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Horsetail 30 CPB  
**Confirmation Sampling**  
**Project # 701530.120.05**

October HF, 2019

**Prepared By:**

Talon/ LPE  
1811 East Mulberry Street  
Fort Collins, CO 80524

**Prepared For:**

**Whiting Oil and Gas Corporation**



October 29 , 2019

Mr. Kyle Waggoner  
Whiting Oil and Gas Corporation  
56719 CR 127  
New Raymer, CO 80742

**RE: Confirmation Sampling  
Horsetail 30 CPB  
Weld County, Colorado  
Project # 701530.120.05**

Mr. Waggoner:

On July 23, 2019, Talon/LPE conducted a liner inspection at the Horsetail 30 CPB (Site) in Weld County, Colorado. Talon personnel discovered a tear in the liner and conducted confirmation soil sampling at the Horsetail 30 CPB (Site) in Weld County, Colorado. The purpose of the sampling event was to ensure that all hydrocarbon impacted soils had been removed to the extent required by the Colorado Oil and Gas Conservation Commission (COGCC) following cleanup activities of a produced water release. The site is identified by the COGCC as Spill/Release Point ID 464278.

On July 23, 2019, a total of 1 grab sample was taken (SS-1 at a depth of 1 foot below ground surface (ft bgs)). A site map with the sample locations is presented in Figures 1 and 2.

The collected sample was analyzed for Total Petroleum Hydrocarbons (TPH) via Gasoline Range Organics (GRO) method EPA8260B and Diesel Range Organics (DRO) method 8015, for Benzene, Toluene, Ethyl-benzene, and Xylenes (BTEX) via method EPA8260B, and for inorganics (Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), and pH) via method USDA60 at Summit Scientific (Summit) in Golden, Colorado.

Analytical results for SS-1 were above COGCC 910-1 concentration levels for pH. On July 31, 2019, Talon/LPE returned to the site to see if further excavation had been performed, and discovered a second tear in the liner. A total of two (2) grab samples were taken (SS-2 at 2 ft bgs, and Background North at 0 ft bgs). Analytical results for SS-2 were above COGCC 910-1 concentration levels for pH. Analytical Results for Background North were below laboratory detection limits and COGCC table 910-1



concentration levels. A soil concentration map is presented in Figure 3, and a breakdown of the soil analytical data is presented in Table 1.

Based on the collected analytical data, further excavation was performed by Whiting contractors to depths of 1.5 ft bgs for SS-1, and 2.2 ft bgs for SS-2. On September 18, 2019, Talon personnel collected 1 grab sample SS-1. Analytical results for pH in SS-1 were below COGCC 910-1 concentration levels. On September 30, 2019, Talon personnel collected 1 grab sample SS-2. Analytical results for pH in SS-2 were below COGCC 910-1 concentration levels. All analytical results are below laboratory detection limits and COGCC 910-01 concentration levels shown in Table 1 and Figure 3.

Following the excavations, Whiting contractors transported and disposed the excavated stockpile material at an approved landfill facility. Clean soil will be brought into the Site to backfill the excavated areas upon approval of this closure request.

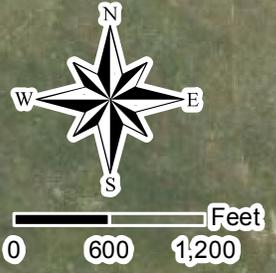
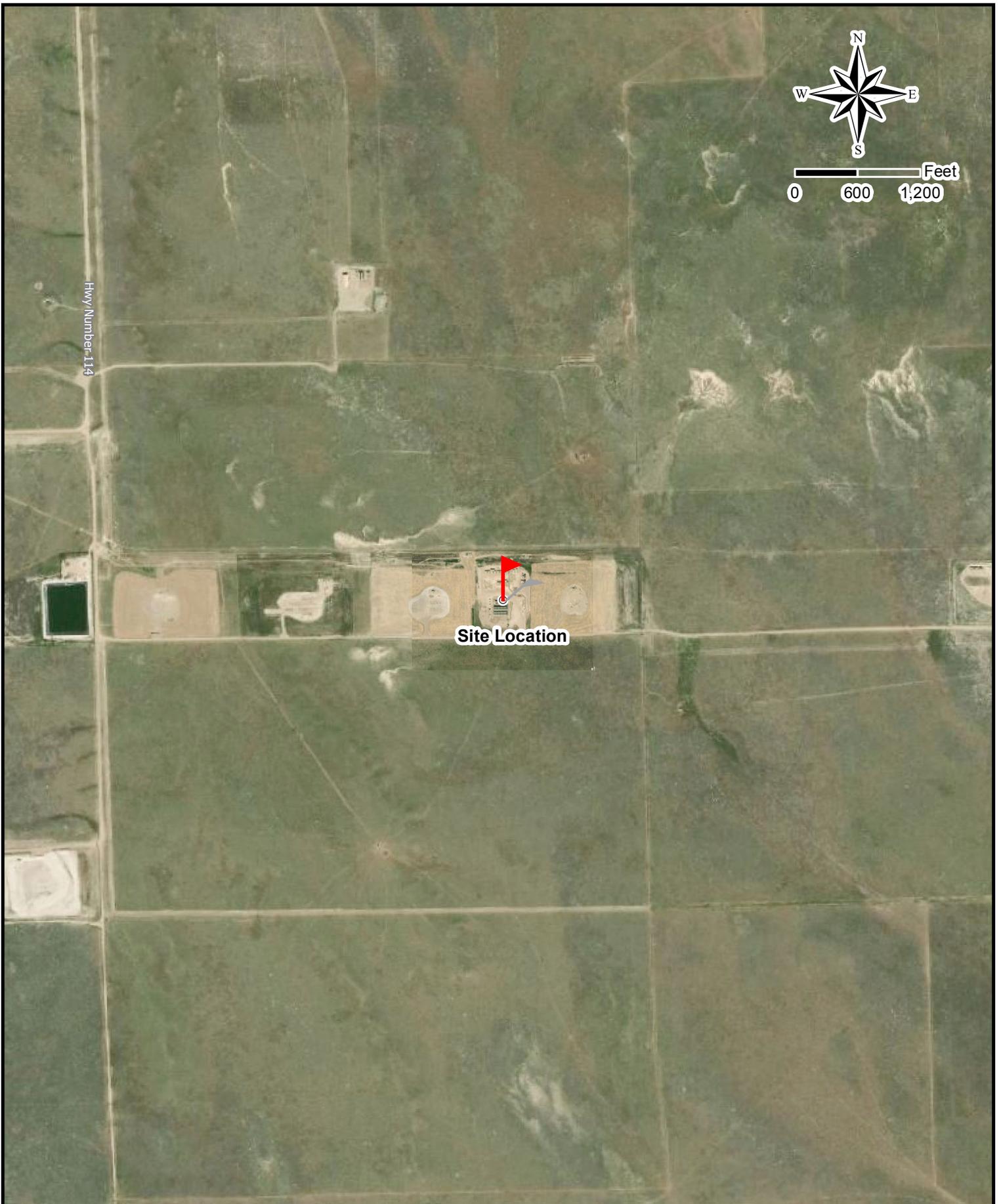
Based upon the collected analytical data Talon/LPE believes that no further corrective action is necessary, and that Whiting can request closure from the COGCC. If you have any questions or comments, please do not hesitate to call me at (970) 818-5330.

Respectfully Submitted,

A handwritten signature in black ink that reads "Levi Kirk". The signature is written in a cursive, flowing style.

Levi Kirk  
Environmental Scientist  
Talon/LPE

**Attachment 1**  
**Figures**



Hwy Number 114

Site Location



Drafted: 10/23/2019  
1 in = 1,200 ft  
Drafted By: JAI

Whiting Oil & Gas  
Wolf 35-2623H Produced Water  
Weld County, CO  
Figure 1 - Aerial Map

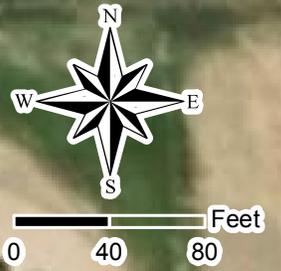


LEGEND  
• Soil Sample



Drafted: 10/23/2019  
1 in = 80 ft  
Drafted By: JAI

Whiting Oil & Gas  
Wolf 35-2623H Produced Water  
Weld County, CO  
Figure 2 - Site Map



LEGEND	
•	Soil Sample
<u>COGCC Concentration Levels</u>	
(mg/kg)	
B	= 0.17
T	= 85
E	= 100
X	= 175
GRO	= NA
DRO	= NA
(mmhos/cm)	
EC	= <4
(Units)	
SAR	= <12
pH	= 6-9

SS-2@2', mg/kg  
 B=<0.0020  
 T=<0.0050  
 E=<0.0050  
 X=<0.010  
 GRO=<0.50  
 DRO=<50  
 TPH=<50  
 EC=0.878  
 SAR=3.75  
 pH=9.83

SS-2@2.2', mg/kg  
 pH=8.39

SS-2  
 SS-1

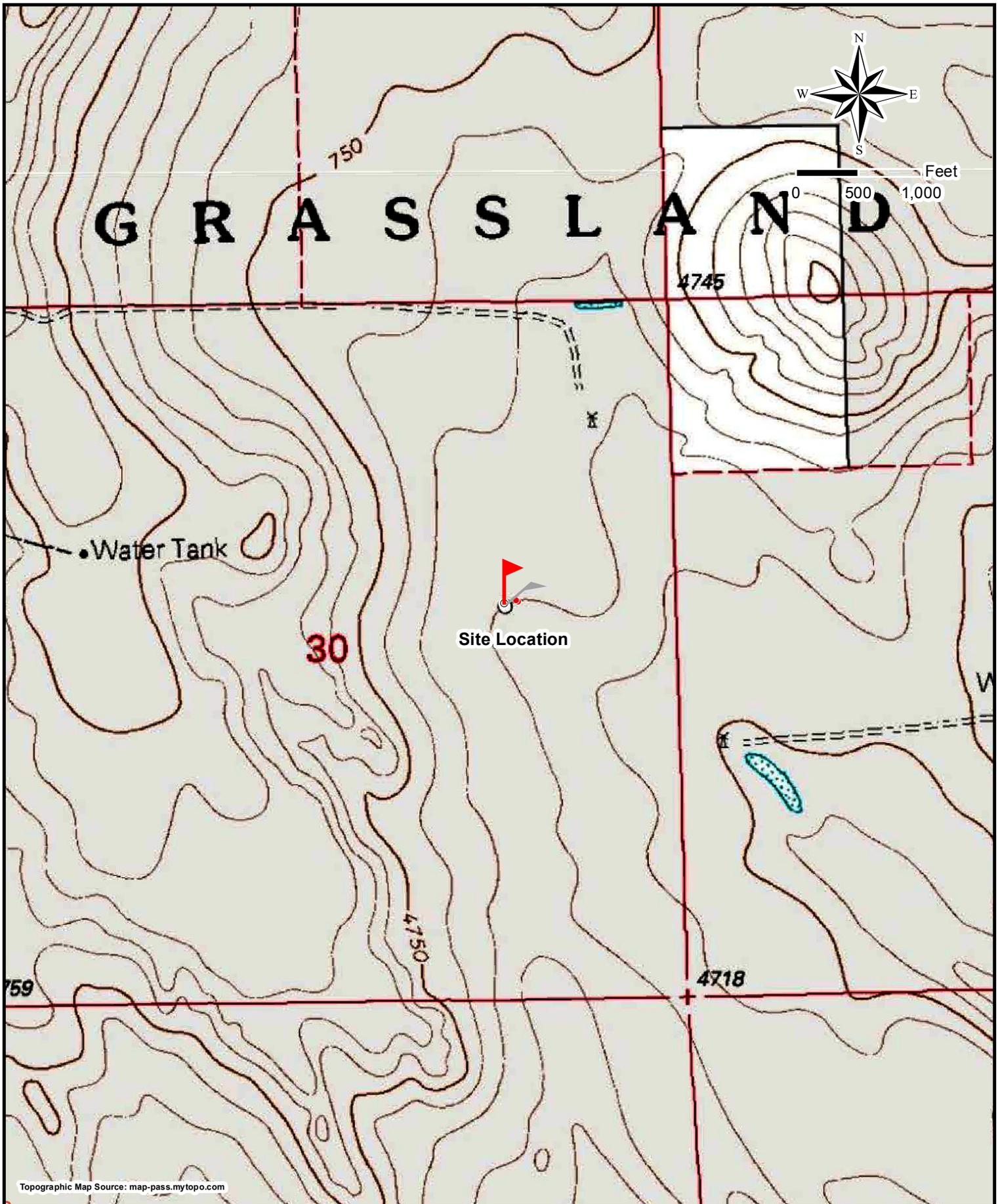
SS-1@1', mg/kg  
 B=<0.0020  
 T=<0.0050  
 E=<0.0050  
 X=<0.010  
 GRO=<0.50  
 DRO=<50  
 TPH=<50  
 EC=0.619  
 SAR=1.680  
 pH=9.10

SS-1@1.5', mg/kg  
 pH=8.25



Drafted: 10/23/2019  
 1 in = 80 ft  
 Drafted By: JAI

Whiting Oil & Gas  
 Wolf 35-2623H Produced Water  
 Weld County, CO  
 Figure 3 - Soil Concentration Map



Topographic Map Source: map-pass.mytopo.com



Drafted: 10/23/2019

1 in = 1,000 ft

Drafted By: JAI

Whiting Oil & Gas  
 Wolf 35-2623H Produced Water  
 Weld County, CO  
 Figure 4 - Topographic Map

**Attachment 2  
Tables**



Table 1 - Soil Analytical Data

Whiting Oil & Gas Corporation  
 Horsetail 30 CPB  
 Weld County, Colorado

Sample ID	Depth BGS in Feet	Date Sampled	Concentration (mg/kg)							mmhos/cm	Units	
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	GRO	DRO	TPH	EC	SAR	pH
<b>COGCC Table 910-1 Concentration Levels</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>NA</b>	<b>NA</b>	<b>500</b>	<b>&lt;4</b>	<b>&lt;12</b>	<b>6-9</b>
SS-1	1	7/23/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	0.619	1.680	9.10
	1.5	9/18/2019	NS	NS	NS	NS	NS	NS	NS	NS	NS	8.25
SS-2	2	7/31/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	0.878	3.75	9.83
	2.2	9/30/2019	NS	NS	NS	NS	NS	NS	NS	NS	NS	8.39
Background North	0	7/31/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	0.516	1.25	8.26

mg/kg - milligrams per kilogram  
 mmhos/cm - millimhos per centimeter  
 < - Analytical result is less than the reporting limit  
 COGCC - Colorado Oil and Gas Conservation Commission

GRO - Gasoline Range Organics  
 DRO - Diesel Range Organics  
 TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO)  
 EC - Electrical Conductivity

SAR - Sodium Adsorption Ratio  
 NA - Not Analyzed  
 BGS - Below Ground Surface

**Attachment 3**  
**Analytical Report**

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 30, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry

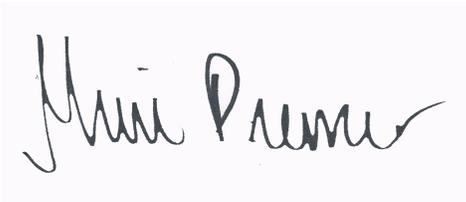
Fort Collins, CO 80525

RE: Horsetail 30 CPB

Work Order # 1907271

Enclosed are the results of analyses for samples received by Summit Scientific on 07/23/19 16:01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, prominent "M" and "P".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1@1'	1907271-01	Soil	07/23/19 13:15	07/23/19 16:01

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.*

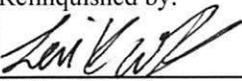
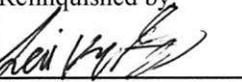
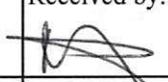
# Summit Scientific

1907271

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

Client: Talon/LPE -Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax: \_\_\_\_\_  
Sampler Name: Levi Kirk

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com & jleverton@talonlpe.com  
Project Name: Horsetail 30CPB  
Project Number: 701530.120.03

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:						Special Instructions							
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	GRO/DRO	SAR	EC	PH									
SS-1@1'	7/23/2019	1:15	1					X					X	X	X	X	X								
Relinquished by:  Date/Time: <u>7/23/2019 16:01</u>				Received by: _____ Date/Time: _____				Turn Around Time (Check)				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>						Sample Integrity: Temperature Upon Receipt: <u>2.3</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
Relinquished by:  Date/Time: <u>7/23/19 16:01</u>				Received by:  Date/Time: <u>7-23-19 10:01</u>																					
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																					

1907271

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: Talon/LPE Client Project ID: Horsetail 30CPB

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

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

Temp (°C)	2.3
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Thermometer ID: 61857155-K

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

MP

Custodian Printed Name or Initials

*Muri Premer*

Signature of Custodian

7/23/19

Date/Time



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

**SS-1@1'**  
**1907271-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1907377	07/26/19	07/26/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1907357	07/25/19	07/25/19	EPA 8015M	

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

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

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>4220</b>	12.9	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>726</b>	6.45	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03  
Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

**SS-1@1'**  
**1907271-01 (Soil)**

**Summit Scientific**

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

<b>Sodium</b>	<b>450</b>	6.45	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B
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**Calculated Analysis**

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>1.68</b>	0.100	units	1	1907416	07/30/19	07/30/19	Calculation	

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

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>77.5</b>		%	1	1907330	07/24/19	07/24/19	Calculation	
<b>pH</b>	<b>9.10</b>		pH Units	"	1907331	07/24/19	07/24/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/23/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.619</b>	0.0100	mmhos/cm	1	1907332	07/24/19	07/24/19	EPA 120.1	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03  
Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

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

**Summit Scientific**

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

**Batch 1907377 - EPA 5030 Soil MS**

**Blank (1907377-BLK1)**

Prepared & Analyzed: 07/26/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0241		"	0.0400		60.2	23-173				
Surrogate: Toluene-d8	0.0364		"	0.0400		91.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0400		87.2	21-167				

**LCS (1907377-BS1)**

Prepared & Analyzed: 07/26/19

Benzene	0.0776	0.0020	mg/kg	0.100		77.6	70-130				
Toluene	0.0846	0.0050	"	0.100		84.6	70-130				
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130				
m,p-Xylene	0.215	0.010	"	0.200		107	70-130				
o-Xylene	0.0977	0.0050	"	0.100		97.7	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0266		"	0.0400		66.4	23-173				
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0356		"	0.0400		89.0	21-167				

**Matrix Spike (1907377-MS1)**

Source: 1907322-01

Prepared & Analyzed: 07/26/19

Benzene	0.0766	0.0020	mg/kg	0.100	ND	76.6	70-130				
Toluene	0.0840	0.0050	"	0.100	ND	84.0	70-130				
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130				
m,p-Xylene	0.222	0.010	"	0.200	ND	111	70-130				
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0229		"	0.0400		57.2	23-173				
Surrogate: Toluene-d8	0.0360		"	0.0400		90.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	21-167				

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
 07/30/19 15:28

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

**Summit Scientific**

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

**Batch 1907377 - EPA 5030 Soil MS**

**Matrix Spike Dup (1907377-MSD1)**

Source: 1907322-01

Prepared & Analyzed: 07/26/19

Benzene	0.0791	0.0020	mg/kg	0.100	ND	79.1	70-130	3.20	30	
Toluene	0.0872	0.0050	"	0.100	ND	87.2	70-130	3.79	30	
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130	2.02	30	
m,p-Xylene	0.225	0.010	"	0.200	ND	113	70-130	1.46	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	0.686	30	
Surrogate: 1,2-Dichloroethane-d4	0.0234		"	0.0400		58.4	23-173			
Surrogate: Toluene-d8	0.0371		"	0.0400		92.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0338		"	0.0400		84.4	21-167			

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
 07/30/19 15:28

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

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

**Batch 1907357 - EPA 3550A**

**Blank (1907357-BLK1)**

Prepared & Analyzed: 07/25/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907357-BS1)**

Prepared & Analyzed: 07/25/19

C10-C28 (DRO) 522 50 mg/kg 500 104 70-130

**Matrix Spike (1907357-MS1)**

Source: 1907216-01

Prepared & Analyzed: 07/25/19

C10-C28 (DRO) 534 50 mg/kg 500 44.1 97.9 70-130

**Matrix Spike Dup (1907357-MSD1)**

Source: 1907216-01

Prepared & Analyzed: 07/25/19

C10-C28 (DRO) 500 50 mg/kg 500 44.1 91.2 70-130 6.54 20

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

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

**Summit Scientific**

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

**Batch 1907365 - General Preparation**

**Blank (1907365-BLK1)**

Prepared & Analyzed: 07/25/19

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

**LCS (1907365-BS1)**

Prepared & Analyzed: 07/25/19

Calcium	565	10.0	mg/kg wet	500	113	70-130				
Magnesium	553	5.00	"	500	111	70-130				
Sodium	538	5.00	"	500	108	70-130				

**Duplicate (1907365-DUP1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	2350	11.9	mg/kg dry	2570	8.86	20				
Magnesium	719	5.97	"	682	5.26	20				
Sodium	278	5.97	"	287	3.14	20				

**Matrix Spike (1907365-MS1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	2910	11.9	mg/kg dry	597	2570	57.9	70-130			QM-07
Magnesium	1200	5.97	"	597	682	86.7	70-130			
Sodium	832	5.97	"	597	287	91.3	70-130			

**Matrix Spike Dup (1907365-MSD1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	3020	11.9	mg/kg dry	597	2570	75.7	70-130	3.59	25	
Magnesium	1250	5.97	"	597	682	95.0	70-130	4.05	25	
Sodium	875	5.97	"	597	287	98.4	70-130	4.99	25	

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
 07/30/19 15:28

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

**Summit Scientific**

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

**Batch 1907330 - General Preparation**

**Duplicate (1907330-DUP1)**

Source: 1907270-01

Prepared & Analyzed: 07/24/19

% Solids	91.6	%		91.8			0.229	20
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**Batch 1907331 - General Preparation**

**LCS (1907331-BS1)**

Prepared & Analyzed: 07/24/19

pH	9.42	pH Units		9.23		102	95-105
----	------	----------	--	------	--	-----	--------

**Duplicate (1907331-DUP1)**

Source: 1907244-01

Prepared & Analyzed: 07/24/19

pH	9.01	pH Units		8.94			0.780	20
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Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03  
 Project Manager: Jennifer Galles

**Reported:**  
 07/30/19 15:28

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1907332 - General Preparation**

**Blank (1907332-BLK1)**

Prepared & Analyzed: 07/24/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1907332-BS1)**

Prepared & Analyzed: 07/24/19

Specific Conductance (EC) 0.752 0.0100 mmhos/cm 0.750 100 90-110

**Duplicate (1907332-DUP1)**

Source: 1907244-01

Prepared & Analyzed: 07/24/19

Specific Conductance (EC) 0.453 0.0100 mmhos/cm 0.453 0.110 20

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.03

Project Manager: Jennifer Galles

**Reported:**  
07/30/19 15:28

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 07, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry

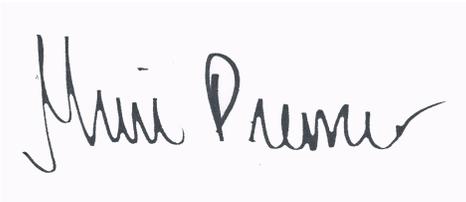
Fort Collins, CO 80525

RE: Horsetail 30 CPB

Work Order # 1907393

Enclosed are the results of analyses for samples received by Summit Scientific on 07/31/19 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized initial 'M'.

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-2@2"	1907393-01	Soil	07/31/19 11:55	07/31/19 15:00
Background North@0'	1907393-02	Soil	07/31/19 12:15	07/31/19 15:00

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.*

1903393

# Summit Scientific

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

Client: Talon/LPE -Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax: \_\_\_\_\_  
Sampler Name: Ben Bradfield

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com & jleverton@talonlpe.com  
Project Name: Horsetail 30 CPB  
Project Number: 701530.120.05

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:						Special Instructions				
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	GRO/DRO	EC	SAR	pH						
SS-2 @2"	7/31/2019	11:55	1					x					x	x	x	x	x					
Background North @0'	7/31/2019	12:15	1					x					x	x	x	x	x					
Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)																		
<i>Ben Bradfield</i>	<i>7/31/19 1455</i>	<i>[Signature]</i>	<i>07/31/19 1500</i>	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>																		
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>																		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	48 Hours <input type="checkbox"/>																		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:																		
				Temperature Upon Receipt: <u>3.8</u>																		
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		

Sample Receipt Checklist

S2 Work Order 1907393

Client: Talon/LPE Client Project ID: HORSETAIL 30 CPB.

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

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

Temp (°C)	<u>3.8</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			
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 samples with holding times due within 48 hours sample due within 48 hours present?		<input checked="" type="checkbox"/>		<u>Standard TAT</u>
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? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? 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> ? 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.				

[Signature]  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

07/31/19  
Date/Time 1540



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

**SS-2@2"**  
**1907393-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1908004	08/01/19	08/02/19	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		84.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		88.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	1908002	08/01/19	08/02/19	EPA 8015M	

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		110 %		30-150		"	"	"	"	

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

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	1280	11.0		mg/kg dry	1	1908031	08/02/19	08/02/19	EPA 6020B	
Magnesium	376	5.49		"	"	"	"	"	"	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

**SS-2@2"**  
**1907393-01 (Soil)**

**Summit Scientific**

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

<b>Sodium</b>	<b>594</b>	5.49	mg/kg dry	1	1908031	08/02/19	08/02/19	EPA 6020B
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**Calculated Analysis**

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>3.75</b>	0.100	units	1	1908068	08/06/19	08/06/19	Calculation	

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

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>91.1</b>		%	1	1908005	08/01/19	08/01/19	Calculation	
<b>pH</b>	<b>9.83</b>		pH Units	"	1908007	08/01/19	08/01/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/31/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.878</b>	0.0100	mmhos/cm	1	1908006	08/01/19	08/01/19	EPA 120.1	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

**Background North@0'**  
**1907393-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1908004	08/01/19	08/02/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		86.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1908002	08/01/19	08/02/19	EPA 8015M	

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.3 %	30-150		"	"	"	"	

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

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>453</b>	11.1	mg/kg dry	1	1908031	08/02/19	08/02/19	EPA 6020B	
<b>Magnesium</b>	<b>202</b>	5.54	"	"	"	"	"	"	
<b>Sodium</b>	<b>127</b>	5.54	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

**Background North@0'**  
**1907393-02 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>1.25</b>	0.100	units	1	1908068	08/06/19	08/06/19	Calculation	

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

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>90.2</b>		%	1	1908005	08/01/19	08/01/19	Calculation	
pH	<b>8.26</b>		pH Units	"	1908007	08/01/19	08/01/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/31/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.516</b>	0.0100	mmhos/cm	1	1908006	08/01/19	08/01/19	EPA 120.1	

Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

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

**Summit Scientific**

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

**Batch 1908004 - EPA 5030 Soil MS**

**Blank (1908004-BLK1)**

Prepared: 08/01/19 Analyzed: 08/02/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.0	23-173			
Surrogate: Toluene-d8	0.0344		"	0.0400		86.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.5	21-167			

**LCS (1908004-BS1)**

Prepared: 08/01/19 Analyzed: 08/02/19

Benzene	0.0660	0.0020	mg/kg	0.0750		88.0	70-130			
Toluene	0.0748	0.0050	"	0.0750		99.7	70-130			
Ethylbenzene	0.0790	0.0050	"	0.0750		105	70-130			
m,p-Xylene	0.153	0.010	"	0.150		102	70-130			
o-Xylene	0.0767	0.0050	"	0.0750		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0306		"	0.0400		76.5	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	21-167			

**Matrix Spike (1908004-MS1)**

Source: 1907366-01

Prepared: 08/01/19 Analyzed: 08/02/19

Benzene	0.0683	0.0020	mg/kg	0.0750	ND	91.0	70-130			
Toluene	0.0760	0.0050	"	0.0750	ND	101	70-130			
Ethylbenzene	0.0820	0.0050	"	0.0750	ND	109	70-130			
m,p-Xylene	0.158	0.010	"	0.150	ND	105	70-130			
o-Xylene	0.0808	0.0050	"	0.0750	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		81.9	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.7	21-167			

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
 08/07/19 09:25

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

**Summit Scientific**

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

**Batch 1908004 - EPA 5030 Soil MS**

**Matrix Spike Dup (1908004-MSD1)**

Source: 1907366-01

Prepared: 08/01/19 Analyzed: 08/02/19

Benzene	0.0659	0.0020	mg/kg	0.0750	ND	87.8	70-130	3.58	30	
Toluene	0.0754	0.0050	"	0.0750	ND	100	70-130	0.872	30	
Ethylbenzene	0.0860	0.0050	"	0.0750	ND	115	70-130	4.71	30	
m,p-Xylene	0.166	0.010	"	0.150	ND	111	70-130	5.10	30	
o-Xylene	0.0835	0.0050	"	0.0750	ND	111	70-130	3.29	30	
Surrogate: 1,2-Dichloroethane-d4	0.0307		"	0.0400		76.6	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		89.9	21-167			

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
 Project Manager: Jennifer Galles

**Reported:**  
 08/07/19 09:25

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

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

**Batch 1908002 - EPA 3550A**

**Blank (1908002-BLK1)**

Prepared: 08/01/19 Analyzed: 08/02/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1908002-BS1)**

Prepared: 08/01/19 Analyzed: 08/02/19

C10-C28 (DRO) 570 50 mg/kg 500 114 70-130

**Matrix Spike (1908002-MS1)**

**Source: 1907366-01**

Prepared: 08/01/19 Analyzed: 08/02/19

C10-C28 (DRO) 570 50 mg/kg 500 38.3 106 70-130

**Matrix Spike Dup (1908002-MSD1)**

**Source: 1907366-01**

Prepared: 08/01/19 Analyzed: 08/02/19

C10-C28 (DRO) 563 50 mg/kg 500 38.3 105 70-130 1.23 20

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

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

**Summit Scientific**

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

**Batch 1908031 - General Preparation**

**Blank (1908031-BLK1)**

Prepared & Analyzed: 08/02/19

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

**LCS (1908031-BS1)**

Prepared & Analyzed: 08/02/19

Calcium	444	10.0	mg/kg wet	500		88.8	70-130		
Magnesium	557	5.00	"	500		111	70-130		
Sodium	482	5.00	"	500		96.4	70-130		

**Duplicate (1908031-DUP1)**

Source: 1907375-05

Prepared & Analyzed: 08/02/19

Calcium	198	12.2	mg/kg dry		191			3.84	20
Magnesium	287	6.12	"		261			9.34	20
Sodium	219	6.12	"		224			1.87	20

**Matrix Spike (1908031-MS1)**

Source: 1907375-05

Prepared & Analyzed: 08/02/19

Calcium	732	12.2	mg/kg dry	612	191	88.5	70-130		
Magnesium	920	6.12	"	612	261	108	70-130		
Sodium	742	6.12	"	612	224	84.8	70-130		

**Matrix Spike Dup (1908031-MSD1)**

Source: 1907375-05

Prepared & Analyzed: 08/02/19

Calcium	697	12.2	mg/kg dry	612	191	82.6	70-130	4.98	25
Magnesium	884	6.12	"	612	261	102	70-130	3.99	25
Sodium	764	6.12	"	612	224	88.4	70-130	2.93	25

Summit Scientific

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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
 Project Manager: Jennifer Galles

**Reported:**  
 08/07/19 09:25

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

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

**Batch 1908005 - General Preparation**

<b>Duplicate (1908005-DUP1)</b>		<b>Source: 1907375-05</b>			<b>Prepared &amp; Analyzed: 08/01/19</b>						
% Solids	81.9		%		81.7				0.245	20	

**Batch 1908007 - General Preparation**

<b>LCS (1908007-BS1)</b>		<b>Prepared &amp; Analyzed: 08/01/19</b>									
pH	9.44		pH Units		9.23		102		95-105		
<b>Duplicate (1908007-DUP1)</b>		<b>Source: 1907375-05</b>			<b>Prepared &amp; Analyzed: 08/01/19</b>						
pH	6.59		pH Units		6.66				1.06	20	

Summit Scientific



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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
 Project Manager: Jennifer Galles

**Reported:**  
 08/07/19 09:25

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1908006 - General Preparation**

**Blank (1908006-BLK1)**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1908006-BS1)**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) 0.746 0.0100 mmhos/cm 0.750 99.4 90-110

**Duplicate (1908006-DUP1)**

**Source: 1907375-05**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) 0.0934 0.0100 mmhos/cm 0.0931 0.322 20

Summit Scientific



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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
08/07/19 09:25

### 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

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 25, 2019

Jennifer Galles  
Talon/LPE  
1811 East Mulberry  
Fort Collins, CO 80525  
RE: Horsetail 30 CPB  
Work Order # 1909221

Enclosed are the results of analyses for samples received by Summit Scientific on 09/18/19 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Ben Shrewsbury  
Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
09/25/19 13:13

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1@1.5'	1909221-01	Soil	09/18/19 13:40	09/18/19 17:00

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.*



**-Sample Receipt Checklist**

S2 Work Order 1909221

Client: Talon/LPE Client Project ID: HORSETAIL 30 CPB

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_

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

Temp (°C)	<u>3.7</u>
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			
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 samples with holding times due within 48 hours sample 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? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? 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> ? 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.

PE  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

09/18/19  
Date/Time 1835



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
 09/25/19 13:13

**SS-1@1.5'**  
**1909221-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/18/19 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.25</b>		pH Units	1	1909248	09/19/19	09/19/19	EPA 9045D	

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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
 09/25/19 13:13

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

**Summit Scientific**

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

**Batch 1909248 - General Preparation**

**LCS (1909248-BS1)**

Prepared & Analyzed: 09/19/19

pH	9.39		pH Units	9.18	102	95-105				
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**Duplicate (1909248-DUP1)**

Source: 1909203-01

Prepared & Analyzed: 09/19/19

pH	9.37		pH Units	9.53		1.69	20			
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Summit Scientific

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



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
Project Manager: Jennifer Galles

**Reported:**  
09/25/19 13:13

### 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

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 07, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry

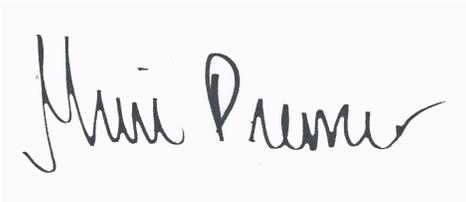
Fort Collins, CO 80525

RE: Horsetail 30 CPB

Work Order # 1909405

Enclosed are the results of analyses for samples received by Summit Scientific on 09/30/19 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized "M" and "P".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
10/07/19 11:11

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS2@2.2'	1909405-01	Soil	09/30/19 12:25	09/30/19 17:00

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.*



1909405

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: TALON / LPE Client Project ID: HORSETAIL 30 CPB

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

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

Temp (°C)	3.2
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Thermometer ID: 61857155-K

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

9/30/19  
Date/Time



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**  
 10/07/19 11:11

**SS2@2.2'**  
**1909405-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/30/19 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.39</b>		pH Units	1	1910085	10/04/19	10/04/19	EPA 9045D	

Summit Scientific



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Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05

Project Manager: Jennifer Galles

**Reported:**

10/07/19 11:11

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

**Summit Scientific**

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

**Batch 1910085 - General Preparation**

**LCS (1910085-BS1)**

Prepared & Analyzed: 10/04/19

pH	9.17		pH Units	9.18		99.9	95-105			
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**Duplicate (1910085-DUP1)**

Source: 1910045-12

Prepared & Analyzed: 10/04/19

pH	8.63		pH Units	8.63			0.00	20		
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Summit Scientific

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Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 30 CPB

Project Number: 701530.120.05  
Project Manager: Jennifer Galles

**Reported:**  
10/07/19 11:11

### 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