

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 27, 2016

Colby Sterling  
Talon/LPE  
1811 E Mulberry  
Ft Collins, CO 80524  
RE: Razor 12F

Enclosed are the results of analyses for samples received by Summit Scientific on 09/23/16 15:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
UL-1	1609160-01	Soil	09/23/16 12:59	09/23/16 15:38
UL-2	1609160-02	Soil	09/23/16 13:03	09/23/16 15:38
UL-3	1609160-03	Soil	09/23/16 13:07	09/23/16 15:38
UL-4	1609160-04	Soil	09/23/16 13:11	09/23/16 15:38
P-1	1609160-05	Soil	09/23/16 13:15	09/23/16 15:38
P-2	1609160-06	Soil	09/23/16 13:19	09/23/16 15:38
P-3	1609160-07	Soil	09/23/16 13:23	09/23/16 15:38

Summit Scientific

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



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

# Summit Scientific 1609160

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Page \_\_\_\_ of \_\_\_\_

Client: Talon/LPE - Bill Whiting Petroleum	Project Manager: Colby Sterling
Address: 1811 East Mulberry	E-Mail: csterling@talonlpe.com
City/State/Zip: Fort Collins, CO 80524	Project Name: Razor 12F
Phone: 970-818-5330 Fax:	Project Number: 701530.064.03
Sampler Name: Colby Sterling	

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			
UL-1	9/23/2016	1259	1		x									x	x	x	x	x	
UL-2	9/23/2016	1303	1		x									x	x	x	x	x	
UL-3	9/23/2016	1307	1		x									x	x	x	x	x	
UL-4	9/23/2016	1311	1		x									x	x	x	x	x	
P-1	9/23/2016	1315	1		x									x	x	x	x	x	
P-2	9/23/2016	1319	1		x									x	x	x	x	x	
P-3	9/23/2016	1323	1		x									x	x	x	x	x	
Relinquished by: <i>[Signature]</i>	Date/Time: 9-23-16 15:39	Received by: <i>[Signature]</i>	Date/Time: 9-23-16 15:38	Turn Around Time (Check)										Notes:					
				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>															
				24 Hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/>															
				48 Hours <input type="checkbox"/>															
Relinquished by: <i>[Signature]</i>	Date/Time: 9-23-16 18:00	Received by: <i>[Signature]</i>	Date/Time: 9-23-16 18:00	Sample Integrity:															
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Temperature Upon Receipt: 12.3															
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>															

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.



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

#### Sample Receipt Checklist

S2 Work Order: 1609160

Client: Talon

Client Project ID: Razor 12F

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

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

Cooler ID					
Temp (°C)	123°C				

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.

Mindy Mach  
Custodian Printed Name

CSM  
Signature or initials of Custodian

9/26/16 1209  
Date/Time



Talon/LPE  
1811 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**UL-1**  
**1609160-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.7 %	30-150		"	"	"	"	

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

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**UL-1**  
**1609160-01 (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	443	8.65	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	167	4.32	"	"	"	"	"	"	
Sodium	1100	4.32	"	"	"	"	"	"	

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.3		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.64	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.83	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**UL-2**  
**1609160-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.3 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**UL-2**  
**1609160-02 (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	556	8.98	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	146	4.49	"	"	"	"	"	"	
Sodium	995	4.49	"	"	"	"	"	"	

Date Sampled: 09/23/16 13:03

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.71		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 13:03

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.88	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 13:03

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.55	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 13:03

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.8		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**UL-3**  
**1609160-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.5 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**UL-3**  
**1609160-03 (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	775	9.28	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	320	4.64	"	"	"	"	"	"	
Sodium	1650	4.64	"	"	"	"	"	"	

Date Sampled: 09/23/16 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.6		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.16	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.94	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**UL-4**  
**1609160-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.9 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**UL-4**  
**1609160-04 (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	645	10.6	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	161	5.30	"	"	"	"	"	"	
Sodium	777	5.30	"	"	"	"	"	"	

Date Sampled: 09/23/16 13:11

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.09		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 13:11

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.02	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 13:11

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.62	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 13:11

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**P-1**  
**1609160-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.0 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**P-1**  
**1609160-05 (Soil)**

**Summit Scientific**

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

Calcium	1430	9.21	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	273	4.61	"	"	"	"	"	"	
Sodium	78.8	4.61	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.500		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.848	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: **09/23/16 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.5		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**P-2**  
**1609160-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.1 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**P-2**  
**1609160-06 (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	2090	9.53	mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	194	4.76	"	"	"	"	"	"	
Sodium	2700	4.76	"	"	"	"	"	"	

Date Sampled: 09/23/16 13:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	15.1		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 13:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.33	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 13:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.25	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 13:19

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**P-3**  
**1609160-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/16 13:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609194	09/26/16	09/26/16	8015M	

Date Sampled: **09/23/16 13:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.0 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/16 13:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609196	09/26/16	09/26/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/23/16 13:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: **09/23/16 13:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**P-3**  
**1609160-07 (Soil)**

**Summit Scientific**

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

Calcium	1630	10.8 mg/kg dry	1	1609190	09/26/16	09/26/16	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	239	5.40	"	"	"	"	"
Sodium	1560	5.40	"	"	"	"	"

Date Sampled: 09/23/16 13:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.55		units	"	1609203	09/26/16	09/26/16	"	

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

Date Sampled: 09/23/16 13:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.00	0.0100	mmhos/cm	1	1609193	09/26/16	09/26/16	SM 2510B	

Date Sampled: 09/23/16 13:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.63	0.100	pH Units	"	1609192	09/26/16	"	EPA 9045	

Date Sampled: 09/23/16 13:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.5		%	"	1609191	"	09/26/16	% calculation	

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**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 1609194 - EPA 3550A**

**Blank (1609194-BLK1)**

Prepared & Analyzed: 09/26/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.1 " 12.5 88.8 30-150

**LCS (1609194-BS1)**

Prepared & Analyzed: 09/26/16

C10-C28 (DRO) 406 50 mg/kg 499 81.3 73-134

Surrogate: o-Terphenyl 12.5 " 12.5 100 30-150

**Matrix Spike (1609194-MS1)**

Source: 1609159-01

Prepared & Analyzed: 09/26/16

C10-C28 (DRO) 1800 50 mg/kg 499 1400 80.3 50-148

Surrogate: o-Terphenyl 13.8 " 12.5 111 30-150

**Matrix Spike Dup (1609194-MSD1)**

Source: 1609159-01

Prepared & Analyzed: 09/26/16

C10-C28 (DRO) 1630 50 mg/kg 499 1400 46.4 50-148 9.87 20 QM-07

Surrogate: o-Terphenyl 14.2 " 12.5 114 30-150

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**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 1609196 - EPA 5030 Soil MS**

**Blank (1609196-BLK1)**

Prepared & Analyzed: 09/26/16

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	0.0414		"	0.0400	104	23-173				
Surrogate: Toluene-d8	0.0396		"	0.0400	99.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400	101	21-167				

**LCS (1609196-BS1)**

Prepared & Analyzed: 09/26/16

Benzene	0.108	0.0020	mg/kg	0.100	108	58-130				
Toluene	0.0964	0.0050	"	0.100	96.4	61-134				
Ethylbenzene	0.111	0.0050	"	0.0992	112	74-139				
m,p-Xylene	0.212	0.010	"	0.200	106	73-137				
o-Xylene	0.107	0.0050	"	0.0980	110	73-141				
Xylenes (total)	0.320	0.0050	"			30-150				
Gasoline Range Hydrocarbons	2.08	0.50	"			30-150				
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400	106	23-173				
Surrogate: Toluene-d8	0.0413		"	0.0400	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400	97.6	21-167				

**Matrix Spike (1609196-MS1)**

Source: 1609159-02

Prepared & Analyzed: 09/26/16

Benzene	0.104	0.0020	mg/kg	0.0982	106	30-131				
Toluene	0.0926	0.0050	"	0.0982	94.3	30-134				
Ethylbenzene	0.107	0.0050	"	0.0974	109	22-153				
m,p-Xylene	0.202	0.010	"	0.196	103	10-159				
o-Xylene	0.104	0.0050	"	0.0963	108	31-151				
Xylenes (total)	0.306	0.0050	"			30-150				
Gasoline Range Hydrocarbons	1.99	0.50	"			30-150				
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0393	106	23-173				
Surrogate: Toluene-d8	0.0406		"	0.0393	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0393	97.8	21-167				

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**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 1609196 - EPA 5030 Soil MS**

Matrix Spike Dup (1609196-MSD1)	Source: 1609159-02			Prepared & Analyzed: 09/26/16						
Benzene	0.0988	0.0020	mg/kg	0.0982	101	30-131	5.15	34		
Toluene	0.0872	0.0050	"	0.0982	88.8	30-134	6.00	30		
Ethylbenzene	0.101	0.0050	"	0.0974	104	22-153	5.28	24		
m,p-Xylene	0.194	0.010	"	0.196	98.9	10-159	4.21	68		
o-Xylene	0.0986	0.0050	"	0.0963	102	31-151	5.55	38		
Xylenes (total)	0.292	0.0050	"			30-150	4.67	20		
Gasoline Range Hydrocarbons	1.93	0.50	"			30-150	3.19	20		
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0393	104	23-173				
Surrogate: Toluene-d8	0.0403		"	0.0393	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0393	98.2	21-167				

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

Reported:  
09/27/16 06:57

**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 1609190 - General Preparation**

**Blank (1609190-BLK1)**

Prepared & Analyzed: 09/26/16

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

**LCS (1609190-BS1)**

Prepared & Analyzed: 09/26/16

Calcium	523	10.0	mg/kg wet	500	105	82.9-118
Magnesium	537	5.00	"	500	107	77.1-123
Sodium	565	5.00	"	500	113	71-129

**Duplicate (1609190-DUP1)**

Source: 1609160-01

Prepared & Analyzed: 09/26/16

Calcium	471	8.65	mg/kg dry	443	6.14	200
Magnesium	165	4.32	"	167	1.57	200
Sodium	1130	4.32	"	1100	2.21	200

**Matrix Spike (1609190-MS1)**

Source: 1609160-01

Prepared & Analyzed: 09/26/16

Calcium	771	8.65	mg/kg dry	432	443	75.7	75-125
Magnesium	668	4.32	"	432	167	116	75-125
Sodium	1630	4.32	"	432	1100	123	75-125

**Matrix Spike Dup (1609190-MSD1)**

Source: 1609160-01

Prepared & Analyzed: 09/26/16

Calcium	821	8.65	mg/kg dry	432	443	87.2	75-125	6.27	25
Magnesium	629	4.32	"	432	167	107	75-125	6.03	25
Sodium	1550	4.32	"	432	1100	105	75-125	5.00	25

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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

**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 1609191 - General Preparation**

**Duplicate (1609191-DUP1)**      **Source: 1609160-01**      Prepared & Analyzed: 09/26/16

% Solids	76.8		%		93.2			19.3	20
----------	------	--	---	--	------	--	--	------	----

**Batch 1609192 - General Preparation**

**LCS (1609192-BS1)**      Prepared & Analyzed: 09/26/16

pH	8.06	0.100	pH Units	8.00	101	95-105
----	------	-------	----------	------	-----	--------

**Duplicate (1609192-DUP1)**      **Source: 1609160-01**      Prepared & Analyzed: 09/26/16

pH	8.86	0.100	pH Units	8.83		0.339	20
----	------	-------	----------	------	--	-------	----

**Batch 1609193 - General Preparation**

**Blank (1609193-BLK1)**      Prepared & Analyzed: 09/26/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm
---------------------------	----	--------	----------

**LCS (1609193-BS1)**      Prepared & Analyzed: 09/26/16

Specific Conductance (EC)	0.501	0.0100	mmhos/cm	0.500	100	90-110
---------------------------	-------	--------	----------	-------	-----	--------

**Duplicate (1609193-DUP1)**      **Source: 1609160-01**      Prepared & Analyzed: 09/26/16

Specific Conductance (EC)	2.82	0.0100	mmhos/cm	2.64		6.48	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 E Mulberry  
Ft Collins CO, 80524

Project: Razor 12F  
Project Number: [none701530.064.01]  
Project Manager: Colby Sterling

**Reported:**  
09/27/16 06:57

### 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