (1707183-BS1)**

Prepared: 07/20/17 Analyzed: 07/21/17

Benzene	0.104	0.10	mg/kg	0.100		104	58-130			
Toluene	0.115	10	"	0.100		115	61-134			
Ethylbenzene	0.134	10	"	0.0992		135	74-139			
m,p-Xylene	0.253	10	"	0.200		127	73-137			
o-Xylene	0.125	10	"	0.0980		128	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0460		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

**Matrix Spike (1707183-MS1)**

Source: 1707150-01

Prepared: 07/20/17 Analyzed: 07/21/17

Benzene	0.222	0.10	mg/kg	0.100	0.0914	130	30-131			
Toluene	0.118	10	"	0.100	ND	118	30-134			
Ethylbenzene	0.166	10	"	0.0992	0.0192	148	22-153			
m,p-Xylene	0.320	10	"	0.200	0.0447	138	10-159			
o-Xylene	0.143	10	"	0.0980	0.00855	137	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
07/21/17 09:49

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1707183 - EPA 5030 Soil MS**

Matrix Spike Dup (1707183-MSD1)		Source: 1707150-01			Prepared: 07/20/17		Analyzed: 07/21/17			
Benzene	0.224	0.10	mg/kg	0.100	0.0914	133	30-131	1.20	34	QM-07
Toluene	0.115	10	"	0.100	ND	115	30-134	2.48	30	
Ethylbenzene	0.163	10	"	0.0992	0.0192	145	22-153	1.91	24	
m,p-Xylene	0.318	10	"	0.200	0.0447	137	10-159	0.903	68	
o-Xylene	0.140	10	"	0.0980	0.00855	134	31-151	2.25	38	
Surrogate: 1,2-Dichloroethane-d4	0.0493		"	0.0400		123	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

Summit Scientific

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Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1707188 - General Preparation**

**LCS (1707188-BS1)**

Prepared & Analyzed: 07/20/17

pH	6.05	0.100	pH Units	6.00	101	95-105
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**Duplicate (1707188-DUP1)**

**Source: 1707151-01**

Prepared & Analyzed: 07/20/17

pH	7.62	0.100	pH Units	7.84	2.85	20
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**Batch 1707191 - General Preparation**

**Blank (1707191-BLK1)**

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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**LCS (1707191-BS1)**

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	0.508	0.0100	mmhos/cm	0.500	102	90-110
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**Duplicate (1707191-DUP1)**

**Source: 1707151-01**

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	3.07	0.0100	mmhos/cm	3.13	1.76	20
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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Foundation Energy, LLC  
15 E 15th St  
Tulsa OK, 74103

Project: Federal 1-35  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
07/21/17 09:49

### Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference