

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 30, 2021

Max Moran  
Absaroka Solutions  
112 High Street  
Buffalo, WY 82834

RE: Arapahoe Unit Section 25S Spill Support  
Work Order #2111254

Enclosed are the results of analyses for samples received by Summit Scientific on 11/12/21 12:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AU_SS_01	2111254-01	Soil	11/11/21 15:00	11/12/21 12:00
AU_SS_02	2111254-02	Soil	11/11/21 15:12	11/12/21 12:00
AU_SS_03	2111254-03	Soil	11/11/21 15:23	11/12/21 12:00
AU_SS_04	2111254-04	Soil	11/11/21 15:43	11/12/21 12:00
AU_SS_05_SW	2111254-05	Soil	11/11/21 15:55	11/12/21 12:00
AU_SS_06_SW	2111254-06	Soil	11/11/21 16:10	11/12/21 12:00
AU_SS_07_SW	2111254-07	Soil	11/11/21 16:21	11/12/21 12:00

Summit Scientific

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# Summit Scientific

2111254

S<sub>2</sub>

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

Client: Absaroka Energy and Environmental Solutions

Project Manager: Max Moran

Address: 112 High Street

E-Mail: Max.Moran@AbsarokaSolutions.com

City/State/Zip: Buffalo WY 82834

[Ben.Shoup@Absarokasolutions.com](mailto:Ben.Shoup@Absarokasolutions.com)

Phone: 720-352-5326

Project Name: Arapahoe Unit Section 25S Spill Support

Sampler Name: Scott Corlett

Project Number: CIT.CO.0555.01

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Full Table 915-1 Suite								
1	AU_SS_01	11/11/2021	15:00	3			X			X			X								
2	AU_SS_02	11/11/2021	15:12	3			X			X			X								
3	AU_SS_03	11/11/2021	15:23	3			X			X			X								
4	AU_SS_04	11/11/2021	15:43	3			X			X			X								
5	AU_SS_05_SW	11/11/2021	15:55	3			X			X			X								
6	AU_SS_06_SW	11/11/2021	16:10	3			X			X			X								
7	AU_SS_07_SW	11/11/2021	16:21	3			X			X			X								
8	AU_BG_01	11/11/2021	16:48	3			X			X											Hold
9	AU_BG_02	11/11/2021	16:59	3			X			X											Hold
10	AU_BG_03	11/11/2021	17:15	3			X			X											Hold
Relinquished by: Scott Corlett		Date/Time: 11-12-2021/12:00		Received by: 		Date/Time: 11-12-21 12:00		Turn Around Time (Check)						Notes: Please send results to both Ben and Max							
Relinquished by:		Date/Time:		Received by:		Date/Time:		Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>													
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>													
Relinquished by:		Date/Time:		Received by:		Date/Time:		48 hours <input type="checkbox"/>						Sample Integrity:							
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt: 13.9						Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No							

S<sub>2</sub>

2111254

Sample Receipt Checklist

S2 Work Order# \_\_\_\_\_

Client: Absaroka Client Project ID: Arapahoe Unit Section 25S spill support.

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Temp (°C) 13.9

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? 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"/>	on ICE
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 with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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? 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) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 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 or Initials

11-12-21  
Date/Time



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_01**  
**2111254-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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11/30/21 10:24

**AU\_SS\_01**  
**2111254-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.9 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_01**  
**2111254-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.04	0.247	mg/kg dry	1	BEK0364	11/16/21	11/22/21	EPA 6020B	
Barium	249	0.494	"	"	"	"	"	"	
Cadmium	0.276	0.247	"	"	"	"	"	"	
Copper	10.8	0.494	"	"	"	"	"	"	
Lead	9.49	0.247	"	"	"	"	"	"	
Nickel	12.4	0.494	"	"	"	"	"	"	
Selenium	1.48	0.321	"	"	"	"	"	"	
Silver	0.0656	0.0247	"	"	"	"	"	"	
Zinc	36.2	0.494	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	107	0.0618	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	27.3	0.0618	"	"	"	"	"	"	
Sodium	27.5	0.0618	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.614	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**AU\_SS\_01**  
**2111254-01 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>80.9</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.917</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.92</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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Project Number: CIT.CO.0555.01  
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**Reported:**  
11/30/21 10:24

**AU\_SS\_02**  
**2111254-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		121 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Arapahoe Unit Section 25S Spill Support

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11/30/21 10:24

**AU\_SS\_02**  
**2111254-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.3 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
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11/30/21 10:24

**AU\_SS\_02**  
**2111254-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.04	0.229	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	177	0.457	"	"	"	"	"	"	
Cadmium	ND	0.229	"	"	"	"	"	"	
Copper	7.70	0.457	"	"	"	"	"	"	
Lead	7.00	0.229	"	"	"	"	"	"	
Nickel	8.74	0.457	"	"	"	"	"	"	
Selenium	1.18	0.297	"	"	"	"	"	"	
Silver	0.0430	0.0229	"	"	"	"	"	"	
Zinc	28.4	0.457	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 15:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 15:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	80.0	0.0571	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	26.6	0.0571	"	"	"	"	"	"	
Sodium	166	0.0571	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 15:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.11	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 15:12

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**AU\_SS\_02**  
**2111254-02 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>87.5</b>	<b>%</b>	<b>1</b>	<b>BEK0416</b>	<b>11/18/21</b>	<b>11/19/21</b>	<b>Calculation</b>
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.69</b>	<b>0.0100</b>	<b>mmhos/cm</b>	<b>1</b>	<b>BEK0450</b>	<b>11/19/21</b>	<b>11/19/21</b>	<b>EPA 120.1</b>	

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

Date Sampled: **11/11/21 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.75</b>		<b>pH Units</b>	<b>1</b>	<b>BEK0451</b>	<b>11/19/21</b>	<b>11/19/21</b>	<b>EPA 9045D</b>	

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_03**  
**2111254-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		123 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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**2111254-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.6 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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**2111254-03 (Soil)**

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**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.26	0.235	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	192	0.469	"	"	"	"	"	"	
Cadmium	ND	0.235	"	"	"	"	"	"	
Copper	8.94	0.469	"	"	"	"	"	"	
Lead	7.95	0.235	"	"	"	"	"	"	
Nickel	10.4	0.469	"	"	"	"	"	"	
Selenium	1.30	0.305	"	"	"	"	"	"	
Silver	0.0542	0.0235	"	"	"	"	"	"	
Zinc	33.4	0.469	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 15:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 15:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	126	0.0586	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	34.6	0.0586	"	"	"	"	"	"	
Sodium	795	0.0586	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 15:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.2	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 15:23

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**2111254-03 (Soil)**

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

<b>% Solids</b>	<b>85.3</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>4.74</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 15:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.77</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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**Reported:**  
11/30/21 10:24

**AU\_SS\_04**  
**2111254-04 (Soil)**

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

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>63</b>	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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11/30/21 10:24

**AU\_SS\_04**  
**2111254-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.8 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Reported:**  
11/30/21 10:24

**AU\_SS\_04**  
**2111254-04 (Soil)**

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**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.87	0.235	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	197	0.469	"	"	"	"	"	"	
Cadmium	ND	0.235	"	"	"	"	"	"	
Copper	8.13	0.469	"	"	"	"	"	"	
Lead	7.15	0.235	"	"	"	"	"	"	
Nickel	9.49	0.469	"	"	"	"	"	"	
Selenium	1.19	0.305	"	"	"	"	"	"	
Silver	0.0484	0.0235	"	"	"	"	"	"	
Zinc	29.8	0.469	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 15:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 15:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.8	0.0587	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	3.36	0.0587	"	"	"	"	"	"	
Sodium	315	0.0587	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 15:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	20.3	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 15:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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11/30/21 10:24

**AU\_SS\_04**  
**2111254-04 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>85.3</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.54</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 15:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.42</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_05\_SW**  
**2111254-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		120 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 15:55**

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

**PAH by EPA Method 8270D SIM**

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**2111254-05 (Soil)**

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**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.8 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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11/30/21 10:24

**AU\_SS\_05\_SW**  
**2111254-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.14	0.241	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	185	0.483	"	"	"	"	"	"	
Cadmium	ND	0.241	"	"	"	"	"	"	
Copper	9.17	0.483	"	"	"	"	"	"	
Lead	8.19	0.241	"	"	"	"	"	"	
Nickel	9.98	0.483	"	"	"	"	"	"	
Selenium	1.31	0.314	"	"	"	"	"	"	
Silver	0.0523	0.0241	"	"	"	"	"	"	
Zinc	32.6	0.483	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	330	0.0603	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	57.8	0.0603	"	"	"	"	"	"	
Sodium	652	0.0603	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.71	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_05\_SW**  
**2111254-05 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>82.9</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>5.18</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.72</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_06\_SW**  
**2111254-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.9 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
11/30/21 10:24

**AU\_SS\_06\_SW**  
**2111254-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.7 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_06\_SW**  
**2111254-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.87	0.247	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	215	0.494	"	"	"	"	"	"	
Cadmium	0.276	0.247	"	"	"	"	"	"	
Copper	11.6	0.494	"	"	"	"	"	"	
Lead	9.47	0.247	"	"	"	"	"	"	
Nickel	12.2	0.494	"	"	"	"	"	"	
Selenium	1.53	0.321	"	"	"	"	"	"	
Silver	0.0682	0.0247	"	"	"	"	"	"	
Zinc	37.9	0.494	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	134	0.0617	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	32.6	0.0617	"	"	"	"	"	"	
Sodium	488	0.0617	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.81	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 16:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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11/30/21 10:24

**AU\_SS\_06\_SW**  
**2111254-06 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>81.0</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>3.14</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 16:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.88</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**AU\_SS\_07\_SW**  
**2111254-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0385	11/17/21	11/18/21	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: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		120 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0386	11/17/21	11/19/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
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11/30/21 10:24

**AU\_SS\_07\_SW**  
**2111254-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0371	11/17/21	11/19/21	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: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.7 %	40-150		"	"	"	"	

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

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEK0411	11/18/21	11/26/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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11/30/21 10:24

**AU\_SS\_07\_SW**  
**2111254-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.08	0.225	mg/kg dry	1	BEK0364	11/16/21	11/23/21	EPA 6020B	
Barium	166	0.450	"	"	"	"	"	"	
Cadmium	ND	0.225	"	"	"	"	"	"	
Copper	6.74	0.450	"	"	"	"	"	"	
Lead	6.03	0.225	"	"	"	"	"	"	
Nickel	7.72	0.450	"	"	"	"	"	"	
Selenium	0.955	0.293	"	"	"	"	"	"	
Silver	0.0374	0.0225	"	"	"	"	"	"	
Zinc	25.6	0.450	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/11/21 16:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEK0352	11/16/21	11/16/21	EPA 7196A	

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

Date Sampled: 11/11/21 16:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.7	0.0563	mg/L dry	1	BEK0420	11/18/21	11/28/21	EPA 6020B	
Magnesium	9.14	0.0563	"	"	"	"	"	"	
Sodium	20.1	0.0563	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/11/21 16:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.846	0.00100	units	1	BEK0563	11/29/21	11/29/21	Calculation	

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

Date Sampled: 11/11/21 16:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Reported:**  
 11/30/21 10:24

**AU\_SS\_07\_SW**  
**2111254-07 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>88.8</b>	%	1	BEK0416	11/18/21	11/19/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.378</b>	0.0100	mmhos/cm	1	BEK0450	11/19/21	11/19/21	EPA 120.1	

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

Date Sampled: **11/11/21 16:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.09</b>		pH Units	1	BEK0451	11/19/21	11/19/21	EPA 9045D	

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Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BEK0385 - EPA 5030 Soil MS

##### Blank (BEK0385-BLK1)

Prepared: 11/17/21 Analyzed: 11/18/21

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0391		"	0.0400		97.7	23-173			
<i>Surrogate: Toluene-d8</i>	0.0487		"	0.0400		122	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0408		"	0.0400		102	21-167			

##### LCS (BEK0385-BS1)

Prepared: 11/17/21 Analyzed: 11/18/21

Benzene	0.0728	0.0020	mg/kg	0.100		72.8	70-130			
Toluene	0.0940	0.0050	"	0.100		94.0	70-130			
Ethylbenzene	0.0748	0.0050	"	0.100		74.8	70-130			
m,p-Xylene	0.154	0.010	"	0.200		76.8	70-130			
o-Xylene	0.0758	0.0050	"	0.100		75.8	70-130			
1,2,4-Trimethylbenzene	0.0748	0.0050	"	0.100		74.8	70-130			
1,3,5-Trimethylbenzene	0.0737	0.0050	"	0.100		73.7	70-130			
Naphthalene	0.0788	0.0038	"	0.100		78.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0348		"	0.0400		86.9	23-173			
<i>Surrogate: Toluene-d8</i>	0.0448		"	0.0400		112	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0412		"	0.0400		103	21-167			

##### Matrix Spike (BEK0385-MS1)

Source: 2111254-01

Prepared: 11/17/21 Analyzed: 11/18/21

Benzene	0.0778	0.0020	mg/kg	0.100	ND	77.8	70-130			
Toluene	0.0968	0.0050	"	0.100	ND	96.8	70-130			
Ethylbenzene	0.0708	0.0050	"	0.100	ND	70.8	70-130			
m,p-Xylene	0.144	0.010	"	0.200	ND	72.1	70-130			
o-Xylene	0.0729	0.0050	"	0.100	ND	72.9	70-130			
1,2,4-Trimethylbenzene	0.0706	0.0050	"	0.100	ND	70.6	70-130			
1,3,5-Trimethylbenzene	0.0826	0.0050	"	0.100	ND	82.6	70-130			
Naphthalene	0.0794	0.0038	"	0.100	ND	79.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0392		"	0.0400		98.0	23-173			
<i>Surrogate: Toluene-d8</i>	0.0447		"	0.0400		112	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0431		"	0.0400		108	21-167			

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BEK0385 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BEK0385-MSD1)</b>	<b>Source: 2111254-01</b>			Prepared: 11/17/21 Analyzed: 11/18/21						
Benzene	0.0740	0.0020	mg/kg	0.100	ND	74.0	70-130	5.02	30	
Toluene	0.0970	0.0050	"	0.100	ND	97.0	70-130	0.155	30	
Ethylbenzene	0.0719	0.0050	"	0.100	ND	71.9	70-130	1.60	30	
m,p-Xylene	0.143	0.010	"	0.200	ND	71.7	70-130	0.480	30	
o-Xylene	0.0743	0.0050	"	0.100	ND	74.3	70-130	1.91	30	
1,2,4-Trimethylbenzene	0.0728	0.0050	"	0.100	ND	72.8	70-130	2.93	30	
1,3,5-Trimethylbenzene	0.0712	0.0050	"	0.100	ND	71.2	70-130	14.9	30	
Naphthalene	0.0799	0.0038	"	0.100	ND	79.9	70-130	0.640	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0460</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEK0386 - EPA 3550A**

**Blank (BEK0386-BLK1)**

Prepared: 11/17/21 Analyzed: 11/19/21

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

**LCS (BEK0386-BS1)**

Prepared: 11/17/21 Analyzed: 11/19/21

C10-C28 (DRO)	444	50	mg/kg	500		88.8	70-130				
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**Matrix Spike (BEK0386-MS1)**

Source: 2111254-01

Prepared: 11/17/21 Analyzed: 11/19/21

C10-C28 (DRO)	454	50	mg/kg	500	41.4	82.6	70-130				
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**Matrix Spike Dup (BEK0386-MSD1)**

Source: 2111254-01

Prepared: 11/17/21 Analyzed: 11/19/21

C10-C28 (DRO)	414	50	mg/kg	500	41.4	74.5	70-130	9.37	20		
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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0371 - EPA 5030 Soil MS**

**Blank (BEK0371-BLK1)**

Prepared: 11/17/21 Analyzed: 11/18/21

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0314</i>		"	<i>0.0333</i>		<i>94.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0315</i>		"	<i>0.0333</i>		<i>94.6</i>	<i>40-150</i>			

**LCS (BEK0371-BS1)**

Prepared: 11/17/21 Analyzed: 11/18/21

Acenaphthene	0.0329	0.00500	mg/kg	0.0333		98.6	31-137			
Anthracene	0.0323	0.00500	"	0.0333		97.0	30-120			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333		87.8	30-120			
Benzo (a) pyrene	0.0313	0.00500	"	0.0333		93.9	30-120			
Benzo (b) fluoranthene	0.0359	0.00500	"	0.0333		108	30-120			
Benzo (k) fluoranthene	0.0394	0.00500	"	0.0333		118	30-120			
Chrysene	0.0295	0.00500	"	0.0333		88.5	30-120			
Dibenz (a,h) anthracene	0.0192	0.00500	"	0.0333		57.7	30-120			
Fluoranthene	0.0351	0.00500	"	0.0333		105	30-120			
Fluorene	0.0335	0.00500	"	0.0333		101	30-120			
Indeno (1,2,3-cd) pyrene	0.0226	0.00500	"	0.0333		67.7	30-120			
Pyrene	0.0333	0.00500	"	0.0333		100	35-142			
1-Methylnaphthalene	0.0318	0.00500	"	0.0333		95.3	35-142			
2-Methylnaphthalene	0.0317	0.00500	"	0.0333		95.2	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0329</i>		"	<i>0.0333</i>		<i>98.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0341</i>		"	<i>0.0333</i>		<i>102</i>	<i>40-150</i>			

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112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0371 - EPA 5030 Soil MS**

<b>Matrix Spike (BEK0371-MS1)</b>	<b>Source: 2111090-02</b>			Prepared: 11/17/21 Analyzed: 11/18/21					
Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.5	31-137		
Anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120		
Benzo (a) anthracene	0.0223	0.00500	"	0.0333	ND	66.9	30-120		
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	67.0	30-120		
Benzo (b) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.7	30-120		
Benzo (k) fluoranthene	0.0283	0.00500	"	0.0333	ND	84.8	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.5	30-120		
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333	ND	44.5	30-120		
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.6	30-120		
Fluorene	0.0234	0.00500	"	0.0333	ND	70.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0166	0.00500	"	0.0333	ND	49.7	30-120		
Pyrene	0.0269	0.00500	"	0.0333	0.00619	62.2	35-142		
1-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.8	15-130		
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.1	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0235</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>70.4</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0267</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>80.2</i>	<i>40-150</i>		

<b>Matrix Spike Dup (BEK0371-MSD1)</b>	<b>Source: 2111090-02</b>			Prepared: 11/17/21 Analyzed: 11/18/21					
Acenaphthene	0.0191	0.00500	mg/kg	0.0333	ND	57.2	31-137	18.1	30
Anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	19.1	30
Benzo (a) anthracene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	16.5	30
Benzo (a) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	12.4	30
Benzo (b) fluoranthene	0.0230	0.00500	"	0.0333	ND	69.0	30-120	14.4	30
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	13.4	30
Chrysene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	14.7	30
Dibenz (a,h) anthracene	0.0123	0.00500	"	0.0333	ND	36.8	30-120	18.8	30
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	17.2	30
Fluorene	0.0201	0.00500	"	0.0333	ND	60.4	30-120	15.2	30
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.8	30-120	17.4	30
Pyrene	0.0219	0.00500	"	0.0333	0.00619	47.0	35-142	20.7	30
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.2	15-130	17.5	50
2-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.4	15-130	17.1	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0213</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>63.9</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0229</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>68.6</i>	<i>40-150</i>		

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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

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

**Batch BEK0411 - EPA 3050B**

**Blank (BEK0411-BLK1)**

Prepared: 11/18/21 Analyzed: 11/26/21

Boron ND 0.0100 mg/L

**LCS (BEK0411-BS1)**

Prepared: 11/18/21 Analyzed: 11/26/21

Boron 4.84 0.0100 mg/L 5.00 96.8 80-120

**Duplicate (BEK0411-DUP1)**

**Source: 2111252-01**

Prepared: 11/18/21 Analyzed: 11/26/21

Boron ND 0.0100 mg/L ND 20

**Matrix Spike (BEK0411-MS1)**

**Source: 2111252-01**

Prepared: 11/18/21 Analyzed: 11/26/21

Boron 4.94 0.0100 mg/L 5.00 ND 98.7 75-125

**Matrix Spike Dup (BEK0411-MSD1)**

**Source: 2111252-01**

Prepared: 11/18/21 Analyzed: 11/26/21

Boron 4.98 0.0100 mg/L 5.00 ND 99.6 75-125 0.935 25

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112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEK0364 - EPA 3050B**

**Blank (BEK0364-BLK1)**

Prepared: 11/16/21 Analyzed: 11/22/21

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 (BEK0364-BS1)**

Prepared: 11/16/21 Analyzed: 11/22/21

Arsenic	47.6	0.200	mg/kg wet	40.0		119	80-120			
Barium	46.8	0.400	"	40.0		117	80-120			
Cadmium	2.03	0.200	"	2.00		101	80-120			
Copper	46.2	0.400	"	40.0		116	80-120			
Lead	22.1	0.200	"	20.0		110	80-120			
Nickel	44.0	0.400	"	40.0		110	80-120			
Selenium	4.58	0.260	"	4.00		115	80-120			
Silver	2.26	0.0200	"	2.00		113	80-120			
Zinc	46.0	0.400	"	40.0		115	80-120			

**Duplicate (BEK0364-DUP1)**

Source: 2110432-03

Prepared: 11/16/21 Analyzed: 11/22/21

Arsenic	1.98	0.225	mg/kg dry	1.74		13.0	20			
Barium	116	0.451	"	183		44.6	20			QR-03
Cadmium	0.113	0.225	"	0.0918		21.0	20			QR-03
Copper	7.64	0.451	"	7.58		0.734	20			
Lead	7.33	0.225	"	6.71		8.86	20			
Nickel	6.36	0.451	"	5.48		14.7	20			
Selenium	1.10	0.293	"	1.02		7.08	20			
Silver	0.0299	0.0225	"	0.0346		14.4	20			
Zinc	30.7	0.451	"	29.5		3.99	20			

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112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**Total Metals by EPA 6020B - Quality Control**

**Summit Scientific**

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

**Batch BEK0364 - EPA 3050B**

**Matrix Spike (BEK0364-MS1)**

Source: 2110432-03

Prepared: 11/16/21 Analyzed: 11/22/21

Arsenic	51.8	0.225	mg/kg dry	45.1	1.74	111	75-125			
Barium	106	0.451	"	45.1	183	NR	75-125			QR-03
Cadmium	2.72	0.225	"	2.25	0.0918	117	75-125			
Copper	55.1	0.451	"	45.1	7.58	105	75-125			
Lead	28.4	0.225	"	22.5	6.71	96.3	75-125			
Nickel	54.7	0.451	"	45.1	5.48	109	75-125			
Selenium	5.07	0.293	"	4.51	1.02	89.8	75-125			
Silver	2.39	0.0225	"	2.25	0.0346	105	75-125			
Zinc	80.6	0.451	"	45.1	29.5	113	75-125			

**Matrix Spike Dup (BEK0364-MSD1)**

Source: 2110432-03

Prepared: 11/16/21 Analyzed: 11/22/21

Arsenic	51.0	0.225	mg/kg dry	45.1	1.74	109	75-125	1.58	25	
Barium	98.8	0.451	"	45.1	183	NR	75-125	6.63	25	QR-03
Cadmium	2.68	0.225	"	2.25	0.0918	115	75-125	1.42	25	
Copper	54.3	0.451	"	45.1	7.58	104	75-125	1.47	25	
Lead	28.5	0.225	"	22.5	6.71	96.9	75-125	0.455	25	
Nickel	53.0	0.451	"	45.1	5.48	105	75-125	3.17	25	
Selenium	4.88	0.293	"	4.51	1.02	85.5	75-125	3.88	25	
Silver	2.39	0.0225	"	2.25	0.0346	104	75-125	0.356	25	
Zinc	82.3	0.451	"	45.1	29.5	117	75-125	2.05	25	

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BEK0352 - 3060A Mod**

**Blank (BEK0352-BLK1)**

Prepared & Analyzed: 11/16/21

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BEK0352-BS1)**

Prepared & Analyzed: 11/16/21

Chromium, Hexavalent      23.5      0.30 mg/kg wet      25.0      94.0      80-120

**Duplicate (BEK0352-DUP1)**

**Source: 2110432-03**

Prepared & Analyzed: 11/16/21

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BEK0352-MS1)**

**Source: 2110432-03**

Prepared & Analyzed: 11/16/21

Chromium, Hexavalent      25.9      0.30 mg/kg dry      28.2      ND      92.0      75-125

**Matrix Spike Dup (BEK0352-MSD1)**

**Source: 2110432-03**

Prepared & Analyzed: 11/16/21

Chromium, Hexavalent      25.4      0.30 mg/kg dry      28.2      ND      90.0      75-125      2.20      20

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Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01

Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0420 - General Preparation**

**Blank (BEK0420-BLK1)**

Prepared: 11/18/21 Analyzed: 11/28/21

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

**LCS (BEK0420-BS1)**

Prepared: 11/18/21 Analyzed: 11/28/21

Calcium	5.64	0.0500	mg/L wet	5.00	113	70-130				
Magnesium	5.73	0.0500	"	5.00	115	70-130				
Sodium	5.63	0.0500	"	5.00	113	70-130				

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01

Project Manager: Max Moran

**Reported:**  
 11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0416 - General Preparation**

Duplicate (BEK0416-DUP1)	Source: 2111044-10		Prepared: 11/18/21 Analyzed: 11/19/21		
% Solids	91.8	%	91.9	0.117	20

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0450 - General Preparation**

**Blank (BEK0450-BLK1)**

Prepared & Analyzed: 11/19/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEK0450-BS1)**

Prepared & Analyzed: 11/19/21

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

**Duplicate (BEK0450-DUP1)**

**Source: 2110397-01**

Prepared & Analyzed: 11/19/21

Specific Conductance (EC) 0.342 0.0100 mmhos/cm 0.346 1.16 20

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01

Project Manager: Max Moran

**Reported:**  
 11/30/21 10:24

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

**Summit Scientific**

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

**Batch BEK0451 - General Preparation**

**LCS (BEK0451-BS1)**

Prepared & Analyzed: 11/19/21

pH 9.06 pH Units 9.18 98.7 95-105

**Duplicate (BEK0451-DUP1)**

Source: 2110397-01

Prepared & Analyzed: 11/19/21

pH 6.76 pH Units 6.80 0.590 20

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
11/30/21 10:24

### Notes and Definitions

- 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 16, 2021

Max Moran  
Absaroka Solutions  
112 High Street  
Buffalo, WY 82834

RE: Arapahoe Unit Section 25S Spill Support  
Work Order #2112040

Enclosed are the results of analyses for samples received by Summit Scientific on 12/02/21 12:52. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury  
President



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AU_25_BG_BH_01_4	2112040-01	Soil	12/01/21 14:50	12/02/21 12:52
AU_25_BG_BH_01_6	2112040-03	Soil	12/01/21 14:58	12/02/21 12:52

Summit Scientific

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# Summit Scientific

2112040

S<sub>2</sub>

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

Client: Absaroka Energy and Environmental Solutions

Project Manager: Max Moran/Ben Shoup

Address: 112 High ST.

E-Mail: max.moran@absarokasolutions.com

City/State/Zip: Buffalo, WY, 82834

ben.shoup@absarokasolutions.com

Phone: 720-352-5326

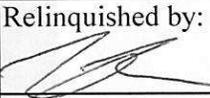
Arapahoe Unit Section 25S Spill Support

Sampler Name: Max Moran

Project Number: CIT.CO.0555.01

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Full 915 Suite	EC	SAR	pH	Boron*	Arsenic			
1	AU_25_BG_BH_01_4	12/1/2021	1450	3			X			X				X	X	X		X			
2	AU_25_BG_BH_01_5	12/1/2021	1455	3			X														HOLD
3	AU_25_BG_BH_01_6	12/1/2021	1458	3			X							X	X	X		X			
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 12/2/21 1252	Received by: 	Date/Time: 12.2.21 1252	<b>Turn Around Time</b> (Check) Same Day ___ 72 hours ___ 24 hours ___ Standard <u>X</u> 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>10.1</u> Samples Intact: <u>Yes</u> No	<b>Please hold all additional sample material for future analysis</b>
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S<sub>2</sub>

2112040

Sample Receipt Checklist

S2 Work Order# \_\_\_\_\_

Client: Absaroka

Client Project ID: Arapahoe Unit Section 255 Spill Support

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Temp (°C) 10.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? 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"/>	<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 with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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? 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) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 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 or Initials

11-2-21  
Date/Time



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

**AU\_25\_BG\_BH\_01\_4**  
**2112040-01 (Soil)**

Summit Scientific

**Total Metals by EPA 6020B**

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.17	0.200	mg/kg dry	1	BEL0185	12/09/21	12/16/21	EPA 6020B	

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

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.8	0.0553	mg/L dry	1	BEL0167	12/08/21	12/11/21	EPA 6020B	
Magnesium	5.17	0.0553	"	"	"	"	"	"	
Sodium	3.37	0.0553	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.158	0.00100	units	1	BEL0252	12/13/21	12/13/21	Calculation	

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

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BEL0228	12/10/21	12/10/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.252	0.0100	mmhos/cm	1	BEL0192	12/09/21	12/09/21	EPA 120.1	

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

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
 Project Manager: Max Moran

**Reported:**  
 12/16/21 19:05

**AU\_25\_BG\_BH\_01\_4**  
**2112040-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/01/21 14:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>pH</b>	<b>8.10</b>		pH Units	1	BEL0193	12/09/21	12/09/21	EPA 9045D	

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support  
Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

**AU\_25\_BG\_BH\_01\_6**  
**2112040-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.57	0.200	mg/kg dry	1	BEL0185	12/09/21	12/16/21	EPA 6020B	

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

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.6	0.0554	mg/L dry	1	BEL0167	12/08/21	12/11/21	EPA 6020B	
Magnesium	5.99	0.0554	"	"	"	"	"	"	
Sodium	2.11	0.0554	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100	units	1	BEL0252	12/13/21	12/13/21	Calculation	

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

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2		%	1	BEL0228	12/10/21	12/10/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.230	0.0100	mmhos/cm	1	BEL0192	12/09/21	12/09/21	EPA 120.1	

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

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
 Project Manager: Max Moran

**Reported:**  
 12/16/21 19:05

**AU\_25\_BG\_BH\_01\_6**  
**2112040-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/01/21 14:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>pH</b>	<b>7.90</b>		pH Units	1	BEL0193	12/09/21	12/09/21	EPA 9045D	

Summit Scientific



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112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

**Total Metals by EPA 6020B - Quality Control**

**Summit Scientific**

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

**Batch BEL0185 - EPA 3050B**

**Blank (BEL0185-BLK1)**

Prepared: 12/09/21 Analyzed: 12/15/21

Arsenic ND 0.200 mg/kg wet

**LCS (BEL0185-BS1)**

Prepared: 12/09/21 Analyzed: 12/15/21

Arsenic 41.9 0.200 mg/kg wet 40.0 105 80-120

**Duplicate (BEL0185-DUP1)**

**Source: 2112040-01**

Prepared: 12/09/21 Analyzed: 12/16/21

Arsenic 4.03 0.200 mg/kg dry 4.17 3.43 20

**Matrix Spike (BEL0185-MS1)**

**Source: 2112040-01**

Prepared: 12/09/21 Analyzed: 12/16/21

Arsenic 46.0 0.200 mg/kg dry 44.2 4.17 94.6 75-125

**Matrix Spike Dup (BEL0185-MSD1)**

**Source: 2112040-01**

Prepared: 12/09/21 Analyzed: 12/16/21

Arsenic 45.4 0.200 mg/kg dry 44.2 4.17 93.2 75-125 1.35 25

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
 Project Manager: Max Moran

**Reported:**  
 12/16/21 19:05

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

**Summit Scientific**

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

**Batch BEL0167 - General Preparation**

**Blank (BEL0167-BLK1)**

Prepared: 12/08/21 Analyzed: 12/10/21

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

**LCS (BEL0167-BS1)**

Prepared: 12/08/21 Analyzed: 12/11/21

Calcium	5.51	0.0500	mg/L wet	5.00	110	70-130				
Magnesium	5.16	0.0500	"	5.00	103	70-130				
Sodium	5.23	0.0500	"	5.00	105	70-130				

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01

Project Manager: Max Moran

**Reported:**  
 12/16/21 19:05

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

**Summit Scientific**

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

**Batch BEL0228 - General Preparation**

**Duplicate (BEL0228-DUP1)**

Source: 2112026-12

Prepared & Analyzed: 12/10/21

% Solids	96.8		%		96.6			0.214	20	
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Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01

Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

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

**Summit Scientific**

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

**Batch BEL0192 - General Preparation**

**Blank (BEL0192-BLK1)**

Prepared & Analyzed: 12/09/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEL0192-BS1)**

Prepared & Analyzed: 12/09/21

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.5 95-105

**Duplicate (BEL0192-DUP1)**

Source: 2111266-03

Prepared & Analyzed: 12/09/21

Specific Conductance (EC) 0.435 0.0100 mmhos/cm 0.450 3.25 20

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
 Project Manager: Max Moran

**Reported:**  
 12/16/21 19:05

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

**Summit Scientific**

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

**Batch BEL0193 - General Preparation**

**LCS (BEL0193-BS1)**

Prepared & Analyzed: 12/09/21

pH	9.06	pH Units	9.18	98.7	95-105
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**Duplicate (BEL0193-DUP1)**

Source: 2112040-01

Prepared & Analyzed: 12/09/21

pH	8.16	pH Units	8.10	0.738	20
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Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Arapahoe Unit Section 25S Spill Support

Project Number: CIT.CO.0555.01  
Project Manager: Max Moran

**Reported:**  
12/16/21 19:05

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference