



April 17, 2024

Dave Brazeal
Taproot Energy Partners
518 17th Street, Suite 1800
Denver, Colorado 80202

Submitted via e-mail to dbrazeal@taprootep.com

**RE: Confirmation Soil Sampling Following Produce Water Release
Spill/Release ID Point 480563 near Briggsdale, Colorado Remediation Project # 21046**

Dear Mr. Brazeal

Environmental Works, Inc. (EWI) is pleased to submit this letter report summarizing the additional investigation activities completed in conjunction with the initial release response on August 19, 2021, confirmation sampling completed on September 24, 2021, and duplicate samples collected due to recent comments from Energy and Carbon Management Commission (ECMC) on February 2, 2024 at Taproot's Hale Release Spill/Release Point ID 480563 near Briggsdale, Colorado (the Site). The release occurred at a location just east of the previous Hale release that occurred on June 8, 2021. The system was shutdown, isolated and cleanup and excavation began, an estimated 300 cubic yards of impacted material were excavated and had offsite disposal. An additional excavation of the impacted area occurred in 2023 when Taproot replaced their faulty Thermoflex pipelines with Flexsteel pipelines.

Results are recorded on Figure 1 and Table 1, and analytical data from the recent sampling event is found in Appendix B. The purpose of this report is to aid with the submission of the Final Form 27 Supplemental to the ECMC and to satisfy the requirements to achieve Site closure in accordance with ECMC Guidance Rule 913.

Summary of Work Completed

During the initial release response, EWI collected excavation floor and sidewall samples in accordance with Rule 915. EWI re-mobilized to the Site on September 24, 2021 after discussions with the ECMC and surveying of the aerial extent. Additional shallow excavation samples were collected from the areas minimally impacted by the release. Surveying of Site features and sampling locations was completed by Avery Technical Resources. GPS coordinates, sample names, and sample depths are recorded in Appendix A in accordance with ECMC Guidance Rule 915. Sample locations, the produced water line, excavation extents, and select site features for reference are depicted on Figure 1.

Based on evaluation of Site survey data, the following samples were recommended in accordance ECMC Guidance Table 915-1:



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ER: 877.827.9500



720.797.6458



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- Nine (9) sidewall samples (SW1 through SW9) for the primary excavation where the release occurred.
- One (1) floor sample (FS1) for the primary excavation where the release occurred of less than 500 square feet (sq. ft.). The floor sample was collected from the bottom of the excavation (approximately 5' below ground surface [bgs]) from the area where the highest impacts to soil would be expected, in accordance with COGCC Guidance Rule 915.

Following ECMC Rule 915, a total of four (4) soil samples were collected from the area of shallow excavation over an area of approximately 4,000 sq. ft. Surface samples (SS1 through SS4) were collected from approximately 0.5 feet bgs with a hand auger. The background samples (BS2 through BS4) are used to compare background conditions with confirmation sample results. EWI re-mobilized to the Site on February 2, 2024, after comments from ECMC to collect extra samples to fill analyte gaps.

Soil borings for sidewall samples were advanced with a hand auger while the excavations remained open following the initial release. Continuous soil screening for the presence of volatile organic compounds (VOCs) was also conducted on sidewall sample borings using a photoionization detector (PID) to aid in understanding Site conditions. No elevated PID readings were observed in any soil at the Site. Following sampling, soil borings were abandoned with clean soil cuttings and the hand auger was decontaminated between borings.

Samples were immediately placed on ice and shipped to a ECMC approved lab (Origins). All samples collected were analyzed for the full list of Table 915-1 analytes. Table 2 presents the full analytical results and compares them with the Residential Soil Screening Level Concentrations (RSSLs) and the Protection of Groundwater Soil Screening Level Concentrations listed in Table 915-1. RSSLs were approved in previous correspondence with ECMC. Recent analytical results are attached as Appendix B. Groundwater is located at an estimated 110 feet below ground surface based on topography and nearby well data.

A photographic log is attached as Appendix C to aid with the determination that appropriate action was taken to remove impacted material with the goal of achieving Site closure.

Results and Conclusions

Exceedances of the RSSLs were only observed for arsenic, pH, boron, and sodium absorption ration (SAR). pH was detected slightly above the soil suitability for reclamation standard of 8.3 standard units (s.u.) in soil samples from SW2 (8.38 s.u.), SW3 (8.32 s.u.), SW7 (8.36 s.u.) and SW9 (8.70 s.u., 8.70 s.u., 8.36 s.u.) as well as in all background samples at similar levels ranging from 8.31 to 8.5 s.u.

The soil sample from SW4 (2.04 mg/l), on 8/20/2021, slightly exceeded the suitability for reclamation standard for boron of 2 mg/l. The supplemental soil sample from SW4 (0.434 mg/l), collected on 2/2/2024, no longer exceeded the suitability for reclamation standard for boron following excavation and replacement during removal of the faulty Thermoflex pipe.

SAR exceeded the suitability for reclamation standard of 6 in soil samples taken on 8/20/2021 for SW2 (7.15), SW4 (10.5), and SW8 (9.8). Step-out borings as well as resampling on 2/2/2024 show no soil samples exceeded the suitability for reclamation for SAR.

No soil samples exceeded the suitability for reclamation standard for conductivity of 4 mmhos/cm.

Arsenic was detected at concentrations above the RSSL in all soil samples that were analyzed, including all background samples. Concentrations of arsenic can vary significantly within a vertical section of soil

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due to natural variations within soil types. Although arsenic was higher in some sidewall and surface samples than the background, that could be a function of depth and/or soil type. The concentrations observed at the Site are similar to elevated arsenic levels found in soils across the state and should not be a barrier to Site closure. The highest levels of arsenic were detected in samples BS4 from a depth of 5' (4.44 mg/kg) and from SW-02 from a depth of 5' (4.76 mg/kg).

No semi-volatile or volatile compounds were detected above RSSLs. Limited total petroleum hydrocarbon (TPH) compounds were detected above the laboratory reporting limit, but well below the Cleanup Standards.

Soil samples at the Site exhibited few exceedances of the RSSLs and Protection of Groundwater Screening Level Concentrations, and many of the exceedances were also observed in the background sample. Additionally, no detections of VOCs were present from PID screening of the soil at the time of sample collection. With the data collected from initial and confirmation soil sampling, EWI believes horizontal and vertical delineation has been adequately completed, and no additional Site investigation is needed. A final Form 27 shall be submitted to the ECMC in Q2 of 2024.

We appreciate the opportunity to provide this letter report to Taproot Energy Partners. Please contact me at 507-475-2825 or akubat@environmentalworks.com if you have questions or we can be of further service.

Sincerely,



Adam Kubat
Project Manager
Environmental Works, Inc.

Taproot Rockies Midstream LLC

Hale Produced Water Release
Briggsdale, CO
Facility ID 467382
Spill/Release Point ID 480563
Remediation Project Number 21046

Legend

- 9/24/2021 sample locations
- Release Point
- 5/18/22 and 2/2/2024 delineation sample locations
- Pipeline location
- Surveyed release extents shallow excavation extents 4000 sq ft. 3-6" deep
- Primary excavation floor 450 sq ft
- primary excavation 17' x 72' perimeter 178'

SS3

BS3

SS4

BS2

SW10

SW11

SW5

SW6

SW7

SW9

SW8

SW12

FS1

SS2

SW15

SW14

SW13

SW1

BS4

SS1

0 12.5 25 50 Feet

N

Maxar, Microsoft

Table 1. Summary of Analytical Results

Station Name	CAS Number	Units	Residential Soil Screening Level Concentrations	FS-01	BS2	BS2*	BS2*	BS3*	BS3*	BS4*	BS4*	SS1	SS2	SS3	SS4	SW-01	SW-02
Sample Date				8/20/2021	5/18/2022	2/2/2024	2/2/2024	2/2/2024	2/2/2024	2/2/2024	2/2/24	9/24/2021	9/24/2021	9/24/2021	9/24/2021	8/20/2021	8/20/2021
Sample Depth				5 - 5.5 ft	2-2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2.5 - 2.5 ft	5 - 5 ft	2.5 - 2.5 ft	5 - 5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	2 - 2.5 ft	2 - 2.5 ft
Metals																	
ARSENIC	7440-38-2	mg/kg	0.68	2.42	NS	2.90	3.70	3.04	4.30	4.01	4.44	3.52	3.2	2.41	3.13	2.82	2.45
BARIUM	7440-39-3	mg/kg	15,000	230	NS	--	--	--	--	--	--	315	301	184	247	180	200
CADMIUM	7440-43-9	mg/kg	71	0.127	NS	--	--	--	--	--	--	0.257	0.301	0.33	0.282	0.138	0.198
COPPER	7440-50-8	mg/kg	3,100	12.7	NS	--	--	--	--	--	--	11.3	12.5	12.5	12.5	12.7	12
CHROMIUM (VI)	18540-29-9	mg/kg	0.3	<1	NS	--	--	--	--	--	--	<1	<1	<1	<1	<1	<1
LEAD	7439-92-1	mg/kg	400	8.96	NS	--	--	--	--	--	--	11.5	10.6	10.1	19.2	9.4	9.87
NICKEL	7440-02-0	mg/kg	1,500	10.8	NS	--	--	--	--	--	--	10.1	11.6	11.2	11.4	10.6	10.2
SELENIUM	7782-49-2	mg/kg	390	1.54	NS	--	--	--	--	--	--	<2	<2	<2	<2	1.51	1.45
SILVER	7440-22-4	mg/kg	390	<1	NS	--	--	--	--	--	--	<1	<1	<1	<1	<1	<1
ZINC	7440-66-6	mg/kg	23,000	45	NS	--	--	--	--	--	--	38.7	43.3	44	43	47.1	43.8
VOCs																	
BENZENE	71-43-2	mg/kg	1.2	<0.001	NS	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ETHYLBENZENE	100-41-4	mg/kg	5.8	<0.0025	NS	--	--	--	--	--	--	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
TOLUENE	108-88-3	mg/kg	490	<0.005	NS	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	0.00155
XYLENES, TOTAL	1330-20-7	mg/kg	58	0.00103	NS	--	--	--	--	--	--	<0.0065	<0.0065	<0.0065	<0.0065	0.00123	0.0137
1,2,4-TRIMETHYLBENZENE	95-63-6	mg/kg	30	0.00188	NS	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	0.00178	<0.005
1,3,5-TRIMETHYLBENZENE	108-67-8	mg/kg	27	<0.005	NS	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	0.0093
Semi-VOCs																	
1-METHYLNAPHTHALENE	90-12-0	mg/kg	18	0.0336	NS	--	--	--	--	--	--	<0.02	<0.02	<0.02	<0.02	0.0755	0.133
2-CHLORONAPHTHALENE	91-58-7	mg/kg	--	<0.02	NS	--	--	--	--	--	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2-METHYLNAPHTHALENE	91-57-6	mg/kg	24	0.0284	NS	--	--	--	--	--	--	<0.02	<0.02	<0.02	<0.02	0.0535	0.0589
ACENAPHTHENE	83-32-9	mg/kg	360	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00361	0.0101
ACENAPHTHYLENE	208-96-8	mg/kg	--	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
ANTHRACENE	120-12-7	mg/kg	1,800	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BENZO(A)ANTHRACENE	56-55-3	mg/kg	1.1	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00254	<0.006
BENZO(A)PYRENE	50-32-8	mg/kg	0.11	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.003	<0.006
BENZO(B)FLUORANTHENE	205-99-2	mg/kg	1.1	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00637	0.0028
BENZO(G,H,I)PERYLENE	191-24-2	mg/kg	--	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00213	<0.006
BENZO(K)FLUORANTHENE	207-08-9	mg/kg	11	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
CHRYSENE	218-01-9	mg/kg	110	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00436	0.0107
DIBENZ(A,H)ANTHRACENE	53-70-3	mg/kg	0.11	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
FLUORANTHENE	206-44-0	mg/kg	240	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00389	0.0049
FLUORENE	86-73-7	mg/kg	240	0.00495	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.0138	0.0451
INDENO(1,2,3-CD)PYRENE	193-39-5	mg/kg	1.1	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.00226	<0.006
NAPHTHALENE	91-20-3	mg/kg	2	<0.0125	NS	--	--	--	--	--	--	<0.02	<0.02	<0.02	<0.02	0.00895	0.0104
PHENANTHRENE	85-01-8	mg/kg	--	0.012	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.0311	0.112
PYRENE	129-00-0	mg/kg	180	<0.006	NS	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.006	0.0062	0.00908
TPH**																	
TPH (GC/FID) LOW FRACTION	8006-61-9	mg/kg	500	0.0725	NS	--	--	--	--	--	--	<0.1	<0.1	<0.1	<0.1	0.781	2.18
C10-C28 DIESEL RANGE	NA	mg/kg	500	6.42	NS	--	--	--	--	--	--	8.62	4.01	4.24	4.22	43.1	166
C28-C36 MOTOR OIL RANGE	NA	mg/kg	500	5.75	NS	--	--	--	--	--	--	18	14.9	16.4	10.6	32	111

Table 1. Summary of Analytical Results

Station Name	CAS Number	Units	Residential Soil Screening Level Concentrations	FS-01	BS2	BS2*	BS2*	BS3*	BS3*	BS4*	BS4*	SS1	SS2	SS3	SS4	SW-01	SW-02
Sample Date				8/20/2021	5/18/2022	2/2/2024	2/2/2024	2/2/2024	2/2/2024	2/2/2024	2/2/24	9/24/2021	9/24/2021	9/24/2021	9/24/2021	8/20/2021	8/20/2021
Sample Depth				5 - 5.5 ft	2-2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2.5 - 2.5 ft	5 - 5 ft	2.5 - 2.5 ft	5 - 5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	0.5 - 0.5 ft	2 - 2.5 ft	2 - 2.5 ft
Soil Suitability for Reclamation**																	
HOT WATER SOL. BORON	7440-42-8	mg/l	2	1.41	0.239	0.429	0.718	0.402	1.35	0.607	0.382	0.511	0.332	0.139	0.133	0.514	0.953
PH	NA	s.u.	6 - 8.3	8.06	8.03	8.39	8.50	8.31	8.33	8.32	8.34	8.13	8.03	7.97	7.79	7.81	7.62
SODIUM ADSORPTION RATIO	NA	Na/(Ca+Mg)	6	5.21	1.59	1.93	4.50	0.91	4.91	0.673	0.690	3.2	3.29	0.517	1.08	2.65	7.15
SPECIFIC CONDUCTANCE	Specific Conductance	mmhos/cm	4	1.75	0.250	0.472	0.418	0.294	1.43	0.721	0.421	0.575	1.1	0.25	1.6	0.983	3.06

NOTES:

Boldface type indicates the analyte was detected above the reporting limit.
Highlighted text indicates an exceedance of either the protection of groundwater soil screening level or residential soil screening level.
** Where RSSL or protection of groundwater screening level is not present, Table 915-1 Cleanup Concentrations are used.
-- No standard established.
NA Not applicable.
NS Not sampled.
BS indicates a background sample collected from a nearby unaffected area.
FS indicates a sample collected from the floor of an excavation.
SS indicates a surface sample collected from the area of shallow excavation with limited impact from produced water.
SW indicates a sample collected from the sidewall of an excavation.
*Duplicate samples were collected due to recent ECMC comments

Taproot Rockies Midstream
Hale Produced Water Release #2
Spill/Release Point ID 480563
Briggsdale, Colorado

Station Name	SW-02*	SW-02*	SW-03	SW-03*	SW-03*	SW-04	SW-04*	SW-04*	SW-05	SW-05*	SW-05*	SW-06	SW-07	SW07*	SW-07*	SW-08	SW-09	SW-09*	SW-09*	SW-10	SW-11	SW-12	SW-13	SW-14	SW-15
Sample Date	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	8/20/2021	2/2/2024	2/2/2024	8/20/2021	8/20/2021	2/2/2024	2/2/2024	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022
Sample Depth	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2.5 - 2.5ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft
Metals																									
ARSENIC	3.74	4.76	3.05	2.50	4.23	2.66	2.72	4.22	3.24	2.53	4.18	2.72	2.84	3.00	4.55	2.46	3.33	3.33	3.69	NS	NS	NS	NS	NS	NS
BARIUM	--	--	192	--	--	424	--	--	446	--	--	200	245	--	--	196	147	--	--	NS	NS	NS	NS	NS	NS
CADMIUM	--	--	0.175	--	--	0.113	--	--	0.143	--	--	0.145	0.21	--	--	0.146	0.309	--	--	NS	NS	NS	NS	NS	NS
COPPER	--	--	12.6	--	--	12.1	--	--	15.8	--	--	13.1	13.3	--	--	12.2	12.3	--	--	NS	NS	NS	NS	NS	NS
CHROMIUM (VI)	--	--	<1	--	--	<1	--	--	<1	--	--	<1	<1	--	--	<1	<1	--	--	NS	NS	NS	NS	NS	NS
LEAD	--	--	10.2	--	--	8.81	--	--	10.5	--	--	8.92	9.78	--	--	9.79	9.65	--	--	NS	NS	NS	NS	NS	NS
NICKEL	--	--	11.4	--	--	10.4	--	--	13.1	--	--	11	11.4	--	--	10.3	11.7	--	--	NS	NS	NS	NS	NS	NS
SELENIUM	--	--	2.08	--	--	1.49	--	--	2.23	--	--	1.67	1.82	--	--	2.25	<2	--	--	NS	NS	NS	NS	NS	NS
SILVER	--	--	<1	--	--	<1	--	--	<1	--	--	<1	<1	--	--	<1	<1	--	--	NS	NS	NS	NS	NS	NS
ZINC	--	--	43.2	--	--	44.8	--	--	56.1	--	--	47.1	47.3	--	--	44.4	41.3	--	--	NS	NS	NS	NS	NS	NS
VOCs																									
BENZENE	--	--	<0.001	--	--	<0.001	--	--	<0.001	--	--	<0.001	<0.001	--	--	<0.001	<0.001	--	--	NS	NS	NS	NS	NS	NS
ETHYLBENZENE	--	--	<0.0025	--	--	<0.0025	--	--	<0.0025	--	--	0.0028	<0.0025	--	--	<0.0025	<0.0025	--	--	NS	NS	NS	NS	NS	NS
TOLUENE	--	--	<0.005	--	--	<0.005	--	--	<0.005	--	--	0.0029	<0.005	--	--	<0.005	<0.005	--	--	NS	NS	NS	NS	NS	NS
XYLENES, TOTAL	--	--	<0.0065	--	--	0.00425	--	--	<0.0065	--	--	0.00926	<0.0065	--	--	<0.0065	<0.0065	--	--	NS	NS	NS	NS	NS	NS
1,2,4-TRIMETHYLBENZENE	--	--	<0.005	--	--	<0.005	--	--	<0.005	--	--	0.0051	<0.005	--	--	<0.005	<0.005	--	--	NS	NS	NS	NS	NS	NS
1,3,5-TRIMETHYLBENZENE	--	--	<0.005	--	--	0.00298	--	--	<0.005	--	--	<0.005	<0.005	--	--	<0.005	<0.005	--	--	NS	NS	NS	NS	NS	NS
Semi-VOCs																									
1-METHYLNAPHTHALENE	--	--	<0.02	--	--	0.00627	--	--	0.0052	--	--	0.0388	0.0303	--	--	0.0788	<0.02	--	--	NS	NS	NS	NS	NS	NS
2-CHLORONAPHTHALENE	--	--	<0.02	--	--	<0.02	--	--	<0.02	--	--	<0.02	<0.02	--	--	<0.02	<0.02	--	--	NS	NS	NS	NS	NS	NS
2-METHYLNAPHTHALENE	--	--	<0.02	--	--	<0.02	--	--	0.00445	--	--	0.0302	0.0215	--	--	0.058	<0.02	--	--	NS	NS	NS	NS	NS	NS
ACENAPHTHENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	0.00513	<0.006	--	--	NS	NS	NS	NS	NS	NS
ACENAPHTHYLENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
ANTHRACENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
BENZO(A)ANTHRACENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
BENZO(A)PYRENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
BENZO(B)FLUORANTHENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	0.00196	<0.006	--	--	NS	NS	NS	NS	NS	NS
BENZO(G,H,I)PERYLENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
BENZO(K)FLUORANTHENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
CHRYSENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	0.00677	<0.006	--	--	NS	NS	NS	NS	NS	NS
DIBENZ(A,H)ANTHRACENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
FLUORANTHENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	0.00278	<0.006	--	--	NS	NS	NS	NS	NS	NS
FLUORENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	0.00937	0.00899	--	--	0.0228	<0.006	--	--	NS	NS	NS	NS	NS	NS
INDENO(1,2,3-CD)PYRENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	<0.006	<0.006	--	--	<0.006	<0.006	--	--	NS	NS	NS	NS	NS	NS
NAPHTHALENE	--	--	<0.0125	--	--	<0.0125	--	--	<0.0125	--	--	<0.0125	<0.0125	--	--	<0.0125	<0.02	--	--	NS	NS	NS	NS	NS	NS
PHENANTHRENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	0.0248	0.0259	--	--	0.0684	<0.006	--	--	NS	NS	NS	NS	NS	NS
PYRENE	--	--	<0.006	--	--	<0.006	--	--	<0.006	--	--	0.0021	0.00203	--	--	0.00591	<0.006	--	--	NS	NS	NS	NS	NS	NS
TPH**																									
TPH (GC/FID) LOW FRACTION	--	--	<0.1	--	--	3.23	--	--	0.0247	--	--	0.496	0.0382	--	--	0.867	<0.1	--	--	NS	NS	NS	NS	NS	NS
C10-C28 DIESEL RANGE	--	--	<4	--	--	4.96	--	--	<4	--	--	2.57	4.38	--	--	49.5	2.53	--	--	NS	NS	NS	NS	NS	NS
C28-C36 MOTOR OIL RANGE	--	--	3.67	--	--	3.51	--	--	2.54	--	--	3.23	4.9	--	--	35.2	8.65	--	--	NS	NS	NS	NS	NS	NS

Taproot Rockies Midstream
Hale Produced Water Release #2
Spill/Release Point ID 480563
Briggsdale, Colorado

Station Name	SW-02*	SW-02*	SW-03	SW-03*	SW-03*	SW-04	SW-04*	SW-04*	SW-05	SW-05*	SW-05*	SW-06	SW-07	SW07*	SW-07*	SW-08	SW-09	SW-09*	SW-09*	SW-10	SW-11	SW-12	SW-13	SW-14	SW-15
Sample Date	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	2/2/2024	2/2/2024	8/20/2021	8/20/2021	2/2/2024	2/2/2024	8/20/2021	8/20/2021	2/2/2024	2/2/2024	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022
Sample Depth	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2.5 - 2.5ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2.5 - 2.5 ft	5 - 5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft	2 - 2.5 ft
Soil Suitability for Reclamation**																									
HOT WATER SOL. BORON	0.41	1.59	0.407	0.747	1.33	2.04	0.434	1.34	0.744	0.430	1.63	0.674	0.733	0.637	1.86	0.999	0.484	0.484	0.788	0.332	0.285	0.211	0.308	0.261	0.236
PH	8.38	8.10	8.32	8.25	7.97	7.97	8.30	8.09	7.96	8.08	8.14	8.02	7.9	8.36	8.16	7.84	8.7	8.7	8.36	7.76	8.26	7.74	8.08	7.59	7.91
SODIUM ADSORPTION RATIO	1.29	2.46	1.52	2.13	2.19	10.5	0.559	2.35	2.73	0.181	2.18	3.68	3.51	1.85	2.78	9.8	0.751	0.751	3.10	1.32	1.32	1.16	1.37	1.38	1.09
SPECIFIC CONDUCTANCE	0.311	1.86	0.304	0.546	3.03	3.53	0.400	2.82	1.44	0.428	1.56	1.16	1.58	0.530	1.79	3.49	0.348	0.348	0.666	0.250	0.230	0.239	0.337	1.64	0.313

Appendix A - Hale Soil Sampling Locations
Taproot Energy Partners
Facility ID 467382
Spill/Release ID 480563
Briggsdale, Colorado

Point	Sample Depth (ft)	Elevation (a)	Latitude, Longitude (b)
SW1	2-2.5	4925.67	40.6507222 N, 104.0851278 W
SW2	2-2.5, 5	4925.92	40.6507222 N, 104.0852083 W
SW3	2-2.5, 5	4925.39	40.6507222 N, 104.0852889 W
SW4	2-2.5, 5	4925.69	40.6507222 N, 104.0853556 W
SW5	2-2.5, 5	4925.46	40.6507583 N, 104.0853722 W
SW6	2-2.5, 5	4925.58	40.6507556 N, 104.0852806 W
SW7	2-2.5, 5	4925.50	40.6507556 N, 104.0852111 W
SW8	2-2.5, 5	4925.71	40.6507583 N, 104.0851250 W
SW9	2.5-3, 5	4925.33	40.6507583 N, 104.0851528 W
SW10	2-2.5	4929*	40.6507715 N, 104.0851527 W
SW11	2-2.5	4929*	40.6507712 N, 104.0851141 W
SW12	2-2.5	4929*	40.6507505 N, 104.0851073 W
SW13	2-2.5	4930*	40.6507096 N, 104.0852080 W
SW14	2-2.5	4930*	40.6507092 N, 104.0852897 W
SW15	2-2.5	4930*	40.6507096 N, 104.0853568 W
FS1	5-5.5	4923.60	40.6507361 N, 104.0852417 W
SS1	0.5	4927.78	40.6506917 N, 104.0851778 W
SS2	0.5	4927.65	40.6507194 N, 104.0854194 W
SS3	0.5	4927.30	40.6508194 N, 104.0853417 W
SS4	0.5	4926.93	40.6508139 N, 104.0851556 W
BS2	2.5, 5	4928*	40.6508376 N, 104.0850697 W
BS3	2.5, 5	4929*	40.6508135 N, 104.0854653 W
BS4	2.5, 5	4930*	40.6506676 N, 104.0854199 W
Release Point	5.0	5923.75	40.6507306 N, 104.0851861 W

a/ Ground surface elevation, feet above mean sea level.

b/ All coordinates converted to NAD83 coordinate system.

* Estimated elevation from Google Earth

February 15, 2024

Environmental Works

Adam Kubat

AP@environmentalworks.com

Briggsdale CO 80204

Project Name - Taproot - Hale

Project Number - 240513-A1

Attached are your analytical results for Taproot - Hale received by Origins Laboratory, Inc. February 05, 2024. This project is associated with Origins project number Y402133-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BS3-2.5	Y402133-01	Soil	February 2, 2024 10:10	02/05/2024 15:20
BS3-5	Y402133-02	Soil	February 2, 2024 10:10	02/05/2024 15:20
BS4-2.5	Y402133-03	Soil	February 2, 2024 10:20	02/05/2024 15:20
BS4-5	Y402133-04	Soil	February 2, 2024 10:20	02/05/2024 15:20
BS2-2.5	Y402133-05	Soil	February 2, 2024 10:30	02/05/2024 15:20
BS2-5	Y402133-06	Soil	February 2, 2024 10:30	02/05/2024 15:20
SW9-2.5	Y402133-07	Soil	February 2, 2024 10:35	02/05/2024 15:20
SW9-5	Y402133-08	Soil	February 2, 2024 10:35	02/05/2024 15:20
SW2-2.5	Y402133-09	Soil	February 2, 2024 10:40	02/05/2024 15:20
SW2-5	Y402133-10	Soil	February 2, 2024 10:40	02/05/2024 15:20
SW3-2.5	Y402133-11	Soil	February 2, 2024 10:50	02/05/2024 15:20
SW3-5	Y402133-12	Soil	February 2, 2024 10:50	02/05/2024 15:20
SW7-2.5	Y402133-13	Soil	February 2, 2024 11:00	02/05/2024 15:20
SW7-5	Y402133-14	Soil	February 2, 2024 11:00	02/05/2024 15:20

Origins Laboratory, Inc.



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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW5-2.5	Y402133-15	Soil	February 2, 2024 11:10	02/05/2024 15:20
SW5-5	Y402133-16	Soil	February 2, 2024 11:10	02/05/2024 15:20
SW4-2.5	Y402133-17	Soil	February 2, 2024 11:20	02/05/2024 15:20
SW4-5	Y402133-18	Soil	February 2, 2024 11:20	02/05/2024 15:20

Origins Laboratory, Inc.



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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

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4402133

page 1 of 2

ORIGINS
LABORATORY, INC

Client: Taproot Environmental Works Inc. Project Manager: Adam Kubat
Address: 2770 Industrial Ln Project Name: Taproot - Hale
Briggsdale, CO 80204 Project Number: 240513-A1
Telephone Number: 507-475-2825 Samples Collected By: ARK
Email Address: AKubat@environmentalworks.com

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			Other
BS3 - 2.5	2/2/24	10:10	2									1	
BS3 - 5	2/2/24	10:10	2									2	
BS4 - 2.5	2/2/24	10:20	2									3	
BS4 - 5	2/2/24	10:20	2									4	
BS2 - 2.5	2/2/24	10:30	2									5	
BS2 - 5	2/2/24	10:30	2									6	
SW4 - 2.5	2/2/24	10:35	2									7	
SW4 - 5	2/2/24	10:35	2									8	
SW2 - 2.5	2/2/24	10:40	2									9	
SW2 - 5	2/2/24	10:40	2									10	
Relinquished By: <u>hung sum</u>	Date: <u>2/5/24</u>	Time: <u>3:20</u>		Received By: <u>[Signature]</u>				Date: <u>2/5/24</u>			Time: <u>1520</u>	Turnaround Time: <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> 72 Hr	
Relinquished By:	Date:	Time:		Received By:				Date:			Time:	Standard <input checked="" type="checkbox"/>	

Date Results Needed

Temp Received- S

Origins Laboratory, Inc.

J. Bynon

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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

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page 2 of 2

ORIGINS

LABORATORY, INC

Client: Environmental Works, Inc.
 Address: 2770 Industrial Ln
Broomfield, CO 80020
 Telephone Number: 507-475-2825
 Email Address: AKubat@environmentalworks.com

Project Manager: Adam Kubat
 Project Name: Taproot - Hale
 Project Number: 240513-A1
 Samples Collected By: ARK

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis			Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ	Canister #	Other		AVS
SW3-2.5	2/2/24	10:50	2											1
SW3-5	2/2/24	10:50	2											2
SW7-2.5	2/2/24	11:00	2											3
SW7-5	2/2/24	11:00	2											4
SW5-2.5	2/2/24	11:10	2											5
SW5-5	2/2/24	11:10	2											6
SW4-2.5	2/2/24	11:20	2											7
SW4-5	2/2/24	11:20	2											8
														9
														10

Relinquished By: <u>Muffy van</u>	Date: <u>2/5/24</u>	Time: <u>3:20 pm</u>	Received By: <u>[Signature]</u>	Date: <u>2/5/24</u>	Time: <u>1:50</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

Temp Received- 5

Origins Laboratory, Inc.

J. Bynon

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Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Origins Laboratory

Sample Receipt Checklist

F-012207-01-R1
Effective Date: 01/09/12

Origins Work Order: 4402123

Client: Env. Works

Client Project ID: Taproot - Hale

Checklist Completed by: EHS

Shipped Via: HO
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 2/5/24

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 115 °C 1 °C 1 °C (Describe) _____ °C

Thermometer ID: T004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date, time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

2/7/24
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

BS3-2.5

2/2/2024 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y402133-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.402	0.0994	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
-------	-------	--------	------	---	---------	-----	------------	------------

Metals by Saturated Paste by EPA 6010

Calcium	2.23	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	ND	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.31		pH Units	1	B4B0817	EAL	02/08/2024	02/09/2024
----	------	--	----------	---	---------	-----	------------	------------

SAR by 20B Saturated Paste

SAR	0.190	0.0100	SAR	1	B4B0808	ACC	02/08/2024	02/09/2024
-----	-------	--------	-----	---	---------	-----	------------	------------

Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.294	0.00500	mmhos/cm	1	B4B0817	EAL	02/08/2024	02/09/2024
---------------------------	-------	---------	----------	---	---------	-----	------------	------------

Table 915 metals by EPA 6020B

Arsenic	3.04	0.0925	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
---------	------	--------	-------	----	---------	-----	------------	------------

Origins Laboratory, Inc.



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Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

BS3-5

2/2/2024 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y402133-02 (Soil)

Boron (DTPA Sorbitol)

Boron	1.35	0.0997	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
-------	------	--------	------	---	---------	-----	------------	------------

Metals by Saturated Paste by EPA 6010

Calcium	4.16	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	1.02	0.823	"	"	"	ACC	"	"
Sodium	7.90	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.33		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
----	------	--	----------	---	---------	-----	------------	------------

SAR by 20B Saturated Paste

SAR	4.91	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
-----	------	--------	-----	---	---------	-----	------------	------------

Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.43	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
---------------------------	------	---------	----------	---	---------	-----	------------	------------

Table 915 metals by EPA 6020B

Arsenic	4.30	0.0959	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
---------	------	--------	-------	----	---------	-----	------------	------------

Origins Laboratory, Inc.



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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

BS4-2.5

2/2/2024 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc. Y402133-03 (Soil)

Boron (DTPA Sorbitol)

Boron	0.607	0.101	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	3.78	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	0.939	0.823	"	"	"	ACC	"	"
Sodium	1.03	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.32		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	0.673	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.721	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.01	0.0937	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Origins Laboratory, Inc.



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

BS4-5

2/2/2024 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-04 (Soil)

Boron (DTPA Sorbitol)

Boron	0.382	0.0992	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	2.32	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	0.833	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.34		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	0.690	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.421	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.44	0.0936	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Environmental Works

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Briggsdale CO 80204

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Project Number: 240513-A1

Project: Taproot - Hale

BS2-2.5

2/2/2024 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.429	0.0998	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.68	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	2.00	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.39		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	1.93	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.472	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	2.90	0.0938	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

BS2-5

2/2/2024 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-06 (Soil)

Boron (DTPA Sorbitol)

Boron	0.718	0.0987	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	0.635	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	2.83	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.50		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	4.50	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.418	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	3.70	0.0887	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW9-2.5

2/2/2024 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-07 (Soil)

Boron (DTPA Sorbitol)

Boron	0.484	0.101	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	2.06	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	0.821	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.27		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	0.751	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.348	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	3.33	0.0903	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW9-5

2/2/2024 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-08 (Soil)

Boron (DTPA Sorbitol)

Boron	0.788	0.0993	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.72	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	3.21	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.36		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	3.10	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.666	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	3.69	0.0938	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW2-2.5

2/2/2024 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-09 (Soil)

Boron (DTPA Sorbitol)

Boron	0.410	0.101	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.42	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	1.17	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.38		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	1.29	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.311	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	3.74	0.0984	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW2-5

2/2/2024 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-10 (Soil)

Boron (DTPA Sorbitol)

Boron	1.59	0.100	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	10.7	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	1.69	0.823	"	"	"	ACC	"	"
Sodium	6.14	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.10		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.46	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.86	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.76	0.0964	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW3-2.5

2/2/2024 10:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-11 (Soil)

Boron (DTPA Sorbitol)

Boron	0.747	0.101	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	2.06	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	2.38	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.25		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.13	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.546	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	2.50	0.0960	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW3-5

2/2/2024 10:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-12 (Soil)

Boron (DTPA Sorbitol)

Boron	1.33	0.0998	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	22.9	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	3.13	0.823	"	"	"	ACC	"	"
Sodium	7.89	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	7.97		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.19	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3.03	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.23	0.0956	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW7-2.5

2/2/2024 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-13 (Soil)

Boron (DTPA Sorbitol)

Boron	0.637	0.0996	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.95	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	2.01	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.36		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	1.85	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.530	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	3.00	0.0914	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW7-5

2/2/2024 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-14 (Soil)

Boron (DTPA Sorbitol)

Boron	1.86	0.0987	mg/L	1	B4B0814	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	7.92	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	1.38	0.823	"	"	"	ACC	"	"
Sodium	5.99	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.16		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.78	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.79	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.55	0.0921	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW5-2.5

2/2/2024 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-15 (Soil)

Boron (DTPA Sorbitol)

Boron	0.430	0.102	mg/L	1	B4B0815	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	2.89	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	ND	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.08		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	0.181	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.428	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	2.53	0.0899	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Project Number: 240513-A1

Project: Taproot - Hale

SW5-5

2/2/2024 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-16 (Soil)

Boron (DTPA Sorbitol)

Boron	1.63	0.0991	mg/L	1	B4B0815	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	7.76	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	1.45	0.823	"	"	"	ACC	"	"
Sodium	4.67	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.14		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.18	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.56	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.18	0.0847	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Origins Laboratory, Inc.



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

Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

SW4-2.5

2/2/2024 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-17 (Soil)

Boron (DTPA Sorbitol)

Boron	0.434	0.0983	mg/L	1	B4B0815	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	2.47	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	ND	0.823	"	"	"	ACC	"	"
Sodium	0.697	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.30		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	0.559	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.400	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	2.72	0.0950	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Origins Laboratory, Inc.



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Environmental Works

AP@environmentalworks.com

Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

SW4-5

2/2/2024 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y402133-18 (Soil)

Boron (DTPA Sorbitol)

Boron	1.34	0.0992	mg/L	1	B4B0815	ACC	02/08/2024	02/09/2024
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Metals by Saturated Paste by EPA 6010

Calcium	15.0	0.499	meq/L	10	[CALC]	ACC	02/08/2024	02/09/2024
Magnesium	3.01	0.823	"	"	"	ACC	"	"
Sodium	7.05	0.435	"	"	"	ACC	"	"

pH in Soil by 9045D

pH	8.09		pH Units	1	B4B0818	EAL	02/08/2024	02/09/2024
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SAR by 20B Saturated Paste

SAR	2.35	0.0100	SAR	1	B4B0809	ACC	02/08/2024	02/09/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.82	0.00500	mmhos/cm	1	B4B0818	EAL	02/08/2024	02/09/2024
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Table 915 metals by EPA 6020B

Arsenic	4.22	0.0849	mg/kg	10	B4B0617	HJD	02/06/2024	02/09/2024
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Origins Laboratory, Inc.



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Metals by EPA 6000/7000 Series Methods - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4B0617 - EPA 3050B										
Blank (B4B0617-BLK1)					Prepared: 02/06/2024 Analyzed: 02/09/2024					
Arsenic	ND	0.0100	mg/kg							
LCS (B4B0617-BS1)					Prepared: 02/06/2024 Analyzed: 02/09/2024					
Arsenic	4.53	0.0100	mg/kg	5.00		90.7	80-120			
Matrix Spike (B4B0617-MS1)		Source: Y402133-01			Prepared: 02/06/2024 Analyzed: 02/09/2024					
Arsenic	7.45	0.0849	mg/kg	4.25	3.04	104	75-125			
Matrix Spike Dup (B4B0617-MSD1)		Source: Y402133-01			Prepared: 02/06/2024 Analyzed: 02/09/2024					
Arsenic	7.38	0.0904	mg/kg	4.52	3.04	95.9	75-125	0.971	20	

Origins Laboratory, Inc.



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4B0808 - Saturated Paste Metals

Blank (B4B0808-BLK1)

Prepared: 02/08/2024 Analyzed: 02/09/2024

SAR	ND	0.0100	SAR
Calcium PPM	ND	10.0	mg/L
Magnesium PPM	ND	10.0	"
Sodium PPM	ND	10.0	"

Duplicate (B4B0808-DUP1)

Source: Y402133-01

Prepared: 02/08/2024 Analyzed: 02/09/2024

Calcium PPM	39.8	10.0	mg/L	44.7	11.5	50
SAR	ND	0.0100	SAR	0.190		200
Magnesium PPM	2.98	10.0	mg/L	3.32	10.8	50
Sodium PPM	4.98	10.0	"	4.90	1.62	50

Batch B4B0809 - Saturated Paste Metals

Blank (B4B0809-BLK1)

Prepared: 02/08/2024 Analyzed: 02/09/2024

Calcium PPM	ND	10.0	mg/L
SAR	ND	0.0100	SAR
Magnesium PPM	ND	10.0	mg/L
Sodium PPM	ND	10.0	"

Duplicate (B4B0809-DUP1)

Source: Y402133-02

Prepared: 02/08/2024 Analyzed: 02/09/2024

Calcium PPM	78.2	10.0	mg/L	83.3	6.41	50
SAR	ND	0.0100	SAR	4.91		200
Magnesium PPM	11.7	10.0	mg/L	12.4	5.31	50
Sodium PPM	178	10.0	"	182	1.79	50

Batch B4B0814 - DTPA Sorbitol Preparation

Blank (B4B0814-BLK1)

Prepared: 02/08/2024 Analyzed: 02/09/2024

Origins Laboratory, Inc.



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4B0814 - DTPA Sorbitol Preparation										
Blank (B4B0814-BLK1)					Prepared: 02/08/2024 Analyzed: 02/09/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4B0814-DUP1)					Source: Y402130-01 Prepared: 02/08/2024 Analyzed: 02/09/2024					
Boron	0.245	0.0987	mg/L		0.249			1.51	50	
Batch B4B0815 - DTPA Sorbitol Preparation										
Blank (B4B0815-BLK1)					Prepared: 02/08/2024 Analyzed: 02/09/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4B0815-DUP1)					Source: Y402133-15 Prepared: 02/08/2024 Analyzed: 02/09/2024					
Boron	0.366	0.0998	mg/L		0.430			16.1	50	

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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Saturated Paste - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4B0817 - Saturated Paste pH/EC

Blank (B4B0817-BLK1)

Prepared: 02/08/2024 Analyzed: 02/09/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B4B0817-DUP1)

Source: Y402133-01

Prepared: 02/08/2024 Analyzed: 02/09/2024

pH	8.27		pH Units	8.31			0.483	25
Specific Conductance (EC)	0.265	0.00500	mmhos/cm	0.294			10.4	25

Batch B4B0818 - Saturated Paste pH/EC

Blank (B4B0818-BLK1)

Prepared: 02/08/2024 Analyzed: 02/09/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B4B0818-DUP1)

Source: Y402133-02

Prepared: 02/08/2024 Analyzed: 02/09/2024

pH	8.34		pH Units	8.33			0.120	25
Specific Conductance (EC)	1.39	0.00500	mmhos/cm	1.43			2.87	25

Origins Laboratory, Inc.



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Environmental Works

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Briggsdale CO 80204

Adam Kubat

Project Number: 240513-A1

Project: Taproot - Hale

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Taproot. Sampling at the Hale Site near Briggsdale, CO.
EWI Project #212509. A1.

Photo: 1

Description:

2/2/2024

EWI Direct push drill rig on site.



Photo: 2

Description:

2/2/2024

Soil screening and logging



Taproot. Sampling at the Hale Site near Briggsdale, CO.
EWI Project #212509. A1.

Photo: 3

Description:

2/2/2024

Representative photo of
drill hole.



Photo: 4

Description:

2/2/2024

A view looking Southwest
of the sampling/impacted
area with produced water.
Vegetation has grown back
onsite in the area where
the pipeline is located.



Taproot. Sampling at the Hale Site near Briggsdale, CO.
EWI Project #212509. A1.

