

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 18, 2022

Jennifer Galles

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Facility 4 AE 2

Work Order #2204061

Enclosed are the results of analyses for samples received by Summit Scientific on 04/05/22 16:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Source #1	2204061-01	Soil	04/05/22 11:05	04/05/22 16:35

Summit Scientific

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# Summit Scientific

2204061

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

Page 1 of 1

Client: K.P. Kauffman/ Marcom

Project Manager: Jen Galles

Address: 1675 Broadway

E-Mail: primarycontractor@marcomllc.net

City/State/Zip: Denver, CO 80202


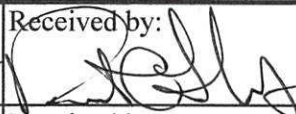
Phone: 303.825.4822

Project Name: Facility 4 AE2

Sampler Name: J. Coleman

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	Table GIS	Full Sweep										
1	Source #1	4/5/22	1105	3			X			X				X										
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Relinquished by: 	Date/Time: 4-5-22 @ 1635	Received by: 	Date/Time: 4522 1635	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	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"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 3.9	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S<sub>2</sub>

2204061

## Sample Receipt Checklist

S2 Work Order#

Client: Kp Kauffman Client Project ID: Facility 4 AE2Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: 

	-			
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 3.9Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$ <sup>(1)</sup> ? <b>NOTE:</b> 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"/>	<u>on ICE</u>
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron ( $\text{Fe}^{2+}$ ), Hexavalent Chromium ( $\text{Cr}^{6+}$ , 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the comments column – HCl, $\text{H}_2\text{SO}_4$ , NaOH, $\text{HNO}_3$ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the $\text{pH} \leq 2$ <sup>(1)</sup> ? 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):				

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

[Signature]  
Custodian Printed Name

4.5.22  
Date/Time



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**Source #1**  
**2204061-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0131	04/07/22	04/08/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0058</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.29</b>	0.050	"	10	"	"	04/08/22	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.056</b>	0.0050	"	1	"	"	04/08/22	"	
Naphthalene	ND	0.038	"	10	"	"	04/08/22	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4.5</b>	0.50	"	1	"	"	04/08/22	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		135 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>150</b>	50	mg/kg	1	BFD0132	04/07/22	04/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

**R-01**

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Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

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04/18/22 14:15

**Source #1**  
**2204061-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

**R-01**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	<b>0.634</b>	0.250	mg/kg	50	BFD0130	04/07/22	04/13/22	EPA 8270D SIM	
Anthracene	<b>0.474</b>	0.250	"	"	"	"	"	"	
Benzo (a) anthracene	<b>0.633</b>	0.250	"	"	"	"	"	"	
Benzo (a) pyrene	<b>0.331</b>	0.250	"	"	"	"	"	"	
Benzo (b) fluoranthene	<b>0.398</b>	0.250	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.250	"	"	"	"	"	"	
Chrysene	ND	0.250	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.250	"	"	"	"	"	"	
Fluoranthene	<b>2.78</b>	0.250	"	"	"	"	"	"	
Fluorene	<b>0.550</b>	0.250	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.250	"	"	"	"	"	"	
Pyrene	<b>2.30</b>	0.250	"	"	"	"	"	"	
1-Methylnaphthalene	<b>0.413</b>	0.250	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.250	"	"	"	"	"	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10		%	40-150		"	"	"	"	S-01
Surrogate: Fluoranthene-d10		%	40-150		"	"	"	"	S-01

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	<b>0.227</b>	0.0100	mg/L	1	BFD0185	04/11/22	04/14/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

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1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**Source #1**  
**2204061-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.27	0.245	mg/kg dry	1	BFD0120	04/06/22	04/12/22	EPA 6020B
Barium	130	0.491	"	"	"	"	"	"
Cadmium	0.300	0.245	"	"	"	"	"	"
Copper	13.6	0.491	"	"	"	"	"	"
Lead	12.7	0.245	"	"	"	"	"	"
Nickel	14.4	0.491	"	"	"	"	"	"
Selenium	1.26	0.319	"	"	"	"	"	"
Silver	0.0768	0.0245	"	"	"	"	"	"
Zinc	50.8	0.491	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0237	04/12/22	04/12/22	EPA 7196A	

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

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	114	0.0613	mg/L dry	1	BFD0294	04/14/22	04/17/22	EPA 6020B	
Magnesium	113	0.0613	"	"	"	"	"	"	
Sodium	554	0.0613	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.80	0.00100	units	1	BFD0339	04/18/22	04/18/22	Calculation	

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

Date Sampled: **04/05/22 11:05**

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

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**Source #1**  
**2204061-01 (Soil)**

**Summit Scientific**

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

% Solids	81.5	%	1	BFD0211	04/11/22	04/12/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.17	0.0100	mmhos/cm	1	BFD0315	04/15/22	04/15/22	EPA 120.1	

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

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BFD0313	04/15/22	04/15/22	EPA 9045D	

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1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

## 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 BFD0131 - EPA 5030 Soil MS

##### Blank (BFD0131-BLK1)

Prepared: 04/07/22 Analyzed: 04/08/22

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	0.0558		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	50-150			

##### LCS (BFD0131-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

Benzene	0.0918	0.0020	mg/kg	0.100		91.8	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0900	0.0050	"	0.100		90.0	70-130			
m,p-Xylene	0.195	0.010	"	0.200		97.7	70-130			
o-Xylene	0.0978	0.0050	"	0.100		97.8	70-130			
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
Naphthalene	0.101	0.0038	"	0.100		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0555		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0431		"	0.0400		108	50-150			

##### Matrix Spike (BFD0131-MS1)

Source: 2204053-01

Prepared: 04/07/22 Analyzed: 04/08/22

Benzene	0.0957	0.0020	mg/kg	0.100	ND	95.7	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
m,p-Xylene	0.191	0.010	"	0.200	ND	95.3	70-130			
o-Xylene	0.0977	0.0050	"	0.100	ND	97.7	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130			
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0523		"	0.0400		131	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400		107	50-150			

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1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0131 - EPA 5030 Soil MS**

Matrix Spike Dup (BFD0131-MSD1)		Source: 2204053-01			Prepared: 04/07/22 Analyzed: 04/08/22					
Benzene	0.0958	0.0020	mg/kg	0.100	ND	95.8	70-130	0.188	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	0.544	30	
Ethylbenzene	0.0948	0.0050	"	0.100	ND	94.8	70-130	3.48	30	
m,p-Xylene	0.198	0.010	"	0.200	ND	98.9	70-130	3.75	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	3.29	30	
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	7.30	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	4.02	30	
Naphthalene	0.109	0.0038	"	0.100	ND	109	70-130	1.39	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0520		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	50-150			

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Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0132 - EPA 3550A**

**Blank (BFD0132-BLK1)**

Prepared & Analyzed: 04/07/22

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

**LCS (BFD0132-BS1)**

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	476	50	mg/kg	500	95.2	70-130
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**Matrix Spike (BFD0132-MS1)**

Source: 2204053-01

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	454	50	mg/kg	500	16.9	87.5	70-130
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**Matrix Spike Dup (BFD0132-MSD1)**

Source: 2204053-01

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	433	50	mg/kg	500	16.9	83.2	70-130	4.83	20
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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

## 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 BFD0130 - EPA 5030 Soil MS

##### Blank (BFD0130-BLK1)

Prepared: 04/07/22 Analyzed: 04/08/22

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	0.0159		"	0.0333		47.6	40-150			
Surrogate: Fluoranthene-d10	0.0169		"	0.0333		50.8	40-150			

##### LCS (BFD0130-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0165	0.00500	mg/kg	0.0333		49.5	31-137			
Anthracene	0.0172	0.00500	"	0.0333		51.5	30-120			
Benzo (a) anthracene	0.0187	0.00500	"	0.0333		56.0	30-120			
Benzo (a) pyrene	0.0162	0.00500	"	0.0333		48.5	30-120			
Benzo (b) fluoranthene	0.0170	0.00500	"	0.0333		50.9	30-120			
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333		50.3	30-120			
Chrysene	0.0179	0.00500	"	0.0333		53.7	30-120			
Dibenz (a,h) anthracene	0.0128	0.00500	"	0.0333		38.3	30-120			
Fluoranthene	0.0170	0.00500	"	0.0333		51.1	30-120			
Fluorene	0.0157	0.00500	"	0.0333		47.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333		55.5	30-120			
Pyrene	0.0186	0.00500	"	0.0333		55.9	35-142			
1-Methylnaphthalene	0.0151	0.00500	"	0.0333		45.4	35-142			
2-Methylnaphthalene	0.0150	0.00500	"	0.0333		45.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0159		"	0.0333		47.6	40-150			
Surrogate: Fluoranthene-d10	0.0176		"	0.0333		52.9	40-150			

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BFD0130 - EPA 5030 Soil MS

##### Matrix Spike (BFD0130-MS1)

Source: 2204086-01

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.8	31-137				
Anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120				
Benzo (a) anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120				
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	30-120				
Benzo (b) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120				
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120				
Chrysene	0.0199	0.00500	"	0.0333	ND	59.7	30-120				
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120				
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120				
Fluorene	0.0183	0.00500	"	0.0333	ND	55.0	30-120				
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120				
Pyrene	0.0222	0.00500	"	0.0333	ND	66.6	35-142				
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.0	15-130				
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0181		"	0.0333		54.3	40-150				
Surrogate: Fluoranthene-d10	0.0199		"	0.0333		59.8	40-150				

##### Matrix Spike Dup (BFD0130-MSD1)

Source: 2204086-01

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.8	31-137	11.7	30		
Anthracene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	8.36	30		
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	5.32	30		
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	4.56	30		
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	5.10	30		
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	6.00	30		
Chrysene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	5.83	30		
Dibenz (a,h) anthracene	0.0127	0.00500	"	0.0333	ND	38.0	30-120	9.15	30		
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120	7.62	30		
Fluorene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	12.8	30		
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	3.51	30		
Pyrene	0.0207	0.00500	"	0.0333	ND	62.2	35-142	6.72	30		
1-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.9	15-130	7.78	50		
2-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.3	15-130	14.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.2	40-150				
Surrogate: Fluoranthene-d10	0.0184		"	0.0333		55.1	40-150				

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0185 - EPA 3050B**

**Blank (BFD0185-BLK1)**

Prepared: 04/11/22 Analyzed: 04/14/22

Boron ND 0.0100 mg/L

**LCS (BFD0185-BS1)**

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 4.86 0.0100 mg/L 5.00 97.2 80-120

**Duplicate (BFD0185-DUP1)**

**Source: 2204053-01**

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 0.0597 0.0100 mg/L 0.0648 8.19 20

**Matrix Spike (BFD0185-MS1)**

**Source: 2204053-01**

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 4.96 0.0100 mg/L 5.00 0.0648 97.8 75-125

**Matrix Spike Dup (BFD0185-MSD1)**

**Source: 2204053-01**

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 5.03 0.0100 mg/L 5.00 0.0648 99.3 75-125 1.43 25

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0120 - EPA 3050B**

**Blank (BFD0120-BLK1)**

Prepared: 04/06/22 Analyzed: 04/12/22

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 (BFD0120-BS1)**

Prepared: 04/06/22 Analyzed: 04/12/22

Arsenic	34.4	0.200	mg/kg wet	40.0	86.0	80-120
Barium	33.7	0.400	"	40.0	84.2	80-120
Cadmium	1.71	0.200	"	2.00	85.3	80-120
Copper	33.8	0.400	"	40.0	84.4	80-120
Lead	16.6	0.200	"	20.0	82.8	80-120
Nickel	32.1	0.400	"	40.0	80.3	80-120
Selenium	3.31	0.260	"	4.00	82.7	80-120
Silver	1.65	0.0200	"	2.00	82.6	80-120
Zinc	36.2	0.400	"	40.0	90.5	80-120

**Duplicate (BFD0120-DUP1)**

Source: 2204040-01

Prepared: 04/06/22 Analyzed: 04/12/22

Arsenic	4.53	0.219	mg/kg dry	6.86	40.8	20	QR-03
Barium	178	0.439	"	132	30.1	20	QR-03
Cadmium	0.376	0.219	"	0.353	6.19	20	
Copper	18.3	0.439	"	58.4	105	20	QR-03
Lead	18.1	0.219	"	17.2	5.46	20	
Nickel	12.5	0.439	"	25.7	69.2	20	QR-03
Selenium	1.04	0.285	"	0.766	30.1	20	QR-03
Silver	0.115	0.0219	"	0.356	102	20	QR-03
Zinc	99.9	0.439	"	479	131	20	QR-03

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0120 - EPA 3050B**

Matrix Spike (BFD0120-MS1)	Source: 2204040-01			Prepared: 04/06/22 Analyzed: 04/12/22						
Arsenic	41.4	0.219	mg/kg dry	43.9	6.86	78.6	75-125			
Barium	204	0.439	"	43.9	132	164	75-125			QR-03
Cadmium	2.19	0.219	"	2.19	0.353	83.9	75-125			
Copper	108	0.439	"	43.9	58.4	113	75-125			
Lead	33.7	0.219	"	21.9	17.2	75.6	75-125			
Nickel	45.3	0.439	"	43.9	25.7	44.7	75-125			QR-03
Selenium	4.39	0.285	"	4.39	0.766	82.7	75-125			
Silver	2.61	0.0219	"	2.19	0.356	103	75-125			
Zinc	128	0.439	"	43.9	479	NR	75-125			QR-03

Matrix Spike Dup (BFD0120-MSD1)	Source: 2204040-01			Prepared: 04/06/22 Analyzed: 04/12/22						
Arsenic	40.7	0.219	mg/kg dry	43.9	6.86	77.2	75-125	1.50	25	
Barium	187	0.439	"	43.9	132	127	75-125	8.37	25	QR-03
Cadmium	2.28	0.219	"	2.19	0.353	87.7	75-125	3.69	25	
Copper	54.1	0.439	"	43.9	58.4	NR	75-125	66.4	25	QR-03
Lead	36.7	0.219	"	21.9	17.2	89.2	75-125	8.48	25	
Nickel	43.9	0.439	"	43.9	25.7	41.7	75-125	2.98	25	QR-03
Selenium	4.07	0.285	"	4.39	0.766	75.3	75-125	7.69	25	
Silver	2.23	0.0219	"	2.19	0.356	85.5	75-125	15.4	25	
Zinc	154	0.439	"	43.9	479	NR	75-125	17.9	25	QR-03

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0237 - 3060A Mod**

**Blank (BFD0237-BLK1)**

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFD0237-BS1)**

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 26.4 0.30 mg/kg wet 25.0 105 80-120

**Duplicate (BFD0237-DUP1)**

**Source: 2204040-01**

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFD0237-MS1)**

**Source: 2204040-01**

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 32.7 0.30 mg/kg dry 27.4 ND 119 75-125

**Matrix Spike Dup (BFD0237-MSD1)**

**Source: 2204040-01**

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 32.0 0.30 mg/kg dry 27.4 ND 117 75-125 2.03 20

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2  
Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0294 - General Preparation**

**Blank (BFD0294-BLK1)**

Prepared: 04/14/22 Analyzed: 04/17/22

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

**LCS (BFD0294-BS1)**

Prepared: 04/14/22 Analyzed: 04/17/22

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.70	0.0500	"	5.00	114	70-130
Sodium	5.19	0.0500	"	5.00	104	70-130

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]

Project Manager: Jennifer Galles

**Reported:**

04/18/22 14:15

**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 BFD0211 - General Preparation**

<b>Duplicate (BFD0211-DUP1)</b>		<b>Source: 2204037-04</b>			Prepared: 04/11/22 Analyzed: 04/12/22					
% Solids	92.5		%		93.0			0.475	20	

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0315 - General Preparation**

**Blank (BFD0315-BLK1)**

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFD0315-BS1)**

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BFD0315-DUP1)**

**Source: 2204061-01**

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) 4.11 0.0100 mmhos/cm 4.17 1.35 20

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

**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 BFD0313 - General Preparation**

**LCS (BFD0313-BS1)**

Prepared & Analyzed: 04/15/22

pH	9.03	pH Units	9.18	98.4	95-105
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**Duplicate (BFD0313-DUP1)**

Source: 2204061-01

Prepared & Analyzed: 04/15/22

pH	8.04	pH Units	7.99	0.624	20
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Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]  
Project Manager: Jennifer Galles

**Reported:**  
04/18/22 14:15

### Notes and Definitions

S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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