

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 28, 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 09/27/16 18:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
UL-5	1609173-01	Soil	09/27/16 11:40	09/27/16 18:35
UL-3A@6"	1609173-02	Soil	09/27/16 14:55	09/27/16 18:35
P-2A@6"	1609173-03	Soil	09/27/16 15:00	09/27/16 18:35
P-3A@12"	1609173-04	Soil	09/27/16 15:05	09/27/16 18:35

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

Summit Scientific 1609173

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

Page 1 of 1

Client:	Talon/LPE - Bill Whiting Petroleum
Address:	1811 East Mulberry
City/State/Zip:	Fort Collins, CO 80524
Phone:	970-818-5330
Fax:	
Sampler Name:	Jason Levertton / Jennifer Galles

Project Manager:	Colby Sterling
E-Mail:	csterling@talonlpe.com
Project Name:	Razor 12F
Project Number:	701530.064.03

[illegible]

www.s2scientific.com

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

Sample Receipt Checklist

S2 Work Order: 1609173

Client: Talon

Client Project ID: Razor 12F

Shipped Via: P.O.

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

Airbill #: _____

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

Cooler ID					
Temp (°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 ⁽¹⁾ ?				
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 ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?	X			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			X	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			X	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Muri P.
Custodian Printed Name

9-27-16
Signature or Initials of Custodian

18:40
Date/Time



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

UL-5
1609173-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 09/27/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609211	09/27/16	09/28/16	8015M	

Date Sampled: 09/27/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 09/27/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609210	09/27/16	09/27/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 09/27/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

Date Sampled: 09/27/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

UL-5
1609173-01 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1090	11.0	mg/kg dry	1	1609214	09/28/16	09/28/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	253	5.48	"	"	"	"	"	"	
Sodium	2730	5.48	"	"	"	"	"	"	

Date Sampled: 09/27/16 11:40

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	19.4		units	"	1609224	09/28/16	09/28/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/27/16 11:40

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	8.24	0.0100	mmhos/cm	1	1609216	09/28/16	09/28/16	SM 2510B	

Date Sampled: 09/27/16 11:40

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.57	0.100	pH Units	"	1609215	"	09/28/16	EPA 9045	

Date Sampled: 09/27/16 11:40

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	"	1609217	09/28/16	09/28/16	% calculation	

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Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

UL-3A@6"
1609173-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/27/16 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609211	09/27/16	09/28/16	8015M	

Date Sampled: **09/27/16 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/27/16 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609210	09/27/16	09/27/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/27/16 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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

Date Sampled: **09/27/16 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

UL-3A@6"
1609173-02 (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	1260	9.72	mg/kg dry	1	1609214	09/28/16	09/28/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	239	4.86	"	"	"	"	"	"	
Sodium	1970	4.86	"	"	"	"	"	"	

Date Sampled: 09/27/16 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.3		units	"	1609224	09/28/16	09/28/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/27/16 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.67	0.0100	mmhos/cm	1	1609216	09/28/16	09/28/16	SM 2510B	

Date Sampled: 09/27/16 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56	0.100	pH Units	"	1609215	"	09/28/16	EPA 9045	

Date Sampled: 09/27/16 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	"	1609217	09/28/16	09/28/16	% calculation	

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Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

P-2A@6"
1609173-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/27/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609211	09/27/16	09/28/16	8015M	

Date Sampled: **09/27/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/27/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609210	09/27/16	09/27/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/27/16 15:00**

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

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

Date Sampled: **09/27/16 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

P-2A@6"
1609173-03 (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	3770	12.9	mg/kg dry	1	1609214	09/28/16	09/28/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	589	6.44	"	"	"	"	"	"	
Sodium	1550	6.44	"	"	"	"	"	"	

Date Sampled: 09/27/16 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.20		units	"	1609224	09/28/16	09/28/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/27/16 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.06	0.0100	mmhos/cm	1	1609216	09/28/16	09/28/16	SM 2510B	

Date Sampled: 09/27/16 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56	0.100	pH Units	"	1609215	"	09/28/16	EPA 9045	

Date Sampled: 09/27/16 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.7		%	"	1609217	09/28/16	09/28/16	% calculation	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

P-3A@12"
1609173-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/27/16 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609211	09/27/16	09/28/16	8015M	

Date Sampled: **09/27/16 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/27/16 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.015	0.0020	mg/kg	1	1609210	09/27/16	09/27/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/27/16 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	21-167		"	"	"	"	

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

Date Sampled: **09/27/16 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

P-3A@12"
1609173-04 (Soil)

Summit Scientific

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

Analyte	Result	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3030	10.8 mg/kg dry	1	1609214	09/28/16	09/28/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	387	5.40	"	"	"	"	"	
Sodium	1390	5.40	"	"	"	"	"	

Date Sampled: 09/27/16 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.32		units	"	1609224	09/28/16	09/28/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 09/27/16 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.00	0.0100	mmhos/cm	1	1609216	09/28/16	09/28/16	SM 2510B	

Date Sampled: 09/27/16 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17	0.100	pH Units	"	1609215	"	09/28/16	EPA 9045	

Date Sampled: 09/27/16 15:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	"	1609217	09/28/16	09/28/16	% calculation	

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1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1609211 - EPA 3550A

Blank (1609211-BLK1)

Prepared: 09/27/16 Analyzed: 09/28/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.1 " 12.5 89.0 30-150

LCS (1609211-BS1)

Prepared: 09/27/16 Analyzed: 09/28/16

C10-C28 (DRO) 460 50 mg/kg 499 92.2 73-134

Surrogate: o-Terphenyl 11.8 " 12.5 94.3 30-150

Matrix Spike (1609211-MS1)

Source: 1609172-01

Prepared: 09/27/16 Analyzed: 09/28/16

C10-C28 (DRO) 484 50 mg/kg 499 8.15 95.3 50-148

Surrogate: o-Terphenyl 12.4 " 12.5 99.0 30-150

Matrix Spike Dup (1609211-MSD1)

Source: 1609172-01

Prepared: 09/27/16 Analyzed: 09/28/16

C10-C28 (DRO) 458 50 mg/kg 499 8.15 90.1 50-148 5.53 20

Surrogate: o-Terphenyl 11.6 " 12.5 92.5 30-150

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

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

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

Batch 1609210 - EPA 5030 Soil MS

Blank (1609210-BLK1)

Prepared & Analyzed: 09/27/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

LCS (1609210-BS1)

Prepared & Analyzed: 09/27/16

Benzene	0.0840	0.0020	mg/kg	0.100		84.0	58-130			
Toluene	0.0939	0.0050	"	0.100		93.9	61-134			
Ethylbenzene	0.112	0.0050	"	0.0992		113	74-139			
m,p-Xylene	0.239	0.010	"	0.200		120	73-137			
o-Xylene	0.112	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.351	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.38	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	21-167			

Matrix Spike (1609210-MS1)

Source: 1609172-01

Prepared & Analyzed: 09/27/16

Benzene	0.0779	0.0020	mg/kg	0.0926	ND	84.1	30-131			
Toluene	0.0878	0.0050	"	0.0926	ND	94.8	30-134			
Ethylbenzene	0.102	0.0050	"	0.0919	ND	111	22-153			
m,p-Xylene	0.217	0.010	"	0.185	ND	117	10-159			
o-Xylene	0.104	0.0050	"	0.0907	ND	114	31-151			
Xylenes (total)	0.320	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.24	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0370		107	23-173			
Surrogate: Toluene-d8	0.0365		"	0.0370		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0370		98.9	21-167			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

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

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

Batch 1609210 - EPA 5030 Soil MS

Matrix Spike Dup (1609210-MSD1)	Source: 1609172-01			Prepared & Analyzed: 09/27/16						
Benzene	0.0781	0.0020	mg/kg	0.0917	ND	85.1	30-131	0.213	34	
Toluene	0.0881	0.0050	"	0.0917	ND	96.0	30-134	0.305	30	
Ethylbenzene	0.101	0.0050	"	0.0910	ND	111	22-153	0.949	24	
m,p-Xylene	0.215	0.010	"	0.183	ND	118	10-159	0.563	68	
o-Xylene	0.103	0.0050	"	0.0899	ND	114	31-151	1.08	38	
Xylenes (total)	0.318	0.0050	"		ND		30-150	0.731	20	
Gasoline Range Hydrocarbons	2.12	0.50	"		ND		30-150	5.08	20	
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0367		111	23-173			
Surrogate: Toluene-d8	0.0369		"	0.0367		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0367		103	21-167			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

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

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

Batch 1609214 - General Preparation

Blank (1609214-BLK1)

Prepared & Analyzed: 09/28/16

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

LCS (1609214-BS1)

Prepared & Analyzed: 09/28/16

Calcium	564	10.0	mg/kg wet	500	113	82.9-118
Magnesium	498	5.00	"	500	99.6	77.1-123
Sodium	525	5.00	"	500	105	71-129

Duplicate (1609214-DUP1)

Source: 1609173-01

Prepared & Analyzed: 09/28/16

Calcium	998	9.78	mg/kg dry	1090	9.00	200
Magnesium	290	4.89	"	253	13.5	200
Sodium	2700	4.89	"	2730	0.942	200

Matrix Spike (1609214-MS1)

Source: 1609173-01

Prepared & Analyzed: 09/28/16

Calcium	1510	9.78	mg/kg dry	489	1090	86.0	75-125
Magnesium	804	4.89	"	489	253	113	75-125
Sodium	3160	4.89	"	489	2730	89.0	75-125

Matrix Spike Dup (1609214-MSD1)

Source: 1609173-01

Prepared & Analyzed: 09/28/16

Calcium	1540	9.78	mg/kg dry	489	1090	92.6	75-125	2.12	25
Magnesium	799	4.89	"	489	253	112	75-125	0.670	25
Sodium	3140	4.89	"	489	2730	83.9	75-125	0.802	25

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

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

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

Batch 1609215 - General Preparation

LCS (1609215-BS1)

Prepared & Analyzed: 09/28/16

pH	8.04	0.100	pH Units	8.00	100	95-105
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Duplicate (1609215-DUP1)

Source: 1609173-01

Prepared & Analyzed: 09/28/16

pH	8.56	0.100	pH Units	8.57	0.117	20
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Batch 1609216 - General Preparation

Blank (1609216-BLK1)

Prepared & Analyzed: 09/28/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1609216-BS1)

Prepared & Analyzed: 09/28/16

Specific Conductance (EC)	0.504	0.0100	mmhos/cm	0.500	101	90-110
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Duplicate (1609216-DUP1)

Source: 1609173-01

Prepared & Analyzed: 09/28/16

Specific Conductance (EC)	8.72	0.0100	mmhos/cm	8.24	5.60	20
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Batch 1609217 - General Preparation

Duplicate (1609217-DUP1)

Source: 1609119-02

Prepared & Analyzed: 09/28/16

% Solids	93.9		%	92.5	1.42	20
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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/28/16 16:49

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