

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 15, 2019

Alyssa Beard

Foundation Energy

1801 Broadway, Suite 1500

Denver, CO 80202

RE: Federal Wildhorse 7-28

Enclosed are the results of analyses for samples received by Summit Scientific on 01/07/19 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is cursive and reads "Muri Premier".

Muri Premier For Ben Shrewsbury

Laboratory Manager



Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EAST@1.5'	1901080-01	Soil	01/07/19 11:00	01/07/19 16:50
NORTH@1.5'	1901080-02	Soil	01/07/19 11:10	01/07/19 16:50
WEST@1.5'	1901080-03	Soil	01/07/19 11:20	01/07/19 16:50
SOUTH@1.5'	1901080-04	Soil	01/07/19 11:30	01/07/19 16:50
BASE@3.5'	1901080-05	Soil	01/07/19 11:45	01/07/19 16:50

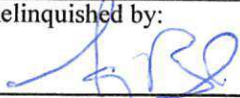

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Summit Scientific

Page 1 of 1

Project Manager:	Alyssa Beard
E-Mail:	abeard@foundationenergy.com
Project Name:	FEDERAL WILDPHORSE 7-28
Project Number:	

				Preservative				Matrix				Analyze For:										
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEX	DRO	pH	EC	SAR	HOLD				Special Instructions	
EAST @ 1.5'	11/7/19	1100	1						X			X	X	X	X	X	X				HOLD EAST, NORTH, WEST + SOUTH. WITH RUNOFF BASE PASSES TANK	
WEST @ 1.5'	↓	1110	↓						↓			↓	↓	↓	↓	↓	X					
NORTH @ 1.5'		1120																X				
SOUTH @ 1.5'		1130																X				
BASE @ 3.5'	↓	1145	↓						↓			↓	↓	↓	↓	↓		X				
Relinquished by: 				Date/Time: 11/7/19 16:50		Received by: 				Date/Time: 1-7-19 16:50		Turn Around Time (Check)							Notes:			
Relinquished by:				Date/Time:		Received by:				Date/Time:		Same Day <input type="checkbox"/> 72 Hours 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>										
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: 5.4 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										

Sample Receipt Checklist

S2 Work Order 1901080

Client: FOUNDATION

Client Project ID: FEDERAL WILDHORSE 7-28

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

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

Temp (°C)	<u>5.4</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 ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<u>X</u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<u>X</u>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	

Additional Comments (if any):

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

Muri
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1-7-19 17:10
Date/Time



Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

EAST@1.5'
1901080-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1901157	01/14/19	01/14/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	6500	50	mg/kg	1	1901156	01/14/19	01/14/19	EPA 8015M	

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.4 %	30-150		"	"	"	"	

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

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	425	10.9	mg/kg dry	1	1901150	01/11/19	01/11/19	EPA 6020B	
Magnesium	96.3	5.45	"	"	"	"	"	"	

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Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

EAST@1.5'
1901080-01 (Soil)

Summit Scientific

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

Sodium	249	5.45	mg/kg dry	1	1901150	01/11/19	01/11/19	EPA 6020B
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Calculated Analysis

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.84	0.100	units	1	1901160	01/14/19	01/14/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	1901133	01/11/19	01/11/19	Calculation	
pH	8.01		pH Units	"	1901135	01/11/19	01/11/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/07/19 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.45	0.0100	mmhos/cm	1	1901134	01/11/19	01/11/19	EPA 120.1	

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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

NORTH@1.5'
1901080-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901157	01/14/19	01/14/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	120	50	mg/kg	1	1901156	01/14/19	01/15/19	EPA 8015M	

Date Sampled: **01/07/19 11:10**

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

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

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	5130	12.9	mg/kg dry	1	1901150	01/11/19	01/11/19	EPA 6020B	
Magnesium	506	6.47	"	"	"	"	"	"	
Sodium	852	6.47	"	"	"	"	"	"	

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Reported:
01/15/19 12:57

NORTH@1.5'
1901080-02 (Soil)

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

Calculated Analysis

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.04	0.100	units	1	1901160	01/14/19	01/14/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.3		%	1	1901133	01/11/19	01/11/19	Calculation	
pH	8.67		pH Units	"	1901135	01/11/19	01/11/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/07/19 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.43	0.0100	mmhos/cm	1	1901134	01/11/19	01/11/19	EPA 120.1	

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Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

WEST@1.5'
1901080-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901157	01/14/19	01/14/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	5100	50	mg/kg	1	1901156	01/14/19	01/14/19	EPA 8015M	

Date Sampled: **01/07/19 11:20**

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

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

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4020	12.4	mg/kg dry	1	1901150	01/11/19	01/11/19	EPA 6020B	
Magnesium	392	6.22	"	"	"	"	"	"	
Sodium	791	6.22	"	"	"	"	"	"	

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WEST@1.5'
1901080-03 (Soil)

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

Calculated Analysis

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.19	0.100	units	1	1901160	01/14/19	01/14/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.4		%	1	1901133	01/11/19	01/11/19	Calculation	
pH	8.08		pH Units	"	1901135	01/11/19	01/11/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/07/19 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.05	0.0100	mmhos/cm	1	1901134	01/11/19	01/11/19	EPA 120.1	

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Foundation Energy
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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

SOUTH@1.5'
1901080-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901157	01/14/19	01/14/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	870	50	mg/kg	1	1901156	01/14/19	01/15/19	EPA 8015M	

Date Sampled: **01/07/19 11:30**

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

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

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2300	14.6	mg/kg dry	1	1901150	01/11/19	01/11/19	EPA 6020B	
Magnesium	298	7.28	"	"	"	"	"	"	
Sodium	299	7.28	"	"	"	"	"	"	

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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

SOUTH@1.5'
1901080-04 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.56	0.100	units	1	1901160	01/14/19	01/14/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	68.7		%	1	1901133	01/11/19	01/11/19	Calculation	
pH	8.04		pH Units	"	1901135	01/11/19	01/11/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/07/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.994	0.0100	mmhos/cm	1	1901134	01/11/19	01/11/19	EPA 120.1	

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Foundation Energy
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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

BASE@3.5'
1901080-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.071	0.0020	mg/kg	1	1901071	01/08/19	01/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.025	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.33	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	46	0.50	"	"	"	"	"	"	

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		204 %	23-173		"	"	"	"	S-02
Surrogate: Toluene-d8		74.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		224 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	78	50	mg/kg	1	1901072	01/08/19	01/09/19	EPA 8015M	

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

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

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5970	18.9	mg/kg dry	1	1901080	01/08/19	01/08/19	EPA 6020B	
Magnesium	518	9.47	"	"	"	"	"	"	
Sodium	1890	9.47	"	"	"	"	"	"	

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1801 Broadway, Suite 1500
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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

BASE@3.5'
1901080-05 (Soil)

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

Calculated Analysis

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.58	0.100	units	1	1901091	01/09/19	01/09/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	52.8		%	1	1901092	01/09/19	01/09/19	Calculation	
pH	7.77		pH Units	"	1901094	01/09/19	01/09/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/07/19 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.76	0.0100	mmhos/cm	1	1901093	01/09/19	01/09/19	EPA 120.1	

Summit Scientific

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901071 - EPA 5030 Soil MS

Blank (1901071-BLK1)

Prepared: 01/08/19 Analyzed: 01/10/19

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	0.0389		"	0.0400		97.4	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.5	21-167			

LCS (1901071-BS1)

Prepared: 01/08/19 Analyzed: 01/10/19

Benzene	0.125	0.0020	mg/kg	0.100		125	70-130			
Toluene	0.122	0.0050	"	0.100		122	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.242	0.010	"	0.200		121	70-130			
o-Xylene	0.115	0.0050	"	0.100		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		96.9	23-173			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.5	21-167			

Matrix Spike (1901071-MS1)

Source: 1901074-01

Prepared: 01/08/19 Analyzed: 01/10/19

Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130			
m,p-Xylene	0.214	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0400		94.4	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167			

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

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 1901071 - EPA 5030 Soil MS

Matrix Spike Dup (1901071-MSD1)		Source: 1901074-01			Prepared: 01/08/19 Analyzed: 01/10/19					
Benzene	0.0984	0.0020	mg/kg	0.100	ND	98.4	70-130	13.2	30	
Toluene	0.0942	0.0050	"	0.100	ND	94.2	70-130	14.9	30	
Ethylbenzene	0.0998	0.0050	"	0.100	ND	99.8	70-130	17.7	30	
m,p-Xylene	0.180	0.010	"	0.200	ND	90.1	70-130	17.3	30	
o-Xylene	0.0875	0.0050	"	0.100	ND	87.5	70-130	18.9	30	
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		92.0	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	21-167			

Batch 1901157 - EPA 5030 Soil MS

Blank (1901157-BLK1)		Prepared & Analyzed: 01/14/19								
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	0.0391		"	0.0400		97.8	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		110	21-167			

LCS (1901157-BS1)		Prepared & Analyzed: 01/14/19								
Benzene	0.129	0.0020	mg/kg	0.100		129	70-130			
Toluene	0.124	0.0050	"	0.100		124	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.253	0.010	"	0.200		126	70-130			
o-Xylene	0.119	0.0050	"	0.100		119	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		96.9	21-167			

Summit Scientific

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]

Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

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 1901157 - EPA 5030 Soil MS

Matrix Spike (1901157-MS1)

Source: 1901080-01

Prepared & Analyzed: 01/14/19

Benzene	0.0923	0.0020	mg/kg	0.100	ND	92.3	70-130		
Toluene	0.0775	0.0050	"	0.100	ND	77.5	70-130		
Ethylbenzene	0.0746	0.0050	"	0.100	ND	74.6	70-130		
m,p-Xylene	0.229	0.010	"	0.200	ND	114	70-130		
o-Xylene	0.0947	0.0050	"	0.100	ND	94.7	70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110	23-173		
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170		
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167		

Matrix Spike Dup (1901157-MSD1)

Source: 1901080-01

Prepared & Analyzed: 01/14/19

Benzene	0.0842	0.0020	mg/kg	0.100	ND	84.2	70-130	9.18	30
Toluene	0.0975	0.0050	"	0.100	ND	97.5	70-130	22.9	30
Ethylbenzene	0.0957	0.0050	"	0.100	ND	95.7	70-130	24.7	30
m,p-Xylene	0.216	0.010	"	0.200	ND	108	70-130	5.88	30
o-Xylene	0.0876	0.0050	"	0.100	ND	87.6	70-130	7.87	30
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173		
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	20-170		
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	21-167		

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

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 1901072 - EPA 3550A

Blank (1901072-BLK1)				Prepared: 01/08/19 Analyzed: 01/09/19						
C10-C28 (DRO)	ND	50	mg/kg							
LCS (1901072-BS1)				Prepared: 01/08/19 Analyzed: 01/09/19						
C10-C28 (DRO)	557	50	mg/kg	500		111	70-130			
Matrix Spike (1901072-MS1)				Source: 1901074-01		Prepared: 01/08/19 Analyzed: 01/09/19				
C10-C28 (DRO)	569	50	mg/kg	500	11.0	112	70-130			
Matrix Spike Dup (1901072-MSD1)				Source: 1901074-01		Prepared: 01/08/19 Analyzed: 01/09/19				
C10-C28 (DRO)	554	50	mg/kg	500	11.0	109	70-130	2.64	20	

Batch 1901156 - EPA 3550A

Blank (1901156-BLK1)				Prepared & Analyzed: 01/14/19						
C10-C28 (DRO)	ND	50	mg/kg							
LCS (1901156-BS1)				Prepared & Analyzed: 01/14/19						
C10-C28 (DRO)	596	50	mg/kg	500		119	70-130			
Matrix Spike (1901156-MS1)				Source: 1901080-01		Prepared & Analyzed: 01/14/19				
C10-C28 (DRO)	4460	50	mg/kg	500	6470	NR	70-130			QM-07
Matrix Spike Dup (1901156-MSD1)				Source: 1901080-01		Prepared & Analyzed: 01/14/19				
C10-C28 (DRO)	6070	50	mg/kg	500	6470	NR	70-130	30.7	20	QM-07

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

Soluble Nutrients by EPA 6020/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 1901080 - General Preparation

Blank (1901080-BLK1)

Prepared & Analyzed: 01/08/19

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

LCS (1901080-BS1)

Prepared & Analyzed: 01/08/19

Calcium	835	10.0	mg/kg wet	800	104	70-130
Magnesium	875	5.00	"	800	109	70-130
Sodium	862	5.00	"	800	108	70-130

Duplicate (1901080-DUP1)

Source: 1901046-01

Prepared & Analyzed: 01/08/19

Calcium	4440	11.3	mg/kg dry	4490	1.23	20
Magnesium	551	5.64	"	568	3.07	20
Sodium	32.4	5.64	"	34.9	7.52	20

Matrix Spike (1901080-MS1)

Source: 1901046-01

Prepared & Analyzed: 01/08/19

Calcium	5460	11.3	mg/kg dry	903	4490	107	70-130
Magnesium	1470	5.64	"	903	568	100	70-130
Sodium	937	5.64	"	903	34.9	99.9	70-130

Matrix Spike Dup (1901080-MSD1)

Source: 1901046-01

Prepared & Analyzed: 01/08/19

Calcium	5450	11.3	mg/kg dry	903	4490	106	70-130	0.183	25
Magnesium	1520	5.64	"	903	568	105	70-130	3.04	25
Sodium	974	5.64	"	903	34.9	104	70-130	3.96	25

Batch 1901150 - General Preparation

Blank (1901150-BLK1)

Prepared & Analyzed: 01/11/19

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

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

Soluble Nutrients by EPA 6020/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 1901150 - General Preparation

LCS (1901150-BS1)

Prepared & Analyzed: 01/11/19

Calcium	540	10.0	mg/kg wet	500		108	70-130
Magnesium	549	5.00	"	500		110	70-130
Sodium	554	5.00	"	500		111	70-130

Duplicate (1901150-DUP1)

Source: 1901080-01

Prepared & Analyzed: 01/11/19

Calcium	430	10.9	mg/kg dry		425			1.18	20
Magnesium	100	5.45	"		96.3			4.01	20
Sodium	237	5.45	"		249			4.78	20

Matrix Spike (1901150-MS1)

Source: 1901080-01

Prepared & Analyzed: 01/11/19

Calcium	967	10.9	mg/kg dry	545	425	99.5	70-130
Magnesium	694	5.45	"	545	96.3	110	70-130
Sodium	834	5.45	"	545	249	107	70-130

Matrix Spike Dup (1901150-MSD1)

Source: 1901080-01

Prepared & Analyzed: 01/11/19

Calcium	912	10.9	mg/kg dry	545	425	89.4	70-130	5.84	25
Magnesium	685	5.45	"	545	96.3	108	70-130	1.41	25
Sodium	822	5.45	"	545	249	105	70-130	1.49	25

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

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 1901092 - General Preparation

Duplicate (1901092-DUP1)		Source: 1901046-01			Prepared & Analyzed: 01/09/19					
% Solids	88.3		%		88.6			0.339	20	

Batch 1901094 - General Preparation

LCS (1901094-BS1)		Prepared & Analyzed: 01/09/19								
pH	9.25		pH Units	9.23		100	95-105			
Duplicate (1901094-DUP1)		Source: 1901051-01			Prepared & Analyzed: 01/09/19					
pH	8.21		pH Units		8.23			0.243	20	

Batch 1901133 - General Preparation

Duplicate (1901133-DUP1)		Source: 1901119-01			Prepared & Analyzed: 01/11/19					
% Solids	91.1		%		90.7			0.436	20	

Batch 1901135 - General Preparation

LCS (1901135-BS1)		Prepared & Analyzed: 01/11/19								
pH	9.26		pH Units	9.23		100	95-105			
Duplicate (1901135-DUP1)		Source: 1901080-01			Prepared & Analyzed: 01/11/19					
pH	8.05		pH Units		8.01			0.498	20	

Summit Scientific

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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1901093 - General Preparation

Blank (1901093-BLK1)

Prepared & Analyzed: 01/09/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1901093-BS1)

Prepared & Analyzed: 01/09/19

Specific Conductance (EC) 0.794 0.0100 mmhos/cm 0.750 106 90-110

Duplicate (1901093-DUP1)

Source: 1901051-01

Prepared & Analyzed: 01/09/19

Specific Conductance (EC) 5.16 0.0100 mmhos/cm 5.14 0.291 20

Batch 1901134 - General Preparation

Blank (1901134-BLK1)

Prepared & Analyzed: 01/11/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1901134-BS1)

Prepared & Analyzed: 01/11/19

Specific Conductance (EC) 0.782 0.0100 mmhos/cm 0.750 104 90-110

Duplicate (1901134-DUP1)

Source: 1901080-01

Prepared & Analyzed: 01/11/19

Specific Conductance (EC) 1.44 0.0100 mmhos/cm 1.45 0.416 20

Summit Scientific

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Foundation Energy
1801 Broadway, Suite 1500
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Project: Federal Wildhorse 7-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
01/15/19 12:57

Notes and Definitions

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

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