

REPORT OF WORK COMPLETION (ROWC)

Property:

**ELU A18 495 Cuttings
QB Energy Operating, LLC
Garfield County, Colorado
Remediation Project Number : TBD**

November 12, 2024
Ensolum Project No. 09D2436023

Prepared for:

**QB Energy Operating, LLC
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1.0 INTRODUCTION

Ensolum, LLC (Ensolum) was contracted by QB Energy Operating LLC (QB Energy) to complete soil assessment activities at the ELU A18 495 Cuttings (Site) located in Garfield County, Colorado. The soil assessment screening and sampling was conducted in accordance with Colorado Energy & Carbon Management Commission (ECMC) guidelines.

1.1 Site Description

The Site is located approximately 17.98 miles north-northeast of Parachute, CO within the North Parachute Ranch Field. Land use is primarily non-cropland and oil & gas operations with topography sloping to the south-southwest. The nearest surface water feature is West Fork Parachute Creek, approximately 2538 feet southeast and 656 feet lower in elevation than the point of release (POR). Data from the Division of water Resources (DWR), indicates that there are no constructed water wells within 0.5 miles of the Site. The nearest water well identified by Permit # 56839 with construction data is located approximately 1.71 miles Southwest of the POR and approximately 157 feet lower in elevation. According to the construction report, this well was drilled to a maximum depth of 75 feet below ground surface (bgs), with groundwater encountered at a depth of 74.08 feet. It is estimated that the depth to water is greater than 100 feet below ground surface (bgs).

1.2 Site Background

On October 21, 2024, a truck driver was transporting cuttings away from the site when, while maneuvering around a narrow bend alongside another vehicle, the road shoulder collapsed, causing the truck to overturn. This incident is recorded in Initial Form 19, Document Number 403964002, and Supplemental Form 19, Document Number 403972177.

2.0 FIELD ACTIVITIES

2.1 Excavation Activities

On October 24, 2024, Ensolum personnel were at the Site to oversee excavation of impacted soil as indicated by visual observations. One (1) soil sample was collected (A18 495-(BASE01)@0.5) from the base of the existing excavation from a depth of approximately 0.5 feet bgs. The soil sample was field screened for volatile organic compound (VOC) concentrations using a photoionization detector (PID) and exhibited a reading of 0.2 ppm. The sample was submitted to Elevation Diagnostics (Elevation) for analysis of the full Table 915-1 with a standard turnaround request.

Additionally, two (2) background samples (NPRBG-(A18 495-W)@1 and NPRBG-(A18 495-W)@0.5) were taken in native soil outside interim reclamation areas. The soil samples were field screened for VOC concentrations using a PID with both exhibiting a reading of 0.1 ppm. The soil samples were submitted to Elevation for analysis of 915-1 Metals and Soil Suitability with a standard turnaround request. A general site location map is included as Figure 1; and the Site

Map displaying the location of the Site on aerial imagery is included as Figure 2. Additionally, the photographic log can be found in Appendix C.

3.0 FINDINGS AND CONCLUSIONS

Based on the October 24, 2024, analytical results sample A18 495-(BASE01)@0.5 exceeded ECMC Table 915-1 protection of groundwater standards for selenium and barium.

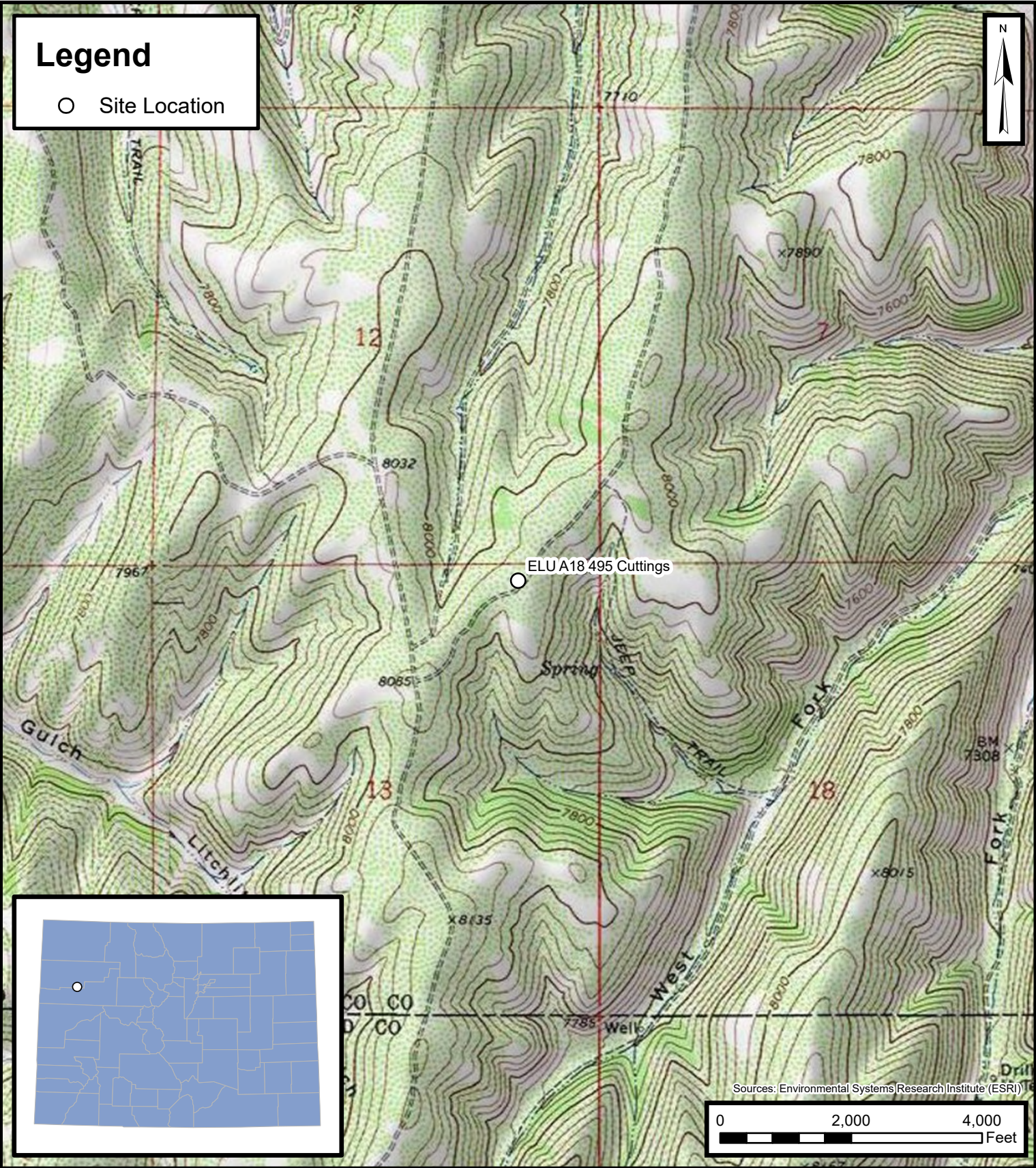
Additional reference data obtained from background samples collected during the initial drilling of the conductor casing, located approximately 0.02 miles east of the cuttings spill location, corroborate the assertion that all instances of arsenic exceedances are unrelated to the release that occurred on October 21, 2024. The arsenic analytical results from the background soil samples NPRBG-(A18 495-SB03)@13, indicate a concentration of 5.80 mg/kg, which exceeds the arsenic levels found within the excavation. While the arsenic concentration in sample A18 495-(BASE01)@0.5 exceeded the standards set forth in ECMC Table 915-1, Ensolum advises that QB Energy requests the use of Table 915-1 footnote 11, as the levels were below the relevant background thresholds. The supplementary reference background data is included in Table 3.

Ensolum has determined that there is no reasonable pathway for groundwater within the investigation area. Data from the Division of Water Resources (DWR), indicates that there are no constructed water wells within 0.5 miles of the Site. The nearest water well, identified by Permit # 56839 with construction data is located approximately 1.71 miles Southwest of the POR and approximately 157 feet lower in elevation. According to the construction report, this well was drilled to a maximum depth of 75 feet below ground surface (bgs), with groundwater encountered at a depth of 74.08 feet. It is estimated that the depth to water is greater than 100 feet below ground surface (bgs). Ensolum recommends a request to the ECMC for using Table 915-1 Residential soil screening levels (RSSL) cleanup concentrations. Assuming the request to utilize the use of RSSLs is approved, all COCs are compliant with Table 915-1.

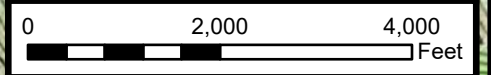
Based on the October analytical results, all soil samples were below ECMC standards when compared to RSSL concentrations. The analysis of the background samples indicates that the arsenic concentrations detected in soils collected from the impacted area are not associated with this release. Based on the October 24, 2024, analytical results, QB Energy is requesting an NFA determination for this site.

Legend

○ Site Location



Sources: Environmental Systems Research Institute (ESRI)



Topographic Map

ELUA18 495 Cuttings
QB Energy Operating LLC
NWNW Sec 13, T04N, R96W
Garfield County, Colorado

Project Number: 09D2436023

FIGURE

1

Path: C:\Users\Peter.Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\18_495_Cuttings\1 - Project\Fig1_Template\ELUA18 495 Cuttings.aprx

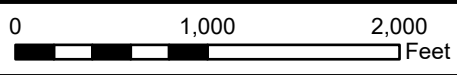
Legend

○ Site Location



Harrison Gulch

ELU A18 495 Cuttings



Sources: Bing Maps

Aerial Site Location Map

ELU A18 495 Cuttings
QB Energy Operating LLC
NWNW Sec 13, T04N, R96W
Garfield County, Colorado

Project Number: 09D2436023

FIGURE

2



Path: C:\Users\Peter_Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\PAR_CIS\Fig Path Structure2 - Denver\QB Energy Operating, LLC\09D2436023 - ELU A18 495 Cuttings\1 - Project\Fig_1_Template\ELU A18 495 Cuttings.aprx

Legend

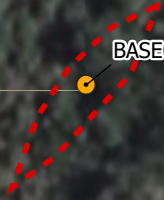
- Soil Sample
- Background Location
- ▭ Excavation Extent



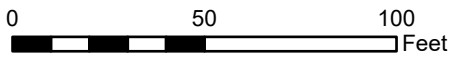
NPRBG-(A18 495-W)@1



BASE01@0.5



NPRBG-(A18 495-W)@0.5



Sources: Bing Maps



Soil Sample Location Map

ELU A18 495 Cuttings
QB Energy Operating LLC
NWNW Sec 13, T04N, R96W
Garfield County, Colorado

Project Number: 09D2436023

FIGURE

3



ECMC Location Name (ID): 488367	Legal Description: NWNW S13 T4S R96W
Client Location Name: ELU A18 495 Cuttings	Coordinates (Lat/Long): 39.709112, -108.105039
ECMC Remediation Project(s): TBD	County: Garfield

Table 1 - Soil Sampling Summary

Soil Sample ID	Date	Sample Type	Depth (FT BGS)	PID Reading (ppm)	Odor (Y/N)	Odor Description (If Applicable)	Staining (Y/N)	Staining Description (If Applicable)	Grab (G) or Composite (C)	Submitted for Analysis (Y/N)	Analysis or Rationale for no Submittal	Turnaround Time (TAT)
20241024-A18 495-(BASE01)@0.5	10/24/2024	Excavation	0.5	0.2	N	-	N	-	G	Y	Full Table 915-1	Standard
20241024-NPRBG-(A18 495-W)@0.5	10/24/2024	Background	0.5	0.1	N	-	N	-	G	Y	915-1 Metals, Soil Suitability	Standard
20241024-NPRBG-(A18 495-W)@1	10/24/2024	Background	1	0.1	N	-	N	-	G	Y	915-1 Metals, Soil Suitability	Standard

SOIL ANALYTICAL RESULTS TABLE
ELU A18 495 Cuttings

				<table border="0" style="width:100%; text-align:center;"> <tr> <td>Analyte</td> <td>GRO</td> <td>DRO</td> <td>ORO</td> <td>Benzene</td> <td>Toluene</td> <td>Ethylbenzene</td> <td>Total Xylenes</td> <td>1,2,4-TMB</td> <td>1,3,5-TMB</td> <td>Acenaphthene</td> <td>Anthracene</td> <td>Benz(a)anthracene</td> <td>Benzo(b)fluoranthene</td> <td>Benzo(k)fluoranthene</td> <td>Benzo(a)pyrene</td> <td>Chrysene</td> <td>Dibenz(a,h)anthracen</td> <td>Fluoranthene</td> <td>Fluorene</td> <td>Indeno(1,2,3-cd)Pyre</td> <td>1-Methylnaphthalene</td> <td>2-Methylnaphthalene</td> <td>Naphthalene</td> <td>Pyrene</td> </tr> <tr> <td>915-1 PROTECTION OF GW</td> <td>500</td> <td>500</td> <td></td> <td>0.0026</td> <td>0.69</td> <td>0.78</td> <td>9.9</td> <td>0.0081</td> <td>0.0087</td> <td>0.55</td> <td>5.8</td> <td>0.011</td> <td>0.3</td> <td>2.9</td> <td>0.24</td> <td>9</td> <td>0.096</td> <td>5.9</td> <td>0.54</td> <td>0.98</td> <td>0.006</td> <td>0.019</td> <td>0.0038</td> <td>1.3</td> </tr> <tr> <td>915-1 RESIDENTIAL SOIL</td> <td>500</td> <td></td> <td></td> <td>1.2</td> <td>490</td> <td>5.8</td> <td>58</td> <td>30</td> <td>27</td> <td>360</td> <td>1800</td> <td>1.1</td> <td>1.1</td> <td>11</td> <td>0.11</td> <td>110</td> <td>0.11</td> <td>240</td> <td>240</td> <td>1.1</td> <td>18</td> <td>24</td> <td>2</td> <td>180</td> </tr> <tr> <td>Units</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> <td>mg/kg</td> </tr> </table>																				Analyte	GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Acenaphthene	Anthracene	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracen	Fluoranthene	Fluorene	Indeno(1,2,3-cd)Pyre	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Pyrene	915-1 PROTECTION OF GW	500	500		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.55	5.8	0.011	0.3	2.9	0.24	9	0.096	5.9	0.54	0.98	0.006	0.019	0.0038	1.3	915-1 RESIDENTIAL SOIL	500			1.2	490	5.8	58	30	27	360	1800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	2	180	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte	GRO	DRO	ORO	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Acenaphthene	Anthracene	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz(a,h)anthracen	Fluoranthene	Fluorene	Indeno(1,2,3-cd)Pyre	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Pyrene																																																																																																			
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Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																																																																																																			
Sample Name	Sample Type	Sample Date	Lab Report																																																																																																																								
20241024-A18 495-(BASE01)@0.5	Excavation	10/24/2024	AA13491	< 0.26827	< 100	< 100	< 0.00242	< 0.00263	< 0.005	< 0.00654	< 0.00245	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01																																																																																																			

Notes:
 Bold with silver highlight: Exceeds RSSLs
 Bold with blue highlight: Exceeds POGs
 "<" (as in, less than laboratory reporting detection limit)

SOIL ANALYTICAL RESULTS TABLE
ELU A18 495 Cuttings


				Analyte	EC	SAR	pH	HWS Boron	Arsenic	Barium	Cadmium	Chromium VI	Copper	Lead	Nickel	Selenium	Silver	Zinc
				915-1 PROTECTION OF GW	4	6	8.3	2	0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
				915-1 RESIDENTIAL SOIL	4	6	8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
				Units	mmhos/cm	No Unit	SU	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Name	Sample Type	Sample Date	Lab Report															
20241024-A18 495-(BASE01)@0.5	Excavation	10/24/2024	AA13491	1.59	0.17	7.35	0.59	3.59	236.52	0.31	< 0.08	12.64	12.55	16.12	2.62	< 0.25	38.07	
20241024-NPRBG-(A18 495-W)@0.5	Background	10/24/2024	AA13492	1.51	0.16	7.24	0.4	3.03	219.51	0.28	< 0.08	11.77	11.18	15.55	1.99	< 0.25	36.64	
20241024-NPRBG-(A18 495-W)@1	Background	10/24/2024	AA13492	0.95	0.09	7.12	0.33	2.89	210.27	0.27	< 0.08	11.86	11	16.31	1.7	< 0.25	38.21	
20230926-NPRBG-(A18 495-SB01)@101	Background	09/26/2023	L1659927	0.533	2.88	8.14	0.193	3.73	422	0.657	< 1.00	11.8	9.67	15.3	0.589	< 0.500	53.0	
20230926-NPRBG-(A18 495-SB01)@134	Background	09/26/2023	L1659927	1.21	1.83	7.91	0.184	4.82	619	0.205	< 1.00	12.4	8.80	14.4	0.356	< 0.500	52.1	
20230926-NPRBG-(A18 495-SB02)@121	Background	09/26/2023	L1659927	0.259	3.55	7.89	0.183	4.79	299	0.107	< 1.00	13.5	12.8	34.0	0.328	< 0.500	44.9	
20230926-NPRBG-(A18 495-SB03)@13	Background	09/26/2023	L1659927	0.238	2.22	7.91	0.0541	5.80	318	0.196	< 1.00	14.3	17.3	17.6	0.304	< 0.500	43.7	
20230926-NPRBG-(A18 495-SB03)@21	Background	09/26/2023	L1659927	0.272	3.96	7.94	0.202	4.45	269	0.104	< 1.00	12.1	11.6	33.1	0.387	< 0.500	44.7	
20230926-NPRBG-(A18 495-SB03)@43	Background	09/26/2023	L1659927	0.251	2.48	8.02	0.0749	4.02	192	0.366	< 1.00	13.2	12.0	18.7	0.386	< 0.500	47.5	
20230926-NPRBG-(A18 495-SB03)@54	Background	09/26/2023	L1659927	0.279	2.80	8.16	0.0821	4.62	374	0.205	< 1.00	16.9	13.6	24.9	0.774	< 0.500	46.7	
20230926-NPRBG-(A18 495-SB03)@79	Background	09/26/2023	L1659927	0.394	3.70	8.33	0.0758	6.95	178	0.263	< 1.00	12.8	11.0	22.4	0.430	< 0.500	49.5	


Notes:


Bold with silver highlight: Exceeds RSSLs


Bold with blue highlight: Exceeds POGs

"<" (as in, less than laboratory reporting detection limit)

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: NA
Date: October 24, 2024	Photo No. 1 – Extent	Coordinates Lat/Long: 39.708957/-108.111035
<p>Date & Time: Thu, Oct 24, 2024 at 09:25:30 MDT Position: +039.708957° / -108.111035° (±15.6ft) Altitude: 8089ft (±13.2ft) Datum: WGS-84 Azimuth/Bearing: 095° S85E 1689mils True (±12°) Elevation Angle: -18.8° Horizon Angle: -01.1° Zoom: 0.5X Grading extent</p> 		
View facing east of the excavation/grading extent.		

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: NA
Date: October 24, 2024	Photo No. 2 – Extent	Coordinates Lat/Long: 39.708978/-108.110919
<p>Date & Time: Thu, Oct 24, 2024 at 09:25:47 MDT Position: +039.708978° / -108.110919° (±7.8ft) Altitude: 8079ft (±9.8ft) Datum: WGS-84 Azimuth/Bearing: 243° S63W 4320mils True (±12°) Elevation Angle: -17.7° Horizon Angle: -00.6° Zoom: 0.5X Grading extent</p> 		
View facing southwest of the excavation/grading extent.		

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: NA
Date: October 24, 2024	Photo No. 3 – Extent	Coordinates Lat/Long: 39.708899/-108.110939
<p>Date & Time: Thu, Oct 24, 2024 at 09:26:04 MDT Position: +039.708899° / -108.110939° (±17.2ft) Altitude: 8084ft (±10.0ft) Datum: WGS-84 Azimuth/Bearing: 322° N38W 5724mils True (±12°) Elevation Angle: -20.3° Horizon Angle: -00.2° Zoom: 0.5X Grading extent</p> 		
View facing west of the excavation/grading extent.		

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: 20241024-A18 495-(BASE01)@0.5
Date: October 24, 2024	Photo No. 4 – BASE01	Coordinates Lat/Long: 39.708978/-108.110998
<p>Date & Time: Thu, Oct 24, 2024 at 09:29:50 MDT Position: +039.708978° / -108.110998° (±10.8ft) Altitude: 8086ft (±9.8ft) Datum: WGS-84 Azimuth/Bearing: 147° S33E 2613mils True (±11°) Elevation Angle: -28.1° Horizon Angle: +00.5° Zoom: 0.5X Cutting/POR/Grading sample location</p> 		
View facing southeast of BASE01 sample location.		

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: 20241024-NPRBG-(A18 495-W)@1
Date: October 24, 2024	Photo No. 5 – A18 495-W@1	Coordinates Lat/Long: 39.709229/-108.111209
<p>Date & Time: Thu, Oct 24, 2024 at 09:42:23 MDT Position: +039.709229° / -108.111209° (±15.2ft) Altitude: 8081ft (±13.2ft) Datum: WGS-84 Azimuth/Bearing: 179° S01E 3182mils True (±11°) Elevation Angle: -23.8° Horizon Angle: +04.0° Zoom: 0.5X NPRBG-(A18 495-W)@1</p> 		
View facing east of background sample (A18 495-W)@1.		

PHOTOGRAPHIC LOG		
Caerus Piceance, LLC	ELU A18 495 Cuttings Garfield County, Colorado	Sample ID: 20241024-NPRBG-(A18 495-W)@0.5
Date: October 24, 2024	Photo No. 6 – A18 495-W@0.5	Coordinates Lat/Long: 39.708789/-108.110882
<p>Date & Time: Thu, Oct 24, 2024 at 10:07:42 MDT Position: +039.708789° / -108.110882° (±37.7ft) Altitude: 8082ft (±17.8ft) Datum: WGS-84 Azimuth/Bearing: 164° S16E 2916mils True (±11°) Elevation Angle: -25.6° Horizon Angle: +01.0° Zoom: 0.5X NPRBG-(A18 495-W)@0.5</p> 		
View facing east of background sample (A18 495-W)@0.5.		