

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

December 12, 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 11:11. 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:**  
12/12/16 15:33

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 1-34: E @ 8'	1612026-01	Soil	12/01/16 08:28	12/05/16 11:11
Fed 1-34: N @ 8'	1612026-02	Soil	12/01/16 08:56	12/05/16 11:11
Fed 1-34: S @ 6'	1612026-03	Soil	12/01/16 09:21	12/05/16 11:11
Fed 1-34: C @ 3.5'	1612026-04	Soil	12/01/16 09:06	12/05/16 11:11
Fed 1-34: W @ 8'	1612026-05	Soil	12/01/16 09:55	12/05/16 11:11

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Corneze

Reported:  
12/12/16 15:33

# Summit Scientific

S<sub>2</sub>

1612026

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

Page 1 of 1

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	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 910-1	GBTEX	TPH - DRC	EC	PH	As-only	
1	Fed 1-34: E @ 8'	01-Dec	0828	1						X				X	X	X	X		01
2	Fed 1-34: N @ 8'		0856	1										X	X	X	X		02
3	Fed 1-34: S @ 6'		0921	1										X	X	X	X		03
4	Fed 1-34: C @ 3.5'		0906	2										X	X	X	X		04
5	Fed 1-34: W @ 8'		0955	1										X	X	X	X		05
6	North Camp		1518	1													X		
7	Fed 1-35: N @ 5'		1113	1										X	X	X	X		
8	Fed 1-35: W @ 7'		1121	1										X	X	X	X		
9	Fed 1-35: S @ 5'		1139	1										X	X	X	X		
10	Fed 1-35: E @ 2'		1146	1										X	X	X	X		

Relinquished by: \_\_\_\_\_ Date/Time: 12/5/16 10:10 Received by: E. Corneze Date/Time: 12-5-16 10:10  
Turn Around Time (Check)  
Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
24 hours \_\_\_\_\_ Standard X  
48 hours \_\_\_\_\_  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: 1.6°C  
Intact: (Yes) No

Notes: \_\_\_\_\_

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

### Sample Receipt Checklist

S2 Work Order: 1612026

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment (Fed 1-34)

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				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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

MBJ  
Signature or Initials of Custodian

12/5/16 1240  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: E @ 8'**  
**1612026-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 08:28

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 08:28

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 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/06/16	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 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.74	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: E @ 8'**  
**1612026-01 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.96	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: N @ 8'**  
**1612026-02 (Soil)**

**Summit Scientific**

#### **Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 08:56

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 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.8 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/06/16	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 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>11.1</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: N @ 8'**  
**1612026-02 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.09	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: S @ 6'**  
**1612026-03 (Soil)**

**Summit Scientific**

#### **Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:21

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 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 09:21

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 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	12.6	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: S @ 6'**  
**1612026-03 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.08	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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6899 Pecos Street  
Denver CO, 80221

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

**Reported:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1800	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0038	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.19	0.0050	"	"	"	"	"	"	
Xylenes (total)	2.5	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1500	50	"	100	"	"	12/07/16	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	12/07/16	"	
Surrogate: Toluene-d8		85.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		302 %	21-167		"	"	"	"	S-02

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

Date Sampled: 12/01/16 09:06

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:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	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>0.00974</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0432</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		126 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		108 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 09:06

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>28.9</b>	0.240	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>105</b>	0.480	"	"	"	"	"	"	
<b>Boron</b>	<b>3.14</b>	1.20	"	"	"	"	"	"	
Cadmium	ND	0.120	"	"	"	"	"	"	
<b>Chromium</b>	<b>9.69</b>	0.600	"	"	"	"	"	"	
<b>Copper</b>	<b>19.3</b>	0.600	"	"	"	"	"	"	
<b>Lead</b>	<b>18.4</b>	0.240	"	"	"	"	"	"	
<b>Nickel</b>	<b>18.7</b>	0.120	"	"	"	"	"	"	
<b>Selenium</b>	<b>1.52</b>	0.480	"	"	"	"	"	"	
Silver	ND	0.120	"	"	"	"	"	"	
<b>Zinc</b>	<b>75.9</b>	12.0	"	"	"	"	"	"	

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

Reported:  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

**Total Mercury by EPA Method 7471**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0600	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1612064	12/07/16	12/08/16	EPA 7196	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	9.69	0.959	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1370	12.0	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	190	6.00	"	"	"	"	"	"	
Sodium	47.8	6.00	"	"	"	"	"	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.321		units	"	1612082	12/08/16	12/08/16	"	

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

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.33	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	"	1612069	12/07/16	12/07/16	% calculation	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

**Fed 1-34: W @ 8'**  
**1612026-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:55

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 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 09:55

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 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	13.5	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: W @ 8'**  
**1612026-05 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.22	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**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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6899 Pecos Street  
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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

**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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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**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:**  
12/12/16 15:33

**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	"

<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0227</i>		<i>"</i>	<i>0.0333</i>	<i>68.0</i>	<i>30-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0341</i>		<i>"</i>	<i>0.0333</i>	<i>102</i>	<i>30-150</i>

**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

<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0272</i>		<i>"</i>	<i>0.0333</i>	<i>81.6</i>	<i>50-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0396</i>		<i>"</i>	<i>0.0333</i>	<i>119</i>	<i>50-150</i>

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

Reported:  
12/12/16 15:33

**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:**  
12/12/16 15:33

**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	"
Boron	ND	1.00	"
Cadmium	ND	0.100	"
Chromium	ND	0.500	"
Copper	ND	0.500	"
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
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
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	
Cadmium	0.131	0.104	"	0.0802	48.4	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
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

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

**Reported:**  
12/12/16 15:33

**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**

<b>Matrix Spike (1612062-MS1)</b>		<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>					
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			
Cadmium	2.17	0.104	"	1.95	0.0802	107	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			
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

<b>Matrix Spike Dup (1612062-MSD1)</b>		<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>					
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	
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	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	
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

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**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:**  
12/12/16 15:33

## 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

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:**  
12/12/16 15:33

**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:**  
12/12/16 15:33

**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:**  
12/12/16 15:33

### Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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 ♦ 303.277.9531 - 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

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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@8'		0921	1										X	X	X	X		
4	Feed 1-34: E@5'		0946	2										X	X	X	X		
5	Feed 1-34: W@5'		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'	12-2-16	0708	1						X				X	X	X	X			

Relinquished by: [Signature] Date/Time: 12/5/16 10:10 Received by: [Signature] 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

[Signature]





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				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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**

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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	

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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: 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	

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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)	88	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	0.044	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.30	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.018	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9.1	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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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)**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	0.00615	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	"	"	"	"	"	"	
Chrysene	0.00804	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00574	0.00500	"	"	"	"	"	"	
Fluorene	0.00755	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	0.232	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
Arsenic	6.64	0.245	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	25.7	0.490	"	"	"	"	"	"	
Arsenic	6.64	0.245	"	"	"	"	"	"	
Boron	1.92	1.22	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
Barium	25.7	0.490	"	"	"	"	"	"	
Chromium	5.09	0.612	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
Copper	6.59	0.612	"	"	"	"	"	"	
Lead	8.41	0.245	"	"	"	"	"	"	
Chromium	5.09	0.612	"	"	"	"	"	"	
Nickel	9.95	0.122	"	"	"	"	"	"	
Selenium	0.717	0.490	"	"	"	"	"	"	
Copper	6.59	0.612	"	"	"	"	"	"	
Silver	ND	0.122	"	"	"	"	"	"	

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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: 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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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)**

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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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Denver CO, 80221

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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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

**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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

**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			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

**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			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

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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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6899 Pecos Street  
Denver CO, 80221

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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Denver CO, 80221

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			

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**

**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	

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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

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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

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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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

December 12, 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 12:03. 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:**  
12/12/16 15:44

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 43-4:E @ 4'	1612030-01	Soil	12/01/16 16:37	12/05/16 12:03
Fed 43-4:C @ 6'	1612030-02	Soil	12/01/16 16:55	12/05/16 12:03
Fed 43-4:S @ 6'	1612030-03	Soil	12/01/16 17:05	12/05/16 12:03
Fed 43-4:W @ 2'	1612030-04	Soil	12/02/16 07:08	12/05/16 12:03
Fed 43-4:N @ 10'	1612030-05	Soil	12/02/16 07:53	12/05/16 12:03

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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:  
12/12/16 15:44

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S<sub>2</sub>

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1612030.1

1 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	GrTEX	TPH-200	EC		PH
1	Fed 1-35-C @ 3'	12-16-16	12:18	1						X			X					
2	Fed 2-34-E @ 8'		13:57	1									X	X	X	X		
3	Fed 2-34-C @ 4'		13:51	2									X					
4	Fed 2-34-S @ 8'		14:20	1									X	X	X	X		
5	Fed 2-34-W @ 8'		14:31	1									X	X	X	X		
6	Fed 2-34-N @ 8'		15:39	1									X	X	X	X		
7	Fed 43-4-E @ 4'		16:37	1									X	X	X	X		01
8	Fed 43-4-C @ 6'		16:55	2									X					02
9	Fed 43-4-S @ 6'		17:05	1									X	X	X	X		03
10	Fed 43-4-W @ 2'	02-Dec	07:08	1									X	X	X	X		04

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	12/5/16 10:10		12-5-16 10:10	Same Day — 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours — Standard <input checked="" type="checkbox"/>	
				48 hours —	
Sample Integrity:				Temperature Upon Receipt: 1.6°C	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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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:  
12/12/16 15:44

# Summit Scientific

S<sub>2</sub>

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303-277-9310 • 303-374-5933

1612030.2

2 of 2  
Page 2 of 2

Client: Foundation Energy/Tasman Project Manager: T. U. C.  
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 2/10-1	GISTEX	TPH-DRO	EC	PH		AS-Caly
1	Fed 43-4: N@10'	02-Dec	0753	1						X				X	X	X	X		05
2	Fed 12-3: C@4'		0925	2									X	X	X	X	X		
3	Fed 12-3: S@6'		0946	1									X	X	X	X	X		
4	Fed 12-3: E@8'		1008	1									X	X	X	X	X		
5	Fed 12-3: N@8'		1031	1									X	X	X	X	X		
6	Fed 12-3: W@10'		1101	1									X	X	X	X	X		
7	Fed 3-11: C@6'		1218	2									X	X	X	X	X		
8	Fed 3-11: W@2'		1232	1									X	X	X	X	X		
9	Fed 3-11: N@2'		1259	1									X	X	X	X	X		
10	Fed 3-11: S@4'		1229	1									X	X	X	X	X		

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

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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:  
12/12/16 15:44

### Sample Receipt Checklist

S2 Work Order: 1612030

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment (Fed 434)

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 1210  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:44

**Fed 43-4:E @ 4'**  
**1612030-01 (Soil)**

**Summit Scientific**

#### **Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.7 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.407</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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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:**  
12/12/16 15:44

**Fed 43-4:E @ 4'**  
**1612030-01 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.41	0.100	pH Units	1	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:**  
12/12/16 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2000	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.8 %	30-150		"	"	"	"	

### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	33	0.50	"	100	"	"	"	"	
Gasoline Range Hydrocarbons	9200	500	"	1000	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		276 %	21-167		"	"	"	"	S-02

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

Date Sampled: 12/01/16 16:55

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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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	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	"	"	"	"	"	"	
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	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	64.2 %	30-150	"	"	"	"	"	"	
Surrogate: Fluoranthene-d10	92.4 %	30-150	"	"	"	"	"	"	

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

Date Sampled: 12/01/16 16:55

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.55	0.238	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	169	0.477	"	"	"	"	"	"	
Cadmium	0.243	0.119	"	"	"	"	"	"	
Chromium	6.54	0.596	"	"	"	"	"	"	
Copper	15.5	0.596	"	"	"	"	"	"	
Lead	12.4	0.238	"	"	"	"	"	"	
Nickel	13.0	0.119	"	"	"	"	"	"	
Selenium	ND	0.477	"	"	"	"	"	"	
Silver	ND	0.119	"	"	"	"	"	"	
Zinc	56.1	11.9	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.55	0.238	"	"	"	"	"	"	

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:**  
12/12/16 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

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

<b>Barium</b>	<b>169</b>	0.477 mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	ND	1.19 "	"	"	"	"	"
<b>Cadmium</b>	<b>0.243</b>	0.119 "	"	"	"	"	"
<b>Chromium</b>	<b>6.54</b>	0.596 "	"	"	"	"	"
<b>Copper</b>	<b>15.5</b>	0.596 "	"	"	"	"	"
<b>Lead</b>	<b>12.4</b>	0.238 "	"	"	"	"	"
<b>Nickel</b>	<b>13.0</b>	0.119 "	"	"	"	"	"
Selenium	ND	0.477 "	"	"	"	"	"
Silver	ND	0.119 "	"	"	"	"	"
<b>Zinc</b>	<b>56.1</b>	11.9 "	"	"	"	"	"

**Total Mercury by EPA Method 7471**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0596	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1612064	12/07/16	12/08/16	EPA 7196	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Trivalent Chromium</b>	<b>6.54</b>	0.954	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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:**  
12/12/16 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1240	11.9	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	319	5.96	"	"	"	"	"	"	
Sodium	45.0	5.96	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.295		units	"	1612082	12/08/16	12/08/16	"	

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

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.674	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	"	1612069	12/07/16	12/07/16	% calculation	

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:**  
12/12/16 15:44

**Fed 43-4:S @ 6'**  
**1612030-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.9 %	30-150		"	"	"	"	

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

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.51	0.0100	mmhos/cm	1	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:**  
12/12/16 15:44

**Fed 43-4:S @ 6'**  
**1612030-03 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.88	0.100	pH Units	1	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:**  
12/12/16 15:44

**Fed 43-4:W @ 2'**  
**1612030-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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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:**  
12/12/16 15:44

**Fed 43-4:W @ 2'**  
**1612030-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/02/16 07:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.27	0.100	pH Units	1	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:  
12/12/16 15:44

**Fed 43-4:N @ 10'**  
**1612030-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.09	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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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:**  
12/12/16 15:44

**Fed 43-4:N @ 10'**  
**1612030-05 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.61	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:44

**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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Denver CO, 80221

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

Reported:  
12/12/16 15:44

**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 1612073 - EPA 5030 Soil MS**

**Blank (1612073-BLK1)**

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

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

**LCS (1612073-BS1)**

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

Benzene	0.121	0.0020	mg/kg	0.100		121	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.141	0.0050	"	0.0992		142	74-150			
m,p-Xylene	0.262	0.010	"	0.200		131	73-137			
o-Xylene	0.140	0.0050	"	0.0980		143	73-150			
Xylenes (total)	0.402	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.67	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

**Matrix Spike (1612073-MS1)**

Source: 1612029-01

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

Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131			
Toluene	0.124	0.0050	"	0.100	0.00396	120	30-134			
Ethylbenzene	0.144	0.0050	"	0.0992	ND	146	22-153			
m,p-Xylene	0.278	0.010	"	0.200	0.0112	134	10-159			
o-Xylene	0.146	0.0050	"	0.0980	ND	149	31-151			
Xylenes (total)	0.424	0.0050	"		0.0112		30-150			
Gasoline Range Hydrocarbons	2.72	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:44

**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 1612073 - EPA 5030 Soil MS**

Matrix Spike Dup (1612073-MSD1)		Source: 1612029-01			Prepared: 12/07/16		Analyzed: 12/08/16			
Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131	0.341	34	
Toluene	0.125	0.0050	"	0.100	0.00396	121	30-134	0.772	30	
Ethylbenzene	0.149	0.0050	"	0.0992	ND	150	22-153	2.93	24	
m,p-Xylene	0.282	0.010	"	0.200	0.0112	135	10-159	1.35	68	
o-Xylene	0.148	0.0050	"	0.0980	ND	151	31-151	1.36	38	
Xylenes (total)	0.430	0.0050	"		0.0112		30-150	1.36	20	
Gasoline Range Hydrocarbons	2.89	0.50	"		ND		30-150	5.99	20	
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

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

Reported:  
12/12/16 15:44

**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:  
12/12/16 15:44

**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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Denver CO, 80221

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

**Reported:**  
12/12/16 15:44

**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	"
Cadmium	ND	0.100	"
Barium	ND	0.400	"
Chromium	ND	0.500	"
Copper	ND	0.500	"
Cadmium	ND	0.100	"
Lead	ND	0.200	"
Nickel	ND	0.100	"
Chromium	ND	0.500	"
Selenium	ND	0.400	"
Silver	ND	0.100	"
Copper	ND	0.500	"
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
Arsenic	127	0.500	"	132	96.5	82.6-117
Boron	94.4	2.50	"	120	78.7	77.1-123
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
Cadmium	118	0.250	"	122	96.7	80.3-120
Copper	195	1.25	"	212	91.9	85.4-115
Lead	94.7	0.500	"	108	87.7	81.1-119
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Copper	195	1.25	"	212	91.9	85.4-115
Silver	55.6	0.250	"	73.5	75.6	69.8-130

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

**Reported:**  
12/12/16 15:44

**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

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6899 Pecos Street  
Denver CO, 80221

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

**Reported:**  
12/12/16 15:44

**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			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Copper	38.9	0.518	"	39.0	2.29	94.0	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	
Arsenic	42.6	0.207	"	40.5	0.898	103	75-125	8.37	25	
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	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:**  
12/12/16 15:44

**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:**  
12/12/16 15:44

**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:**  
12/12/16 15:44

## 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

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:  
12/12/16 15:44

**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:**  
12/12/16 15:44

**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:**  
12/12/16 15:44

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

December 12, 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 12:13. 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:**  
12/12/16 15:48

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 12-3: C @ 4'	1612031-01	Soil	12/02/16 09:25	12/05/16 12:13
Fed 12-3: S @ 6'	1612031-02	Soil	12/02/16 09:45	12/05/16 12:13
Fed 12-3: E @ 8'	1612031-03	Soil	12/02/16 10:08	12/05/16 12:13
Fed 12-3: N @ 8'	1612031-04	Soil	12/02/16 10:31	12/05/16 12:13
Fed 12-3: W @ 10'	1612031-05	Soil	12/02/16 09:25	12/05/16 12:13

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:  
12/12/16 15:48

# Summit Scientific

1612031

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

Page 8 of 8

Client: Foundation Energy/Trinidad Project Manager: TUC  
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	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 2/10-1	G-TEXT	TPH-DRO	EC	PH		AS-Only
1	Fed 43-4: N @ 10'	02 Dec	0753	1						X				X	X	X	X		(amp) 12/5/16
2	Fed 12-3: C @ 4'		0925	2										X	X	X	X		01
3	Fed 12-3: S @ 6'		0945	1										X	X	X	X		02
4	Fed 12-3: E @ 8'		1008	1										X	X	X	X		03
5	Fed 12-3: N @ 8'		1031	1										X	X	X	X		04
6	Fed 12-3: W @ 10'		1101	1										X	X	X	X		05
7	Fed 3-11: C @ 6'		1218	2										X	X	X	X		
8	Fed 3-11: W @ 2'		1232	1										X	X	X	X		(amp) 12/5/16
9	Fed 3-11: N @ 2'		1259	1										X	X	X	X		
10	Fed 3-11: S @ 4'		1229	1										X	X	X	X		

  

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/5/16 1010</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12-5-16 10:10</u>	Turn Around Time (Check)	Notes:
				Same Day _____ 72 hours	Z
				24 hours _____ Standard	
				48 hours _____	
				Sample Integrity:	
				Temperature Upon Receipt: <u>1.6°C</u>	
				Intact: <u>(Yes)</u> No	

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Summit Scientific

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[Signature]



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:48

### Sample Receipt Checklist

S2 Work Order: 1612031

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment  
(Fed 12-3)

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				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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

MS  
Signature or Initials of Custodian

12/5/16 1230  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:48

**Fed 12-3: C @ 4'**  
**1612031-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	5500	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	0.11	0.0050	"	"	"	"	"	"	
Ethylbenzene	2.0	0.50	"	100	"	"	"	"	
Xylenes (total)	80	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	13000	500	"	1000	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		323 %	21-167		"	"	"	"	S-02

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

Date Sampled: 12/02/16 09:25

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	"	"	"	"	"	"	

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:**  
12/12/16 15:48

**Fed 12-3: C @ 4'**  
**1612031-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	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	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0701</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.150</b>	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		37.6 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>7.77</b>	0.245	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>135</b>	0.490	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.388</b>	0.123	"	"	"	"	"	"	
<b>Chromium</b>	<b>7.68</b>	0.613	"	"	"	"	"	"	
<b>Copper</b>	<b>20.6</b>	0.613	"	"	"	"	"	"	
<b>Lead</b>	<b>27.0</b>	0.245	"	"	"	"	"	"	
<b>Nickel</b>	<b>13.8</b>	0.123	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.665</b>	0.490	"	"	"	"	"	"	
<b>Silver</b>	<b>0.248</b>	0.123	"	"	"	"	"	"	
<b>Zinc</b>	<b>81.5</b>	12.3	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>7.77</b>	0.245	"	"	"	"	"	"	

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:**  
12/12/16 15:48

**Fed 12-3: C @ 4'**  
**1612031-01 (Soil)**

**Summit Scientific**

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

Barium	135	0.490	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	3.43	1.23	"	"	"	"	"	"
Cadmium	0.388	0.123	"	"	"	"	"	"
Chromium	7.68	0.613	"	"	"	"	"	"
Copper	20.6	0.613	"	"	"	"	"	"
Lead	27.0	0.245	"	"	"	"	"	"
Nickel	13.8	0.123	"	"	"	"	"	"
Selenium	0.665	0.490	"	"	"	"	"	"
Silver	0.248	0.123	"	"	"	"	"	"
Zinc	81.5	12.3	"	"	"	"	"	"

**Total Mercury by EPA Method 7471**

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0537	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1612064	12/07/16	12/08/16	EPA 7196	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	7.68	0.980	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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:**  
12/12/16 15:48

**Fed 12-3: C @ 4'**  
**1612031-01 (Soil)**

**Summit Scientific**

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

Calcium	2200	12.3	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	389	6.13	"	"	"	"	"	"	
Sodium	1700	6.13	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.78		units	"	1612082	12/08/16	12/08/16	"	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.52	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15	0.100	pH Units	"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.6		%	"	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:  
12/12/16 15:48

**Fed 12-3: S @ 6'**  
**1612031-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.33	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**Fed 12-3: S @ 6'**  
**1612031-02 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:48

**Fed 12-3: E @ 8'**  
**1612031-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.24	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**Fed 12-3: E @ 8'**  
**1612031-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/02/16 10:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.91	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

Summit Scientific

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**Fed 12-3: N @ 8'**  
**1612031-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.6 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.89	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Summit Scientific

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**Fed 12-3: N @ 8'**  
**1612031-04 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.16	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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

**Reported:**  
12/12/16 15:48

**Fed 12-3: W @ 10'**  
**1612031-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.3 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	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: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.25	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**Fed 12-3: W @ 10'**  
**1612031-05 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.01	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**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 1612067 - EPA 3550A**

**Blank (1612067-BLK1)**

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.2 30-150

**LCS (1612067-BS1)**

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

C10-C28 (DRO) 458 50 mg/kg 499 91.7 73-134

Surrogate: o-Terphenyl 14.1 " 12.5 113 30-150

**Matrix Spike (1612067-MS1)**

**Source: 1612031-01**

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

C10-C28 (DRO) 5780 50 mg/kg 499 5510 54.7 50-148

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

**Matrix Spike Dup (1612067-MSD1)**

**Source: 1612031-01**

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

C10-C28 (DRO) 6380 50 mg/kg 499 5510 174 50-148 9.81 20 QM-07

Surrogate: o-Terphenyl 16.4 " 12.5 131 30-150

Summit Scientific

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

Reported:  
12/12/16 15:48

**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 1612073 - EPA 5030 Soil MS**

**Blank (1612073-BLK1)**

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

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

**LCS (1612073-BS1)**

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

Benzene	0.121	0.0020	mg/kg	0.100		121	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.141	0.0050	"	0.0992		142	74-150			
m,p-Xylene	0.262	0.010	"	0.200		131	73-137			
o-Xylene	0.140	0.0050	"	0.0980		143	73-150			
Xylenes (total)	0.402	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.67	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

**Matrix Spike (1612073-MS1)**

Source: 1612029-01

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

Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131			
Toluene	0.124	0.0050	"	0.100	0.00396	120	30-134			
Ethylbenzene	0.144	0.0050	"	0.0992	ND	146	22-153			
m,p-Xylene	0.278	0.010	"	0.200	0.0112	134	10-159			
o-Xylene	0.146	0.0050	"	0.0980	ND	149	31-151			
Xylenes (total)	0.424	0.0050	"		0.0112		30-150			
Gasoline Range Hydrocarbons	2.72	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:48

**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 1612073 - EPA 5030 Soil MS**

Matrix Spike Dup (1612073-MSD1)		Source: 1612029-01			Prepared: 12/07/16		Analyzed: 12/08/16			
Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131	0.341	34	
Toluene	0.125	0.0050	"	0.100	0.00396	121	30-134	0.772	30	
Ethylbenzene	0.149	0.0050	"	0.0992	ND	150	22-153	2.93	24	
m,p-Xylene	0.282	0.010	"	0.200	0.0112	135	10-159	1.35	68	
o-Xylene	0.148	0.0050	"	0.0980	ND	151	31-151	1.36	38	
Xylenes (total)	0.430	0.0050	"		0.0112		30-150	1.36	20	
Gasoline Range Hydrocarbons	2.89	0.50	"		ND		30-150	5.99	20	
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

Summit Scientific

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

Reported:  
12/12/16 15:48

**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

Summit Scientific

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6899 Pecos Street  
Denver CO, 80221

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

Reported:  
12/12/16 15:48

**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			

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:**  
12/12/16 15:48

**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	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
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
Cadmium	118	0.250	"	122	96.7	80.3-120
Barium	183	1.00	"	228	80.3	72.8-127
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Cadmium	118	0.250	"	122	96.7	80.3-120
Copper	195	1.25	"	212	91.9	85.4-115
Lead	94.7	0.500	"	108	87.7	81.1-119
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Copper	195	1.25	"	212	91.9	85.4-115
Silver	55.6	0.250	"	73.5	75.6	69.8-130

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:**  
12/12/16 15:48

**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**

**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
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Copper	2.83	0.518	"	2.29	21.0	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:  
12/12/16 15:48

**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:**  
12/12/16 15:48

**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:**  
12/12/16 15:48

**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:**  
12/12/16 15:48

### 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

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:**  
12/12/16 15:48

**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:**  
12/12/16 15:48

**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**

**Duplicate (1612069-DUP1)**      **Source: 1612014-01**      Prepared & Analyzed: 12/07/16

% Solids	92.3		%		93.0			0.756	20	
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**Batch 1612095 - General Preparation**

**LCS (1612095-BS1)**      Prepared & Analyzed: 12/06/16

pH	8.02	0.100	pH Units	8.00	100	95-105				
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**Duplicate (1612095-DUP1)**      **Source: 1612029-01**      Prepared & Analyzed: 12/06/16

pH	8.39	0.100	pH Units		8.31			0.958	20	
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**Batch 1612097 - General Preparation**

**Blank (1612097-BLK1)**      Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
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**LCS (1612097-BS1)**      Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.2	90-110				
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**Duplicate (1612097-DUP1)**      **Source: 1612029-01**      Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	11.7	0.0100	mmhos/cm		12.7			7.75	20	
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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:**  
12/12/16 15:48

### Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

December 12, 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 12:22. 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:**  
12/12/16 15:49

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 3-11: C @ 6'	1612032-01	Soil	12/02/16 12:18	12/05/16 12:22
Fed 3-11: W @ 2'	1612032-02	Soil	12/02/16 12:32	12/05/16 12:22
Fed 3-11: N @ 2'	1612032-03	Soil	12/02/16 12:59	12/05/16 12:22
Fed 3-11: S @ 4'	1612032-04	Soil	12/02/16 12:29	12/05/16 12:22
Fed 3-11: E @ 6'	1612032-05	Soil	12/02/16 13:43	12/05/16 12:22

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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:  
12/12/16 15:49

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S<sub>2</sub>

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303-277-9310 • 303-374-5933

1412032.1

1 of 2  
2 of 2

Page 8 of 8

Client: Foundation Energy/Truman Project Manager: TUC  
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	GIBTEX	TPH-DRO	EC		PH
1	Fed 43-4: H@10'	02-1-16	0753	1						X				X	X	X	X	
2	Fed 12-3: C@4'		0925	2									X	X	X	X		
3	Fed 12-3: S@6'		0946	1									X	X	X	X		
4	Fed 12-3: E@8'		1008	1									X	X	X	X		
5	Fed 12-3: N@8'		1031	1									X	X	X	X		
6	Fed 12-3: W@10'		1101	1									X	X	X	X		
7	Fed 3-11: C@6'		1218	2									X	X	X	X	01	
8	Fed 3-11: W@2'		1232	1									X	X	X	X	02	
9	Fed 3-11: N@2'		1259	1									X	X	X	X	03	
10	Fed 3-11: S@4'		1229	1									X	X	X	X	04	

Relinquished by: [Signature] Date/Time: 12/14/16 1010 Received by: [Signature] Date/Time: 12-5-16 10:00 Turn Around Time (Check)  
Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
24 hours \_\_\_\_\_ Standard X  
48 hours \_\_\_\_\_  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: 1.6°C  
Intact: Yes No

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[Signature]





Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:49

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S<sub>2</sub>

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11612032.2

2 2

Page 4 of 8

Client: Foundation Energy / Tasman Project Manager: RUC  
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)	Fall Tails	GISTEX	TPH-DRO	EC		PH
1	Fed 3-11: E06'	02-Dec	1343	1						X				X	X	X	X	05
2	Fed 3-11: E02'		1416	2										X				
3	Soil Heart Comp		1530	1														
4	Fed 3-11: W06'		1527	1										X	X	X	X	
5	Fed 3-11: S02'		1657	1										X	X	X	X	
6	Fed 3-11: N08'		1638	1										X	X	X	X	
7	Fed 3-11: E02'		1657	1										X	X	X	X	
8	Fed 3-9: C08'	03-Dec	0946	2										X	X	X	X	
9	Fed 3-9: N08'		0604	1										X	X	X	X	
10	Fed 3-9: E010'		0830	1										X	X	X	X	

Relinquished by: [Signature] Date/Time: 12/5/16 10:00 Received by: [Signature] Date/Time: 12-5-16 16:00  
 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 X  
 48 hours \_\_\_\_\_  
 Sample Integrity: 1.6%  
 Temperature Upon Receipt: \_\_\_\_\_  
 Intact: Yes No

Notes: \_\_\_\_\_

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[Signature]



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:49

#### Sample Receipt Checklist

S2 Work Order: 1612032  
Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Fed 3-11)  
Shipped Via: Hand Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
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 1230  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1100	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2.0	0.20	mg/kg	100	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	8.8	0.50	"	"	"	"	"	"	
Ethylbenzene	17	0.50	"	"	"	"	"	"	
Xylenes (total)	170	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9000	50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		249 %	21-167		"	"	"	"	S-02

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

Date Sampled: 12/02/16 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	"	"	"	"	"	"	

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:**  
12/12/16 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	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	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0636</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>2.38</b>	0.500	"	100	"	"	"	"	
Pyrene	ND	0.00500	"	1	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.8 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		98.5 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>11.0</b>	0.244	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>130</b>	0.489	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.321</b>	0.122	"	"	"	"	"	"	
<b>Chromium</b>	<b>7.14</b>	0.611	"	"	"	"	"	"	
<b>Copper</b>	<b>15.8</b>	0.611	"	"	"	"	"	"	
<b>Lead</b>	<b>15.8</b>	0.244	"	"	"	"	"	"	
<b>Nickel</b>	<b>14.5</b>	0.122	"	"	"	"	"	"	
<b>Selenium</b>	<b>1.80</b>	0.489	"	"	"	"	"	"	
<b>Silver</b>	<b>0.150</b>	0.122	"	"	"	"	"	"	
<b>Zinc</b>	<b>74.3</b>	12.2	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>11.0</b>	0.244	"	"	"	"	"	"	

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:**  
12/12/16 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

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

Barium	130	0.489	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	3.40	1.22	"	"	"	"	"	"
Cadmium	0.321	0.122	"	"	"	"	"	"
Chromium	7.14	0.611	"	"	"	"	"	"
Copper	15.8	0.611	"	"	"	"	"	"
Lead	15.8	0.244	"	"	"	"	"	"
Nickel	14.5	0.122	"	"	"	"	"	"
Selenium	1.80	0.489	"	"	"	"	"	"
Silver	0.150	0.122	"	"	"	"	"	"
Zinc	74.3	12.2	"	"	"	"	"	"

**Total Mercury by EPA Method 7471**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0556	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1612064	12/07/16	12/08/16	EPA 7196	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	7.14	0.978	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1390	12.2	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	198	6.11	"	"	"	"	"	"	
Sodium	3950	6.11	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	26.6		units	"	1612082	12/08/16	12/08/16	"	

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

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	15.3	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.36	0.100	pH Units	"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	"	1612069	12/07/16	12/07/16	% calculation	

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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:**  
12/12/16 15:49

**Fed 3-11: W @ 2'**  
**1612032-02 (Soil)**

**Summit Scientific**

### **Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.6 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.50	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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:**  
12/12/16 15:49

**Fed 3-11: W @ 2'**  
**1612032-02 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.79	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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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:**  
12/12/16 15:49

**Fed 3-11: N @ 2'**  
**1612032-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.1 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	12.4	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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:**  
12/12/16 15:49

**Fed 3-11: N @ 2'**  
**1612032-03 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.84	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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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:  
12/12/16 15:49

**Fed 3-11: S @ 4'**  
**1612032-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.3 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	21.5	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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:**  
12/12/16 15:49

**Fed 3-11: S @ 4'**  
**1612032-04 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.97	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**Fed 3-11: E @ 6'**  
**1612032-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

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

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	22.0	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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:**  
12/12/16 15:49

**Fed 3-11: E @ 6'**  
**1612032-05 (Soil)**

**Summit Scientific**

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

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.03	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**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 1612067 - EPA 3550A**

**Blank (1612067-BLK1)**

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.2 30-150

**LCS (1612067-BS1)**

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

C10-C28 (DRO) 458 50 mg/kg 499 91.7 73-134

Surrogate: o-Terphenyl 14.1 " 12.5 113 30-150

**Matrix Spike (1612067-MS1)**

**Source: 1612031-01**

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

C10-C28 (DRO) 5780 50 mg/kg 499 5510 54.7 50-148

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

**Matrix Spike Dup (1612067-MSD1)**

**Source: 1612031-01**

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

C10-C28 (DRO) 6380 50 mg/kg 499 5510 174 50-148 9.81 20 QM-07

Surrogate: o-Terphenyl 16.4 " 12.5 131 30-150

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

Reported:  
12/12/16 15:49

**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 1612073 - EPA 5030 Soil MS**

**Blank (1612073-BLK1)**

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

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

**LCS (1612073-BS1)**

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

Benzene	0.121	0.0020	mg/kg	0.100		121	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.141	0.0050	"	0.0992		142	74-150			
m,p-Xylene	0.262	0.010	"	0.200		131	73-137			
o-Xylene	0.140	0.0050	"	0.0980		143	73-150			
Xylenes (total)	0.402	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.67	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

**Matrix Spike (1612073-MS1)**

Source: 1612029-01

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

Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131			
Toluene	0.124	0.0050	"	0.100	0.00396	120	30-134			
Ethylbenzene	0.144	0.0050	"	0.0992	ND	146	22-153			
m,p-Xylene	0.278	0.010	"	0.200	0.0112	134	10-159			
o-Xylene	0.146	0.0050	"	0.0980	ND	149	31-151			
Xylenes (total)	0.424	0.0050	"		0.0112		30-150			
Gasoline Range Hydrocarbons	2.72	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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6899 Pecos Street  
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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1612073 - EPA 5030 Soil MS**

Matrix Spike Dup (1612073-MSD1)		Source: 1612029-01			Prepared: 12/07/16		Analyzed: 12/08/16			
Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131	0.341	34	
Toluene	0.125	0.0050	"	0.100	0.00396	121	30-134	0.772	30	
Ethylbenzene	0.149	0.0050	"	0.0992	ND	150	22-153	2.93	24	
m,p-Xylene	0.282	0.010	"	0.200	0.0112	135	10-159	1.35	68	
o-Xylene	0.148	0.0050	"	0.0980	ND	151	31-151	1.36	38	
Xylenes (total)	0.430	0.0050	"		0.0112		30-150	1.36	20	
Gasoline Range Hydrocarbons	2.89	0.50	"		ND		30-150	5.99	20	
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

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

Reported:  
12/12/16 15:49

**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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Denver CO, 80221

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

Reported:  
12/12/16 15:49

**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:**  
12/12/16 15:49

**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	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
Cadmium	ND	0.100	"
Barium	ND	0.400	"
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
Cadmium	118	0.250	"	122	96.7	80.3-120
Barium	183	1.00	"	228	80.3	72.8-127
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Cadmium	118	0.250	"	122	96.7	80.3-120
Copper	195	1.25	"	212	91.9	85.4-115
Lead	94.7	0.500	"	108	87.7	81.1-119
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Copper	195	1.25	"	212	91.9	85.4-115
Silver	55.6	0.250	"	73.5	75.6	69.8-130

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6899 Pecos Street  
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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**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

**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

*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:  
12/12/16 15:49

**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:**  
12/12/16 15:49

**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:**  
12/12/16 15:49

**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:**  
12/12/16 15:49

### 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:**  
12/12/16 15:49

**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:**  
12/12/16 15:49

**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 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 1612095 - General Preparation**

<b>LCS (1612095-BS1)</b>	Prepared & Analyzed: 12/06/16										
pH	8.02	0.100	pH Units	8.00		100	95-105				
<b>Duplicate (1612095-DUP1)</b>	<b>Source: 1612029-01</b>			Prepared & Analyzed: 12/06/16							
pH	8.39	0.100	pH Units		8.31			0.958		20	

**Batch 1612097 - General Preparation**

<b>Blank (1612097-BLK1)</b>	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
<b>LCS (1612097-BS1)</b>	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750		99.2	90-110				
<b>Duplicate (1612097-DUP1)</b>	<b>Source: 1612029-01</b>			Prepared & Analyzed: 12/09/16							
Specific Conductance (EC)	11.7	0.0100	mmhos/cm		12.7			7.75		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:**  
12/12/16 15:49

### Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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 ♦ 303.277.9531 - fax

December 13, 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 12:35. 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:**  
12/13/16 14:29

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ferg 3-9: C @ 8'	1612034-01	Soil	12/03/16 07:46	12/05/16 12:35
Ferg 3-9: N @ 8'	1612034-02	Soil	12/03/16 08:04	12/05/16 12:35
Ferg 3-9: E @ 10'	1612034-03	Soil	12/03/16 08:38	12/05/16 12:35
Ferg 3-9: S @ 10'	1612034-04	Soil	12/03/16 08:59	12/05/16 12:35
Ferg 3-9: W @ 10'	1612034-05	Soil	12/03/16 09:17	12/05/16 12:35

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:  
12/13/16 14:29

# Summit Scientific

S<sub>2</sub>

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303-277-9310 • 303-374-5933

1212034.1

1 of 2

Page 4 of 6

Client: Foundation Energy / Tasman Project Manager: RUC  
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)	Fall Table	GIBTEX	TPH-DRO	EC		PH
1	Fed 3-11: E @ 6'	02-Dec	1343	1						X				X	X	X	X	
2	Fed 2-11: E @ 2'		1468	2										X				
3	Southeast Camp		1530	1														
4	Fed 2-11: W @ 6'		1527	1										X	X	X	X	
5	Fed 2-11: S @ 2'		1537	1										X	X	X	X	
6	Fed 2-11: N @ 8'		1638	1										X	X	X	X	
7	Fed 2-11: E @ 2'		1657	1										X	X	X	X	
8	Fed 3-9: C @ 8'	03-Dec	0746	2										X	X	X	X	01
9	Fed 3-9: N @ 8'		0804	1										X	X	X	X	02
10	Fed 3-9: E @ 10'		0838	1										X	X	X	X	03
Relinquished by: <u>[Signature]</u>		Date/Time: <u>12/5/16 10:00</u>	Received by: <u>[Signature]</u>		Date/Time: <u>12-5-16 10:00</u>	Turn Around Time (Check)		Same Day _____ 72 hours _____		24 hours _____ Standard <u>X</u>		48 hours _____		Sample Integrity: <u>1.68</u>		Temperature Upon Receipt: <u>1.68</u>		Notes:
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____	Intact: <u>Yes</u> No _____												

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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.

Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

## Summit Scientific

 $S_2$ 

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

1412034.2

2 of 2

Page 5 of 6

Client: Foundation Energy / Tasman

Project Manager: ENC

**Address:**

E-Mail:

City/State/Zip: \_\_\_\_\_

Phone:

Fax:

Project Name:

### Western Sum Lit Assessment

**Sampler Name:**

Project Number:

Sample Name:		Project Number:		Preservative		Matrix		Analysis Requested						Special Instructions						
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	C-B-T-E-T	TPH-DOC	E/C	P-H	As-Only		
1	Ferc 3-9:5@10'	07-10-16	0859	1						X				X	X	X	X			04
2	Ferc 3-9:W@10'		0917	1										X	X	X	X			05
3	Fed 22-9:C@4'		1020	2									X							
4	Fed 22-9:5@4'		1052	1										X	X	X	X			
5	Fed 22-9:5@4'		1208	1										X	X	X	X			
6	Fed 22-9:W@8'		1226	1										X	X	X	X			
7	Fed 22-9:4@4'		1209	1										X	X	X	X			
8	Fed 22-9:5@8'		1211	1										X	X	X	X			
9	SW 1st @ 3'		1113	1																
10	Southwest Comp		1142	1																
Relinquished by:		Date/Time:		Received by:		Date/Time:		Turn Around Time		(Check)		Notes:								
		12/5/16 1010				12-5-16 1010		Same Day		72 hours										
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours		Standard		X								
								48 hours												
								Sample Integrity:												
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt:		L60C										
								Intact: Yes No												

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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:  
12/13/16 14:29

#### Sample Receipt Checklist

S2 Work Order: 1612034

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

(Figs 3-9)

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

12/13/16 1235  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

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

**Reported:**  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>1800</b>	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		103 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
<b>Toluene</b>	<b>24</b>	0.50	"	100	"	"	"	"	
<b>Ethylbenzene</b>	<b>10</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>570</b>	5.0	"	1000	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1700</b>	50	"	100	"	"	"	"	

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		128 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		205 %	21-167		"	"	"	"	S-02

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

Date Sampled: **12/03/16 07:46**

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	"	"	"	"	"	"	

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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:  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

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

Benzo (a) anthracene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM
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	"	"	"	"	"	"
<b>Fluorene</b>	<b>0.00719</b>	0.00500	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"
<b>Naphthalene</b>	<b>1.19</b>	0.0500	"	10	"	"	"	"
Pyrene	ND	0.00500	"	1	"	"	"	"

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		14.4 %	30-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		94.2 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>5.71</b>	0.231	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>137</b>	0.461	"	"	"	"	"	"	
<b>Arsenic</b>	<b>5.71</b>	0.231	"	"	"	"	"	"	
<b>Boron</b>	<b>3.51</b>	1.15	"	"	"	"	"	"	
<b>Barium</b>	<b>137</b>	0.461	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.140</b>	0.115	"	"	"	"	"	"	
<b>Chromium</b>	<b>6.08</b>	0.577	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.140</b>	0.115	"	"	"	"	"	"	
<b>Copper</b>	<b>8.72</b>	0.577	"	"	"	"	"	"	
<b>Lead</b>	<b>9.57</b>	0.231	"	"	"	"	"	"	
<b>Chromium</b>	<b>6.08</b>	0.577	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.84</b>	0.115	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.591</b>	0.461	"	"	"	"	"	"	
<b>Copper</b>	<b>8.72</b>	0.577	"	"	"	"	"	"	

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

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12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

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

Silver	ND	0.115	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
<b>Zinc</b>	<b>36.8</b>	11.5	"	"	"	"	"	"
<b>Lead</b>	<b>9.57</b>	0.231	"	"	"	"	"	"
<b>Nickel</b>	<b>9.84</b>	0.115	"	"	"	"	"	"
<b>Selenium</b>	<b>0.591</b>	0.461	"	"	"	"	"	"
Silver	ND	0.115	"	"	"	"	"	"
<b>Zinc</b>	<b>36.8</b>	11.5	"	"	"	"	"	"

**Total Mercury by EPA Method 7471**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0489	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Trivalent Chromium</b>	<b>6.08</b>	0.923	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: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>7710</b>	11.5	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>309</b>	5.77	"	"	"	"	"	"	
<b>Sodium</b>	<b>39.6</b>	5.77	"	"	"	"	"	"	
<b>Sodium Adsorption Ratio</b>	<b>0.120</b>		units	"	1612082	12/08/16	12/08/16	"	

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

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

**Reported:**  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>4.35</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>7.87</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	
% Solids	<b>86.7</b>		%	"	1612069	12/07/16	12/07/16	% calculation	

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Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**Ferg 3-9: N @ 8'**  
**1612034-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.69</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

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

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.07</b>	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
<b>Specific Conductance (EC)</b>	<b>7.08</b>	0.0100	mmhos/cm	"	1612098	12/09/16	12/09/16	SM 2510B	

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

**Reported:**  
12/13/16 14:29

**Ferg 3-9: E @ 10'**  
**1612034-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.1 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>6.70</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>8.15</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	

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

**Reported:**  
12/13/16 14:29

**Ferg 3-9: S @ 10'**  
**1612034-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.1 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		133 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.19</b>	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	<b>2.20</b>	0.0100	mmhos/cm	"	1612098	12/09/16	12/09/16	SM 2510B	

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Denver CO, 80221

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

**Reported:**  
12/13/16 14:29

**Ferg 3-9: W @ 10'**  
**1612034-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.3 %	30-150		"	"	"	"	

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

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>5.93</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>8.00</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**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 1612117 - EPA 3550A**

**Blank (1612117-BLK1)**

Prepared & Analyzed: 12/12/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.9 " 12.5 103 30-150

**LCS (1612117-BS1)**

Prepared & Analyzed: 12/12/16

C10-C28 (DRO) 429 50 mg/kg 499 86.0 73-134

Surrogate: o-Terphenyl 13.0 " 12.5 104 30-150

**Matrix Spike (1612117-MS1)**

Source: 1612072-01

Prepared: 12/12/16 Analyzed: 12/13/16

C10-C28 (DRO) 460 50 mg/kg 499 53.6 81.5 50-148

Surrogate: o-Terphenyl 13.0 " 12.5 104 30-150

**Matrix Spike Dup (1612117-MSD1)**

Source: 1612072-01

Prepared: 12/12/16 Analyzed: 12/13/16

C10-C28 (DRO) 464 50 mg/kg 499 53.6 82.3 50-148 0.890 20

Surrogate: o-Terphenyl 13.1 " 12.5 105 30-150

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6899 Pecos Street  
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Project: Western Slope Pit Assessment  
Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

**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 1612089 - EPA 5030 Soil MS**

**Blank (1612089-BLK1)**

Prepared & Analyzed: 12/08/16

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167			

**LCS (1612089-BS1)**

Prepared & Analyzed: 12/08/16

Benzene	0.0861	0.0020	mg/kg	0.100		86.1	58-130			
Toluene	0.0954	0.0050	"	0.100		95.4	61-134			
Ethylbenzene	0.120	0.0050	"	0.0992		121	74-139			
m,p-Xylene	0.217	0.010	"	0.200		109	73-137			
o-Xylene	0.112	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.330	0.0050	"				30-150			
Gasoline Range Hydrocarbons	3.07	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0499		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

**Matrix Spike (1612089-MS1)**

Source: 1612033-01

Prepared: 12/08/16 Analyzed: 12/09/16

Benzene	0.0834	0.0020	mg/kg	0.100	ND	83.4	30-131			
Toluene	0.0954	0.0050	"	0.100	ND	95.4	30-134			
Ethylbenzene	0.119	0.0050	"	0.0992	ND	120	22-153			
m,p-Xylene	0.218	0.010	"	0.200	ND	109	10-159			
o-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151			
Xylenes (total)	0.330	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	3.10	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**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 1612089 - EPA 5030 Soil MS**

Matrix Spike Dup (1612089-MSD1)		Source: 1612033-01			Prepared: 12/08/16		Analyzed: 12/09/16			
Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	30-131	0.609	34	
Toluene	0.0951	0.0050	"	0.100	ND	95.1	30-134	0.346	30	
Ethylbenzene	0.120	0.0050	"	0.0992	ND	121	22-153	1.21	24	
m,p-Xylene	0.219	0.010	"	0.200	ND	110	10-159	0.741	68	
o-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151	0.00	38	
Xylenes (total)	0.331	0.0050	"		ND		30-150	0.490	20	
Gasoline Range Hydrocarbons	3.12	0.50	"		ND		30-150	0.787	20	
Surrogate: 1,2-Dichloroethane-d4	0.0501		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

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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:  
12/13/16 14:29

**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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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

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

Reported:  
12/13/16 14:29

**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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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

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

**Reported:**  
12/13/16 14:29

**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	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
Cadmium	ND	0.100	"
Barium	ND	0.400	"
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
Cadmium	118	0.250	"	122	96.7	80.3-120
Barium	183	1.00	"	228	80.3	72.8-127
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Cadmium	118	0.250	"	122	96.7	80.3-120
Copper	195	1.25	"	212	91.9	85.4-115
Lead	94.7	0.500	"	108	87.7	81.1-119
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Copper	195	1.25	"	212	91.9	85.4-115
Silver	55.6	0.250	"	73.5	75.6	69.8-130

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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:**  
12/13/16 14:29

**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
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Copper	2.83	0.518	"	2.29	21.0	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

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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:  
12/13/16 14:29

**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	

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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:**  
12/13/16 14:29

**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:**  
12/13/16 14:29

**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

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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:**  
12/13/16 14:29

**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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6899 Pecos Street  
Denver CO, 80221

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

Reported:  
12/13/16 14:29

**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:**  
12/13/16 14:29

**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 1612096 - General Preparation**

<b>LCS (1612096-BS1)</b>				Prepared & Analyzed: 12/09/16						
pH	8.02	0.100	pH Units	8.00	100	95-105				
<b>Duplicate (1612096-DUP1)</b>	<b>Source: 1612034-01</b>			Prepared & Analyzed: 12/09/16						
pH	7.82	0.100	pH Units		7.87			0.637	20	

**Batch 1612098 - General Preparation**

<b>Blank (1612098-BLK1)</b>				Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
<b>LCS (1612098-BS1)</b>				Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.2	90-110				
<b>Duplicate (1612098-DUP1)</b>	<b>Source: 1612034-01</b>			Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	4.04	0.0100	mmhos/cm		4.35			7.40	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:**  
12/13/16 14:29

### Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 09, 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 11:31. 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: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Comp	1612027-01	Soil	12/01/16 15:18	12/05/16 11:31
Southeast Comp	1612027-02	Soil	12/01/16 15:30	12/05/16 11:31
Southwest Comp	1612027-03	Soil	12/01/16 14:42	12/05/16 11:31

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Corne

Reported:  
12/09/16 10:47

# Summit Scientific

S<sub>2</sub>

1612027.1

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Page 1 of 3

Client: Foundation Energy / Tasman Project Manager: ZMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit Assessment  
Sampler Name: Bob Corne 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 910-1	GBTEX	TPH - DRC	EC		PH
1	Feet 1-34: EEB	12/5/16	08:28	1														
2	Feet 1-34: NCB	12/5/16	08:28	1														
3	Feet 1-34: SCF	12/5/16	08:28	1														
4	Feet 1-34: CCB	12/5/16	08:28	2														
5	Feet 1-34: NCB	12/5/16	08:28	1														
6	North Comp	12/5/16	15:18	1														
7	Feet 1-35: NCB	12/5/16	11:13	1														
8	Feet 1-35: NCB	12/5/16	11:21	1														
9	Feet 1-35: SCF	12/5/16	11:29	1														
10	Feet 1-35: EEB	12/5/16	11:46	1														

  

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)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day _____	72 hours _____ Standard <u>X</u> 48 hours _____
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: <u>1.6°C</u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Intact: <u>(Yes)</u> No	

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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.

[Signature]

Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

Summit Scientific

 $S_2$ 

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303-277-9310 ♦ 303-374-5933

1612027.2

Page 2 of 3

Client: Foundation Energy / Tasman

Project Manager: RUC

Address:

E-Mail:

City/State/Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Project Name: Western Slope Pit Assessment

Sampler Name:

Project Number:

Sampler Name:		Project Number:		Preservative		Matrix		Analysis Requested		Special Instructions									
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GISTEX	TPH-DRO	EC	pH	AS - Only	
1	Fed 3-11-E06'	02-10-02	1343	1					X				X	X	X	X			
2	Fed 2-11-E02'		1454	2									X						
3	Contrast Comp		1530	1													X		
4	Fed 2-11-E06'		1527	1									X	X	X	X			
5	Fed 2-11-E02'		1547	1									X	X	X	X			
6	Fed 2-11-E08'		1638	1									X	X	X	X			
7	Fed 2-11-E02'		1652	1									X	X	X	X			
8	Fed 3-9-E08'	03-10-02	0946	2									X	X	X	X			
9	Fed 3-9-E08'		0904	1									X	X	X	X			
10	Fed 3-9-E010'		0838	1									X	X	X	X			
Relinquished by:		Date/Time:	Received by:		Date/Time:		Turn Around Time		(Check)		Notes:								
[Signature]		12/5/16 10:00	[Signature]		12-5-16 10:00		Same Day		72 hours		Σ								
Relinquished by:		Date/Time:	Received by:		Date/Time:		24 hours		Standard										
							48 hours												
							Sample Integrity:		1.6%										
Relinquished by:		Date/Time:	Received by:		Date/Time:		Temperature Upon Receipt:												
							Intact: Yes No												

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

# Summit Scientific

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1612027.3

3 3  
Page 5 of 8

Client: Foundation Energy / Tasman

Project Manager: ZHC

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	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GBL	TPH	EC		pH
1	Fert 3-9-10 10' 07" 0859			1														
2	Fert 3-9-10 16' 0917			1														
3	Fert 22-9-10 41 1020			2														
4	Fert 22-9-10 41 1052			1														
5	Fert 22-9-10 41 1208			1														
6	Fert 22-9-10 41 1226			1														
7	Fert 22-9-10 41 1302			1														
8	Fert 22-9-10 41 1501			1														
9	Fert 22-9-10 41 1618			2														
10	Southwest Camp			1443														

Relinquished by: Date/Time: 12/5/16 10:00

Relinquished by: Date/Time: 12/5/16 10:00

Relinquished by: Date/Time: 12/5/16 10:00

Received by: Date/Time: 12/5/16 10:00

Received by: Date/Time: 12/5/16 10:00

Received by: Date/Time: 12/5/16 10:00

Turn Around Time (Check)

Same Day ☐ 72 hours ☒

24 hours ☐ Standard ☒

48 hours ☐

Sample Integrity: 1.60C

Temperature Upon Receipt: 1.60C

Intact: Yes ☒ No ☐

Notes:

12/5/16

DT D3

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

### Sample Receipt Checklist

S2 Work Order: 1612027

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment (Comp)

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

[Signature]  
Signature or Initials of Custodian

12/5/16  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**North Comp**  
**1612027-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/01/16 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>9.58</b>	0.222	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

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

Date Sampled: **12/01/16 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>90.1</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**Southeast Comp  
1612027-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/01/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>7.54</b>	0.224	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

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

Date Sampled: **12/01/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>89.1</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**Southwest Comp  
1612027-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/01/16 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>5.60</b>	0.222	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

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

Date Sampled: **12/01/16 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>90.2</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

**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

**LCS (1612062-BS1)**

Prepared & Analyzed: 12/07/16

Arsenic 127 0.500 mg/kg wet 132 96.5 82.6-117

**Duplicate (1612062-DUP1)**

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic 1.02 0.207 mg/kg dry 0.898 12.6 20

**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

**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

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**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>		<b>Prepared &amp; Analyzed: 12/07/16</b>						
% Solids	92.3		%		93.0			0.756	20	
<b>Duplicate (1612069-DUP2)</b>		<b>Source: 1612014-01</b>		<b>Prepared &amp; Analyzed: 12/07/16</b>						
% Solids	92.3		%		93.0			0.756	20	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

### Notes and Definitions

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