

Schuyler Hamilton
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Report of Work Completed – Pit Closure

ECMC Location Name (ID)	PRF / C-1W (269711)
Operator Location Name	Pinyon Ridge Federal C-1W Pit
Remediation Project Number	26721
Legal Description	NESE Sec. 21 T3N-R97W
Coordinates (Lat/Long)	40.212534 / -108.276615
County	Rio Blanco County, Colorado

Mr. Hamilton,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Anschutz Exploration Corporation (Anschutz) to document the findings of site investigation conducted to close the freshwater storage pit at the Pinyon Ridge Federal C-1W well pad (Location). The Location is 22.7 miles northwest of Meeker, Colorado in Rio Blanco County as illustrated in the attached Topographic Location Map. Additional information on the Location and associated remediation project is provided in the title block above and in the attached topographic location map and site diagram. The ROWC provides a brief background on the incident and remediation project, methods used to complete the drilling assessment, results of the assessment, and recommendations for how to proceed with this information.

Background

On December 20, 2022, Anschutz submitted Energy & Carbon Conservation Management Commission (ECMC) Form 27 Document 403265956 to initiate closure of the freshwater storage pit on site in accordance with ECMC Rule 913.c.(1). The form was approved by ECMC on January 11, 2023.

Methodology

On July 13, 2023, Confluence provided initial sampling support to characterize the sidewalls of the freshwater storage pit. Six characterization soil samples were collected from the sidewalls of the freshwater storage pit from depths ranging from 3 to 7 feet below ground surface (bgs). Soil samples were characterized using visual and olfactory observations and were field screened using a photoionization detector (PID).

On October 3, 2023, Confluence returned to the Location to collect a produced water characterization sample from the tank battery on site.

All collected soil samples were placed in laboratory provided containers, immediately placed on ice, and shipped for laboratory analysis under a completed chain-of-custody form to Pace Analytical

Services (Pace). Soil samples were analyzed for ECMC Table 915-1 soil constituents of concern. The produced water sample was submitted for analysis of pH and Table 915-1 metals. Sample locations are illustrated in the attached Site Diagrams.

Results

These results summarize findings from the site investigation. For organizational and presentation purposes, the results summary is divided between general observations of lithology and hydrogeology for the entire Location and site investigation activities. Collected spatial data are depicted in the attached Site Diagram. Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized by clay loam with interbedded mudstone lenses. Groundwater is expected to flow northeast towards Open Gulch and ultimately to the White River, located 4.7 miles south of the Location. During the course of site investigation at the Location related to Remediation Project Number 23348, multiple soil borings were advanced to refusal around the Location with a maximum depth of 25 feet bgs, and groundwater was not encountered during the course of site investigation. For this reason, depth to groundwater at the Location is assumed to be greater than 25 feet bgs, beneath a lithologic confining layer.

Characterization Soil Sampling

Field screening indicated potential impacts within the southeast sample based on soil staining and a PID measurement of 287.5 parts per million (ppm). The remaining soil samples did not indicate soil impacts with PID measurements ranging from 0.1 to 21.4 ppm. Laboratory results of the characterization soil samples exceed ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) for EC, SAR, pH, arsenic, and hexavalent chromium. EC exceeds at 4.720 millimhos per centimeter (mmhos/cm) in the northwest wall. SAR exceedances range from 18.0 to 45.3, and pH exceedances range from 5.15 to 8.80. Arsenic exceedances range from 0.797 to 18.8 milligrams per kilogram (mg/kg), and hexavalent chromium exceeds at 0.429 mg/kg in the northeast wall.

Produced Water Sample

Analytical results of the produced water characterization sample were below laboratory detection limits for arsenic. Additionally, results of the source water analysis indicate a pH value of 6.46.

Analysis and Recommendations

Although EC and hexavalent chromium values above ECMC Table 915-1 RSSLs remain within the investigation area, background data collected from the Location in support of ECMC Remediation Project Number 23348 demonstrates elevated levels of these constituents in native soil. Analytical results of background soil samples collected from SB18 indicate native EC, SAR, and hexavalent chromium values of 8.510 mmhos/cm, 18.8, and 0.453 mg/kg, respectively. SB18 is located within the same soil type as the pit: Kobase silty clay loam, and samples were collected from the same relative elevation as the pit investigation area. Therefore, it is reasonable to conclude that SB18 is representative of native conditions at the Location. Confluence recommends that Anschutz request consideration of ECMC Table 915-1 Footnote 1 to establish alternative allowable limits for EC, SAR, and hexavalent chromium of 8.510 mmhos/cm, 18.8, and 0.453 mg/kg, respectively.



Although levels of pH and arsenic exceeding ECMC Table 915-1 RSSLs remain in the investigation area, produced water characterization data indicates these constituents are not present at significant levels in produced water from the Location. Analytical results of produced water characterization indicate levels of arsenic below laboratory detection limits and a near-neutral pH value of 6.46. Although records indicate the pit has not been used to store produced water, the site-specific produced water sample remains indicative of which elevated inorganic constituents may be attributed to oil and gas operations at the Location. Based on this information, it is reasonable to conclude that elevated levels of arsenic and pH are not attributed to oil and gas operations at the Location. Per ECMC Rule 915.e.(2).C, Confluence recommends that Anschutz requests to remove pH and arsenic as constituents of concern.

Assuming the proposed alternative allowable limits and operator knowledge are accepted, all constituents of concern are within ECMC Table 915-1 RSSLs or proposed alternative allowable limits except for SAR. SAR exceedances remain undelineated to the north, northwest, south, and southeast of the pit. Confluence recommends additional site investigation to characterize the base of the pit and to delineate the horizontal extent SAR exceedances.

Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results, or recommendations presented here, please do not hesitate to contact us.

Regards,



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Attachments

- Topographic Location Map
- Site Diagram – Site Investigation
- Site Diagram – Background Samples
- Analytical Results Summary Table – Soil
- Analytical Results Summary Table – Produced Water
- Laboratory Reports



Topographic Location Map

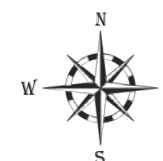
Anschutz Exploration Corp

Pinyon Ridge Federal C-1W Pit
(PRF / C-1W)

ECMC Location ID: 315979

Rio Blanco County

NESE Sec. 21 T3N-R97W



Topographic map sourced from 2020 Earth Point
using data provided by United States Geological
Survey

Created by: Chris McKisson on 05/23/2022.

Pinyon Ridge Federal C-1W



Site Diagram Site Investigation

Anschutz Exploration Corporation

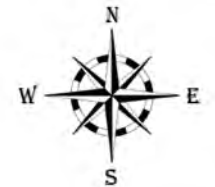
PRF / C-1W

(Pinyon Ridge Federal C-1W Pit)



ECMC Location ID: 269711

Rio Blanco County

NESE Sec. 21 T3N-R97W



Legend

-  Soil Sample
-  Produced Water Sample

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Miranda Beard on 10/17/2023.

230713-PR_C-1W-PIT_N@5-7

230713-PR_C-1W-PIT_NE@3-7

231003_PINYONRIDGE_PW

230713-PR_C-1W-PIT_SE@5-7

230713-PR_C-1W-PIT_NW@5-7

230713-PR_C-1W-PIT_SW@4-5

230713-PR_C-1W-PIT_S@5-7

Site Diagram Background Samples

Anschutz Exploration Corporation

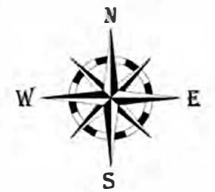
PRF / C-1W

(Pinyon Ridge Federal C-1W Pit)


ECMC Location ID: 269711

Rio Blanco County

NESE Sec. 21 T3N-R97W



Legend

 Background Soil Sample

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Miranda Beard on 10/02/2023.

20220908-PR_FED_C-1W-BG(1440)@1'

20220908-PR_FED_C-1W-BG(1450)@1'

20220908-PR_FED_C-1W-BG(1455)@1'

SB18

SB14

SB20

SB19

20220908-PR_FED_C-1W-BG(1515)@1'

20220908-PR_FED_C-1W-BG(1525)@1'



Laboratory Results Summary Table - Soil
Pinyon Ridge - Fresh Water Storage Pit Closure

10/2/2023

ECMC Soil Screening Levels				Organic Compounds (mg/kg [ppm])																										
ECMC Table 915-1 Residential -->				NA	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	18	24	2	180	
Sample Date	Solid/Soil Source (Equipment) <small>[Vault/Slump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]</small>	Depth - Z (feet) (NEGATIVE VALUE) <small>below ground surface (bgs)</small>	Sample ID	PID (ppm)	TPH (total volatile and extractable petroleum hydrocarbons) (GRO-DRO-ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenz(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Pyrene	
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_SE@5-7	287.5	11.16	0.247	8.83	2.08	<0.00100	0.00558	<0.00250	0.0172	0.00738	0.00648	0.00317	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00520	<0.00600	0.0234	0.0610	0.101	<0.00600	
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_SW@5-7	21.4	15.61	0.172	9.59	5.85	<0.00100	0.00143	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600	
7/13/2023	Pit	-5	20230713-PR_C-1W-PIT_SW@4-5	1.8	6.44	0.0577	2.20	4.18	<0.00100	0.00287	<0.00250	0.00270	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600	
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_NW@5-7	1.4	0.492	0.0332	<4.00	0.459	<0.00100	0.00290	<0.00250	0.00195	<0.00500	<0.00500	0.00334	0.00575	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00358	0.00569	<0.00600	<0.0200	<0.0200	<0.0200	0.00228
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_N@5-7	1.5	0.0230	0.0230	<4.00	<4.00	<0.00100	0.00258	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00250	<0.00600	<0.0200	<0.0200	<0.0200	<0.0200	0.00282
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_NE@3-7	0.1	3.73	0.0286	2.76	0.940	<0.00100	0.00280	<0.00250	0.00109	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600	
7/13/2023	Background	-4	230713-PR_C-1W_SB18@4-8	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-12	230713-PR_C-1W_SB18@8-12	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-15	230713-PR_C-1W_SB18@12-15	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-8	230713-PR_C-1W_SB20@4-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-10	230713-PR_C-1W_SB20@8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-8	230713-PR_C-1W_SB19@4-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-12	230713-PR_C-1W_SB19@8-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/13/2023	Background	-15	230713-PR_C-1W_SB19@12-15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-8	230712-PR_C-1W_SB14@5-8	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-12	230712-PR_C-1W_SB14@8-12	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-14	230712-PR_C-1W_SB14@12-14	0.4	10.44	0.0680	4.01	6.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-18	230712-PR_C-1W_SB14@14-18	0.0	4.18	0.0604	1.85	2.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-14	230712-PR_C-1W_SB14@12-14	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/12/2023	Background	-18	230712-PR_C-1W_SB14@14-18	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1455) @ 1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1450) @ 1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1515) @ 1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG (1520) @ 1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG (1440) @ 1'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	



Laboratory Results Summary Table - Soil
Pinyon Ridge - Fresh Water Storage Pit Closure

10/2/2023

ECMC Soil Screening Levels					Soil Suitability for Reclamation				Metals (mg/kg [ppm])										
ECMC Table 915-1 Residential -->				NA	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	NA	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (VI)	Copper	Lead	Mercury (Total Mercury by EPA 7471)	Nickel	Selenium	Silver	Zinc
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_SE@5-7	287.5	1.840	34.4	6.89	0.184	4.00	25.4	<1.00	<1.00	9.14	10.6	NA	2.81	0.827	<0.500	42.5
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_S@5-7	21.4	2.270	29.1	8.80	0.558	5.07	44.9	1.06	<1.00	22.1	16.4	NA	24.7	0.796	0.0912	130
7/13/2023	Pit	-5	20230713-PR_C-1W-PIT_SW@4-5	1.8	2.350	18.6	8.46	0.401	6.10	68.6	0.248	<1.00	19.7	9.75	NA	16.5	0.646	<0.500	57.4
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_NW@5-7	1.4	4.720	32.5	8.68	0.513	0.797	34.7	0.666	<1.00	28.9	27.4	NA	11.6	0.650	0.189	56.4
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_N@5-7	1.5	3.730	45.3	8.25	0.354	3.44	29.6	0.621	<1.00	15.8	19.0	NA	25.6	1.25	<0.500	133
7/13/2023	Pit	-7	20230713-PR_C-1W-PIT_NE@3-7	0.1	2.040	18.0	5.15	0.728	18.8	42.1	<1.00	0.429	29.7	10.6	NA	2.77	1.59	0.0994	52.3
7/13/2023	Background	-4	230713-PR_C-1W_SB18@4-8	1.5	6.820	12.5	8.16	1.17	7.12	122	0.248	0.303	16.5	9.45	NA	11.7	1.69	<0.500	44.7
7/13/2023	Background	-12	230713-PR_C-1W_SB18@8-12	1.3	8.510	8.15	7.97	0.808	14.3	142	0.651	0.453	19.6	12.3	NA	11.5	0.996	0.109	50.3
7/13/2023	Background	-15	230713-PR_C-1W_SB18@12-15	0.6	2.740	18.8	8.79	0.46	14.2	37.1	<1.00	0.309	13.0	8.86	NA	3.89	1.810	<0.500	52.4
7/13/2023	Background	-8	230713-PR_C-1W_SB20@4-8	NA	1.850	17.0	8.58	0.693	7.52	62.3	0.396	<1.00	26.8	12.5	NA	18.3	0.813	0.110	65.7
7/13/2023	Background	-10	230713-PR_C-1W_SB20@8-10	NA	2.490	9.94	8.09	0.726	13.9	129	0.425	<1.00	28.0	16.2	NA	17.3	1.14	0.116	72.7
7/13/2023	Background	-8	230713-PR_C-1W_SB19@4-8	NA	1.380	5.46	8.03	0.515	4.90	117	0.284	0.289	20.6	10.6	NA	14.7	0.612	0.0987	53.2
7/13/2023	Background	-12	230713-PR_C-1W_SB19@8-12	NA	4.560	3.07	7.84	0.936	4.75	149	0.488	<1.00	13.5	9.06	NA	12.1	0.669	<0.500	40.1
7/13/2023	Background	-15	230713-PR_C-1W_SB19@12-15	NA	4.160	1.87	7.65	0.802	6.15	52.1	0.273	0.268	16.9	9.12	NA	15.1	0.504	0.0912	49.2
7/12/2023	Background	-8	230712-PR_C-1W_SB14@5-8	1.0	0.284	4.72	9.00	0.437	8.34	79.0	0.453	<1.00	16.4	10.3	NA	13.1	0.604	<0.500	46.6
7/12/2023	Background	-12	230712-PR_C-1W_SB14@8-12	0.0	1.980	11.2	8.35	0.700	6.82	92.3	0.350	0.335	21.6	13.0	NA	17.8	0.670	0.0916	68.7
7/12/2023	Background	-14	230712-PR_C-1W_SB14@12-14	0.4	NA	9.18	8.11	NA	7.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/12/2023	Background	-18	230712-PR_C-1W_SB14@14-18	0.0	NA	10.1	8.20	NA	11.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/12/2023	Background	-14	230712-PR_C-1W_SB14@12-14	0.4	1.030	NA	8.09	0.462	7.05	213	0.452	<1.00	17.8	11.3	NA	15.4	0.733	0.112	53.5
7/12/2023	Background	-18	230712-PR_C-1W_SB14@14-18	0.0	1.220	NA	8.19	0.418	12.4	69.0	0.461	0.319	31.4	15.8	NA	19.9	0.952	0.177	73.7
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1455) @ 1'	NA	NA	4.26	8.75	NA	8.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1450) @ 1'	NA	NA	0.108	8.33	NA	3.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG(1515) @ 1'	NA	NA	0.0659	8.29	NA	4.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG (1520) @ 1'	NA	NA	0.0772	8.37	NA	5.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/28/2022	Background	-1	20220928-PR_FED_C-1W-BG (1440) @ 1'	NA	NA	0.0894	8.19	NA	8.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Laboratory Results Summary Table - Produced Water
Pinyon Ridge - Fresh Water Storage Pit Closure

ECMC Allowable Concentration (915-Groundwater)			ECMC Standard Not Applicable											
			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sample Date	Depth - Z (feet) below ground surface (bgs)	Sample ID	Arsenic, dissolved	Barium, dissolved	Boron	Cadmium, dissolved	Chromium (VI)	Copper, dissolved	Lead, dissolved	Nickel	pH	Selenium, dissolved	Silver, dissolved	Zinc
10/3/23	NA	231003_PINYONRIDGE_PW	<0.00500	72.9	26.5	<0.00500	<0.000500	0.0621	0.00440	<0.0100	6.46	<0.0100	<0.00500	<0.100



ANALYTICAL REPORT

October 16, 2023

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Anschutz Exploration Corporation

Sample Delivery Group: L1662745
Samples Received: 10/04/2023
Project Number:
Description: Pinyon Ridge
Site: PINYON RIDGE
Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202

Entire Report Reviewed By:

T. Alan Harvill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:

Anschutz Exploration Corporation

PROJECT:

SDG:

L1662745

DATE/TIME:

10/16/23 11:40

PAGE:

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Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
231003_PINYONRIDGE_PW L1662745-01	5	⁴ Cn
Qc: Quality Control Summary	6	
Wet Chemistry by Method 3500Cr C-2011	6	⁵ Sr
Wet Chemistry by Method 4500H+ B-2011	7	
Metals (ICP) by Method 200.7	8	⁶ Qc
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Gl: Glossary of Terms	11	⁷ Gl
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Sc: Sample Chain of Custody	13	⁹ Sc

SAMPLE SUMMARY

231003_PINYONRIDGE_PW L1662745-01 WW

Collected by
Ahmed Shah

Collected date/time
10/03/23 12:30

Received date/time
10/04/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG2148999	1	10/12/23 13:36	10/12/23 13:36	SET	Mt. Juliet, TN
Wet Chemistry by Method 4500H+ B-2011	WG2146374	1	10/08/23 13:00	10/08/23 13:00	BJM	Mt. Juliet, TN
Metals (ICP) by Method 200.7	WG2147294	5	10/08/23 08:23	10/10/23 12:56	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 200.8	WG2145211	5	10/09/23 16:52	10/15/23 16:48	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 200.8	WG2145211	500	10/09/23 16:52	10/16/23 09:58	SJM	Mt. Juliet, TN

¹Cp

²Tc

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⁸Al

⁹Sc

ACCOUNT:

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L1662745

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10/16/23 11:40

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CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



T. Alan Harvill
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.000150	0.000500	1	10/12/2023 13:36	WG2148999

Wet Chemistry by Method 4500H+ B-2011

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.46	T8	1	10/08/2023 13:00	WG2146374

Sample Narrative:

L1662745-01 WG2146374: 6.46 at 20.1C

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	26.5		0.198	1.00	5	10/10/2023 12:56	WG2147294

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Arsenic	U		0.000975	0.00500	5	10/15/2023 16:48	WG2145211
Barium	72.9		0.238	2.50	500	10/16/2023 09:58	WG2145211
Cadmium	U		0.000800	0.00500	5	10/15/2023 16:48	WG2145211
Copper	0.0621		0.00335	0.00500	5	10/15/2023 16:48	WG2145211
Lead	0.00440	J	0.00256	0.0100	5	10/15/2023 16:48	WG2145211
Nickel	U		0.00257	0.0100	5	10/15/2023 16:48	WG2145211
Selenium	U		0.00218	0.0100	5	10/15/2023 16:48	WG2145211
Silver	U		0.000720	0.00500	5	10/15/2023 16:48	WG2145211
Zinc	U		0.0398	0.100	5	10/15/2023 16:48	WG2145211

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3985466-1 10/12/23 08:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L1664748-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1664748-03 10/12/23 09:33 • (DUP) R3985466-5 10/12/23 09:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

L1665018-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1665018-01 10/12/23 12:28 • (DUP) R3985466-6 10/12/23 12:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.00154	0.00154	1	0.266		20

Laboratory Control Sample (LCS)

(LCS) R3985466-2 10/12/23 08:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	0.00200	0.00213	107	90.0-110	

L1664748-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1664748-01 10/12/23 09:00 • (MS) R3985466-3 10/12/23 09:11 • (MSD) R3985466-4 10/12/23 09:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	0.00182	0.0530	0.0532	102	103	1	90.0-110			0.394	20

L1665047-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1665047-01 10/12/23 13:01 • (MS) R3985466-7 10/12/23 13:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	0.0500	0.000351	0.0518	103	1	90.0-110	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1662010-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1662010-02 10/08/23 13:00 • (DUP) R3983454-2 10/08/23 13:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.02	8.00	1	0.250		1

Sample Narrative:

OS: 8.02 at 20.8C

DUP: 8 at 20.5C

L1663044-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1663044-01 10/08/23 13:00 • (DUP) R3983454-3 10/08/23 13:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.97	6.97	1	0.000		1

Sample Narrative:

OS: 6.97 at 20.5C

DUP: 6.97 at 20.2C

Laboratory Control Sample (LCS)

(LCS) R3983454-1 10/08/23 13:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 20.7C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3983802-8 10/09/23 12:25

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Boron	U		0.0396	0.200

Laboratory Control Sample (LCS)

(LCS) R3983802-9 10/09/23 12:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Boron	1.00	0.985	98.5	85.0-115	

L1661900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1661900-02 10/09/23 12:30 • (MS) R3983802-11 10/09/23 12:36 • (MSD) R3983802-12 10/09/23 12:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Boron	1.00	0.216	1.13	1.23	91.0	102	1	70.0-130			9.04	20

L1661948-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1661948-02 10/09/23 12:41 • (MS) R3983802-13 10/09/23 12:43 • (MSD) R3983802-14 10/09/23 12:46

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Boron	1.00	0.117	1.10	1.09	98.1	97.6	1	70.0-130			0.388	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3986510-1 10/15/23 15:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.000195	0.00100
Barium	U		0.000476	0.00500
Cadmium	U		0.000160	0.00100
Copper	U		0.000670	0.00100
Lead	U		0.000513	0.00200
Nickel	U		0.000514	0.00200
Selenium	U		0.000437	0.00200
Silver	U		0.000144	0.00100
Zinc	U		0.00796	0.0200

Laboratory Control Sample (LCS)

(LCS) R3986510-2 10/15/23 15:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	0.0500	0.0524	105	85.0-115	
Barium	0.0500	0.0490	98.1	85.0-115	
Cadmium	0.0500	0.0517	103	85.0-115	
Copper	0.0500	0.0470	94.0	85.0-115	
Lead	0.0500	0.0523	105	85.0-115	
Nickel	0.0500	0.0516	103	85.0-115	
Selenium	0.0500	0.0492	98.3	85.0-115	
Silver	0.0500	0.0500	99.9	85.0-115	
Zinc	0.0500	0.0507	101	85.0-115	

L1661990-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1661990-02 10/15/23 15:10 • (MS) R3986510-4 10/15/23 15:16 • (MSD) R3986510-5 10/15/23 15:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	0.0500	0.000704	0.0534	0.0520	105	103	1	70.0-130			2.60	20
Barium	0.0500	0.0143	0.0654	0.0644	102	100	1	70.0-130			1.49	20
Cadmium	0.0500	U	0.0517	0.0514	103	103	1	70.0-130			0.466	20
Copper	0.0500	0.00871	0.0565	0.0547	95.7	92.0	1	70.0-130			3.26	20
Lead	0.0500	U	0.0544	0.0545	109	109	1	70.0-130			0.177	20
Nickel	0.0500	0.00223	0.0540	0.0528	104	101	1	70.0-130			2.24	20
Selenium	0.0500	U	0.0503	0.0501	101	100	1	70.0-130			0.338	20
Silver	0.0500	U	0.0498	0.0496	99.6	99.1	1	70.0-130			0.528	20
Zinc	0.0500	0.0229	0.0728	0.0717	99.7	97.5	1	70.0-130			1.57	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1662293-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1662293-01 10/15/23 15:23 • (MS) R3986510-6 10/15/23 15:26 • (MSD) R3986510-7 10/15/23 15:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	0.0500	0.00206	0.0524	0.0527	101	101	1	70.0-130			0.710	20
Barium	0.0500	0.0186	0.0686	0.0678	99.9	98.3	1	70.0-130			1.14	20
Cadmium	0.0500	U	0.0535	0.0529	107	106	1	70.0-130			1.17	20
Copper	0.0500	0.00868	0.0549	0.0542	92.4	91.1	1	70.0-130			1.18	20
Lead	0.0500	0.000522	0.0551	0.0533	109	106	1	70.0-130			3.43	20
Nickel	0.0500	0.0559	0.108	0.106	105	99.8	1	70.0-130			2.30	20
Selenium	0.0500	U	0.0505	0.0510	101	102	1	70.0-130			1.04	20
Silver	0.0500	0.000167	0.0504	0.0504	100	100	1	70.0-130			0.0142	20
Zinc	0.0500	0.0735	0.127	0.129	106	111	1	70.0-130			1.77	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

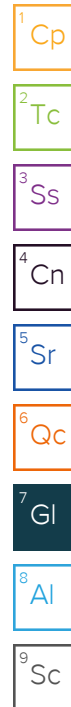
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122


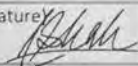

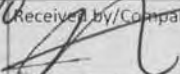
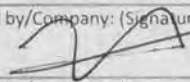
Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



<div>CHAIN-OF-CUSTODY Analytical Request Document</div>										LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here														
Company: Anschutz Exploration Corp					Billing Information: Info on file					ALL SHADED AREAS are for LAB USE ONLY														
Address: Info on file										Container Preservative Type **					Lab Project Manager:									
Report To: schuyler.hamilton@aec-denver.com					Email To: Info on file					** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other														
Copy To: sage.maher@confluence-cc.com remediation@confluence-cc.com					Site Collection Info/Address:					Analyses					Lab Profile/Line:									
Customer Project Name/Number: Pinyon Ridge					State: CO County/City: Mesa Time Zone Collected: [] PT [x] MT [] CT [] ET										Lab Sample Receipt Checklist:									
Phone: Info on file		Site/Facility ID #: Pinyon Ridge			Compliance Monitoring? [] Yes [] No								Custody Seals Present/Intact Y N [x]											
Email: Info on file													Custody Signatures Present Y N [x]											
Collected By (print): Ahmed Shah		Purchase Order #: Standard TAT			DW PWS ID #:								Collector Signature Present Y N [x]											
Collected By (signature): 		Turnaround Date Required: Standard TAT			DW Location Code:								Bottles Intact Y N [x]											
Sample Disposal: [x] Dispose as appropriate [] Return		Rush: [] Same Day [] Next Day			Immediately Packed on Ice: [x] Yes [] No								Correct Bottles Y N [x]											
[] Archive:		[] 2 Day [] 3 Day [] 4 Day [] 5 Day			Field Filtered (if applicable): [] Yes [x] No								Sufficient Volume Y N [x]											
[] Hold:		(Expedite Charges Apply)			Analysis:								Samples Received on Ice Y N [x]											
* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)										VOA - Headspace Acceptable Y N [x]														
Customer Sample ID		Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	TABLE 915-1 VOCs					Lab Profile/Line:									
				Date Time		Date Time				TPH-(GRO, DRO, ORO)					Custody Signatures Present Y N [x]									
231003_PinyonRidge_PW		WW	GRAB	10/03/23 1230					2	TABLE 915-1 METALS LIST					Collector Signature Present Y N [x]									
										TABLE 915-1 PAHs					Bottles Intact Y N [x]									
										pH, EC, SAR					Correct Bottles Y N [x]									
										Boron (hot water soluble)					Sufficient Volume Y N [x]									
										Cr6					Samples Received on Ice Y N [x]									
										pH					VOA - Headspace Acceptable Y N [x]									
															USDA Regulated Soils Y N [x]									
															Samples in Holding Time Y N [x]									
															Residual Chlorine Present Y N [x]									
															Cl Strips:									
															Sample pH Acceptable Y N [x]									
															pH Strips:									
															Sulfide Present Y N [x]									
															Lead Acetate Strips:									
Customer Remarks / Special Conditions / Possible Hazards:										Type of Ice Used: Wet Blue Dry None					SHORT HOLDS PRESENT (<72 hours): Y N N/A					Lab Sample Temperature Info:				
										Packing Material Used:					Lab Tracking #: 6025 5572 2085					Temp Blank Received: Y N NA				
										Radchem sample(s) screened (<500 cpm): Y N NA					Samples received via: FEDEX UPS Client Courier Pace Courier					Therm ID#: 4.9 oC				
Relinquished by/Company: (Signature) 					Date/Time: 10/03/2023 1630					Received by/Company: (Signature) 					Date/Time: D248					Cooler 1 Temp Upon Receipt: 4.9 oC				
Relinquished by/Company: (Signature) 					Date/Time: 10/3/23 1700					Received by/Company: (Signature)					Date/Time:					Cooler 1 Therm Corr. Factor: 0 oC				
Relinquished by/Company: (Signature)					Date/Time:					Received by/Company: (Signature) Alexa Mitchell @					Date/Time: 10/4/23 0900					Cooler 1 Corrected Temp: 4.9 oC				
																				Comments: PH adj. 10/4/23 1837				
																				Trip Blank Received: Y N NA				
																				HCL MeOH TSP Other				
																				Non Conformance(s): YES / NO				
																				Page: of:				



ANALYTICAL REPORT

August 01, 2023

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

Anschutz Exploration Corporation

Sample Delivery Group: L1635893
Samples Received: 07/15/2023
Project Number:
Description: Pit Characterization

Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:

Anschutz Exploration Corporation

PROJECT:

SDG:

L1635893

DATE/TIME:

08/01/23 11:41

PAGE:

1 of 36

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al

SAMPLE SUMMARY

230713-PR_C-1W-PIT_SE@5-7 L1635893-01 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 09:55

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096651	1	07/25/23 18:21	07/25/23 18:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:07	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096657	1	07/21/23 16:43	07/25/23 11:14	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097342	5	07/18/23 22:33	07/19/23 15:46	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 17:08	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2097880	1	07/19/23 09:15	07/19/23 22:00	JBE	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 11:26	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098224	1	07/21/23 10:24	07/21/23 23:27	JCH	Mt. Juliet, TN



230713-PR_C-1W-PIT_S@5-7 L1635893-02 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 10:50

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096651	1	07/25/23 18:24	07/25/23 18:24	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:13	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096657	1	07/21/23 16:43	07/25/23 11:17	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097342	5	07/18/23 22:33	07/19/23 15:49	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 17:32	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2098689	1	07/19/23 09:15	07/20/23 20:31	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 12:18	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098224	1	07/21/23 10:24	07/21/23 23:44	JCH	Mt. Juliet, TN

230713-PR_C-1W-PIT_SW@4-5 L1635893-03 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:20

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096651	1	07/25/23 18:33	07/25/23 18:33	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:23	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096657	1	07/21/23 16:43	07/25/23 10:00	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097342	5	07/18/23 22:33	07/19/23 15:53	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 17:55	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2098439	1	07/19/23 09:15	07/20/23 11:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 12:31	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098224	1	07/21/23 10:24	07/22/23 00:02	JCH	Mt. Juliet, TN

230713-PR_C-1W-PIT_NW@5-7 L1635893-04 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:35

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:16	07/27/23 01:16	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:28	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:10	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097342	5	07/18/23 22:33	07/19/23 16:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 18:18	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2098439	1	07/19/23 09:15	07/20/23 11:57	ACG	Mt. Juliet, TN

SAMPLE SUMMARY

230713-PR_C-1W-PIT_NW@5-7 L1635893-04 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:35

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 10:33	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098224	1	07/21/23 10:24	07/22/23 00:19	JCH	Mt. Juliet, TN

230713-PR_C-1W-PIT_N@5-7 L1635893-05 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 12:40

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:19	07/27/23 01:19	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:33	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	2	07/21/23 16:46	07/26/23 16:13	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:58	07/22/23 12:53	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 18:41	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2098439	1	07/19/23 09:15	07/20/23 12:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 10:20	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098987	1	07/21/23 06:00	07/21/23 19:02	AMM	Mt. Juliet, TN

230713-PR_C-1W-PIT_NE@3-7 L1635893-06 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 12:45

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:22	07/27/23 01:22	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:39	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097342	5	07/18/23 22:33	07/19/23 16:06	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2097676	1	07/19/23 09:15	07/19/23 19:04	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2098439	1	07/19/23 09:15	07/20/23 12:35	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2098204	1	07/21/23 10:16	07/22/23 10:59	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2098987	1	07/21/23 06:00	07/21/23 19:22	AMM	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	34.4		1	07/25/2023 18:21	WG2096651

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/19/2023 09:07	WG2097140

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	6.89	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:

L1635893-01 WG2097597: 6.89 at 21.4C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	1840		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:

L1635893-01 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.184	J	0.0167	0.200	1	07/25/2023 11:14	WG2096657

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	4.00		0.100	1.00	5	07/19/2023 15:46	WG2097342
Barium	25.4		0.152	2.50	5	07/19/2023 15:46	WG2097342
Cadmium	U		0.0855	1.00	5	07/19/2023 15:46	WG2097342
Copper	9.14		0.132	5.00	5	07/19/2023 15:46	WG2097342
Lead	10.6		0.0990	2.00	5	07/19/2023 15:46	WG2097342
Nickel	2.81		0.197	2.50	5	07/19/2023 15:46	WG2097342
Selenium	0.827	J	0.180	2.50	5	07/19/2023 15:46	WG2097342
Silver	U		0.0865	0.500	5	07/19/2023 15:46	WG2097342
Zinc	42.5		0.740	25.0	5	07/19/2023 15:46	WG2097342

Volatile Organic Compounds (GC) by Method 8015D/GRO

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
TPH (GC/FID) Low Fraction	0.247	B	0.0217	0.100	1	07/19/2023 17:08	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	96.1			77.0-120		07/19/2023 17:08	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/19/2023 22:00	WG2097880
Toluene	0.00558		0.00130	0.00500	1	07/19/2023 22:00	WG2097880
Ethylbenzene	U		0.000737	0.00250	1	07/19/2023 22:00	WG2097880
Xylenes, Total	0.0172		0.000880	0.00650	1	07/19/2023 22:00	WG2097880
1,2,4-Trimethylbenzene	0.00738		0.00158	0.00500	1	07/19/2023 22:00	WG2097880
1,3,5-Trimethylbenzene	0.00648		0.00200	0.00500	1	07/19/2023 22:00	WG2097880
(S) Toluene-d8	113			75.0-131		07/19/2023 22:00	WG2097880
(S) 4-Bromofluorobenzene	93.1			67.0-138		07/19/2023 22:00	WG2097880
(S) 1,2-Dichloroethane-d4	116			70.0-130		07/19/2023 22:00	WG2097880

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.83		1.61	4.00	1	07/22/2023 11:26	WG2098204
C28-C36 Motor Oil Range	2.08	J	0.274	4.00	1	07/22/2023 11:26	WG2098204
(S) o-Terphenyl	37.7			18.0-148		07/22/2023 11:26	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.00317	J	0.00209	0.00600	1	07/21/2023 23:27	WG2098224
Anthracene	U		0.00230	0.00600	1	07/21/2023 23:27	WG2098224
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2023 23:27	WG2098224
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2023 23:27	WG2098224
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2023 23:27	WG2098224
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2023 23:27	WG2098224
Chrysene	U		0.00232	0.00600	1	07/21/2023 23:27	WG2098224
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2023 23:27	WG2098224
Fluoranthene	U		0.00227	0.00600	1	07/21/2023 23:27	WG2098224
Fluorene	0.00520	J	0.00205	0.00600	1	07/21/2023 23:27	WG2098224
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2023 23:27	WG2098224
1-Methylnaphthalene	0.0234		0.00449	0.0200	1	07/21/2023 23:27	WG2098224
2-Methylnaphthalene	0.0610		0.00427	0.0200	1	07/21/2023 23:27	WG2098224
Naphthalene	0.101		0.00408	0.0200	1	07/21/2023 23:27	WG2098224
Pyrene	U		0.00200	0.00600	1	07/21/2023 23:27	WG2098224
(S) p-Terphenyl-d14	72.5			23.0-120		07/21/2023 23:27	WG2098224
(S) Nitrobenzene-d5	66.0			14.0-149		07/21/2023 23:27	WG2098224
(S) 2-Fluorobiphenyl	59.3			34.0-125		07/21/2023 23:27	WG2098224



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	29.1		1	07/25/2023 18:24	WG2096651

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/19/2023 09:13	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.80	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:
L1635893-02 WG2097597: 8.8 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2270		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:
L1635893-02 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.558		0.0167	0.200	1	07/25/2023 11:17	WG2096657

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.07		0.100	1.00	5	07/19/2023 15:49	WG2097342
Barium	44.9		0.152	2.50	5	07/19/2023 15:49	WG2097342
Cadmium	1.06		0.0855	1.00	5	07/19/2023 15:49	WG2097342
Copper	22.1		0.132	5.00	5	07/19/2023 15:49	WG2097342
Lead	16.4		0.0990	2.00	5	07/19/2023 15:49	WG2097342
Nickel	24.7		0.197	2.50	5	07/19/2023 15:49	WG2097342
Selenium	0.796	J	0.180	2.50	5	07/19/2023 15:49	WG2097342
Silver	0.0912	J	0.0865	0.500	5	07/19/2023 15:49	WG2097342
Zinc	130		0.740	25.0	5	07/19/2023 15:49	WG2097342

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.172	B	0.0217	0.100	1	07/19/2023 17:32	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	96.2			77.0-120		07/19/2023 17:32	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2023 20:31	WG2098689
Toluene	0.00143	<u>J</u>	0.00130	0.00500	1	07/20/2023 20:31	WG2098689
Ethylbenzene	U		0.000737	0.00250	1	07/20/2023 20:31	WG2098689
Xylenes, Total	U		0.000880	0.00650	1	07/20/2023 20:31	WG2098689
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2023 20:31	WG2098689
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2023 20:31	WG2098689
(S) Toluene-d8	108			75.0-131		07/20/2023 20:31	WG2098689
(S) 4-Bromofluorobenzene	105			67.0-138		07/20/2023 20:31	WG2098689
(S) 1,2-Dichloroethane-d4	104			70.0-130		07/20/2023 20:31	WG2098689

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	9.59		1.61	4.00	1	07/22/2023 12:18	WG2098204
C28-C36 Motor Oil Range	5.85		0.274	4.00	1	07/22/2023 12:18	WG2098204
(S) o-Terphenyl	38.9			18.0-148		07/22/2023 12:18	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/21/2023 23:44	WG2098224
Anthracene	U		0.00230	0.00600	1	07/21/2023 23:44	WG2098224
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2023 23:44	WG2098224
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2023 23:44	WG2098224
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2023 23:44	WG2098224
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2023 23:44	WG2098224
Chrysene	U		0.00232	0.00600	1	07/21/2023 23:44	WG2098224
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2023 23:44	WG2098224
Fluoranthene	U		0.00227	0.00600	1	07/21/2023 23:44	WG2098224
Fluorene	U		0.00205	0.00600	1	07/21/2023 23:44	WG2098224
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2023 23:44	WG2098224
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2023 23:44	WG2098224
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2023 23:44	WG2098224
Naphthalene	U		0.00408	0.0200	1	07/21/2023 23:44	WG2098224
Pyrene	U		0.00200	0.00600	1	07/21/2023 23:44	WG2098224
(S) p-Terphenyl-d14	80.7			23.0-120		07/21/2023 23:44	WG2098224
(S) Nitrobenzene-d5	73.9			14.0-149		07/21/2023 23:44	WG2098224
(S) 2-Fluorobiphenyl	77.3			34.0-125		07/21/2023 23:44	WG2098224



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.6		1	07/25/2023 18:33	WG2096651

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/19/2023 09:23	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.46	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:

L1635893-03 WG2097597: 8.46 at 21.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2350		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:

L1635893-03 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.401		0.0167	0.200	1	07/25/2023 10:00	WG2096657

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.10		0.100	1.00	5	07/19/2023 15:53	WG2097342
Barium	68.6		0.152	2.50	5	07/19/2023 15:53	WG2097342
Cadmium	0.248	J	0.0855	1.00	5	07/19/2023 15:53	WG2097342
Copper	19.7		0.132	5.00	5	07/19/2023 15:53	WG2097342
Lead	9.75		0.0990	2.00	5	07/19/2023 15:53	WG2097342
Nickel	16.5		0.197	2.50	5	07/19/2023 15:53	WG2097342
Selenium	0.646	J	0.180	2.50	5	07/19/2023 15:53	WG2097342
Silver	U		0.0865	0.500	5	07/19/2023 15:53	WG2097342
Zinc	57.4		0.740	25.0	5	07/19/2023 15:53	WG2097342

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0577	B J	0.0217	0.100	1	07/19/2023 17:55	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	97.1			77.0-120		07/19/2023 17:55	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2023 11:38	WG2098439
Toluene	0.00287	U	0.00130	0.00500	1	07/20/2023 11:38	WG2098439
Ethylbenzene	U		0.000737	0.00250	1	07/20/2023 11:38	WG2098439
Xylenes, Total	0.00270	U	0.000880	0.00650	1	07/20/2023 11:38	WG2098439
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2023 11:38	WG2098439
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2023 11:38	WG2098439
(S) Toluene-d8	108			75.0-131		07/20/2023 11:38	WG2098439
(S) 4-Bromofluorobenzene	102			67.0-138		07/20/2023 11:38	WG2098439
(S) 1,2-Dichloroethane-d4	115			70.0-130		07/20/2023 11:38	WG2098439

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.20	U	1.61	4.00	1	07/22/2023 12:31	WG2098204
C28-C36 Motor Oil Range	4.18		0.274	4.00	1	07/22/2023 12:31	WG2098204
(S) o-Terphenyl	45.5			18.0-148		07/22/2023 12:31	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/22/2023 00:02	WG2098224
Anthracene	U		0.00230	0.00600	1	07/22/2023 00:02	WG2098224
Benzo(a)anthracene	U		0.00173	0.00600	1	07/22/2023 00:02	WG2098224
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/22/2023 00:02	WG2098224
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/22/2023 00:02	WG2098224
Benzo(a)pyrene	U		0.00179	0.00600	1	07/22/2023 00:02	WG2098224
Chrysene	U		0.00232	0.00600	1	07/22/2023 00:02	WG2098224
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/22/2023 00:02	WG2098224
Fluoranthene	U		0.00227	0.00600	1	07/22/2023 00:02	WG2098224
Fluorene	U		0.00205	0.00600	1	07/22/2023 00:02	WG2098224
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/22/2023 00:02	WG2098224
1-Methylnaphthalene	U		0.00449	0.0200	1	07/22/2023 00:02	WG2098224
2-Methylnaphthalene	U		0.00427	0.0200	1	07/22/2023 00:02	WG2098224
Naphthalene	U		0.00408	0.0200	1	07/22/2023 00:02	WG2098224
Pyrene	U		0.00200	0.00600	1	07/22/2023 00:02	WG2098224
(S) p-Terphenyl-d14	76.0			23.0-120		07/22/2023 00:02	WG2098224
(S) Nitrobenzene-d5	57.6			14.0-149		07/22/2023 00:02	WG2098224
(S) 2-Fluorobiphenyl	60.9			34.0-125		07/22/2023 00:02	WG2098224



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	32.5		1	07/27/2023 01:16	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/19/2023 09:28	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.68	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:

L1635893-04 WG2097597: 8.68 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4720		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:

L1635893-04 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.513		0.0167	0.200	1	07/26/2023 16:10	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	0.797	J	0.100	1.00	5	07/19/2023 16:03	WG2097342
Barium	34.7		0.152	2.50	5	07/19/2023 16:03	WG2097342
Cadmium	0.666	J	0.0855	1.00	5	07/19/2023 16:03	WG2097342
Copper	28.9		0.132	5.00	5	07/19/2023 16:03	WG2097342
Lead	27.4		0.0990	2.00	5	07/19/2023 16:03	WG2097342
Nickel	11.6		0.197	2.50	5	07/19/2023 16:03	WG2097342
Selenium	0.650	J	0.180	2.50	5	07/19/2023 16:03	WG2097342
Silver	0.189	J	0.0865	0.500	5	07/19/2023 16:03	WG2097342
Zinc	56.4		0.740	25.0	5	07/19/2023 16:03	WG2097342

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0332	B J	0.0217	0.100	1	07/19/2023 18:18	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	97.1			77.0-120		07/19/2023 18:18	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2023 11:57	WG2098439
Toluene	0.00290	U	0.00130	0.00500	1	07/20/2023 11:57	WG2098439
Ethylbenzene	U		0.000737	0.00250	1	07/20/2023 11:57	WG2098439
Xylenes, Total	0.00195	U	0.000880	0.00650	1	07/20/2023 11:57	WG2098439
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2023 11:57	WG2098439
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2023 11:57	WG2098439
(S) Toluene-d8	111			75.0-131		07/20/2023 11:57	WG2098439
(S) 4-Bromofluorobenzene	97.8			67.0-138		07/20/2023 11:57	WG2098439
(S) 1,2-Dichloroethane-d4	115			70.0-130		07/20/2023 11:57	WG2098439

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/22/2023 10:33	WG2098204
C28-C36 Motor Oil Range	0.459	U	0.274	4.00	1	07/22/2023 10:33	WG2098204
(S) o-Terphenyl	37.7			18.0-148		07/22/2023 10:33	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.00334	U	0.00209	0.00600	1	07/22/2023 00:19	WG2098224
Anthracene	0.00575	U	0.00230	0.00600	1	07/22/2023 00:19	WG2098224
Benzo(a)anthracene	U		0.00173	0.00600	1	07/22/2023 00:19	WG2098224
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/22/2023 00:19	WG2098224
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/22/2023 00:19	WG2098224
Benzo(a)pyrene	U		0.00179	0.00600	1	07/22/2023 00:19	WG2098224
Chrysene	U		0.00232	0.00600	1	07/22/2023 00:19	WG2098224
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/22/2023 00:19	WG2098224
Fluoranthene	0.00358	U	0.00227	0.00600	1	07/22/2023 00:19	WG2098224
Fluorene	0.00569	U	0.00205	0.00600	1	07/22/2023 00:19	WG2098224
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/22/2023 00:19	WG2098224
1-Methylnaphthalene	U		0.00449	0.0200	1	07/22/2023 00:19	WG2098224
2-Methylnaphthalene	U		0.00427	0.0200	1	07/22/2023 00:19	WG2098224
Naphthalene	U		0.00408	0.0200	1	07/22/2023 00:19	WG2098224
Pyrene	0.00228	U	0.00200	0.00600	1	07/22/2023 00:19	WG2098224
(S) p-Terphenyl-d14	84.7			23.0-120		07/22/2023 00:19	WG2098224
(S) Nitrobenzene-d5	67.6			14.0-149		07/22/2023 00:19	WG2098224
(S) 2-Fluorobiphenyl	67.4			34.0-125		07/22/2023 00:19	WG2098224



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	45.3		1	07/27/2023 01:19	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/19/2023 09:33	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.25	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:

L1635893-05 WG2097597: 8.25 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3730		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:

L1635893-05 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.354	J	0.0334	0.400	2	07/26/2023 16:13	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.44		0.100	1.00	5	07/22/2023 12:53	WG2097351
Barium	29.6		0.152	2.50	5	07/22/2023 12:53	WG2097351
Cadmium	0.621	J	0.0855	1.00	5	07/22/2023 12:53	WG2097351
Copper	15.8		0.132	5.00	5	07/22/2023 12:53	WG2097351
Lead	19.0		0.0990	2.00	5	07/22/2023 12:53	WG2097351
Nickel	25.6		0.197	2.50	5	07/22/2023 12:53	WG2097351
Selenium	1.25	J	0.180	2.50	5	07/22/2023 12:53	WG2097351
Silver	U		0.0865	0.500	5	07/22/2023 12:53	WG2097351
Zinc	133		0.740	25.0	5	07/22/2023 12:53	WG2097351

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0230	B J	0.0217	0.100	1	07/19/2023 18:41	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	97.9			77.0-120		07/19/2023 18:41	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2023 12:16	WG2098439
Toluene	0.00258	J	0.00130	0.00500	1	07/20/2023 12:16	WG2098439
Ethylbenzene	U		0.000737	0.00250	1	07/20/2023 12:16	WG2098439
Xylenes, Total	U		0.000880	0.00650	1	07/20/2023 12:16	WG2098439
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2023 12:16	WG2098439
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2023 12:16	WG2098439
(S) Toluene-d8	109			75.0-131		07/20/2023 12:16	WG2098439
(S) 4-Bromofluorobenzene	97.3			67.0-138		07/20/2023 12:16	WG2098439
(S) 1,2-Dichloroethane-d4	118			70.0-130		07/20/2023 12:16	WG2098439

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/22/2023 10:20	WG2098204
C28-C36 Motor Oil Range	U		0.274	4.00	1	07/22/2023 10:20	WG2098204
(S) o-Terphenyl	50.6			18.0-148		07/22/2023 10:20	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/21/2023 19:02	WG2098987
Anthracene	U		0.00230	0.00600	1	07/21/2023 19:02	WG2098987
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2023 19:02	WG2098987
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2023 19:02	WG2098987
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2023 19:02	WG2098987
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2023 19:02	WG2098987
Chrysene	U		0.00232	0.00600	1	07/21/2023 19:02	WG2098987
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2023 19:02	WG2098987
Fluoranthene	0.00250	J	0.00227	0.00600	1	07/21/2023 19:02	WG2098987
Fluorene	U		0.00205	0.00600	1	07/21/2023 19:02	WG2098987
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2023 19:02	WG2098987
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2023 19:02	WG2098987
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2023 19:02	WG2098987
Naphthalene	U		0.00408	0.0200	1	07/21/2023 19:02	WG2098987
Pyrene	0.00282	J	0.00200	0.00600	1	07/21/2023 19:02	WG2098987
(S) p-Terphenyl-d14	96.3			23.0-120		07/21/2023 19:02	WG2098987
(S) Nitrobenzene-d5	138			14.0-149		07/21/2023 19:02	WG2098987
(S) 2-Fluorobiphenyl	90.3			34.0-125		07/21/2023 19:02	WG2098987



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.0		1	07/27/2023 01:22	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.429	J	0.255	1.00	1	07/19/2023 09:39	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	5.15	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:

L1635893-06 WG2097597: 5.15 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2040		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:

L1635893-06 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.728		0.0167	0.200	1	07/26/2023 16:16	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	18.8		0.100	1.00	5	07/19/2023 16:06	WG2097342
Barium	42.1		0.152	2.50	5	07/19/2023 16:06	WG2097342
Cadmium	U		0.0855	1.00	5	07/19/2023 16:06	WG2097342
Copper	29.7		0.132	5.00	5	07/19/2023 16:06	WG2097342
Lead	10.6		0.0990	2.00	5	07/19/2023 16:06	WG2097342
Nickel	2.77		0.197	2.50	5	07/19/2023 16:06	WG2097342
Selenium	1.59	J	0.180	2.50	5	07/19/2023 16:06	WG2097342
Silver	0.0994	J	0.0865	0.500	5	07/19/2023 16:06	WG2097342
Zinc	52.3		0.740	25.0	5	07/19/2023 16:06	WG2097342

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0286	B J	0.0217	0.100	1	07/19/2023 19:04	WG2097676
(S) a,a,a-Trifluorotoluene(FID)	98.2			77.0-120		07/19/2023 19:04	WG2097676

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/20/2023 12:35	WG2098439
Toluene	0.00280	U	0.00130	0.00500	1	07/20/2023 12:35	WG2098439
Ethylbenzene	U		0.000737	0.00250	1	07/20/2023 12:35	WG2098439
Xylenes, Total	0.00109	U	0.000880	0.00650	1	07/20/2023 12:35	WG2098439
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/20/2023 12:35	WG2098439
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/20/2023 12:35	WG2098439
(S) Toluene-d8	109			75.0-131		07/20/2023 12:35	WG2098439
(S) 4-Bromofluorobenzene	100			67.0-138		07/20/2023 12:35	WG2098439
(S) 1,2-Dichloroethane-d4	116			70.0-130		07/20/2023 12:35	WG2098439

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.76	U	1.61	4.00	1	07/22/2023 10:59	WG2098204
C28-C36 Motor Oil Range	0.940	U	0.274	4.00	1	07/22/2023 10:59	WG2098204
(S) o-Terphenyl	36.1			18.0-148		07/22/2023 10:59	WG2098204

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/21/2023 19:22	WG2098987
Anthracene	U		0.00230	0.00600	1	07/21/2023 19:22	WG2098987
Benzo(a)anthracene	U		0.00173	0.00600	1	07/21/2023 19:22	WG2098987
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/21/2023 19:22	WG2098987
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/21/2023 19:22	WG2098987
Benzo(a)pyrene	U		0.00179	0.00600	1	07/21/2023 19:22	WG2098987
Chrysene	U		0.00232	0.00600	1	07/21/2023 19:22	WG2098987
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/21/2023 19:22	WG2098987
Fluoranthene	U		0.00227	0.00600	1	07/21/2023 19:22	WG2098987
Fluorene	U		0.00205	0.00600	1	07/21/2023 19:22	WG2098987
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/21/2023 19:22	WG2098987
1-Methylnaphthalene	U		0.00449	0.0200	1	07/21/2023 19:22	WG2098987
2-Methylnaphthalene	U		0.00427	0.0200	1	07/21/2023 19:22	WG2098987
Naphthalene	U		0.00408	0.0200	1	07/21/2023 19:22	WG2098987
Pyrene	U		0.00200	0.00600	1	07/21/2023 19:22	WG2098987
(S) p-Terphenyl-d14	71.6			23.0-120		07/21/2023 19:22	WG2098987
(S) Nitrobenzene-d5	124			14.0-149		07/21/2023 19:22	WG2098987
(S) 2-Fluorobiphenyl	75.9			34.0-125		07/21/2023 19:22	WG2098987



Method Blank (MB)

(MB) R3950312-1 07/19/23 08:55

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1635893-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1635893-02 07/19/23 09:13 • (DUP) R3950312-3 07/19/23 09:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1635933-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1635933-05 07/19/23 11:17 • (DUP) R3950312-8 07/19/23 11:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3950312-2 07/19/23 09:02

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.8	108	80.0-120	

L1635908-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635908-02 07/19/23 09:59 • (MS) R3950312-4 07/19/23 10:04 • (MSD) R3950312-5 07/19/23 10:10

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	16.8	17.5	83.8	87.5	1	75.0-125			4.38	20

L1635908-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1635908-02 07/19/23 09:59 • (MS) R3950312-6 07/19/23 10:15

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	U	868	136	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

L1635907-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635907-01 07/19/23 13:08 • (DUP) R3950271-2 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.54	7.54	1	0.000		1

Sample Narrative:

OS: 7.54 at 21.7C

DUP: 7.54 at 21.5C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

L1636257-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636257-02 07/19/23 13:08 • (DUP) R3950271-3 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.34	8.39	1	0.598		1

Sample Narrative:

OS: 8.34 at 21.5C

DUP: 8.39 at 21.3C

Laboratory Control Sample (LCS)

(LCS) R3950271-1 07/19/23 13:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 21.3C

Method Blank (MB)

(MB) R3950612-1 07/20/23 09:30

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1635894-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635894-01 07/20/23 09:30 • (DUP) R3950612-3 07/20/23 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	197	191	1	2.83		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1635943-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1635943-02 07/20/23 09:30 • (DUP) R3950612-4 07/20/23 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	204	200	1	1.88		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3950612-2 07/20/23 09:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	727	99.3	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3950375-1 07/19/23 15:43

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1635893-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635893-01 07/19/23 15:43 • (DUP) R3950375-3 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1840	1810	1	1.37		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1636321-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636321-02 07/19/23 15:43 • (DUP) R3950375-4 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	194	197	1	1.69		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3950375-2 07/19/23 15:43

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	727	99.3	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3952442-1 07/25/23 10:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3952442-2 07/25/23 10:11 • (LCSD) R3952442-3 07/25/23 10:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.991	0.984	99.1	98.4	80.0-120			0.718	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

Method Blank (MB)

(MB) R3953306-1 07/26/23 16:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3953306-2 07/26/23 16:04 • (LCSD) R3953306-3 07/26/23 16:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.10	1.12	110	112	80.0-120			1.45	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3950380-1 07/19/23 15:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3950380-2 07/19/23 15:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.3	93.3	80.0-120	
Barium	100	89.6	89.6	80.0-120	
Cadmium	100	90.2	90.2	80.0-120	
Copper	100	86.2	86.2	80.0-120	
Lead	100	85.0	85.0	80.0-120	
Nickel	100	91.8	91.8	80.0-120	
Selenium	100	94.4	94.4	80.0-120	
Silver	20.0	17.6	88.1	80.0-120	
Zinc	100	88.7	88.7	80.0-120	

L1636296-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1636296-04 07/19/23 15:29 • (MS) R3950380-5 07/19/23 15:39 • (MSD) R3950380-6 07/19/23 15:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.24	103	96.1	99.6	92.8	5	75.0-125			6.81	20
Barium	100	21.3	116	105	94.7	83.3	5	75.0-125			10.4	20
Cadmium	100	U	98.3	91.0	98.3	91.0	5	75.0-125			7.77	20
Copper	100	21.1	116	108	95.2	87.1	5	75.0-125			7.24	20
Lead	100	14.0	111	99.2	96.7	85.2	5	75.0-125			11.0	20
Nickel	100	11.6	107	102	95.3	90.8	5	75.0-125			4.26	20
Selenium	100	0.289	102	93.9	102	93.6	5	75.0-125			8.15	20
Silver	20.0	U	19.1	17.7	95.5	88.6	5	75.0-125			7.45	20
Zinc	100	47.7	138	137	90.5	89.3	5	75.0-125			0.851	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951578-1 07/22/23 12:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	0.526	U	0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	1.22	U	0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3951578-2 07/22/23 12:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	103	103	80.0-120	
Barium	100	100	100	80.0-120	
Cadmium	100	103	103	80.0-120	
Copper	100	94.9	94.9	80.0-120	
Lead	100	97.6	97.6	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	120	120	80.0-120	
Silver	20.0	21.6	108	80.0-120	
Zinc	100	99.6	99.6	80.0-120	

L1635893-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635893-05 07/22/23 12:53 • (MS) R3951578-5 07/22/23 13:03 • (MSD) R3951578-6 07/22/23 13:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.44	66.4	79.2	63.0	75.8	5	75.0-125	J6		17.6	20
Barium	100	29.6	111	121	81.3	91.6	5	75.0-125			8.90	20
Cadmium	100	0.621	84.3	101	83.7	101	5	75.0-125			18.3	20
Copper	100	15.8	92.6	107	76.8	91.0	5	75.0-125			14.3	20
Lead	100	19.0	102	111	82.7	92.0	5	75.0-125			8.73	20
Nickel	100	25.6	95.3	112	69.7	86.4	5	75.0-125	J6		16.2	20
Selenium	100	1.25	82.4	90.7	81.2	89.4	5	75.0-125			9.51	20
Silver	20.0	U	17.8	21.5	89.1	108	5	75.0-125			18.8	20
Zinc	100	133	196	209	63.0	76.0	5	75.0-125	J6		6.43	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951152-2 07/19/23 10:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0261	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3951152-1 07/19/23 10:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.35	79.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

Method Blank (MB)

(MB) R3950716-3 07/19/23 11:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	115			75.0-131
(S) 4-Bromofluorobenzene	90.6			67.0-138
(S) 1,2-Dichloroethane-d4	87.9			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3950716-1 07/19/23 10:11 • (LCSD) R3950716-2 07/19/23 10:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.112	0.118	89.6	94.4	70.0-123			5.22	20
Toluene	0.125	0.127	0.139	102	111	75.0-121			9.02	20
Ethylbenzene	0.125	0.131	0.148	105	118	74.0-126			12.2	20
Xylenes, Total	0.375	0.385	0.399	103	106	72.0-127			3.57	20
1,2,4-Trimethylbenzene	0.125	0.112	0.115	89.6	92.0	70.0-126			2.64	20
1,3,5-Trimethylbenzene	0.125	0.114	0.120	91.2	96.0	73.0-127			5.13	20
(S) Toluene-d8				113	115	75.0-131				
(S) 4-Bromofluorobenzene				94.1	93.8	67.0-138				
(S) 1,2-Dichloroethane-d4				122	120	70.0-130				

L1635501-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635501-01 07/19/23 15:55 • (MS) R3950716-4 07/19/23 22:43 • (MSD) R3950716-5 07/19/23 23:05

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.132	U	0.111	0.136	84.7	104	1.05	10.0-149			20.2	37
Toluene	0.132	U	0.124	0.150	94.7	115	1.05	10.0-156			19.0	38
Ethylbenzene	0.132	U	0.123	0.151	93.9	115	1.05	10.0-160			20.4	38
Xylenes, Total	0.399	U	0.341	0.426	86.5	108	1.05	10.0-160			22.2	38
1,2,4-Trimethylbenzene	0.132	U	0.0957	0.123	73.1	93.9	1.05	10.0-160			25.0	36
1,3,5-Trimethylbenzene	0.132	U	0.103	0.125	78.6	95.4	1.05	10.0-160			19.3	38
(S) Toluene-d8					112	110		75.0-131				
(S) 4-Bromofluorobenzene					89.9	89.4		67.0-138				
(S) 1,2-Dichloroethane-d4					119	121		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951943-2 07/20/23 10:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	93.2			67.0-138
(S) 1,2-Dichloroethane-d4	119			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3951943-1 07/20/23 08:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.113	90.4	70.0-123	
Toluene	0.125	0.113	90.4	75.0-121	
Ethylbenzene	0.125	0.110	88.0	74.0-126	
Xylenes, Total	0.375	0.311	82.9	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.0913	73.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.0934	74.7	73.0-127	
(S) Toluene-d8			106	75.0-131	
(S) 4-Bromofluorobenzene			96.5	67.0-138	
(S) 1,2-Dichloroethane-d4			117	70.0-130	

L1635891-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635891-03 07/20/23 11:19 • (MS) R3951943-3 07/20/23 17:37 • (MSD) R3951943-4 07/20/23 17:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.140	0.000470	0.0788	0.0950	63.2	76.2	1	10.0-149			18.6	37
Toluene	0.140	0.00426	0.0840	0.101	64.3	78.0	1	10.0-156			18.4	38
Ethylbenzene	0.140	U	0.0783	0.0961	63.1	77.5	1	10.0-160			20.4	38
Xylenes, Total	0.418	U	0.220	0.266	59.1	71.5	1	10.0-160			18.9	38
1,2,4-Trimethylbenzene	0.140	U	0.0668	0.0801	53.9	64.6	1	10.0-160			18.1	36
1,3,5-Trimethylbenzene	0.140	U	0.0647	0.0829	52.2	66.9	1	10.0-160			24.7	38
(S) Toluene-d8					109	106		75.0-131				
(S) 4-Bromofluorobenzene					98.8	94.9		67.0-138				
(S) 1,2-Dichloroethane-d4					103	101		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951933-2 07/20/23 19:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	94.1			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3951933-1 07/20/23 18:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.116	92.8	70.0-123	
Toluene	0.125	0.123	98.4	75.0-121	
Ethylbenzene	0.125	0.122	97.6	74.0-126	
Xylenes, Total	0.375	0.350	93.3	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.0995	79.6	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.101	80.8	73.0-127	
(S) Toluene-d8			109	75.0-131	
(S) 4-Bromofluorobenzene			98.2	67.0-138	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951597-1 07/22/23 09:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	49.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3951597-2 07/22/23 10:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.6	65.2	50.0-150	
(S) o-Terphenyl			64.1	18.0-148	

L1635647-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635647-06 07/22/23 14:43 • (MS) R3951597-3 07/22/23 14:56 • (MSD) R3951597-4 07/22/23 15:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.0	29600	13900	25100	0.000	0.000	500	50.0-150	V	J3 V	57.4	20
(S) o-Terphenyl					0.000	0.000		18.0-148	J7	J7		

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

Method Blank (MB)

(MB) R3951687-2 07/21/23 20:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	93.4			23.0-120
(S) Nitrobenzene-d5	66.2			14.0-149
(S) 2-Fluorobiphenyl	82.6			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3951687-1 07/21/23 20:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0757	94.6	50.0-120	
Anthracene	0.0800	0.0783	97.9	50.0-126	
Benzo(a)anthracene	0.0800	0.0831	104	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0778	97.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0746	93.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0763	95.4	42.0-120	
Chrysene	0.0800	0.0799	99.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0763	95.4	47.0-125	
Fluoranthene	0.0800	0.0823	103	49.0-129	
Fluorene	0.0800	0.0810	101	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0851	106	46.0-125	
1-Methylnaphthalene	0.0800	0.0776	97.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0819	102	50.0-120	
Naphthalene	0.0800	0.0747	93.4	50.0-120	
Pyrene	0.0800	0.0843	105	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3951687-1 07/21/23 20:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			98.8	23.0-120	
(S) Nitrobenzene-d5			80.2	14.0-149	
(S) 2-Fluorobiphenyl			92.1	34.0-125	

L1635695-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635695-14 07/22/23 03:13 • (MS) R3951687-3 07/22/23 03:30 • (MSD) R3951687-4 07/22/23 03:48

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0788	9.46	2.71	0.900	0.000	0.000	1	14.0-127	V	J3 V	100	27
Anthracene	0.0788	6.38	1.31	0.431	0.000	0.000	1	10.0-145	V	J3 V	101	30
Benzo(a)anthracene	0.0788	13.6	2.39	0.741	0.000	0.000	1	10.0-139	V	J3 V	105	30
Benzo(b)fluoranthene	0.0788	15.8	2.64	0.791	0.000	0.000	1	10.0-140	V	J3 V	108	36
Benzo(k)fluoranthene	0.0788	4.16	0.596	0.187	0.000	0.000	1	10.0-137	V	J3 V	104	31
Benzo(a)pyrene	0.0788	10.6	1.73	0.497	0.000	0.000	1	10.0-141	V	J3 V	111	31
Chrysene	0.0788	11.4	2.18	0.706	0.000	0.000	1	10.0-145	V	J3 V	102	30
Dibenz(a,h)anthracene	0.0788	1.15	0.219	0.0747	0.000	0.000	1	10.0-132	V	J3 V	98.3	31
Fluoranthene	0.0788	27.9	11.6	3.75	0.000	0.000	1	10.0-153	E V	J3 V	102	33
Fluorene	0.0788	10.0	2.82	0.896	0.000	0.000	1	11.0-130	V	J3 V	104	29
Indeno(1,2,3-cd)pyrene	0.0788	5.44	0.855	0.251	0.000	0.000	1	10.0-137	V	J3 V	109	32
1-Methylnaphthalene	0.0788	2.92	0.664	0.258	0.000	0.000	1	10.0-142	V	J3 V	88.1	28
2-Methylnaphthalene	0.0788	7.27	1.49	0.508	0.000	0.000	1	10.0-137	V	J3 V	98.3	28
Naphthalene	0.0788	0.988	0.341	0.111	0.000	0.000	1	10.0-135	V	J3 V	102	27
Pyrene	0.0788	28.6	7.52	2.41	0.000	0.000	1	10.0-148	E V	J3 V	103	35
(S) p-Terphenyl-d14					86.5	46.1		23.0-120				
(S) Nitrobenzene-d5					60.9	29.4		14.0-149				
(S) 2-Fluorobiphenyl					60.0	37.1		34.0-125				

Sample Narrative:
OS: Surrogate failure due to matrix interference

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Method Blank (MB)

(MB) R3951650-2 07/21/23 14:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	92.9			23.0-120
(S) Nitrobenzene-d5	82.5			14.0-149
(S) 2-Fluorobiphenyl	90.2			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3951650-1 07/21/23 14:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0750	93.8	50.0-120	
Anthracene	0.0800	0.0737	92.1	50.0-126	
Benzo(a)anthracene	0.0800	0.0775	96.9	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0798	99.8	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0768	96.0	49.0-125	
Benzo(a)pyrene	0.0800	0.0799	99.9	42.0-120	
Chrysene	0.0800	0.0792	99.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0752	94.0	47.0-125	
Fluoranthene	0.0800	0.0803	100	49.0-129	
Fluorene	0.0800	0.0781	97.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0829	104	46.0-125	
1-Methylnaphthalene	0.0800	0.0758	94.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0772	96.5	50.0-120	
Naphthalene	0.0800	0.0712	89.0	50.0-120	
Pyrene	0.0800	0.0798	99.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3951650-1 07/21/23 14:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			91.7	23.0-120	
(S) Nitrobenzene-d5			88.5	14.0-149	
(S) 2-Fluorobiphenyl			93.5	34.0-125	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





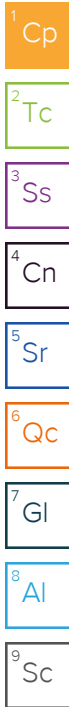
ANALYTICAL REPORT

August 09, 2023

Revised Report

Anschutz Exploration Corporation

Sample Delivery Group: L1635897
Samples Received: 07/15/2023
Project Number:
Description: Backgrounds
Site: PINYON RIDGE FEDERAL C-1W
Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202



Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

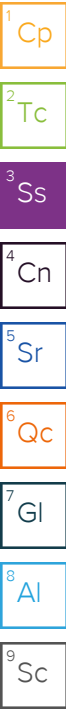
230713-PR_C-1W_SB18@4-8 L1635897-01 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 10:05

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:38	07/27/23 01:38	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097129	1	07/18/23 23:13	07/19/23 12:26	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097500	1	07/19/23 09:00	07/19/23 10:30	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:38	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097070	5	07/18/23 16:19	07/21/23 20:04	JPD	Mt. Juliet, TN



230713-PR_C-1W_SB18@8-12 L1635897-02 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 10:20

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:46	07/27/23 01:46	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097129	1	07/18/23 23:13	07/19/23 12:31	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097500	1	07/19/23 09:00	07/19/23 10:30	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:41	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097070	5	07/18/23 16:19	07/21/23 20:07	JPD	Mt. Juliet, TN

230713-PR_C-1W_SB18@12-15 L1635897-03 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 10:30

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:49	07/27/23 01:49	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097129	1	07/18/23 23:13	07/19/23 12:47	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097500	1	07/19/23 09:00	07/19/23 10:30	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097533	1	07/19/23 12:00	07/20/23 09:30	EPW	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:44	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097070	5	07/18/23 16:19	07/21/23 20:10	JPD	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



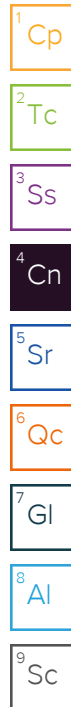
Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 08/03/23 15:25

Project Narrative

Report reissued 8/09 for corrected sample IDs



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	12.5		1	07/27/2023 01:38	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.303	J	0.255	1.00	1	07/19/2023 12:26	WG2097129

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.16	T8	1	07/19/2023 10:30	WG2097500

Sample Narrative:

L1635897-01 WG2097500: 8.16 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	6820		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:

L1635897-01 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.17		0.0167	0.200	1	07/26/2023 16:38	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.12		0.100	1.00	5	07/21/2023 20:04	WG2097070
Barium	122		0.152	2.50	5	07/21/2023 20:04	WG2097070
Cadmium	0.248	J	0.0855	1.00	5	07/21/2023 20:04	WG2097070
Copper	16.5		0.132	5.00	5	07/21/2023 20:04	WG2097070
Lead	9.45		0.0990	2.00	5	07/21/2023 20:04	WG2097070
Nickel	11.7		0.197	2.50	5	07/21/2023 20:04	WG2097070
Selenium	1.69	J	0.180	2.50	5	07/21/2023 20:04	WG2097070
Silver	U		0.0865	0.500	5	07/21/2023 20:04	WG2097070
Zinc	44.7		0.740	25.0	5	07/21/2023 20:04	WG2097070

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.15		1	07/27/2023 01:46	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.453	J	0.255	1.00	1	07/19/2023 12:31	WG2097129

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.97	T8	1	07/19/2023 10:30	WG2097500

Sample Narrative:
L1635897-02 WG2097500: 7.97 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	8510		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:
L1635897-02 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.808		0.0167	0.200	1	07/26/2023 16:41	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	14.3		0.100	1.00	5	07/21/2023 20:07	WG2097070
Barium	142		0.152	2.50	5	07/21/2023 20:07	WG2097070
Cadmium	0.651	J	0.0855	1.00	5	07/21/2023 20:07	WG2097070
Copper	19.6		0.132	5.00	5	07/21/2023 20:07	WG2097070
Lead	12.3		0.0990	2.00	5	07/21/2023 20:07	WG2097070
Nickel	11.5		0.197	2.50	5	07/21/2023 20:07	WG2097070
Selenium	0.996	J	0.180	2.50	5	07/21/2023 20:07	WG2097070
Silver	0.109	J	0.0865	0.500	5	07/21/2023 20:07	WG2097070
Zinc	50.3		0.740	25.0	5	07/21/2023 20:07	WG2097070

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.8		1	07/27/2023 01:49	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.309	J	0.255	1.00	1	07/19/2023 12:47	WG2097129

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.79	T8	1	07/19/2023 10:30	WG2097500

Sample Narrative:

L1635897-03 WG2097500: 8.79 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2740		10.0	1	07/20/2023 09:30	WG2097533

Sample Narrative:

L1635897-03 WG2097533: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.460		0.0167	0.200	1	07/26/2023 16:44	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	14.2		0.100	1.00	5	07/21/2023 20:10	WG2097070
Barium	37.1		0.152	2.50	5	07/21/2023 20:10	WG2097070
Cadmium	U		0.0855	1.00	5	07/21/2023 20:10	WG2097070
Copper	13.0		0.132	5.00	5	07/21/2023 20:10	WG2097070
Lead	8.86		0.0990	2.00	5	07/21/2023 20:10	WG2097070
Nickel	3.89		0.197	2.50	5	07/21/2023 20:10	WG2097070
Selenium	1.81	J	0.180	2.50	5	07/21/2023 20:10	WG2097070
Silver	U		0.0865	0.500	5	07/21/2023 20:10	WG2097070
Zinc	52.4		0.740	25.0	5	07/21/2023 20:10	WG2097070

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3950249-1 07/19/23 10:40

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1635894-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1635894-04 07/19/23 12:11 • (DUP) R3950249-7 07/19/23 12:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1635930-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1635930-03 07/19/23 13:08 • (DUP) R3950249-8 07/19/23 13:14

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3950249-2 07/19/23 10:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.3	103	80.0-120	

L1635890-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635890-03 07/19/23 11:13 • (MS) R3950249-3 07/19/23 11:19 • (MSD) R3950249-4 07/19/23 11:24

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	18.6	19.1	92.8	95.6	1	75.0-125			2.98	20

L1635890-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1635890-03 07/19/23 11:13 • (MS) R3950249-5 07/19/23 11:29

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	U	676	105	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1635894-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635894-01 07/19/23 10:30 • (DUP) R3950157-2 07/19/23 10:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.00	8.03	1	0.374		1

Sample Narrative:

OS: 8 at 21C
DUP: 8.03 at 21.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1635943-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635943-01 07/19/23 10:30 • (DUP) R3950157-3 07/19/23 10:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.46	8.43	1	0.355		1

Sample Narrative:

OS: 8.46 at 20.5C
DUP: 8.43 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R3950157-1 07/19/23 10:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 21.3C

Method Blank (MB)

(MB) R3950612-1 07/20/23 09:30

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1635894-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635894-01 07/20/23 09:30 • (DUP) R3950612-3 07/20/23 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	197	191	1	2.83		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1635943-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1635943-02 07/20/23 09:30 • (DUP) R3950612-4 07/20/23 09:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	204	200	1	1.88		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3950612-2 07/20/23 09:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	727	99.3	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3953306-1 07/26/23 16:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3953306-2 07/26/23 16:04 • (LCSD) R3953306-3 07/26/23 16:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.10	1.12	110	112	80.0-120			1.45	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3951471-1 07/21/23 18:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	0.178	U	0.133	5.00
Lead	0.115	U	0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3951471-2 07/21/23 18:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	
Barium	100	85.1	85.1	80.0-120	
Cadmium	100	86.6	86.6	80.0-120	
Copper	100	81.3	81.3	80.0-120	
Lead	100	84.2	84.2	80.0-120	
Nickel	100	87.4	87.4	80.0-120	
Selenium	100	92.6	92.6	80.0-120	
Silver	20.0	17.9	89.3	80.0-120	
Zinc	100	86.5	86.5	80.0-120	

L1635890-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635890-01 07/21/23 18:49 • (MS) R3951471-5 07/21/23 18:59 • (MSD) R3951471-6 07/21/23 19:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.13	84.6	84.2	81.4	81.1	5	75.0-125			0.435	20
Barium	100	1230	1530	1230	295	0.340	5	75.0-125	E V	E J3 V	21.4	20
Cadmium	100	0.184	84.4	86.3	84.2	86.1	5	75.0-125			2.21	20
Copper	100	9.13	86.2	87.9	77.0	78.8	5	75.0-125			2.04	20
Lead	100	5.71	87.5	88.2	81.8	82.5	5	75.0-125			0.866	20
Nickel	100	13.7	87.1	91.3	73.5	77.7	5	75.0-125	J6		4.71	20
Selenium	100	0.437	90.4	90.4	90.0	90.0	5	75.0-125			0.0393	20
Silver	20.0	U	17.7	17.9	88.5	89.7	5	75.0-125			1.34	20
Zinc	100	26.8	102	104	75.1	77.1	5	75.0-125			1.94	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

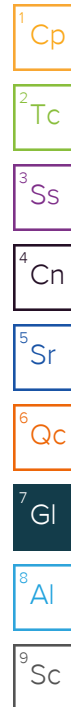
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: **Caerus Oil and Gas LLC** *Anshutz* Billing Information: Info on file

Address: Info on file

Report To: Chris McKisson Email To: chris.mckisson@confluence-cc.com

Copy To: remediation@confluence-cc.com Site Collection Info/Address:

Customer Project Name/Number: Backgrounds State: County/City: Time Zone Collected: CO / Rio Blanco [] PT [X] MT [] CT [] ET

Phone: Site/Facility ID #: Pinyon Ridge Federal C-1W Compliance Monitoring? [] Yes [X] No

Email: Purchase Order #: DW PWS ID #: Quote #: DW Location Code:

Collected By (print): Alex Slorby Turnaround Date Required: Standard Turnaround [X] Yes [] No

Collected By (signature): *Alex Slorby* Rush: (Expedite Charges Apply) [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day Field Filtered (if applicable): [] Yes [] No

Sample Disposal: [] Dispose as appropriate [] Return [] Archive: [] Hold: Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
230713-PR_C-1W_SB18@4-8	SL	G	7/13/2023	1005				1	P
230713-PR_C-1W_SB18@8-12	SL	G	7/13/2023	1020				1	P
230713-PR_C-1W_SB18@12-15	SL	G	7/13/2023	1030				1	P

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N

COC Signed/Accurate: ☒ Y ☐ N

Bottles arrive intact: ☒ Y ☐ N

Correct bottles used: ☒ Y ☐ N

Sufficient volume sent: ☒ Y ☐ N

RAD Screen <0.5 mR/hr: ☒ Y ☐ N

VOA Zero Headspace: ☒ Y ☐ N

Pres. Correct/Check: ☒ Y ☐ N

4.070 = 4.0

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace
MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type ** Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses										Lab Profile/Line:	
EC, SAR, pH	Table 915-1 Metals	Boron - Hot Water Soluble	CR6IC							Lab Sample Receipt Checklist:	
										Custody Seals Present/Intact Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Custody Signatures Present Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Collector Signature Present Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Bottles Intact Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Correct Bottles Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Sufficient Volume Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Samples Received on Ice Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										VOA - Headspace Acceptable Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										USDA Regulated Soils Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Samples in Holding Time Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Residual Chlorine Present Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Cl Strips:	
										Sample pH Acceptable Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										pH Strips:	
										Sulfide Present Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
										Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

L110355897
-01
-02
-03

Customer Remarks / Special Conditions / Possible Hazards: Please store all extra material for additional analysis.

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#:

Cooler 1 Temp Upon Receipt: °C

Cooler 1 Therm Corr. Factor: °C

Cooler 1 Corrected Temp: °C

Comments:

Relinquished by/Company: (Signature) *Alex Slorby* Date/Time: 7/14/2023 1600 Received by/Company: (Signature) Date/Time: MTJL LAB USE ONLY

Relinquished by/Company: (Signature) Date/Time: 7/14/2023 1700 Received by/Company: (Signature) Date/Time: 7.15.23

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) Date/Time: 0900

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): Page: YES / NO of:



ANALYTICAL REPORT

August 01, 2023

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Anschutz Exploration Corporation

Sample Delivery Group: L1635909
Samples Received: 07/15/2023
Project Number:
Description: Backgrounds
Site: PINYON RIDGE FEDERAL C-1W
Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:

Anschutz Exploration Corporation

PROJECT:

SDG:

L1635909

DATE/TIME:

08/01/23 11:41

PAGE:

1 of 15

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

230713-PR_C-1W_SB20@4-8 L1635909-01 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:45

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 02:06	07/27/23 02:06	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097353	1	07/19/23 23:57	07/20/23 06:44	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097668	1	07/19/23 10:51	07/19/23 13:00	SJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 17:01	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:59	07/22/23 13:30	JPD	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

230713-PR_C-1W_SB20@8-10 L1635909-02 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 12:00

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 02:09	07/27/23 02:09	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097353	1	07/19/23 23:57	07/20/23 06:50	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 17:10	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:59	07/22/23 13:33	JPD	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

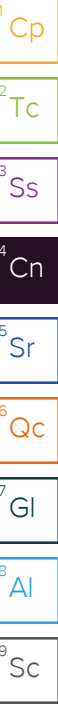
⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	17.0		1	07/27/2023 02:06	WG2096655

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/20/2023 06:44	WG2097353

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	8.58	T8	1	07/19/2023 13:00	WG2097668

Sample Narrative:
L1635909-01 WG2097668: 8.58 at 21.2C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	1850		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:
L1635909-01 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.693		0.0167	0.200	1	07/26/2023 17:01	WG2096658

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	7.52		0.100	1.00	5	07/22/2023 13:30	WG2097351
Barium	62.3		0.152	2.50	5	07/22/2023 13:30	WG2097351
Cadmium	0.396	J	0.0855	1.00	5	07/22/2023 13:30	WG2097351
Copper	26.8		0.132	5.00	5	07/22/2023 13:30	WG2097351
Lead	12.5		0.0990	2.00	5	07/22/2023 13:30	WG2097351
Nickel	18.3		0.197	2.50	5	07/22/2023 13:30	WG2097351
Selenium	0.813	J	0.180	2.50	5	07/22/2023 13:30	WG2097351
Silver	0.110	J	0.0865	0.500	5	07/22/2023 13:30	WG2097351
Zinc	65.7		0.740	25.0	5	07/22/2023 13:30	WG2097351

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	9.94		1	07/27/2023 02:09	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/20/2023 06:50	WG2097353

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.09	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:
L1635909-02 WG2097597: 8.09 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2490		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:
L1635909-02 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.726		0.0167	0.200	1	07/26/2023 17:10	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	13.9		0.100	1.00	5	07/22/2023 13:33	WG2097351
Barium	129		0.152	2.50	5	07/22/2023 13:33	WG2097351
Cadmium	0.425	J	0.0855	1.00	5	07/22/2023 13:33	WG2097351
Copper	28.0		0.132	5.00	5	07/22/2023 13:33	WG2097351
Lead	16.2		0.0990	2.00	5	07/22/2023 13:33	WG2097351
Nickel	17.3		0.197	2.50	5	07/22/2023 13:33	WG2097351
Selenium	1.14	J	0.180	2.50	5	07/22/2023 13:33	WG2097351
Silver	0.116	J	0.0865	0.500	5	07/22/2023 13:33	WG2097351
Zinc	72.7		0.740	25.0	5	07/22/2023 13:33	WG2097351

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3950596-1 07/20/23 06:05

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1635907-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635907-01 07/20/23 06:32 • (DUP) R3950596-3 07/20/23 06:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	0.335	1	200	J P1	20

L1636240-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1636240-07 07/20/23 08:08 • (DUP) R3950596-8 07/20/23 08:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3950596-2 07/20/23 06:13

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.7	107	80.0-120	

L1636240-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1636240-03 07/20/23 07:26 • (MS) R3950596-5 07/20/23 07:36 • (MSD) R3950596-6 07/20/23 07:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	1.12	20.8	19.6	98.5	92.3	1	75.0-125			6.19	20

L1636240-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1636240-03 07/20/23 07:26 • (MS) R3950596-7 07/20/23 07:47

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	643	1.12	599	93.2	50	75.0-125	



L1635907-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635907-01 07/19/23 13:08 • (DUP) R3950271-2 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.54	7.54	1	0.000		1

Sample Narrative:

OS: 7.54 at 21.7C

DUP: 7.54 at 21.5C



L1636257-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636257-02 07/19/23 13:08 • (DUP) R3950271-3 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.34	8.39	1	0.598		1

Sample Narrative:

OS: 8.34 at 21.5C

DUP: 8.39 at 21.3C

Laboratory Control Sample (LCS)

(LCS) R3950271-1 07/19/23 13:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 21.3C

L1635933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635933-01 07/19/23 13:00 • (DUP) R3950290-2 07/19/23 13:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.66	1	0.261		1

Sample Narrative:

OS: 7.64 at 21.4C

DUP: 7.66 at 21.4C

Laboratory Control Sample (LCS)

(LCS) R3950290-1 07/19/23 13:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 21C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3950375-1 07/19/23 15:43

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1635893-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635893-01 07/19/23 15:43 • (DUP) R3950375-3 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1840	1810	1	1.37		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1636321-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636321-02 07/19/23 15:43 • (DUP) R3950375-4 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	194	197	1	1.69		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3950375-2 07/19/23 15:43

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	727	99.3	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3953306-1 07/26/23 16:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3953306-2 07/26/23 16:04 • (LCSD) R3953306-3 07/26/23 16:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.10	1.12	110	112	80.0-120			1.45	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3951578-1 07/22/23 12:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	0.526	U	0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	1.22	U	0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3951578-2 07/22/23 12:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	103	103	80.0-120	
Barium	100	100	100	80.0-120	
Cadmium	100	103	103	80.0-120	
Copper	100	94.9	94.9	80.0-120	
Lead	100	97.6	97.6	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	120	120	80.0-120	
Silver	20.0	21.6	108	80.0-120	
Zinc	100	99.6	99.6	80.0-120	

L1635893-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635893-05 07/22/23 12:53 • (MS) R3951578-5 07/22/23 13:03 • (MSD) R3951578-6 07/22/23 13:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.44	66.4	79.2	63.0	75.8	5	75.0-125	J6		17.6	20
Barium	100	29.6	111	121	81.3	91.6	5	75.0-125			8.90	20
Cadmium	100	0.621	84.3	101	83.7	101	5	75.0-125			18.3	20
Copper	100	15.8	92.6	107	76.8	91.0	5	75.0-125			14.3	20
Lead	100	19.0	102	111	82.7	92.0	5	75.0-125			8.73	20
Nickel	100	25.6	95.3	112	69.7	86.4	5	75.0-125	J6		16.2	20
Selenium	100	1.25	82.4	90.7	81.2	89.4	5	75.0-125			9.51	20
Silver	20.0	U	17.8	21.5	89.1	108	5	75.0-125			18.8	20
Zinc	100	133	196	209	63.0	76.0	5	75.0-125	J6		6.43	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

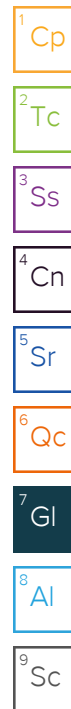
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

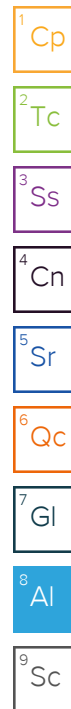
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





ANALYTICAL REPORT

August 09, 2023

Revised Report

Anschutz Exploration Corporation

Sample Delivery Group: L1635908
Samples Received: 07/15/2023
Project Number:
Description: Backgrounds
Site: PINYON RIDGE FEDERAL C-1W
Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

ACCOUNT:

Anschutz Exploration Corporation

PROJECT:

SDG:

L1635908

DATE/TIME:

08/09/23 13:39

PAGE:

1 of 16

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

230713-PR_C-1W_SB19@4-8 L1635908-01 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:05

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 01:58	07/27/23 01:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:44	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:52	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:59	07/22/23 13:13	JPD	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

230713-PR_C-1W_SB19@8-12 L1635908-02 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:10

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 02:00	07/27/23 02:00	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 09:59	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097597	1	07/19/23 10:09	07/19/23 13:08	MCC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:55	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:59	07/22/23 13:16	JPD	Mt. Juliet, TN

230713-PR_C-1W_SB19@12-15 L1635908-03 Solid

Collected by
Alex Slorby

Collected date/time
07/13/23 11:15

Received date/time
07/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2096655	1	07/27/23 02:03	07/27/23 02:03	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2097140	1	07/18/23 23:10	07/19/23 10:25	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2097668	1	07/19/23 10:51	07/19/23 13:00	SJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2097561	1	07/19/23 11:40	07/19/23 15:43	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2096658	1	07/21/23 16:46	07/26/23 16:59	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2097351	5	07/19/23 09:59	07/22/23 13:27	JPD	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 08/03/23 15:31

Project Narrative

Report reissued 8/09 for corrected sample IDs



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.46		1	07/27/2023 01:58	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.289	J	0.255	1.00	1	07/19/2023 09:44	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.03	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:
L1635908-01 WG2097597: 8.03 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1380		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:
L1635908-01 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.515		0.0167	0.200	1	07/26/2023 16:52	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.90		0.100	1.00	5	07/22/2023 13:13	WG2097351
Barium	117		0.152	2.50	5	07/22/2023 13:13	WG2097351
Cadmium	0.284	J	0.0855	1.00	5	07/22/2023 13:13	WG2097351
Copper	20.6		0.132	5.00	5	07/22/2023 13:13	WG2097351
Lead	10.6		0.0990	2.00	5	07/22/2023 13:13	WG2097351
Nickel	14.7		0.197	2.50	5	07/22/2023 13:13	WG2097351
Selenium	0.612	J	0.180	2.50	5	07/22/2023 13:13	WG2097351
Silver	0.0987	J	0.0865	0.500	5	07/22/2023 13:13	WG2097351
Zinc	53.2		0.740	25.0	5	07/22/2023 13:13	WG2097351

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.07		1	07/27/2023 02:00	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U	J5	0.255	1.00	1	07/19/2023 09:59	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.84	T8	1	07/19/2023 13:08	WG2097597

Sample Narrative:
L1635908-02 WG2097597: 7.84 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4560		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:
L1635908-02 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.936		0.0167	0.200	1	07/26/2023 16:55	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.75		0.100	1.00	5	07/22/2023 13:16	WG2097351
Barium	149		0.152	2.50	5	07/22/2023 13:16	WG2097351
Cadmium	0.488	J	0.0855	1.00	5	07/22/2023 13:16	WG2097351
Copper	13.5		0.132	5.00	5	07/22/2023 13:16	WG2097351
Lead	9.06		0.0990	2.00	5	07/22/2023 13:16	WG2097351
Nickel	12.1		0.197	2.50	5	07/22/2023 13:16	WG2097351
Selenium	0.669	J	0.180	2.50	5	07/22/2023 13:16	WG2097351
Silver	U		0.0865	0.500	5	07/22/2023 13:16	WG2097351
Zinc	40.1		0.740	25.0	5	07/22/2023 13:16	WG2097351

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.87		1	07/27/2023 02:03	WG2096655

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.268	J	0.255	1.00	1	07/19/2023 10:25	WG2097140

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.65	T8	1	07/19/2023 13:00	WG2097668

Sample Narrative:

L1635908-03 WG2097668: 7.65 at 21.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4160		10.0	1	07/19/2023 15:43	WG2097561

Sample Narrative:

L1635908-03 WG2097561: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.802		0.0167	0.200	1	07/26/2023 16:59	WG2096658

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.15		0.100	1.00	5	07/22/2023 13:27	WG2097351
Barium	52.1		0.152	2.50	5	07/22/2023 13:27	WG2097351
Cadmium	0.273	J	0.0855	1.00	5	07/22/2023 13:27	WG2097351
Copper	16.9		0.132	5.00	5	07/22/2023 13:27	WG2097351
Lead	9.12		0.0990	2.00	5	07/22/2023 13:27	WG2097351
Nickel	15.1		0.197	2.50	5	07/22/2023 13:27	WG2097351
Selenium	0.504	J	0.180	2.50	5	07/22/2023 13:27	WG2097351
Silver	0.0912	J	0.0865	0.500	5	07/22/2023 13:27	WG2097351
Zinc	49.2		0.740	25.0	5	07/22/2023 13:27	WG2097351

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3950312-1 07/19/23 08:55

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1635893-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1635893-02 07/19/23 09:13 • (DUP) R3950312-3 07/19/23 09:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1635933-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1635933-05 07/19/23 11:17 • (DUP) R3950312-8 07/19/23 11:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3950312-2 07/19/23 09:02

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.8	108	80.0-120	

L1635908-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635908-02 07/19/23 09:59 • (MS) R3950312-4 07/19/23 10:04 • (MSD) R3950312-5 07/19/23 10:10

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	16.8	17.5	83.8	87.5	1	75.0-125			4.38	20

L1635908-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1635908-02 07/19/23 09:59 • (MS) R3950312-6 07/19/23 10:15

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	U	868	136	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1635907-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635907-01 07/19/23 13:08 • (DUP) R3950271-2 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.54	7.54	1	0.000		1

Sample Narrative:

OS: 7.54 at 21.7C

DUP: 7.54 at 21.5C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1636257-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636257-02 07/19/23 13:08 • (DUP) R3950271-3 07/19/23 13:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.34	8.39	1	0.598		1

Sample Narrative:

OS: 8.34 at 21.5C

DUP: 8.39 at 21.3C

Laboratory Control Sample (LCS)

(LCS) R3950271-1 07/19/23 13:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 21.3C

L1635933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635933-01 07/19/23 13:00 • (DUP) R3950290-2 07/19/23 13:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.66	1	0.261		1

Sample Narrative:

OS: 7.64 at 21.4C

DUP: 7.66 at 21.4C

Laboratory Control Sample (LCS)

(LCS) R3950290-1 07/19/23 13:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 21C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3950375-1 07/19/23 15:43

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1635893-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1635893-01 07/19/23 15:43 • (DUP) R3950375-3 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1840	1810	1	1.37		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1636321-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1636321-02 07/19/23 15:43 • (DUP) R3950375-4 07/19/23 15:43

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	194	197	1	1.69		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3950375-2 07/19/23 15:43

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	727	99.3	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3953306-1 07/26/23 16:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3953306-2 07/26/23 16:04 • (LCSD) R3953306-3 07/26/23 16:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.10	1.12	110	112	80.0-120			1.45	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3951578-1 07/22/23 12:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	0.526	U	0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	1.22	U	0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3951578-2 07/22/23 12:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	103	103	80.0-120	
Barium	100	100	100	80.0-120	
Cadmium	100	103	103	80.0-120	
Copper	100	94.9	94.9	80.0-120	
Lead	100	97.6	97.6	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	120	120	80.0-120	
Silver	20.0	21.6	108	80.0-120	
Zinc	100	99.6	99.6	80.0-120	

L1635893-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1635893-05 07/22/23 12:53 • (MS) R3951578-5 07/22/23 13:03 • (MSD) R3951578-6 07/22/23 13:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	3.44	66.4	79.2	63.0	75.8	5	75.0-125	J6		17.6	20
Barium	100	29.6	111	121	81.3	91.6	5	75.0-125			8.90	20
Cadmium	100	0.621	84.3	101	83.7	101	5	75.0-125			18.3	20
Copper	100	15.8	92.6	107	76.8	91.0	5	75.0-125			14.3	20
Lead	100	19.0	102	111	82.7	92.0	5	75.0-125			8.73	20
Nickel	100	25.6	95.3	112	69.7	86.4	5	75.0-125	J6		16.2	20
Selenium	100	1.25	82.4	90.7	81.2	89.4	5	75.0-125			9.51	20
Silver	20.0	U	17.8	21.5	89.1	108	5	75.0-125			18.8	20
Zinc	100	133	196	209	63.0	76.0	5	75.0-125	J6		6.43	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

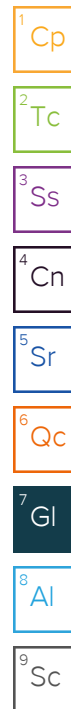
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

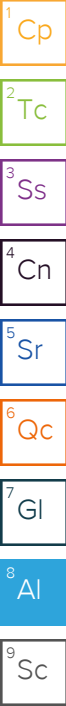
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: **Cerus Oil and Gas LLC** *Anshutz*

Address: Info on file

Report To: Chris McKisson

Copy To: remediation@confluence-cc.com

Customer Project Name/Number: Backgrounds

State: County/City: Time Zone Collected:

CO / Rio Blanco [] PT [X] MT [] CT [] ET

Phone: Site/Facility ID #: Pinyon Ridge Federal C-1W

Email: Compliance Monitoring?

Collected By (print): Alex Slorby Purchase Order #: [] Yes [X] No

Quote #: DW PWS ID #:

Collected By (signature): *Alex Slorby* Turnaround Date Required: Standard DW Location Code:

Turnaround [X] Yes [] No

Sample Disposal: Rush: (Expedite Charges Apply) Field Filtered (if applicable):

[] Dispose as appropriate [] Same Day [] Next Day [] Yes [] No

[] Return [] 2 Day [] 3 Day

[] Archive: [] 4 Day [] 5 Day

[] Hold: Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res CI	# of Ctns	Container Type: Plastic (P) or Glass (G)
			Date	Time	Date	Time			
230713-PR_C-1W_SB19@4-8	SL	G	7/13/2023	1105				1	P
230713-PR_C-1W_SB19@8-12	SL	G	7/13/2023	1110				1	P
230713-PR_C-1W_SB19@12-15	SL	G	7/13/2023	1115				1	P

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N If Applicable

COC Signed/Accurate: ☒ Y ☐ N VOA Zero Headspace: ☒ Y ☐ N

Bottles arrive intact: ☒ Y ☐ N Pres. Correct/Check: ☒ Y ☐ N

Correct bottles used: ☒ Y ☐ N

Sufficient volume sent: ☒ Y ☐ N

RAD Screen <0.5 mR/hr: ☒ Y ☐ N

4.070 = 4.0

Customer Remarks / Special Conditions / Possible Hazards: Please store all extra material for additional analysis.

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

Relinquished by/Company: (Signature) *Alex Slorby* Date/Time: 7/14/2023 1600 Received by/Company: (Signature) *[Signature]* Date/Time: 7/15/23 1700

Relinquished by/Company: (Signature) *[Signature]* Date/Time: 7/14/23 1700 Received by/Company: (Signature) *Hana Muechling* Date/Time: 7-15-23

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) Date/Time: 0900

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace workorder number and MTJL Log-in Number Here

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses										Lab Profile/Line:	
EC, SAR, pH	Table 915-1 Metals	Boron - Hot Water Soluble	CR6IC							Lab Sample Receipt Checklist:	
										Custody Seals Present/Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Custody Signatures Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Collector Signature Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Bottles Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Correct Bottles: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Sufficient Volume: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Samples Received on Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										VOA - Headspace Acceptable: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										USDA Regulated Soils: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Samples in Holding Time: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Residual Chlorine Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Cl Strips: _____	
										Sample pH Acceptable: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										pH Strips: _____	
										Sulfide Present: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N NA	
										Lead Acetate Strips: _____	
										LAB USE ONLY:	
										Lab Sample # / Comments:	
										11635C108	

SHORT HOLDS PRESENT (<72 hours): Y N NA

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#:

Cooler 1 Temp Upon Receipt: °C

Cooler 1 Therm Corr. Factor: °C

Cooler 1 Corrected Temp: °C

Comments:

Relinquished by/Company: (Signature) *[Signature]* Date/Time: 7/15/23 0900

Relinquished by/Company: (Signature) *[Signature]* Date/Time: 7/15/23 0900

Relinquished by/Company: (Signature) *[Signature]* Date/Time: 7/15/23 0900

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: of:



ANALYTICAL REPORT

September 01, 2023

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Anschutz Exploration Corporation

Sample Delivery Group: L1648717
Samples Received: 07/14/2023
Project Number: 315979
Description: AECO05-Pinyon Ridge Fed C-1W

Report To: Schuyler Hamilton
555 17th Street Suite 2400
Denver, CO 80202

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

230712-PR_C-1W_SB14@12-14 L1648717-01 Solid

Collected by
Alex Slorby

Collected date/time
07/12/23 13:45

Received date/time
07/14/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2119912	1	08/24/23 00:20	08/25/23 11:57	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2121252	1	08/26/23 15:00	08/26/23 15:45	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2121183	1	08/26/23 07:25	08/26/23 12:18	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2124219	1	08/31/23 16:01	09/01/23 10:05	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2123590	20	08/30/23 12:17	08/30/23 23:41	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2123590	5	08/30/23 12:17	08/30/23 22:09	LD	Mt. Juliet, TN

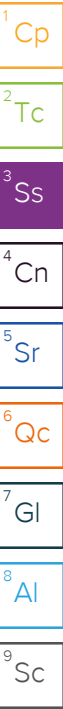
230712-PR_C-1W_SB14@14-18 L1648717-02 Solid

Collected by
Alex Slorby

Collected date/time
07/12/23 15:00

Received date/time
07/14/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2119912	1	08/24/23 00:20	08/25/23 12:06	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2121252	1	08/26/23 15:00	08/26/23 15:45	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2121183	1	08/26/23 07:25	08/26/23 12:18	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2124219	1	08/31/23 16:01	09/01/23 10:07	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2123590	5	08/30/23 12:17	08/30/23 22:49	LD	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	08/25/2023 11:57	WG2119912

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.09	T8	1	08/26/2023 15:45	WG2121252

Sample Narrative:

L1648717-01 WG2121252: 8.09 at 23.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1030	T8	10.0	1	08/26/2023 12:18	WG2121183

Sample Narrative:

L1648717-01 WG2121183: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.462		0.0167	0.200	1	09/01/2023 10:05	WG2124219

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.05		0.100	1.00	5	08/30/2023 22:09	WG2123590
Barium	213		0.608	10.0	20	08/30/2023 23:41	WG2123590
Cadmium	0.452	J	0.0855	1.00	5	08/30/2023 22:09	WG2123590
Copper	17.8		0.132	5.00	5	08/30/2023 22:09	WG2123590
Lead	11.3		0.0990	2.00	5	08/30/2023 22:09	WG2123590
Nickel	15.4		0.197	2.50	5	08/30/2023 22:09	WG2123590
Selenium	0.733	J O1	0.180	2.50	5	08/30/2023 22:09	WG2123590
Silver	0.112	J	0.0865	0.500	5	08/30/2023 22:09	WG2123590
Zinc	53.5	O1	0.740	25.0	5	08/30/2023 22:09	WG2123590

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.319	J	0.255	1.00	1	08/25/2023 12:06	WG2119912

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.19	T8	1	08/26/2023 15:45	WG2121252

Sample Narrative:

L1648717-02 WG2121252: 8.19 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1220	T8	10.0	1	08/26/2023 12:18	WG2121183

Sample Narrative:

L1648717-02 WG2121183: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.418		0.0167	0.200	1	09/01/2023 10:07	WG2124219

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	12.4		0.100	1.00	5	08/30/2023 22:49	WG2123590
Barium	69.0		0.152	2.50	5	08/30/2023 22:49	WG2123590
Cadmium	0.461	J	0.0855	1.00	5	08/30/2023 22:49	WG2123590
Copper	31.4		0.132	5.00	5	08/30/2023 22:49	WG2123590
Lead	15.8		0.0990	2.00	5	08/30/2023 22:49	WG2123590
Nickel	19.9		0.197	2.50	5	08/30/2023 22:49	WG2123590
Selenium	0.952	J	0.180	2.50	5	08/30/2023 22:49	WG2123590
Silver	0.177	J	0.0865	0.500	5	08/30/2023 22:49	WG2123590
Zinc	73.7		0.740	25.0	5	08/30/2023 22:49	WG2123590

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3965626-1 08/25/23 11:39

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1648779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1648779-01 08/25/23 12:23 • (DUP) R3965626-3 08/25/23 12:32

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1648827-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1648827-01 08/25/23 15:31 • (DUP) R3965626-8 08/25/23 15:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3965626-2 08/25/23 11:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	11.0	110	80.0-120	

L1648784-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1648784-01 08/25/23 13:26 • (MS) R3965626-4 08/25/23 13:35 • (MSD) R3965626-5 08/25/23 13:44

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	21.8	22.8	109	114	1	75.0-125			4.45	20

L1648784-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1648784-01 08/25/23 13:26 • (MS) R3965626-6 08/25/23 13:53

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	U	1110	174	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1648647-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1648647-02 08/26/23 15:45 • (DUP) R3965795-2 08/26/23 15:45

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.30	7.36	1	0.819		1

Sample Narrative:
OS: 7.3 at 23.8C
DUP: 7.36 at 23.9C

L1648785-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1648785-01 08/26/23 15:45 • (DUP) R3965795-3 08/26/23 15:45

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.02	8.02	1	0.000		1

Sample Narrative:
OS: 8.02 at 22.9C
DUP: 8.02 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3965795-1 08/26/23 15:45

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:
LCS: 10 at 23.6C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3965763-1 08/26/23 12:18

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1649401-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1649401-04 08/26/23 12:18 • (DUP) R3965763-3 08/26/23 12:18

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	511	515	1	0.780		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1649406-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1649406-04 08/26/23 12:18 • (DUP) R3965763-4 08/26/23 12:18

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	186	185	1	0.647		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3965763-2 08/26/23 12:18

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	732	729	99.6	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3968354-1 09/01/23 09:57

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3968354-2 09/01/23 09:59 • (LCSD) R3968354-3 09/01/23 10:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.06	105	106	80.0-120			0.990	20

1

Cp

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Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3967541-1 08/30/23 22:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3967541-2 08/30/23 22:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.5	96.5	80.0-120	
Barium	100	92.3	92.3	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Copper	100	90.6	90.6	80.0-120	
Lead	100	91.6	91.6	80.0-120	
Nickel	100	95.0	95.0	80.0-120	
Selenium	100	99.7	99.7	80.0-120	
Silver	20.0	19.6	97.8	80.0-120	
Zinc	100	92.9	92.9	80.0-120	

L1648717-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1648717-01 08/30/23 22:09 • (MS) R3967541-5 08/30/23 22:19 • (MSD) R3967541-6 08/30/23 22:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	7.05	110	104	103	96.8	5	75.0-125			5.47	20
Barium	100	212	290	236	78.0	24.0	5	75.0-125	E	E J3 J6	20.6	20
Cadmium	100	0.452	112	103	112	102	5	75.0-125			8.53	20
Copper	100	17.8	122	110	104	91.8	5	75.0-125			10.9	20
Lead	100	11.3	119	109	108	97.7	5	75.0-125			8.78	20
Nickel	100	15.4	115	110	100	94.6	5	75.0-125			4.79	20
Selenium	100	0.733	118	107	118	106	5	75.0-125			10.1	20
Silver	20.0	0.112	23.0	20.7	115	103	5	75.0-125			10.5	20
Zinc	100	53.5	151	151	97.3	97.3	5	75.0-125			0.00285	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

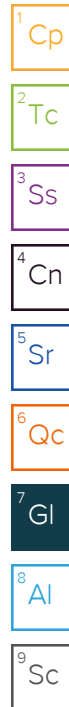
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or
MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VGA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:

Lab Sample # / Comments:

L16355 99 N
8/23/23

-01
-02
-03
-04
-05
-06
-07
-08
-09
-10
L16VB 717-01
-02

Company: Confluence Compliance Companies Billing Information: Info on file
Address: Info on file
Report To: Chris McKisson, remediation@confluence-cc.com Email To: Info on file
Copy To: same Site Collection Info/Address: NESE Sec. 21 3497W 40.212620/-108.276390
Customer Project Name/Number: AE005-Pinyon Ridge Fed C-1W(815979) State: 1 County/City: 1 Time Zone Collected: [] PT [] MT [] CT [] ET
Phone: ON File Site/Facility ID #: same as above Compliance Monitoring? [] Yes [] No
Email: ON File Purchase Order #: same as above DW PWS ID #: same as above
Collected By (print): Alex Storby Quote #: same as above DW Location Code: same as above
Collected By (signature): AS Turnaround Date Required: same as above Immediately Packed on Ice: [] Yes [] No
Sample Disposal: [] Dispose as appropriate [] Return [] Archive [] Hold Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day Field Filtered (if applicable): [] Yes [] No
(Expedite Charges Apply) Analysis: same as above

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns										
			Date	Time	Date	Time												
230712-PR-C1W-SB1104-8	SL		7/12	10:15				2	X	X	X							
230712-PR-C1W-SB1106-18	SL			10:35				2	X	X	X							
230712-PR-C1W-SB1204-8	SL			11:25				2	X	X	X							
230712-PR-C1W-SB1202-14	SL			11:40				2	X	X	X							
230712-PR-C1W-SB1304-8	SL			12:20				2	X	X	X							
230712-PR-C1W-SB1308-12	SL			12:30				2	X	X	X							
230712-PR-C1W-SB1405-8	SL			13:20				2	X	X	X							
230712-PR-C1W-SB1408-12	SL			13:30				2	X	X	X							
230712-PR-C1W-SB1402-14	SL			13:45				2	X	X	X							
230712-PR-C1W-SB1404-18	SL			15:00				2	X	X	X							

Customer Remarks / Special Conditions / Possible Hazards: Type of Ice Used: Wet Blue Dry None

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Packing Material Used:

Lab Tracking #:

6426 8306 6694

Radchem sample(s) screened (<500 cpm): Y N NA

Samples received via:

FEDEX UPS Client Courier Pace Courier

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

L-094

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

Acctnum:

Template:

Prelogin:

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

PM:

PB:

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#:

Cooler 1 Temp Upon Receipt: oC

Cooler 1 Therm Corr. Factor: oC

Cooler 1 Corrected Temp: oC

Comments: GRAB

0.7 to 0.7

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s):

YES / NO

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