

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 12, 2022

Levi Kirk

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Suckla Brown Unit 17 Header

Work Order #2209570

Enclosed are the results of analyses for samples received by Summit Scientific on 09/28/22 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1@10'	2209570-01	Soil	09/28/22 09:50	09/28/22 16:30
SB-1@15'	2209570-02	Soil	09/28/22 10:00	09/28/22 16:30
SB-2@7.5'	2209570-03	Soil	09/28/22 11:25	09/28/22 16:30
SB-2@15'	2209570-04	Soil	09/28/22 11:30	09/28/22 16:30
SB-3@6'	2209570-05	Soil	09/28/22 10:30	09/28/22 16:30
SB-4@7.5'	2209570-06	Soil	09/28/22 12:00	09/28/22 16:30
SB-4@15'	2209570-07	Soil	09/28/22 12:05	09/28/22 16:30
Background-2@6-10'	2209570-08	Soil	09/28/22 13:00	09/28/22 16:30

Summit Scientific

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

Summit Scientific

2209570

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: K.P. Kauffman Company, Inc.

Project Manager: Ray Gorka *Ray Gorka*

Address: ~~1700 Lincoln Street, #4500~~ *1675 Broadway*

E-Mail: rgorka@kpk.com, primarycontractor@marcomllc.net

City/State/Zip: ~~Denver, CO 80203~~ *Denver, CO 80202*

mhattel@msn.com

Phone: 303-825-4822

Project Name: *Sudala Brown Unit 17 Header*

Sampler Name: *Mike Hattel (303-517-6551) CP*

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	For 915	Table 915 inc 915							
1	<i>SB-1 @ 10'</i>	<i>9.28.22</i>	<i>0950</i>	<i>3</i>			<i>X</i>			<i>X</i>											
2	<i>SB-1 @ 15'</i>		<i>1000</i>																		
3	<i>SB-2 @ 7.5'</i>		<i>1125</i>																		
4	<i>SB-2 @ 15'</i>		<i>1130</i>																		
5	<i>SB-3 @ 6'</i>		<i>1030</i>																		
6	<i>SB-4 @ 7.5'</i>		<i>1200</i>																		
7	<i>SB-4 @ 15'</i>		<i>1205</i>																		
8	<i>Backsight - 2 @ 6-10'</i>		<i>1306</i>	<i>1</i>											<i>X</i>						
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>Chris Piccin</i>	<i>9.28.22 1400</i>			Same Day	72 hours	<i>Bags are in fridge</i>
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
		<i>JB</i>	<i>9/28/22 1630</i>	48 hours	<i>X</i>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	<i>9.8</i>	
				Temperature Upon Receipt:	<i>79</i>	
				Samples Intact:	<i>Yes</i> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2209570

Client: KP Kauffman Client Project ID: Suckla Brown Unit 17 HeaderShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.8Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<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 due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
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⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				


 Custodian Printed Name

8-28-22 21:00
 Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-1@10'
2209570-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	09/30/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BF10798	09/30/22	09/30/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		73.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
Project Manager: Levi Kirk

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SB-1@10'
2209570-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.258	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-1@10'
2209570-01 (Soil)

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Total Metals by EPA 6020B

Arsenic	4.18	0.229	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	39.4	0.457	"	"	"	"	"	"
Cadmium	ND	0.229	"	"	"	"	"	"
Copper	6.19	0.457	"	"	"	"	"	"
Lead	6.37	0.229	"	"	"	"	"	"
Nickel	6.76	0.457	"	"	"	"	"	"
Selenium	0.607	0.297	"	"	"	"	"	"
Silver	ND	0.0229	"	"	"	"	"	"
Zinc	24.7	0.457	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.6	0.0572	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	38.5	0.0572	"	"	"	"	"	"	
Sodium	92.9	0.0572	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.37	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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SB-1@10'
2209570-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	87.5			%	1	BFJ0012	10/03/22	10/03/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.866	0.0100		mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.38			pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

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1675 Broadway
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Project: Suckla Brown Unit 17 Header

Project Number: [none]
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SB-1@15'
2209570-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	09/30/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		73.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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SB-1@15'
2209570-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.299	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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1675 Broadway
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Project: Suckla Brown Unit 17 Header

Project Number: [none]
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Reported:
10/12/22 13:51

SB-1@15'
2209570-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.88	0.227	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	30.1	0.453	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	8.67	0.453	"	"	"	"	"	"
Lead	8.09	0.227	"	"	"	"	"	"
Nickel	9.31	0.453	"	"	"	"	"	"
Selenium	0.814	0.295	"	"	"	"	"	"
Silver	ND	0.0227	"	"	"	"	"	"
Zinc	33.8	0.453	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.4	0.0566	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	20.6	0.0566	"	"	"	"	"	"	
Sodium	89.5	0.0566	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.07	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-1@15'
2209570-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.3			%	1	BFJ0012	10/03/22	10/03/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.675	0.0100		mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.36			pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@7.5'
2209570-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1.6	0.20	mg/kg	100	BF10796	09/30/22	10/01/22	EPA 8260B	
Toluene	0.017	0.0050	"	1	"	"	10/01/22	"	
Ethylbenzene	4.1	0.50	"	100	"	"	10/01/22	"	
Xylenes (total)	38	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	13	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	8.4	0.50	"	"	"	"	"	"	
Naphthalene	0.98	0.38	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	520	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		124 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	120	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		84.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@7.5'
2209570-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0193	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0732	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	1.69	0.500	"	100	"	"	09/30/22	"	
2-Methylnaphthalene	4.92	0.500	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.8 %	40-150		"	"	09/30/22	"	
Surrogate: Fluoranthene-d10		82.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.12	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@7.5'
2209570-03 (Soil)

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Total Metals by EPA 6020B

Arsenic	5.68	0.264	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	174	0.527	"	"	"	"	"	"
Cadmium	ND	0.264	"	"	"	"	"	"
Copper	14.8	0.527	"	"	"	"	"	"
Lead	11.2	0.264	"	"	"	"	"	"
Nickel	16.4	0.527	"	"	"	"	"	"
Selenium	1.29	0.343	"	"	"	"	"	"
Silver	0.0438	0.0264	"	"	"	"	"	"
Zinc	54.1	0.527	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.4	0.0659	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	10.4	0.0659	"	"	"	"	"	"	
Sodium	380	0.0659	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	19.3	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@7.5'
2209570-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	75.9	%	1	BFJ0012	10/03/22	10/03/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.38	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.74		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

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1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@15'
2209570-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	10/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		142 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		76.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@15'
2209570-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.00777	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.489	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@15'
2209570-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	11.2	0.244	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	25.0	0.488	"	"	"	"	"	"
Cadmium	ND	0.244	"	"	"	"	"	"
Copper	17.2	0.488	"	"	"	"	"	"
Lead	13.7	0.244	"	"	"	"	"	"
Nickel	9.29	0.488	"	"	"	"	"	"
Selenium	1.19	0.317	"	"	"	"	"	"
Silver	0.0328	0.0244	"	"	"	"	"	"
Zinc	51.1	0.488	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	111	0.0610	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	103	0.0610	"	"	"	"	"	"	
Sodium	901	0.0610	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	14.8	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-2@15'
2209570-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.0	%	1	BFJ0012	10/03/22	10/03/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.06	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.38		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-3@6'
2209570-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	10/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0050	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.029	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.53	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	120	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-3@6'
2209570-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0163	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0519	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.147	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.288	0.0500	"	10	"	"	09/30/22	"	

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.5 %	40-150		"	"	09/30/22	"	
Surrogate: Fluoranthene-d10		80.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.710	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-3@6'
2209570-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	5.84	0.241	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	194	0.483	"	"	"	"	"	"
Cadmium	0.257	0.241	"	"	"	"	"	"
Copper	10.3	0.483	"	"	"	"	"	"
Lead	7.78	0.241	"	"	"	"	"	"
Nickel	13.8	0.483	"	"	"	"	"	"
Selenium	0.792	0.314	"	"	"	"	"	"
Silver	0.0345	0.0241	"	"	"	"	"	"
Zinc	35.0	0.483	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	16.1	0.0604	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	17.7	0.0604	"	"	"	"	"	"	
Sodium	253	0.0604	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.4	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-3@6'
2209570-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.8	%	1	BFJ0012	10/03/22	10/03/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@7.5'
2209570-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	10/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.59	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	230	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@7.5'
2209570-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	0.0115	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0100	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00613	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0130	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0288	0.00500	"	"	"	"	"	"	
Fluorene	0.0265	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0167	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0837	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.683	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@7.5'
2209570-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.63	0.238	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	132	0.476	"	"	"	"	"	"
Cadmium	ND	0.238	"	"	"	"	"	"
Copper	13.1	0.476	"	"	"	"	"	"
Lead	10.7	0.238	"	"	"	"	"	"
Nickel	10.7	0.476	"	"	"	"	"	"
Selenium	1.25	0.310	"	"	"	"	"	"
Silver	0.0378	0.0238	"	"	"	"	"	"
Zinc	45.8	0.476	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	450	0.0595	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	147	0.0595	"	"	"	"	"	"	
Sodium	970	0.0595	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.2	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@7.5'
2209570-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.0	%	1	BFJ0012	10/03/22	10/03/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.20	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.48		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@15'
2209570-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BF10796	09/30/22	10/01/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		120 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BF10798	09/30/22	10/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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K.P. Kauffman
1675 Broadway
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Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@15'
2209570-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BF10755	09/29/22	09/30/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.866	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@15'
2209570-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	7.82	0.234	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B
Barium	26.6	0.468	"	"	"	"	"	"
Cadmium	ND	0.234	"	"	"	"	"	"
Copper	10.2	0.468	"	"	"	"	"	"
Lead	9.48	0.234	"	"	"	"	"	"
Nickel	11.2	0.468	"	"	"	"	"	"
Selenium	0.888	0.304	"	"	"	"	"	"
Silver	0.0244	0.0234	"	"	"	"	"	"
Zinc	37.1	0.468	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	332	0.0585	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	215	0.0585	"	"	"	"	"	"	
Sodium	1290	0.0585	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.6	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

SB-4@15'
2209570-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.5	%	1	BFJ0012	10/03/22	10/03/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.58	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.29		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Background-2@6-10'
2209570-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.511	0.0100	mg/L	1	BFJ0087	10/05/22	10/08/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	5.92	0.251	mg/kg dry	1	BFJ0122	10/06/22	10/08/22	EPA 6020B	
Barium	159	0.502	"	"	"	"	"	"	
Cadmium	ND	0.251	"	"	"	"	"	"	
Copper	13.2	0.502	"	"	"	"	"	"	
Lead	13.2	0.251	"	"	"	"	"	"	
Nickel	13.0	0.502	"	"	"	"	"	"	
Selenium	1.22	0.326	"	"	"	"	"	"	
Silver	0.0639	0.0251	"	"	"	"	"	"	
Zinc	46.4	0.502	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0253	10/11/22	10/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	97.9	0.0627	mg/L dry	1	BFJ0088	10/05/22	10/08/22	EPA 6020B	
Magnesium	56.4	0.0627	"	"	"	"	"	"	
Sodium	109	0.0627	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Background-2@6-10'
2209570-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.17	0.00100	units	1	BFJ0193	10/08/22	10/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.7		%	1	BFJ0012	10/03/22	10/03/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.25	0.0100	mmhos/cm	1	BFJ0109	10/05/22	10/12/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/28/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BFJ0108	10/05/22	10/12/22	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

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 BFI0796 - EPA 5030 Soil MS

Blank (BFI0796-BLK1)

Prepared & Analyzed: 09/30/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0400		112	50-150			
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150			

LCS (BFI0796-BS1)

Prepared & Analyzed: 09/30/22

Benzene	0.0749	0.0020	mg/kg	0.100		74.9	70-130			
Toluene	0.0815	0.0050	"	0.100		81.5	70-130			
Ethylbenzene	0.0864	0.0050	"	0.100		86.4	70-130			
m,p-Xylene	0.175	0.010	"	0.200		87.3	70-130			
o-Xylene	0.0806	0.0050	"	0.100		80.6	70-130			
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.100		85.4	70-130			
1,3,5-Trimethylbenzene	0.0874	0.0050	"	0.100		87.4	70-130			
Naphthalene	0.0990	0.0038	"	0.100		99.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.4	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.0	50-150			

Matrix Spike (BFI0796-MS1)

Source: 2209566-01

Prepared & Analyzed: 09/30/22

Benzene	0.0789	0.0020	mg/kg	0.100	ND	78.9	70-130			
Toluene	0.0887	0.0050	"	0.100	ND	88.7	70-130			
Ethylbenzene	0.0960	0.0050	"	0.100	ND	96.0	70-130			
m,p-Xylene	0.194	0.010	"	0.200	ND	97.0	70-130			
o-Xylene	0.0877	0.0050	"	0.100	ND	87.7	70-130			
1,2,4-Trimethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100	ND	95.8	70-130			
Naphthalene	0.0741	0.0038	"	0.100	ND	74.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		98.9	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.4	50-150			

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1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

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 BFI0796 - EPA 5030 Soil MS

Matrix Spike Dup (BFI0796-MSD1)		Source: 2209566-01			Prepared & Analyzed: 09/30/22					
Benzene	0.0731	0.0020	mg/kg	0.100	ND	73.1	70-130	7.58	30	
Toluene	0.0814	0.0050	"	0.100	ND	81.4	70-130	8.54	30	
Ethylbenzene	0.0875	0.0050	"	0.100	ND	87.5	70-130	9.19	30	
m,p-Xylene	0.175	0.010	"	0.200	ND	87.6	70-130	10.2	30	
o-Xylene	0.0824	0.0050	"	0.100	ND	82.4	70-130	6.24	30	
1,2,4-Trimethylbenzene	0.0874	0.0050	"	0.100	ND	87.4	70-130	4.69	30	
1,3,5-Trimethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130	6.64	30	
Naphthalene	0.0810	0.0038	"	0.100	ND	81.0	70-130	8.93	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0422		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.1	50-150			

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

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 BFI0798 - EPA 3550A

Blank (BFI0798-BLK1)

Prepared & Analyzed: 09/30/22

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

LCS (BFI0798-BS1)

Prepared & Analyzed: 09/30/22

C10-C28 (DRO)	606	50	mg/kg	500	121	70-130
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Matrix Spike (BFI0798-MS1)

Source: 2209566-01

Prepared & Analyzed: 09/30/22

C10-C28 (DRO)	583	50	mg/kg	500	23.1	112	70-130
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Matrix Spike Dup (BFI0798-MSD1)

Source: 2209566-01

Prepared & Analyzed: 09/30/22

C10-C28 (DRO)	584	50	mg/kg	500	23.1	112	70-130	0.0372	20
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFI0755 - EPA 5030 Soil MS

Blank (BFI0755-BLK1)

Prepared & Analyzed: 09/29/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0324		"	0.0333		97.2	40-150			
Surrogate: Fluoranthene-d10	0.0349		"	0.0333		105	40-150			

LCS (BFI0755-BS1)

Prepared & Analyzed: 09/29/22

Acenaphthene	0.0328	0.00500	mg/kg	0.0333		98.3	31-137			
Anthracene	0.0338	0.00500	"	0.0333		102	30-120			
Benzo (a) anthracene	0.0332	0.00500	"	0.0333		99.6	30-120			
Benzo (a) pyrene	0.0330	0.00500	"	0.0333		99.1	30-120			
Benzo (b) fluoranthene	0.0329	0.00500	"	0.0333		98.6	30-120			
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0333		99.2	30-120			
Chrysene	0.0334	0.00500	"	0.0333		100	30-120			
Dibenz (a,h) anthracene	0.0306	0.00500	"	0.0333		91.7	30-120			
Fluoranthene	0.0312	0.00500	"	0.0333		93.6	30-120			
Fluorene	0.0333	0.00500	"	0.0333		99.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0242	0.00500	"	0.0333		72.7	30-120			
Pyrene	0.0256	0.00500	"	0.0333		76.9	35-142			
1-Methylnaphthalene	0.0344	0.00500	"	0.0333		103	35-142			
2-Methylnaphthalene	0.0325	0.00500	"	0.0333		97.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0304		"	0.0333		91.3	40-150			
Surrogate: Fluoranthene-d10	0.0345		"	0.0333		104	40-150			

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BFI0755 - EPA 5030 Soil MS

Matrix Spike (BFI0755-MS1)

Source: 2209540-01

Prepared & Analyzed: 09/29/22

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.3	31-137		
Anthracene	0.0218	0.00500	"	0.0333	ND	65.5	30-120		
Benzo (a) anthracene	0.0207	0.00500	"	0.0333	ND	62.2	30-120		
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.1	30-120		
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Benzo (k) fluoranthene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Chrysene	0.0209	0.00500	"	0.0333	ND	62.6	30-120		
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120		
Fluoranthene	0.0178	0.00500	"	0.0333	ND	53.5	30-120		
Fluorene	0.0215	0.00500	"	0.0333	ND	64.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.7	30-120		
Pyrene	0.0233	0.00500	"	0.0333	ND	69.8	35-142		
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.1	15-130		
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.9	40-150		
Surrogate: Fluoranthene-d10	0.0225		"	0.0333		67.5	40-150		

Matrix Spike Dup (BFI0755-MSD1)

Source: 2209540-01

Prepared & Analyzed: 09/29/22

Acenaphthene	0.0216	0.00500	mg/kg	0.0333	ND	64.7	31-137	2.44	30
Anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	4.04	30
Benzo (a) anthracene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	0.403	30
Benzo (a) pyrene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	0.552	30
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	3.33	30
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	2.78	30
Chrysene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	0.279	30
Dibenz (a,h) anthracene	0.0186	0.00500	"	0.0333	ND	55.8	30-120	4.47	30
Fluoranthene	0.0173	0.00500	"	0.0333	ND	52.0	30-120	2.83	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	3.36	30
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120	0.955	30
Pyrene	0.0219	0.00500	"	0.0333	ND	65.6	35-142	6.24	30
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.3	15-130	0.189	50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.4	15-130	0.731	50
Surrogate: 2-Methylnaphthalene-d10	0.0202		"	0.0333		60.7	40-150		
Surrogate: Fluoranthene-d10	0.0222		"	0.0333		66.5	40-150		

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BFJ0087 - EPA 3050B

Blank (BFJ0087-BLK1)

Prepared: 10/05/22 Analyzed: 10/08/22

Boron ND 0.0100 mg/L

LCS (BFJ0087-BS1)

Prepared: 10/05/22 Analyzed: 10/08/22

Boron 5.67 0.0100 mg/L 5.00 113 80-120

Duplicate (BFJ0087-DUP1)

Source: 2209569-01

Prepared: 10/05/22 Analyzed: 10/08/22

Boron 0.122 0.0100 mg/L 0.124 1.80 20

Matrix Spike (BFJ0087-MS1)

Source: 2209569-01

Prepared: 10/05/22 Analyzed: 10/08/22

Boron 6.18 0.0100 mg/L 5.00 0.124 121 75-125

Matrix Spike Dup (BFJ0087-MSD1)

Source: 2209569-01

Prepared: 10/05/22 Analyzed: 10/08/22

Boron 6.19 0.0100 mg/L 5.00 0.124 121 75-125 0.197 25

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFJ0122 - EPA 3050B

Blank (BFJ0122-BLK1)

Prepared: 10/06/22 Analyzed: 10/08/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFJ0122-BS1)

Prepared: 10/06/22 Analyzed: 10/08/22

Arsenic	40.0	0.200	mg/kg wet	40.0	100	80-120
Barium	39.8	0.400	"	40.0	99.5	80-120
Cadmium	1.99	0.200	"	2.00	99.5	80-120
Copper	38.4	0.400	"	40.0	95.9	80-120
Lead	18.9	0.200	"	20.0	94.4	80-120
Nickel	38.7	0.400	"	40.0	96.8	80-120
Selenium	3.84	0.260	"	4.00	95.9	80-120
Silver	1.97	0.0200	"	2.00	98.4	80-120
Zinc	40.5	0.400	"	40.0	101	80-120

Duplicate (BFJ0122-DUP1)

Source: 2209542-01

Prepared: 10/06/22 Analyzed: 10/08/22

Arsenic	0.924	0.222	mg/kg dry	1.09	16.2	20
Barium	59.1	0.445	"	57.1	3.40	20
Cadmium	0.0884	0.222	"	0.0888	0.354	20
Copper	3.03	0.445	"	3.43	12.5	20
Lead	2.90	0.222	"	2.82	2.79	20
Nickel	4.09	0.445	"	3.52	14.9	20
Selenium	0.369	0.289	"	0.406	9.48	20
Silver	0.0152	0.0222	"	0.0144	4.85	20
Zinc	12.0	0.445	"	13.8	14.3	20

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1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0122 - EPA 3050B

Matrix Spike (BFJ0122-MS1)		Source: 2209542-01			Prepared: 10/06/22 Analyzed: 10/08/22					
Arsenic	40.7	0.222	mg/kg dry	44.5	1.09	89.0	75-125			
Barium	99.5	0.445	"	44.5	57.1	95.3	75-125			
Cadmium	2.13	0.222	"	2.22	0.0888	91.7	75-125			
Copper	41.2	0.445	"	44.5	3.43	84.9	75-125			
Lead	20.9	0.222	"	22.2	2.82	81.3	75-125			
Nickel	42.1	0.445	"	44.5	3.52	86.7	75-125			
Selenium	3.87	0.289	"	4.45	0.406	77.9	75-125			
Silver	1.96	0.0222	"	2.22	0.0144	87.4	75-125			
Zinc	53.9	0.445	"	44.5	13.8	90.2	75-125			

Matrix Spike Dup (BFJ0122-MSD1)		Source: 2209542-01			Prepared: 10/06/22 Analyzed: 10/08/22					
Arsenic	40.5	0.222	mg/kg dry	44.5	1.09	88.6	75-125	0.491	25	
Barium	106	0.445	"	44.5	57.1	109	75-125	5.96	25	
Cadmium	2.23	0.222	"	2.22	0.0888	96.1	75-125	4.55	25	
Copper	41.1	0.445	"	44.5	3.43	84.7	75-125	0.238	25	
Lead	21.8	0.222	"	22.2	2.82	85.5	75-125	4.37	25	
Nickel	42.3	0.445	"	44.5	3.52	87.2	75-125	0.437	25	
Selenium	4.19	0.289	"	4.45	0.406	85.0	75-125	7.79	25	
Silver	2.05	0.0222	"	2.22	0.0144	91.5	75-125	4.55	25	
Zinc	53.6	0.445	"	44.5	13.8	89.3	75-125	0.716	25	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFJ0253 - 3060A Mod

Blank (BFJ0253-BLK1)

Prepared: 10/11/22 Analyzed: 10/12/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFJ0253-BS1)

Prepared: 10/11/22 Analyzed: 10/12/22

Chromium, Hexavalent 22.5 0.30 mg/kg wet 25.0 90.0 80-120

Duplicate (BFJ0253-DUP1)

Source: 2209570-01

Prepared: 10/11/22 Analyzed: 10/12/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFJ0253-MS1)

Source: 2209570-01

Prepared: 10/11/22 Analyzed: 10/12/22

Chromium, Hexavalent 28.2 0.30 mg/kg dry 28.6 ND 98.8 75-125

Matrix Spike Dup (BFJ0253-MSD1)

Source: 2209570-01

Prepared: 10/11/22 Analyzed: 10/12/22

Chromium, Hexavalent 37.1 0.30 mg/kg dry 28.6 ND 130 75-125 27.1 20 QM-05

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFJ0088 - General Preparation

Blank (BFJ0088-BLK1)

Prepared: 10/05/22 Analyzed: 10/08/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFJ0088-BS1)

Prepared: 10/05/22 Analyzed: 10/08/22

Calcium	5.68	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.68	0.0500	"	5.00	114	70-130
Sodium	5.28	0.0500	"	5.00	106	70-130

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

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

Summit Scientific

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

Batch BFJ0012 - General Preparation

Duplicate (BFJ0012-DUP1)

Source: 2209567-04

Prepared & Analyzed: 10/03/22

% Solids	90.9	%		90.8		0.0690	20
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFJ0109 - General Preparation

Blank (BFJ0109-BLK1)

Prepared: 10/05/22 Analyzed: 10/12/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0109-BS1)

Prepared: 10/05/22 Analyzed: 10/12/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFJ0109-DUP1)

Source: 2209302-04

Prepared: 10/05/22 Analyzed: 10/12/22

Specific Conductance (EC) 0.685 0.0100 mmhos/cm 0.780 12.9 20

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Suckla Brown Unit 17 Header

Project Number: [none]
Project Manager: Levi Kirk

Reported:
10/12/22 13:51

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFJ0108 - General Preparation

LCS (BFJ0108-BS1)

Prepared: 10/05/22 Analyzed: 10/12/22

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BFJ0108-DUP1)

Source: 2209302-04

Prepared: 10/05/22 Analyzed: 10/12/22

pH	7.71	pH Units	7.71	0.00	20
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Summit Scientific

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



K.P. Kauffman
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Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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