

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 28, 2020

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Woolley #2 Flowline Release

Work Order #2008203

Enclosed are the results of analyses for samples received by Summit Scientific on 08/21/20 11:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#1 S/W	2008203-01	Soil	08/19/20 10:00	08/21/20 11:15
#2 S/E	2008203-02	Soil	08/19/20 10:00	08/21/20 11:15
#3 N/W	2008203-03	Soil	08/19/20 10:00	08/21/20 11:15
#4 N/E	2008203-04	Soil	08/19/20 10:00	08/21/20 11:15
#5 Bottom	2008203-05	Soil	08/19/20 10:00	08/21/20 11:15

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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

2008203

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

Page 1 of 1

Client: KP Kauffman
Address: 1675 Broadway, Suite 2800
City/State/Zip: Denver, CO 80202
Phone: 303-825-4822 Fax: 303-825-4825
Sampler Name: KPK Field Ops

Project Manager: Max Knop
E-Mail: mknop@kpk.com
Project Name: Woolley #2 Flowline Release
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	TPH-GRO	TPH-DRO	TPH-ORO	BTEX	SAR	EC	pH			
#1 S/W	8/19/2020	10:00	1						x				x	x	x	x	x	x			
#2 S/E	8/19/2020	10:00	1						x				x	x	x	x	x	x			
#3 N/W	8/19/2020	10:00	1						x				x	x	x	x	x	x			
#4 N/E	8/19/2020	10:00	1						x				x	x	x	x	x	x			
#5 Bottom	8/19/2020	10:00	1						x				x	x	x	x	x	x			
Relinquished by: <u>Stephanie Esters</u> Date/Time: <u>8/21/2020 11:15</u>				Received by: <u>[Signature]</u> Date/Time: <u>08-21-20 11:15</u>				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"/>												Notes:	
Relinquished by:				Received by:				Sample Integrity: Temperature Upon Receipt: <u>3.4</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													
Relinquished by:				Received in Lab by:																	

Sample Receipt Checklist

S2 Work Order 2008203

Client: KP Kauffman Client Project ID: Woolley #2 Flowline Release

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

☐ ☒ ☐ ☐ ☐

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

Temp (°C)	3.4
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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⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

MP

Custodian Printed Name or Initials


Signature of Custodian

8/21/20

Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#1 S/W
2008203-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2008238	08/25/20	08/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		91.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2008237	08/25/20	08/25/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

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

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

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	4860	10.4	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B	

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1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#1 S/W
2008203-01 (Soil)

Summit Scientific

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

Magnesium	1470	5.19	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B
Sodium	2130	5.19	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.87	0.100	units	1	2008305	08/28/20	08/28/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4		%	1	2008271	08/27/20	08/27/20	Calculation	
pH	8.23		pH Units	"	2008273	08/27/20	08/27/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	12.4	0.0100	mmhos/cm	1	2008274	08/27/20	08/27/20	EPA 120.1	

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1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#2 S/E
2008203-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2008238	08/25/20	08/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008237	08/25/20	08/26/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

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: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	4830	10.2	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B	
Magnesium	971	5.11	"	"	"	"	"	"	

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#2 S/E
2008203-02 (Soil)

Summit Scientific

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

Sodium	1140	5.11	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B
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Calculated Analysis

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.91	0.100	units	1	2008305	08/28/20	08/28/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.8		%	1	2008271	08/27/20	08/27/20	Calculation	
pH	8.49		pH Units	"	2008273	08/27/20	08/27/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.74	0.0100	mmhos/cm	1	2008274	08/27/20	08/27/20	EPA 120.1	

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K.P. Kauffman
1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#3 N/W
2008203-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2008238	08/25/20	08/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008237	08/25/20	08/26/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.0 %	30-150		"	"	"	"	

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

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	6030	10.3	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B	
Magnesium	584	5.14	"	"	"	"	"	"	

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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#3 N/W
2008203-03 (Soil)

Summit Scientific

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

Sodium	89.9	5.14	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B
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Calculated Analysis

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.296	0.100	units	1	2008305	08/28/20	08/28/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.2		%	1	2008271	08/27/20	08/27/20	Calculation	
pH	8.37		pH Units	"	2008273	08/27/20	08/27/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.741	0.0100	mmhos/cm	1	2008274	08/27/20	08/27/20	EPA 120.1	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#4 N/E
2008203-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2008238	08/25/20	08/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2008237	08/25/20	08/26/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5100	10.3	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B	
Magnesium	624	5.14	"	"	"	"	"	"	

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1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#4 N/E
2008203-04 (Soil)

Summit Scientific

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

Sodium	79.6	5.14	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B
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Calculated Analysis

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.280	0.100	units	1	2008305	08/28/20	08/28/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.3		%	1	2008271	08/27/20	08/27/20	Calculation	
pH	8.69		pH Units	"	2008273	08/27/20	08/27/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.482	0.0100	mmhos/cm	1	2008274	08/27/20	08/27/20	EPA 120.1	

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1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#5 Bottom
2008203-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2008238	08/25/20	08/26/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008237	08/25/20	08/26/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/19/20 10:00**

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

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

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	4040	10.5	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B	
Magnesium	999	5.26	"	"	"	"	"	"	

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1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

#5 Bottom
2008203-05 (Soil)

Summit Scientific

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

Sodium	1170	5.26	mg/kg dry	1	2008286	08/27/20	08/27/20	EPA 6020B
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Calculated Analysis

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.27	0.100	units	1	2008305	08/28/20	08/28/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	2008271	08/27/20	08/27/20	Calculation	
pH	8.15		pH Units	"	2008273	08/27/20	08/27/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **08/19/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.60	0.0100	mmhos/cm	1	2008274	08/27/20	08/27/20	EPA 120.1	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2008238 - EPA 5030 Soil MS

Blank (2008238-BLK1)

Prepared & Analyzed: 08/25/20

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		88.1	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0400		88.7	21-167			

LCS (2008238-BS1)

Prepared & Analyzed: 08/25/20

Benzene	0.0630	0.0020	mg/kg	0.0750		84.0	70-130			
Toluene	0.0823	0.0050	"	0.0750		110	70-130			
Ethylbenzene	0.0964	0.0050	"	0.0750		128	70-130			
m,p-Xylene	0.192	0.010	"	0.150		128	70-130			
o-Xylene	0.0942	0.0050	"	0.0750		126	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0348		"	0.0400		86.9	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0400		88.8	21-167			

Matrix Spike (2008238-MS1)

Source: 2008219-05

Prepared & Analyzed: 08/25/20

Benzene	0.0634	0.0020	mg/kg	0.0750	ND	84.6	70-130			
Toluene	0.0829	0.0050	"	0.0750	ND	111	70-130			
Ethylbenzene	0.0952	0.0050	"	0.0750	0.0340	81.5	70-130			
m,p-Xylene	0.189	0.010	"	0.150	0.0568	87.9	70-130			
o-Xylene	0.0939	0.0050	"	0.0750	ND	125	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.5	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.0	21-167			

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

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 2008238 - EPA 5030 Soil MS

Matrix Spike Dup (2008238-MSD1)		Source: 2008219-05			Prepared & Analyzed: 08/25/20					
Benzene	0.0621	0.0020	mg/kg	0.0750	ND	82.8	70-130	2.20	30	
Toluene	0.0825	0.0050	"	0.0750	ND	110	70-130	0.508	30	
Ethylbenzene	0.0962	0.0050	"	0.0750	0.0340	82.8	70-130	1.00	30	
m,p-Xylene	0.190	0.010	"	0.150	0.0568	88.7	70-130	0.682	30	
o-Xylene	0.0946	0.0050	"	0.0750	ND	126	70-130	0.764	30	
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.8	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.4	21-167			

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1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

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 2008237 - EPA 3550A

Blank (2008237-BLK1)

Prepared & Analyzed: 08/25/20

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (2008237-BS1)

Prepared & Analyzed: 08/25/20

C10-C28 (DRO)	513	50	mg/kg	500	103	70-130
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Matrix Spike (2008237-MS1)

Source: 2008127-06

Prepared & Analyzed: 08/25/20

C10-C28 (DRO)	546	50	mg/kg	500	60.6	97.1	70-130
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Matrix Spike Dup (2008237-MSD1)

Source: 2008127-06

Prepared & Analyzed: 08/25/20

C10-C28 (DRO)	523	50	mg/kg	500	60.6	92.4	70-130	4.37	20
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Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

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 2008286 - General Preparation

Blank (2008286-BLK1)

Prepared & Analyzed: 08/27/20

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

LCS (2008286-BS1)

Prepared & Analyzed: 08/27/20

Calcium	561	10.0	mg/kg wet	500	112	70-130
Magnesium	651	5.00	"	500	130	70-130
Sodium	563	5.00	"	500	113	70-130

Duplicate (2008286-DUP1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

Calcium	4410	10.4	mg/kg dry	4860	9.69	20
Magnesium	1360	5.19	"	1470	8.10	20
Sodium	1970	5.19	"	2130	7.60	20

Matrix Spike (2008286-MS1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

Calcium	5310	10.4	mg/kg dry	519	4860	88.2	70-130
Magnesium	1970	5.19	"	519	1470	95.7	70-130
Sodium	2550	5.19	"	519	2130	81.2	70-130

Matrix Spike Dup (2008286-MSD1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

Calcium	5320	10.4	mg/kg dry	519	4860	89.8	70-130	0.157	25
Magnesium	1980	5.19	"	519	1470	97.8	70-130	0.560	25
Sodium	2580	5.19	"	519	2130	87.2	70-130	1.21	25

Summit Scientific

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1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

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 2008271 - General Preparation

Duplicate (2008271-DUP1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

% Solids	96.5		%		96.4			0.113	20	
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Batch 2008273 - General Preparation

LCS (2008273-BS1)

Prepared & Analyzed: 08/27/20

pH	9.15		pH Units	9.18		99.7	95-105			
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Duplicate (2008273-DUP1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

pH	8.25		pH Units		8.23			0.243	20	
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Summit Scientific

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K.P. Kauffman
1675 Broadway
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Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 2008274 - General Preparation

Blank (2008274-BLK1)

Prepared & Analyzed: 08/27/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2008274-BS1)

Prepared & Analyzed: 08/27/20

Specific Conductance (EC) 0.724 0.0100 mmhos/cm 0.750 96.5 90-110

Duplicate (2008274-DUP1)

Source: 2008203-01

Prepared & Analyzed: 08/27/20

Specific Conductance (EC) 12.4 0.0100 mmhos/cm 12.4 0.444 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #2 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
08/28/20 11:05

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