



July 9, 2025

Project No. M0785.34.001

Amy Patton

Oregon Department of Environmental Quality

700 NE Multnomah Street, Suite 600

Portland, Oregon

Re: Results of Second Round of Domestic Well Sampling - Crook County, Oregon
Task Order 067-23-18

Dear Amy Patton:

Maul Foster & Alongi, Inc. (MFA) has prepared this letter to present the results of the second round of domestic well sampling event conducted as part of the Crook County Limited Groundwater Investigation project located in the vicinity of the Knife River Corporation sand and gravel pit mine at 4755 NW Stahancyk Lane, in Prineville, Oregon (the Site) (see Figure 1). This second sampling event was conducted for the purpose of providing property owners with drinking water quality information and to provide the Oregon Health Authority (OHA) with additional data to develop a public health consultation.

Preparatory Activities

The following activities were conducted in preparation for the fieldwork:

- **DEQ Access Agreements.** Prior to the sampling event, the Oregon Department of Environmental Quality (DEQ) solicited access agreements from property owners with domestic wells in the vicinity of the Site.
- **Property Access Coordination.** Where requested on the access agreements, MFA and DEQ coordinated access to individual properties for sampling days and times via telephone and email.

Domestic Well Sampling

A total of 55 domestic water supply wells (Figure 2) were sampled as part of the initial sampling event between November 18 and 25, 2024. A total of 58 domestic water supply wells (Figure 3) were sampled as part of the second event completed between April 28 and May 6, 2025. Of the 58 wells sampled during the April/May 2025 sampling event, 52 were also sampled in the initial round of sampling.

The domestic well sampling procedures were consistent with the draft Sampling and Analysis Plan dated October 15, 2024. The groundwater samples were collected from the domestic water supply wells from a tap or spigot located as close to the well head or pump house as practicable. Where possible, samples were collected upstream of any storage tanks and before any treatment units on the water system. Wherever samples were collected at a location beyond a pressurization or holding tank, a sufficient volume of water was purged to provide an exchange of fresh water into the tank and at the location where the sample was collected. Wherever feasible, spigots located outside of

the buildings and structures were turned on to prevent any backflow from the storage tank to the sample tap or spigot and to ensure a rapid and complete exchange of water in the tanks.

At each property, after the volume of any pressurization or holding tank was purged, a portable flow through water quality meter was used to measure the pH, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), specific conductivity, and turbidity of the groundwater. These parameters were measured and recorded on field sampling data sheets (FSDSs; Attachment A) throughout the purge period to assess stabilization and equilibration. Observations of water quality including clarity, tint, odor, and presence of suspended sediments are also documented in the FSDSs. The FSDSs also document storage tank volumes associated with each well, as well as any deviations from the sampling procedure described above. Unless otherwise specified, groundwater samples were collected after three sets of stabilized parameter readings were obtained and recorded. The parameters listed in the attached table represent the final set of field parameters measured before groundwater sample collection. MFA also measured the ferrous iron concentration using Hach Model IR-18C Color Disc Test Kit with results presented in the attached table.

Samples were collected directly into the appropriate laboratory-supplied sample containers including preservatives (where applicable). A clean unpreserved 0.5-liter poly bottle was used to obtain and transfer samples from spigots with low ground clearance. During the November 2024 sampling event, one field duplicate was collected for every 20 samples collected. During the April/May 2025 sampling event, one field duplicate was collected on each day of sampling (a total of seven samples).

Samples requiring field filtration for dissolved parameters were collected with a peristaltic pump using new polyethylene and silicone tubing connected to a disposable 0.45 micrometer field filter. Filter blank samples are collected to assess sample contamination from field filters. During the November 2024 sampling event, one filter blank was collected for every 20 samples collected. During the April/May 2025 sampling event, one filter blank was collected on each day of sampling (using deionized water; a total of seven samples).

Analytical Results and Trend Evaluation

Groundwater samples collected from the above activities were submitted to Pace Analytical National Center for Testing and Innovation (Pace National) in Mount Juliet, Tennessee, and Edge Analytical, Inc. (Edge; a subsidiary of Eurofins Environment Testing Northwest, LLC) in Bend, Oregon for chemical analysis. Copies of the laboratory reports are included in Attachment B along with a data validation memorandum (DVM). The data are considered acceptable for their intended use with the appropriate data qualifiers assigned. Please note the discussion of total metals concentrations in the DVM for groundwater samples 20250502-4-DUP and 20250502-5, included on laboratory report L1854814. The laboratory analytical results are presented in the attached table and were screened against the health-based screening levels from the draft Sampling and Analysis Plan dated October 15, 2024.

As stated above, in November 2024, MFA conducted an initial sampling event of 55 wells in the vicinity of the Site. The results are discussed in MFA's report titled *"Revised Results of Preliminary Domestic Well Sampling - Crook County, Oregon Task Order 067-23-18"* (MFA, 2025). 52 of the 55 wells sampled in the initial sampling event were sampled again for this subsequent sampling event. This report includes comparisons of sample results from the initial event and this subsequent sampling event.

Figures 4, 6, and 8 present manganese concentrations in November 2024 for shallow wells (<80 feet below ground surface [bgs]), deep wells (>80 feet bgs), and wells of unknown depth,

respectively. Figure 10 presents the arsenic concentrations in November 2024 for each well (i.e., includes shallow, deep, and unknown well depths).

Figures 5, 7, and 9 present manganese concentrations in April/May 2025 for shallow wells, deep wells, and wells of unknown depth, respectively. Figure 11 presents the arsenic concentrations in April/May 2025 for each well (i.e., includes shallow, deep, and unknown well depths).

The analyte concentrations that exceeded the health-based screening levels in some of the sampled wells in April/May 2025 include fluoride, nitrate (as nitrogen), aluminum, arsenic, copper, iron, lead, manganese, and vanadium. Exceedances for these analytes were also observed in some of the sampled wells in November 2024.

Manganese (both total and dissolved) and arsenic were the most common analytes to have health-based screening levels exceedances across both sampling events, followed by fluoride and total and dissolved iron.

Arsenic and fluoride concentrations were compared to a screening level called the maximum contaminant level (MCL), which is an U.S. Environmental Protection Agency (EPA)-derived screening level that establishes a threshold limit on the amount of a substance that is allowed in drinking water, above which a risk to human health exists. The MCL for arsenic is 10 micrograms per liter (ug/L), and the MCL for fluoride is 350 ug/L. EPA also defines an “MCL goal” (MCL-G) which is a non-enforceable public health goal set which represents the level of a contaminant in drinking water below which there is no known or expected risk to health. The MCL-G for arsenic is 0 ug/L. Manganese and iron concentrations were compared to an EPA-derived secondary drinking water standard called the secondary MCL (MCL-2), which establishes a threshold limit above which there may be aesthetic concerns to water (e.g., impacts to taste, odor, and color). The MCL-2 for manganese is 50 ug/L, and the MCL-2 for iron is 300 ug/L. The Lifetime Exposure Health Advisory Level for manganese (i.e., the maximum concentration of manganese in drinking water that is not expected to cause adverse health effects over a lifetime of exposure) is 300 ug/L.

Manganese. In the April/May 2025 sampling event the reported concentrations of total manganese ranged from nondetect (i.e., not detected above the method detection limit of 0.7 ug/L) to 464 ug/L. Approximately 12 percent of wells sampled had manganese concentrations above the Lifetime Exposure Health Advisory Level of 300 ug/L in April/May 2025, up from 9 percent in November 2024. During the November 2024 sampling event, 51 percent of wells sampled exceeded the MCL-2 of 50 ug/L for manganese. This figure increased slightly to 55 percent during the April/May 2025 sampling event. In general, manganese concentrations were relatively stable between sampling events.

As shown in Figures 4 through 7, elevated manganese concentrations are present in both shallow and deep wells, but exceedances of the MCL-2 are more common and spatially distributed in the deep aquifer. Concentrations in the shallow aquifer are notably higher in the area west/northwest of the Site. Concentrations in the deeper aquifer exceed the MCL-2 in all cardinal directions of the Site. In November 2024, 14 out of 18 deep wells exceeded the MCL-2. In April/May 2025, this number increased to 20 out of 21 deep wells.

Arsenic. In the April/May 2025 sampling event the reported concentrations of total arsenic ranged from an estimated concentration of 1.1 ug/L to 38.6 ug/L. Approximately 40 percent of wells sampled in April/May 2025 exceeded the MCL for arsenic, up from approximately 35 percent of wells sampled in November 2024. The highest concentration of arsenic was 38.6 ug/L from a deep well southeast of the Site. Elevated arsenic concentrations were observed in all cardinal directions from the Site.

In general, arsenic concentrations were relatively stable between sampling events.

As shown in Figures 10 and 11, arsenic concentrations are consistently higher on average in the deeper aquifer than in the shallow aquifer. No exceedances of the arsenic MCL were observed in the shallow aquifer during either sampling event.

Fluoride. In the April/May 2025 sampling event the reported concentrations of fluoride ranged from an estimated concentration of 115 ug/L to 1,250 ug/L. The highest fluoride value of 1,250 ug/L was observed at a deep well located approximately one mile east-southeast of the Site. Elevated fluoride concentrations were observed in both shallow and deep wells and in all cardinal directions from the Site.

Iron. In the April/May 2025 sampling event the reported concentrations of total iron ranged from nondetect (i.e., not detected above the method detection limit of 0.5 ug/L) to 799 ug/L. Elevated iron concentrations were observed in both shallow and deep wells and in all cardinal directions from the Site.

Summary and Conclusions

A total of 58 domestic water wells were sampled during the second round of sampling in April/May 2025. Of the 58 wells sampled during the April/May 2025 sampling event 52 were previously sampled in the initial round of sampling. Considering both the first and second rounds of sampling, approximately 86 percent of the wells exhibited concentrations exceeding at least one screening level. As stated above, arsenic and manganese (both total and dissolved) were the most common analytes to have screening level exceedances across both sampling events, followed by fluoride and total and dissolved iron.

Between the November 2024 and April/May 2025 sampling events:

- Approximately 56 percent of the wells sampled across both events exceeded the MCL-2 of 50 ug/L for manganese, with about 12 percent at concentrations above 300 ug/L. The highest concentration of total manganese was 464 ug/L detected in a shallow well west of the Site.
- Approximately 40 percent of wells sampled across both events exceeded the MCL for arsenic. The highest concentration of arsenic was 38.6 ug/L from a deep well southeast of the Site.

Across both sampling events (November 2024 and April/May 2025):

- Manganese concentrations in the shallow aquifer were highest west of the Site—particularly along NW Elliott Lane, NW Puckett Road, and NW Green Valley Road.
- In contrast, arsenic concentrations in the shallow aquifer remained relatively consistent across the study area.
- In the deeper aquifer, both arsenic and manganese concentrations are elevated across the study area.
- Neither fluoride nor total/dissolved iron concentrations demonstrated a strong association with either the shallow or deep aquifer, nor were the high concentrations focused in any particular area.

The data from the 2024-2025 domestic well sampling studies is intended to provide the Oregon Health Authority with additional data for a public health assessment. No strong or consistent patterns were observed in the data beyond those noted above.

Sincerely,
Maul Foster & Alongi, Inc.


Sean Maloney, GIT
Project Geologist



EXPIRES: 1/1/2026
This digital seal certifies the signatory
and document content.
Michael Pickering, RG
Principal Geologist

Attachments

Limitations

Figures

Table

A—Groundwater Field Sampling Data Sheets

B—Laboratory Analytical Reports and Data Validation Memorandum

Reference

MFA. 2025. *Revised Results of Preliminary Domestic Well Sampling - Crook County, Oregon Task Order 067-23-18*. Maul Foster & Alongi, Inc.: Portland, OR. March 28.

Limitations

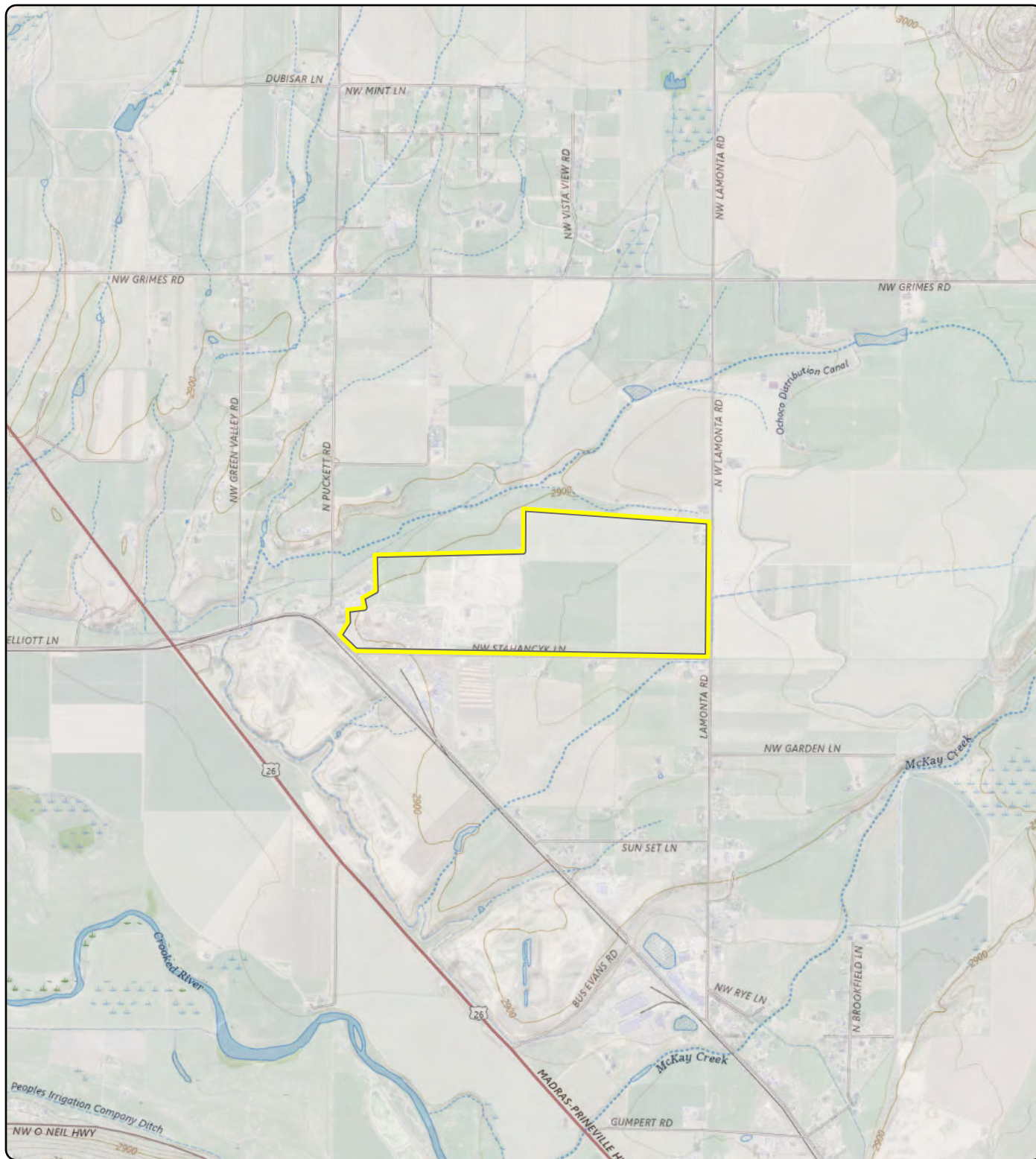
The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures



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Notes
U.S. Geological Survey 7.5-minute topographic
quadangle (2020): Houston Lake.
Township 14 south, range 15 east, section 14.

Legend
 Mine Site

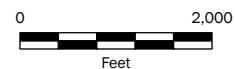
Figure 1 Site Location

Crook County Preliminary Domestic Well Sampling
Oregon Department of Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR



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Project: M0785 34.001 Produced By: sturner Reviewed By: mwhitson Print Date: 6/10/2025 Path: X:\0_MFA_Projects\M0785 34.001\Pro\M0785 34_001_005.aprx Fig 2 Domestic Well Sample Locations, Nov 2024

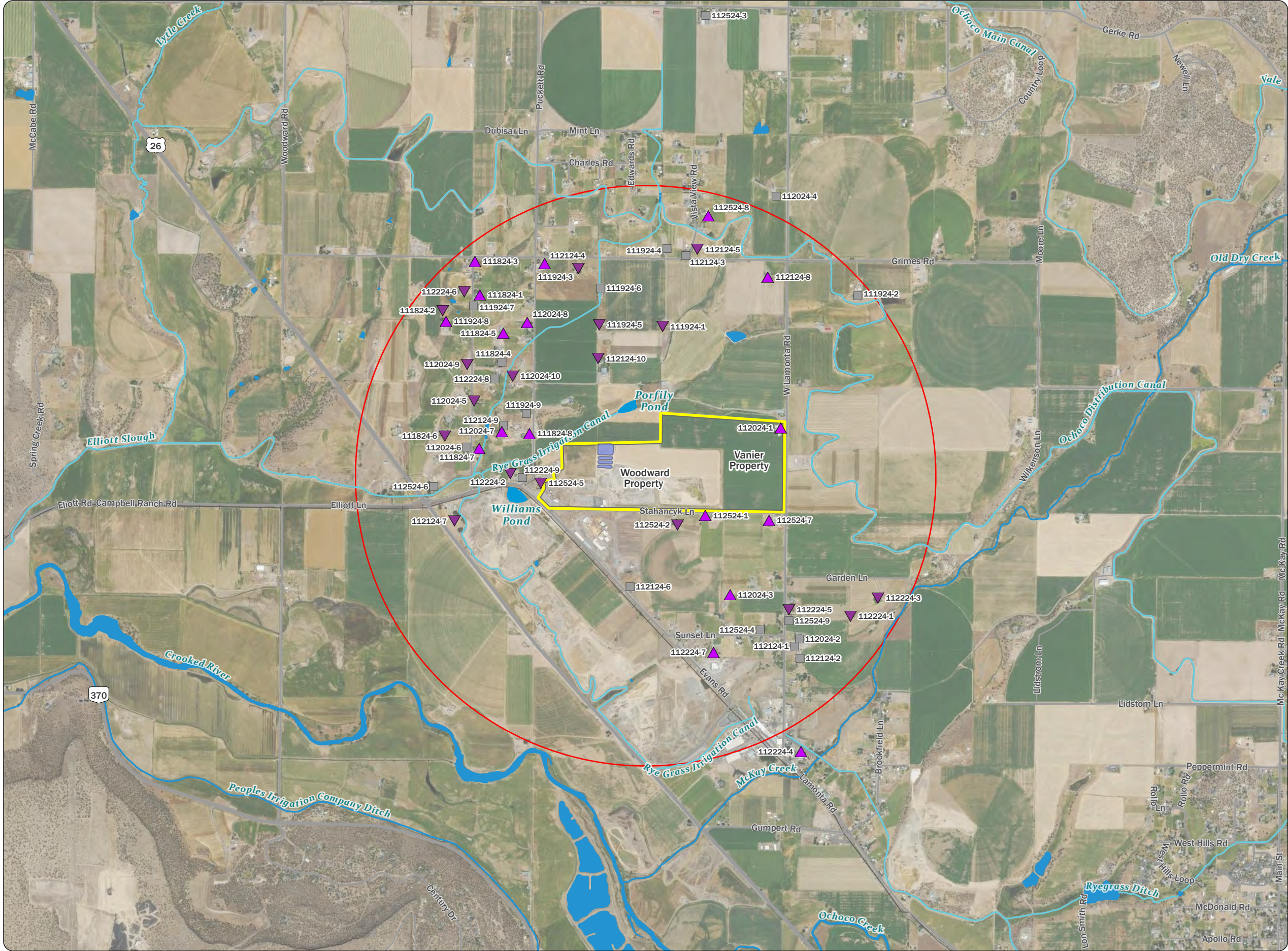


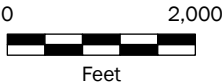
Figure 2 Domestic Well Sample Locations, November 2024

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Deep Water Supply Well (>80 ft bgs)
- Shallow Water Supply Well (<80 ft bgs)
- Water Supply Well (unknown depth)
- Settling Pond
- Waterbody
- Canal
- River/Creek
- Mine Site
- 1-Mile Site Buffer

Notes
ft bgs = feet below ground surface.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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Path: X:\O_WFA_P\Projects\M0785_34\001\Proj\M0785_34_001_005.aprx;Fig 3 Domestic Well Sample Locations; Apr-May 2025
Print Date: 6/10/2025
Reviewed By: mwhitson
Produced By: sturner
Project: M0785_34_001

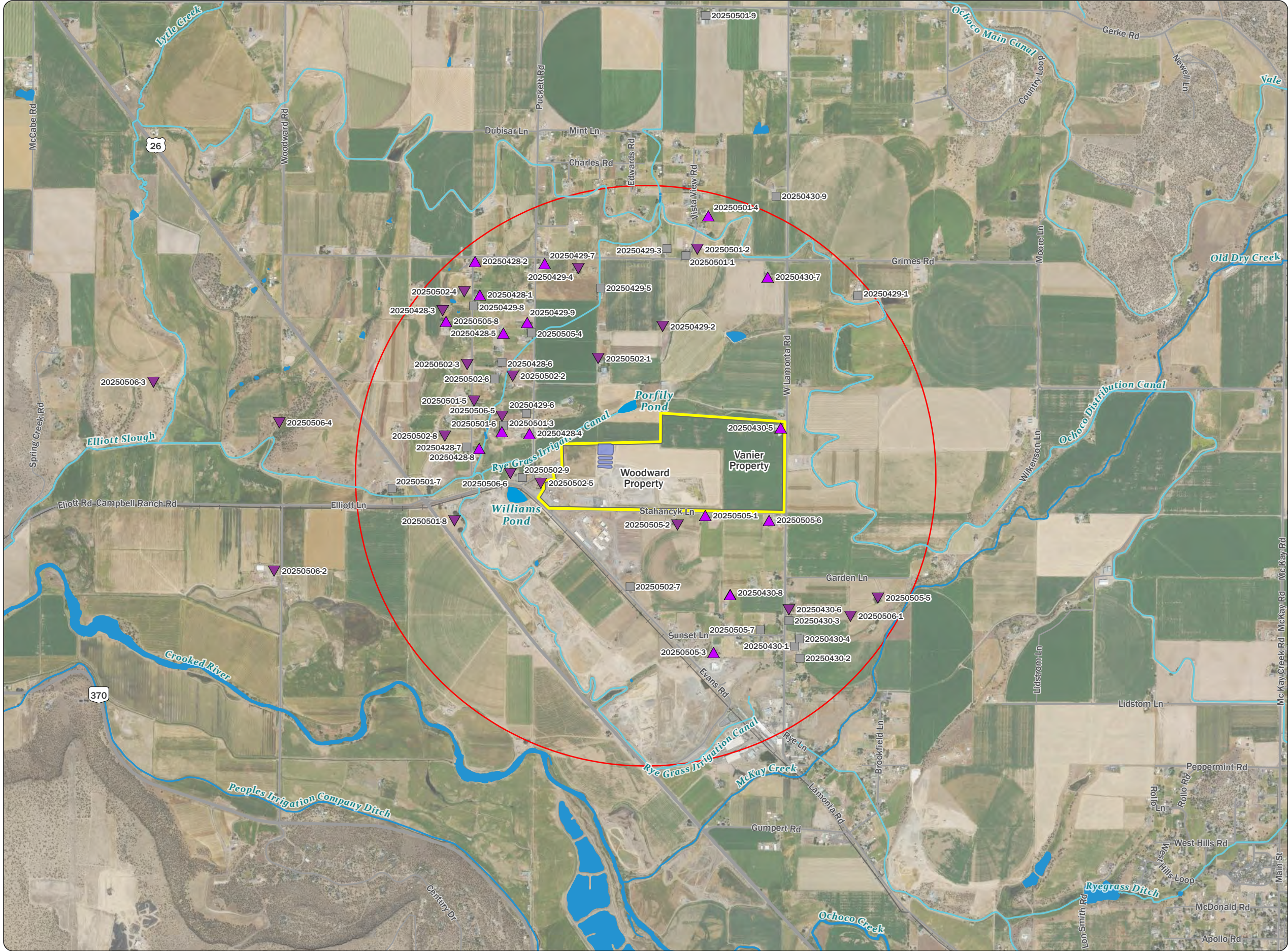
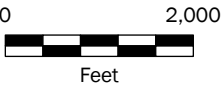


Figure 3
Domestic Well
Sample Locations,
April/May 2025

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

- Legend**
- Deep Water Supply Well (>80 ft bgs)
 - Shallow Water Supply Well (<80 ft bgs)
 - Water Supply Well (unknown depth)
 - Settling Pond
 - Waterbody
 - Canal
 - River/Creek
 - Mine Site
 - 1-Mile Site Buffer

Notes
ft bgs = feet below ground surface.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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Project: M0785 34.001 Produced By: jellstron Reviewed By: mwhitson Print Date: 6/24/2025 Path: X:\0_MFA_Projects\M0785 34.001\Pre\M0785 34_001_005.aprx\Fig 4 Manganese Concentrations in Shallow Wells, Nov 2024

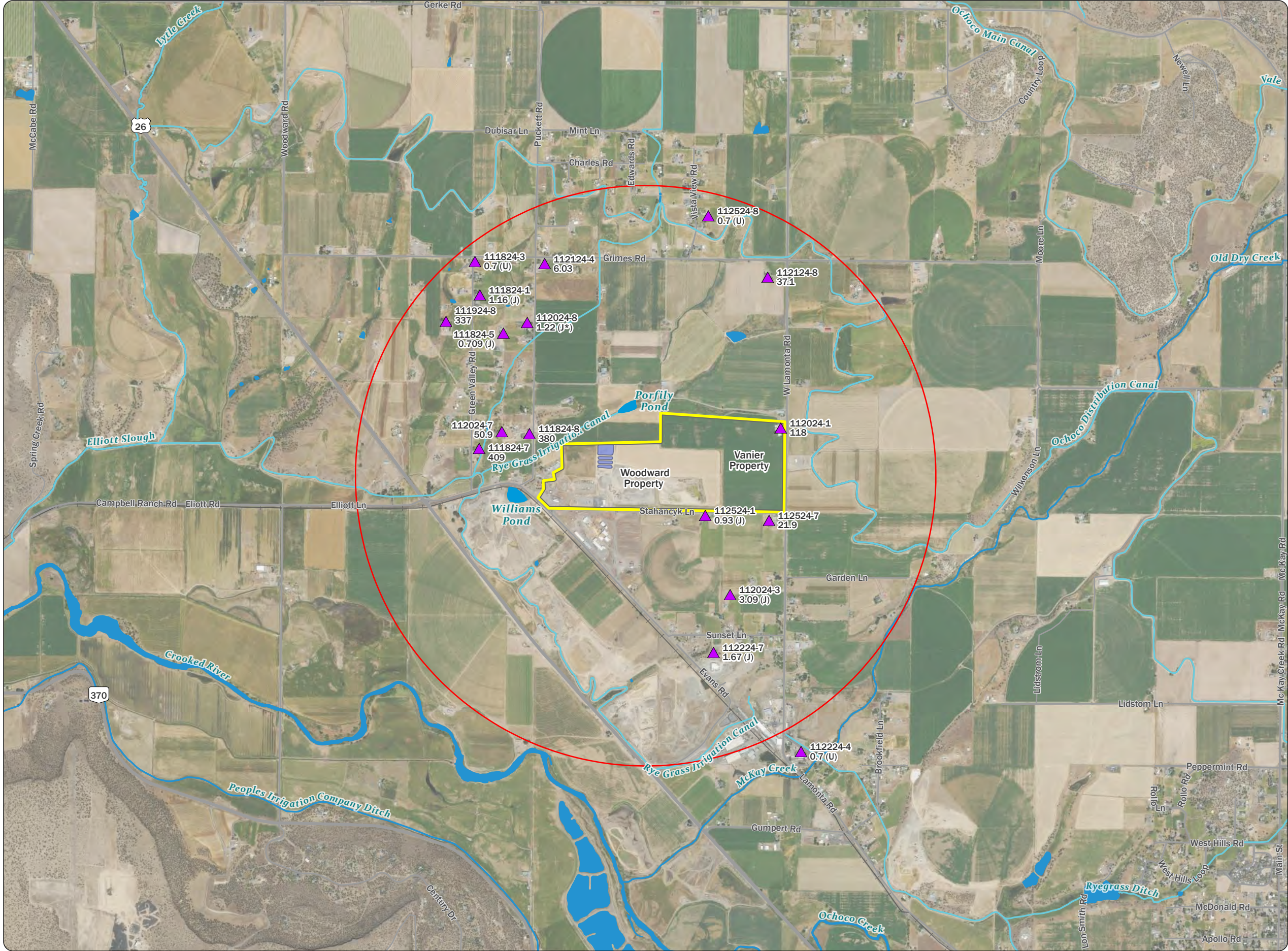


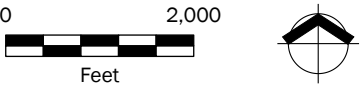
Figure 4
Manganese Concentrations
in Shallow Wells,
November 2024

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Shallow Water Supply Well (<80 ft bgs)
- 1-Mile Site Buffer
- Mine Site
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
J* = result is estimated. Primary and field duplicate analytical results have significant differences which were confirmed by laboratory reanalysis.
U = result is non-detect at the method detection limit.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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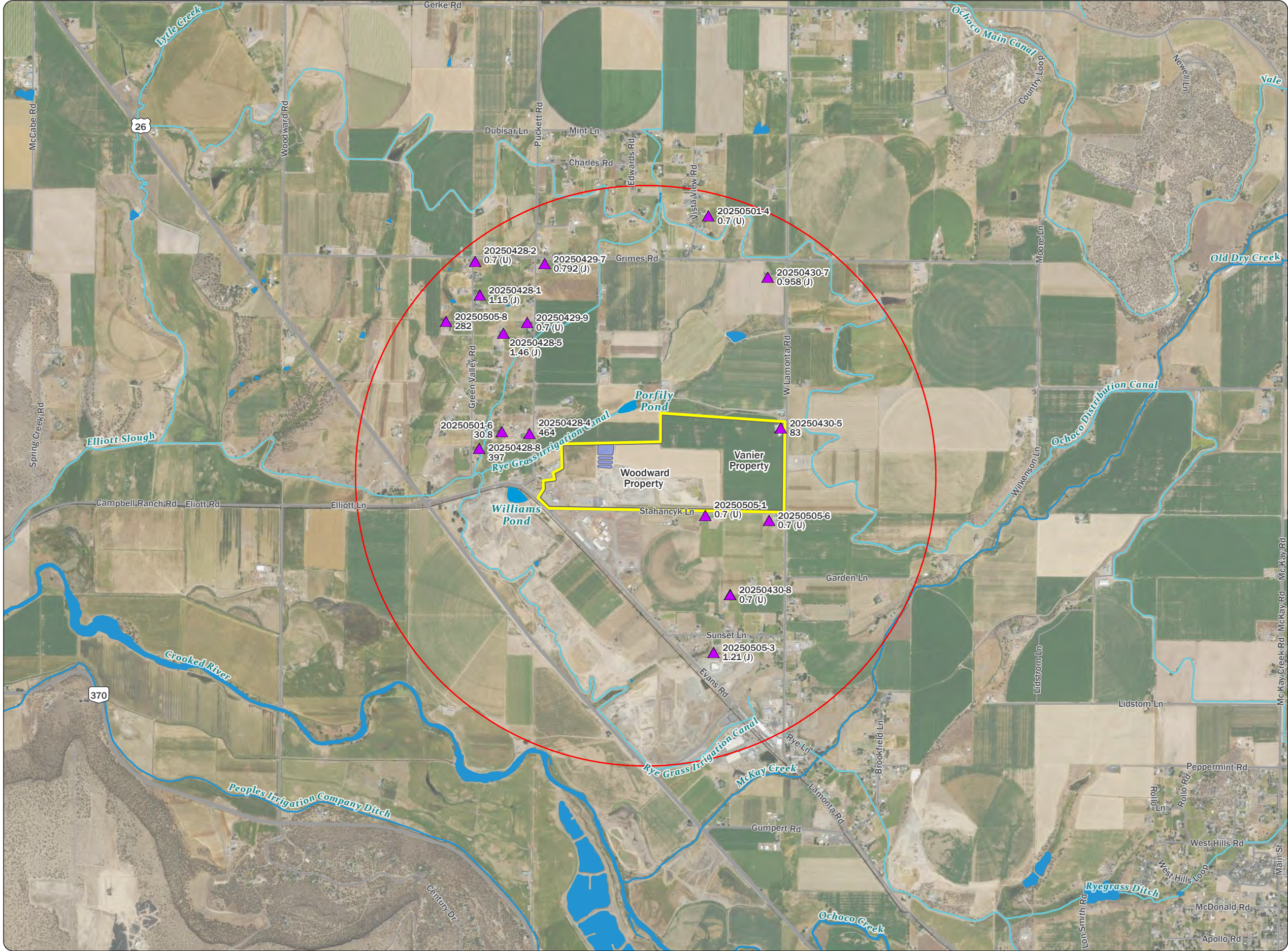


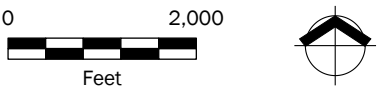
Figure 5
Manganese Concentrations
in Shallow Wells,
April/May 2025

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Shallow Water Supply Well (<80 ft bgs)
- 1-Mile Site Buffer
- Mine Site
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
U = result is non-detect at the method detection limit.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.

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Project: M0785 34.001 Produced By: jellstrom Reviewed By: mwhitson Print Date: 6/24/2025 Path: X:\0_MFA_Projects\M0785\34.001\Pro\M0785_34_001_005.aprx Fig 6 Manganese Concentrations in Deep Wells, Nov 2024

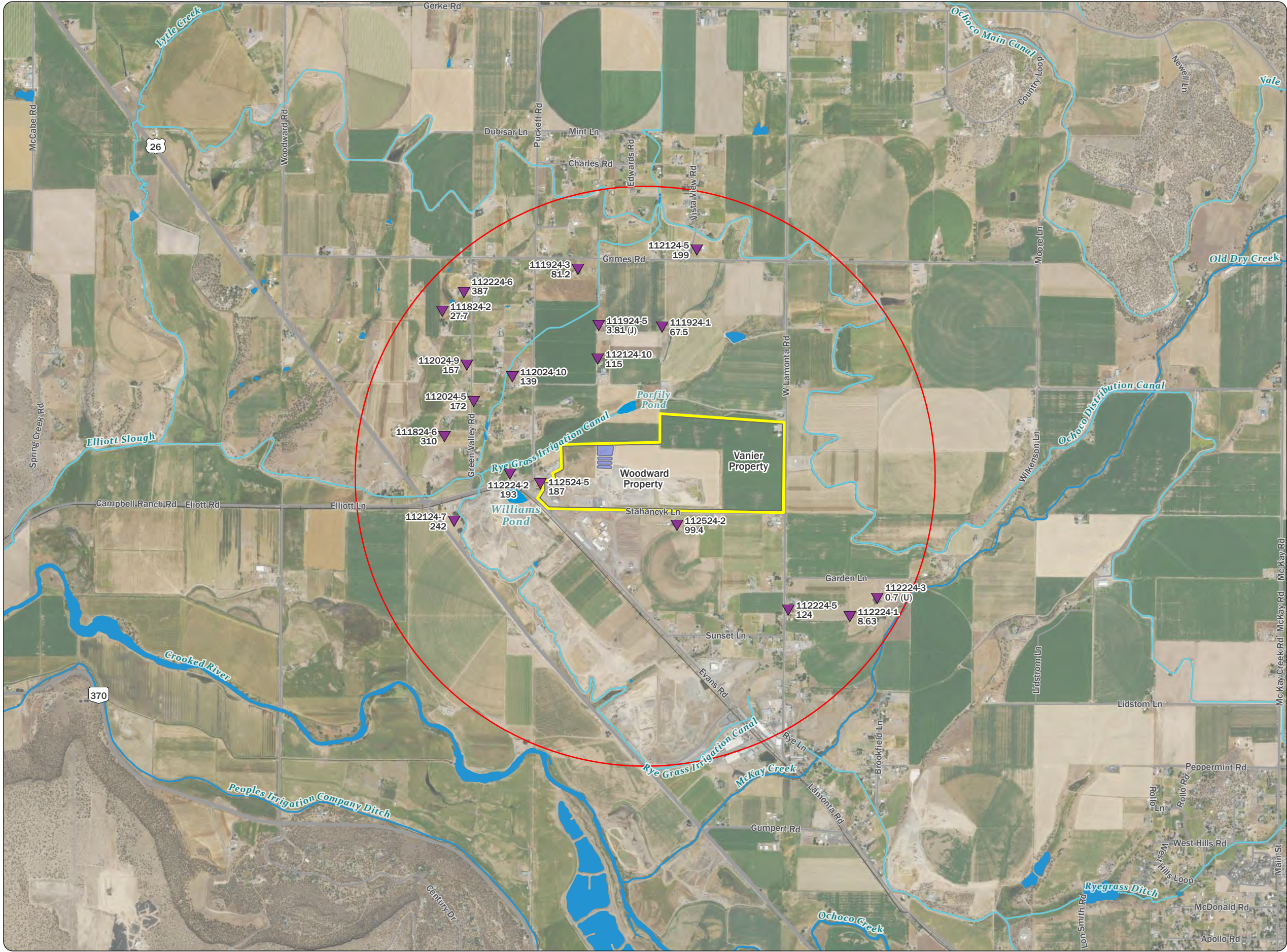


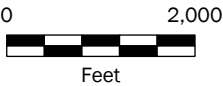
Figure 6
Manganese Concentrations
in Deep Wells,
November 2024

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Deep Water Supply Well (>80 ft bgs)
- Mine Site
- 1-Mile Site Buffer
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
U = result is non-detect at the method detection limit.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.

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Path: X:\0_MFA_Projects\M0785\34\001\Pro\M0785_34_001_005.aprx; Fig 7 Manganese Concentrations in Deep Wells; Apr-May 2025
Print Date: 6/24/2025
Reviewed By: mwatson
Produced By: jellstrott
Project: M0785 34.001



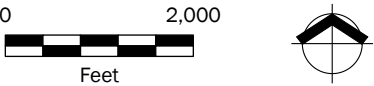
Figure 7
Manganese Concentrations
in Deep Wells,
April/May 2025

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Deep Water Supply Well (>80 ft bgs)
- Mine Site
- 1-Mile Site Buffer
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
U = result is non-detect at the method detection limit.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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Path: X:\O_MFA_Projects\M0785\34\001\Proj\M0785_34_001_005.aprx Fig 8 Manganese Concentrations in Unknown Wells, Nov 2024
Print Date: 6/24/2025
Reviewed By: mwatson
Produced By: jellstrott
Project: M0785 34.001

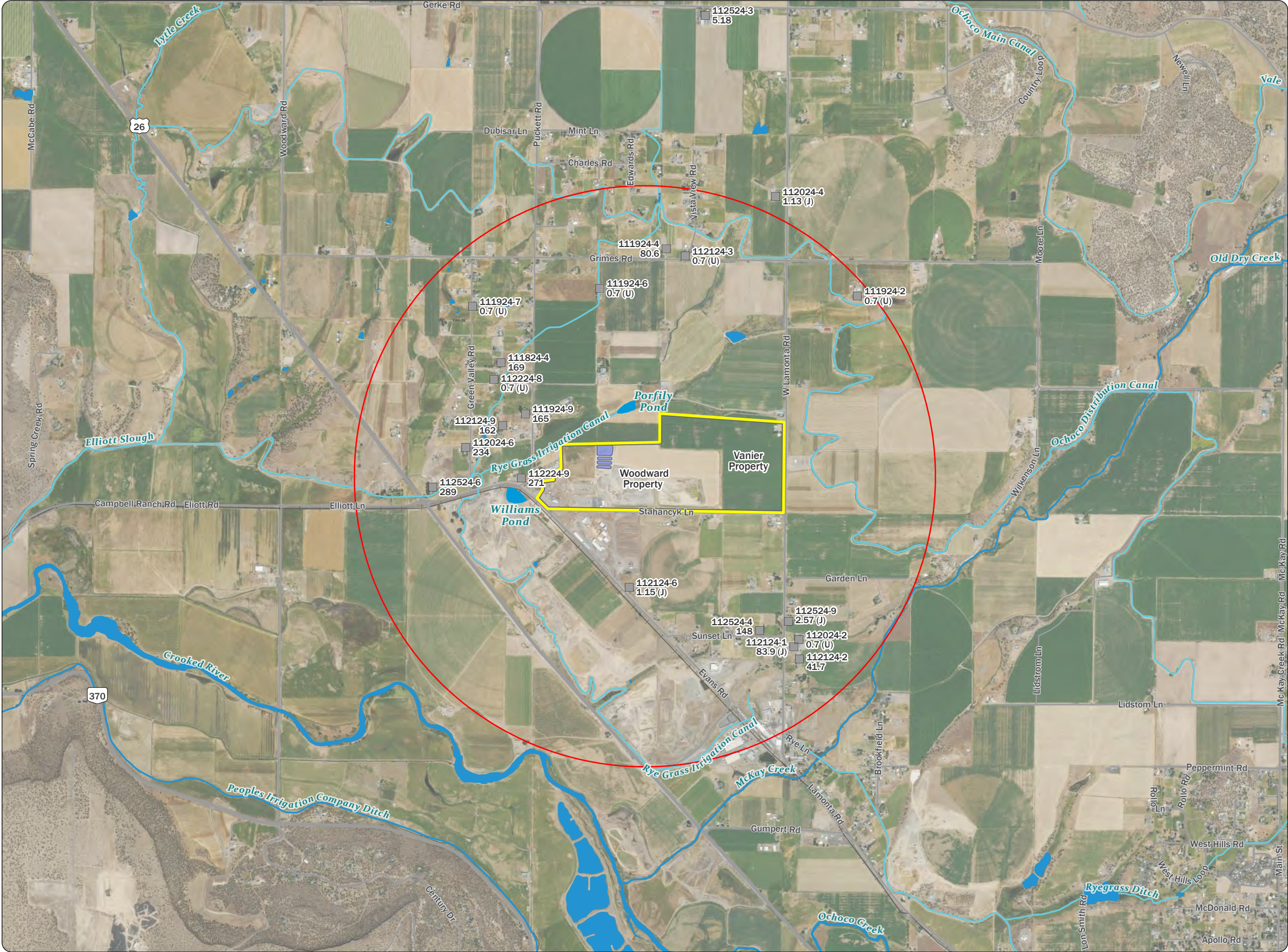


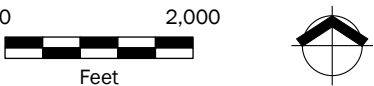
Figure 8
Manganese Concentrations
in Wells of Unknown Depth,
November 2024

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Water Supply Well (unknown depth)
- Mine Site
- 1-Mile Site Buffer
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
U = result is non-detect at the method detection limit.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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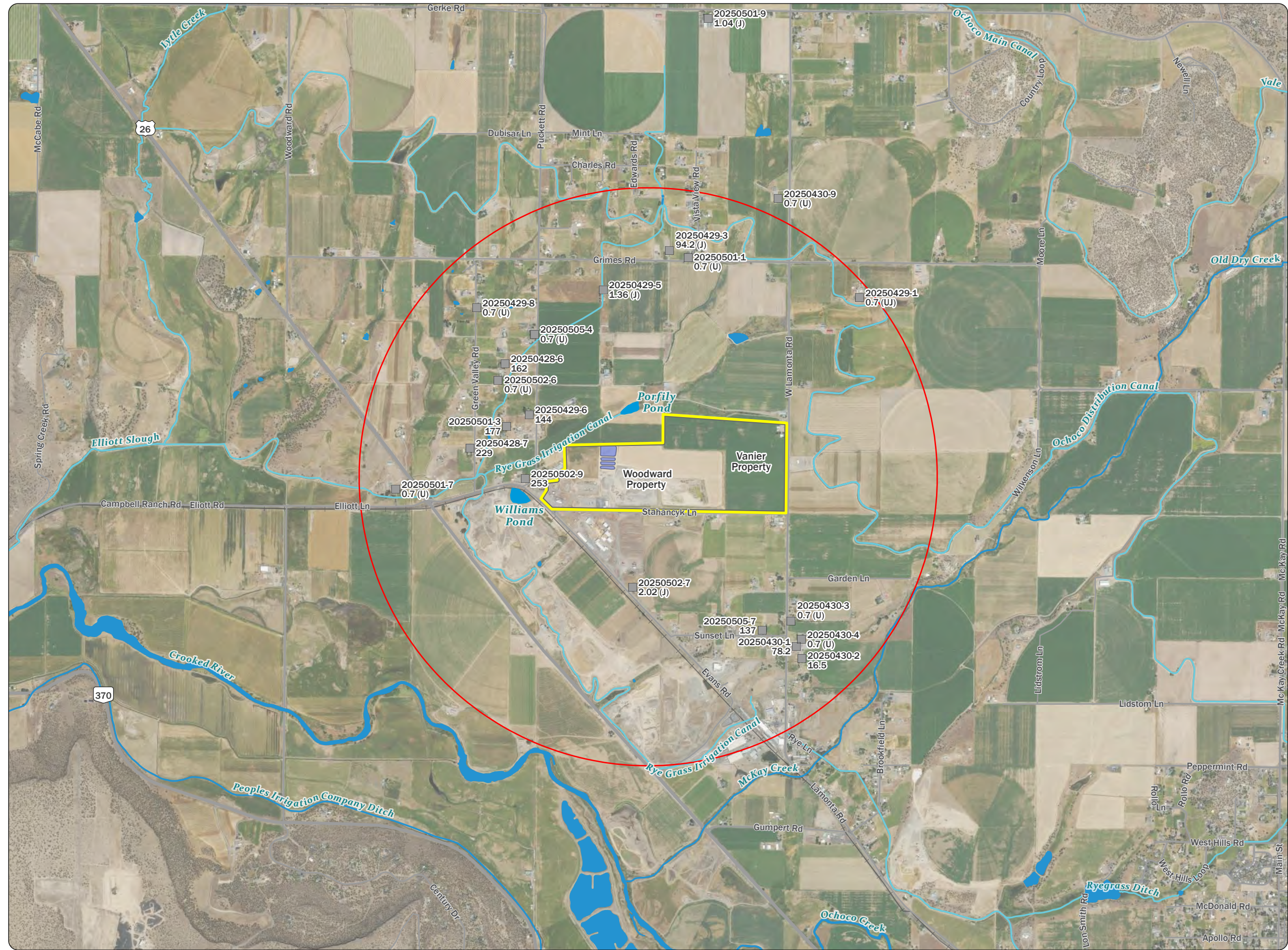


Figure 9
Manganese Concentrations
in Wells of Unknown Depth,
April/May 2025

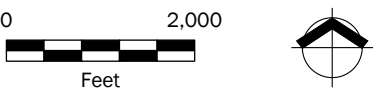
Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

-  Water Supply Well (unknown depth)
-  Mine Site
-  1-Mile Site Buffer
-  Settling Pond
-  Waterbody
-  Canal
-  River/Creek

Notes

Concentrations shown are in ug/L.
ft bgs = feet below ground surface.
ug/L = micrograms per liter.
J = result is estimated.
U = result is non-detect at the method detection limit.
UJ = result is non-detect with an estimated
method detection limit or method reporting limit.
Well locations estimated by MFA using GPS during
sample collection in November 2024.



Data Sources

Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.



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Path: X:\0_MFA_Projects\M0785\34\001\Proj\M0785_34_001_005.aprx Fig 10 Arsenic Concentrations, Nov 2024
Print Date: 6/24/2025
Reviewed By: mwatson
Produced By: jellstrom
Project: M0785_34_001

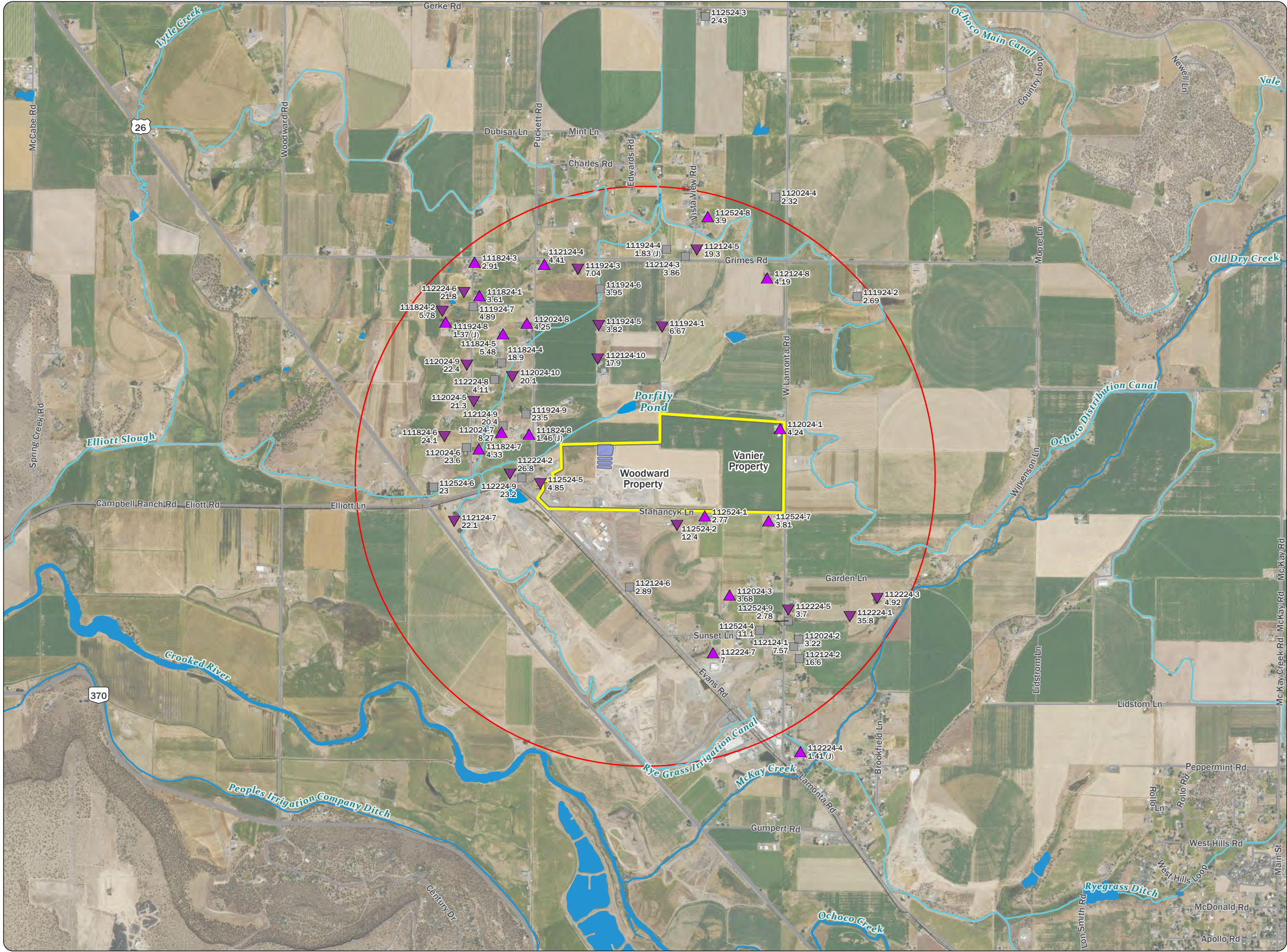


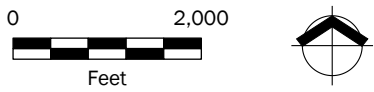
Figure 10
Arsenic Concentrations,
November 2024

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Deep Water Supply Well (>80 ft bgs)
- Shallow Water Supply Well (<80 ft bgs)
- Water Supply Well (unknown depth)
- Mine Site
- 1-Mile Site Buffer
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L (micrograms per liter).
ft bgs = feet below ground surface.
J = result is estimated.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.

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Path: X:\G_MFA_P\Projects\M0785-34\01\01\Pro\M0785-34_001_005.aprx|Fig 11 Arsenic Concentrations, Apr May 2025
Print Date: 6/25/2025
Reviewed By: mwatson
Produced By: jellstrott
Project: M0785-34.001

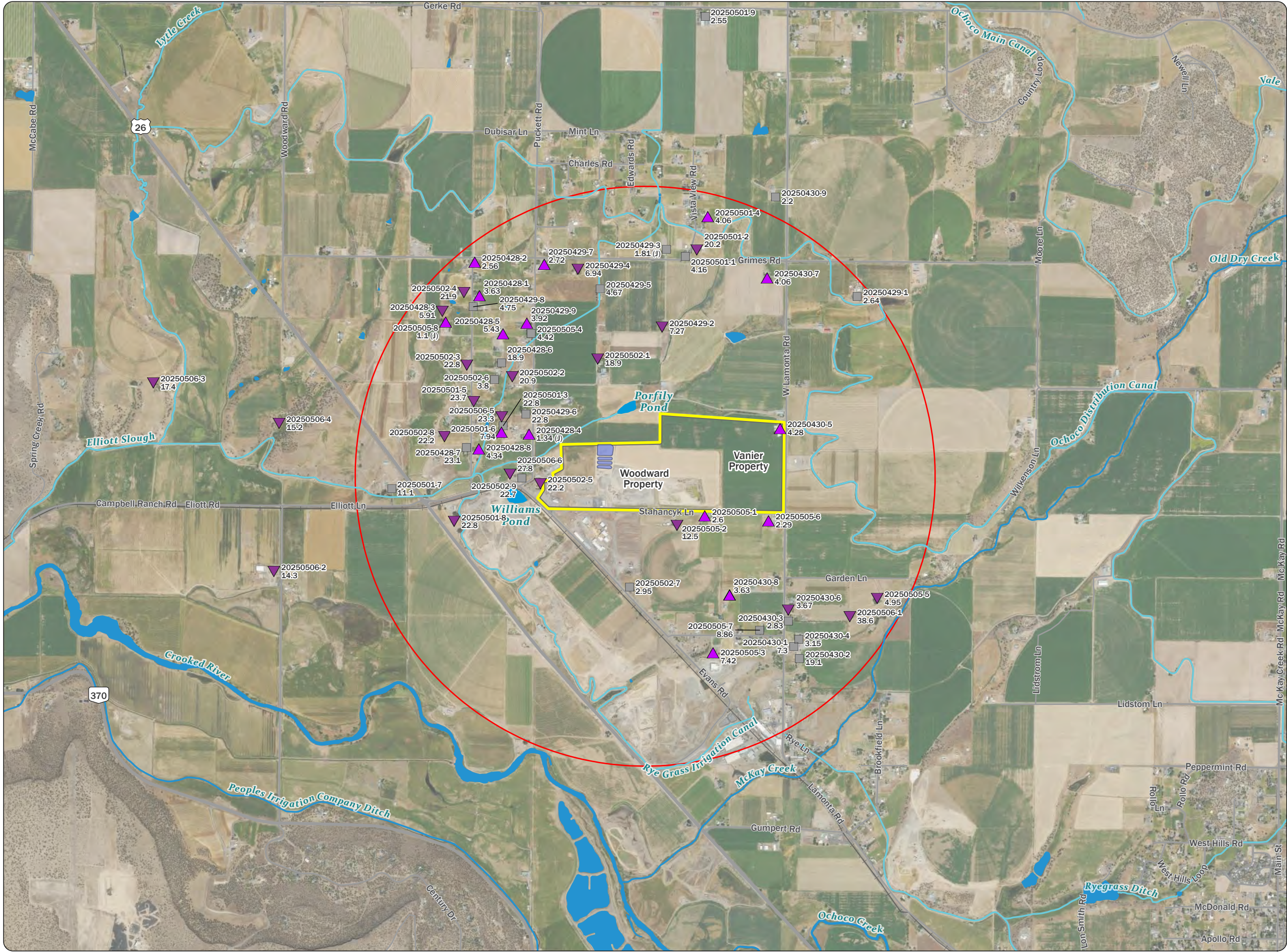


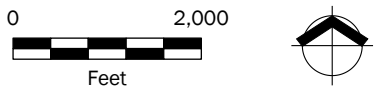
Figure 11
Arsenic Concentrations,
April/May 2025

Crook County Preliminary
Domestic Well Sampling
Oregon Department of
Environmental Quality
4755 NW Stahancyk Lane
Prineville, OR

Legend

- Deep Water Supply Well (>80 ft bgs)
- Shallow Water Supply Well (<80 ft bgs)
- Water Supply Well (unknown depth)
- Mine Site
- 1-Mile Site Buffer
- Settling Pond
- Waterbody
- Canal
- River/Creek

Notes
Concentrations shown are in ug/L (micrograms per liter).
ft bgs = feet below ground surface.
J = result is estimated.
Well locations estimated by MFA using GPS during sample collection in November 2024.



Data Sources
Aerial photograph (2022) obtained from the USDA Farm Services Agency; hydrography data obtained from Crook County; well locations obtained from the Oregon Water Resources Department.

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Table



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Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250428-1	20250428-1-DUP	111824-1	111824-1-DUP	20250428-2	111824-3	20250428-3	111824-2	20250428-4	111824-8	20250428-5	111824-5	
Collection Date:			04/28/2025	04/28/2025	11/18/2024	11/18/2024	04/28/2025	11/18/2024	04/28/2025	11/18/2024	04/28/2025	11/18/2024	04/28/2025	11/18/2024	
Sampling Point:			Post-Tank					Pre-Tank		Pre-Tank		Post-Tank		Post-Tank	
Sample Type:			N	FD	N	FD	N	N	N	N	N	N	N		
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	286,000 J	285,000 J	277,000	277,000	255,000 J	245,000	356,000 J	354,000	314,000 J	310,000	358,000 J	354,000	
Alkalinity, total	NV	NV	286,000 J	285,000 J	277,000	277,000	255,000 J	245,000	356,000 J	354,000	314,000 J	310,000	358,000 J	354,000	
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	7,230	6,640	7,060	7,890	6,520	6,150	4,270	4,940	9,220	8,730	8,930	9,380	
Fluoride	350	ATSDR	362	274	223	415	311	199	304	308	281	190	264	243	
Sulfate	250,000	MCL-2	17,000	15,700	15,200	15,800	18,900	16,100	21,500	18,100	27,800	28,200	27,100	26,800	
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	6.93	7.02	6.79	6.73	6.71	5.76	1.46	1.89	1.35	1.91	13.68	11.07	
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	
Iron	300	MCL-2	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	68.4 J+	23.4 J	172 J+	272	22.6 U	22.6 U	
Manganese	50	MCL-2	0.7 U	0.7 U	0.701 J	0.7 U	0.7 U	0.7 U	84.9	21.8	438	374	0.819 J	0.726 J	
Total Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	19 J	16 U	16 U	16 U	24.3 J	16 U	27.8 J	16 U	32.3 J	16 U	
Arsenic	10/0	MCL/MCLG ^(b)	3.63	3.56	3.61	3.57	2.56	2.91	5.91	5.78	1.34 J	1.46 J	5.43	5.48	
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	
Calcium	NV	NV	48,300	47,400	46,900	47,300	47,100	45,400	58,500	59,200	48,900	51,800	56,700	56,300	
Chromium	100	MCL	0.9 U	0.9 U	1.56 J	0.9 U	0.9 U	0.9 U	0.978 J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	
Cobalt	210	ATSDR	0.1 U	0.1 U	0.11 J	0.1 U	0.1 U	0.1 U	0.133 J	0.115 J	0.1 U	0.1 U	0.1 U	0.1 U	
Copper	140	ATSDR	5 U	4.87 J	143 J*	13.2 J*	3.91 J	1.42 J	3.48 J	8.47	14.8	2.42 J	34.3	17.1	
Iron	300	MCL-2	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	603	127	618	352	59.8 J	22.6 U	
Lead	15	MCL	0.5 U	0.783 J	47 J*	0.5 UJ*	0.632 J	0.5 U	0.5 U	0.577 J	0.687 J	0.5 U	0.651 J	0.5 U	
Lithium	40	EPA RSL	4.22 U	4.22 U	4.85 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	
Magnesium	NV	NV	23,300	21,700	21,300	21,300	22,700	21,900	26,500	26,700	24,400	24,800	26,900	25,900	
Manganese	50	MCL-2	1.15 J	0.7 U	1.16 J	0.7 U	0.7 U	0.7 U	124	27.7	464	380	1.46 J	0.709 J	
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	
Nickel	100	ATSDR	0.786 J	0.54 J	0.635 J	0.5 U	0.5 U	0.5 U	0.649 J	0.521 J	0.657 J	0.5 U	0.805 J	0.693 J	
Potassium	NV	NV	4,120	4,090	3,580	3,530	3,630	3,280	4,370	3,820	4,720	4,730	4,800	4,540	
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	2 U	
Silica (as silicon)	NV	NV	49,900	48,000	53,100	52,800	52,100	54,700	48,800	52,700	52,400	53,100	48,100	51,500	
Silicon	NV	NV	23,300	22,400	24,800	24,700	24,400	25,600	22,800	24,600	24,500	24,800	22,500	24,100	
Sodium	NV	NV	53,100	53,800	47,500	47,400	36,400	35,400	51,900	50,300	50,100	53,200	83,300	80,900	
Sulfur	NV	NV	5,650	5,490	5,270	5,110	6,140	5,650	6,970	6,630	9,010	9,690	8,850	9,420	
Vanadium	63	ATSDR	21.5	20.4	25.9	27.1	21.5	25.2	28.9	41	5.29	7.39	31.9	32	
Zinc	2,000	ATSDR	10.8 J	13.1 J	98.9 J*	23.1 J*	16.6 J	15.7 J	9.5 J	15.9 J	13.8 J	13.5 J	38.2	17.1 J	
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	217,000	208,000	205,000	206,000	211,000	203,000	255,000	258,000	223,000	231,000	252,000	247,000	
Total organic carbon	NV	NV	2,140	2,120	2,740	2,850	1,400	1,840	3,310	4,480	1,870	2,180	2,750	3,310	
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0.5	0.5	0	0	
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	7.56	7.56	7.64	7.64	7.43	7.54	7.41	7.73	7.62	7.74	7.44	7.55	
Temperature (°C)	NV	NV	12.6	12.6	12.4	12.4	12.6	12.5	11.7	12.4	13.1	12.8	12.3	12.7	
Conductivity (uS/cm)	NV	NV	737	737	592	592	667	530	660	676	768	654	809	804	
Dissolved Oxygen (mg/L)	NV	NV	4.7	4.7	5.49	5.49	2.4	3.08	6.98	7.20	4.55	0.96	7.04	2.85	
Oxidation-Reduction Potential (mV)	NV	NV	54.9	54.9	186.4	186.4	67.9	164.9	64.7	104.1	-46.4	-90.2	129.2	178.4	
Turbidity (NTU)	NV	NV	1.98	1.98	2.3	2.3	1.5	1.5	12.9	2.4	8.88	1.98	1.46	1.7	

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250428-6	111824-4	20250428-7	112024-6	20250428-8	111824-7	20250429-1	20250429-1-DUP	111924-2	20250429-2	111924-1	20250429-3	111924-4
Collection Date:			04/28/2025	11/18/2024	04/28/2025	11/20/2024	04/28/2025	11/18/2024	04/29/2025	04/29/2025	11/19/2024	04/29/2025	11/19/2024	04/29/2025	11/19/2024
Sampling Point:			Post-Tank		Post-Tank		Post-Treatment		Post-Tank			Post-Tank		Post-Tank	
Sample Type:			N	N	N	N	N	N	N	N	FD	N	N	N	N
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	164,000 J	160,000	166,000 J	158,000	260,000 J	256,000	379,000 J	326,000 J	372,000	227,000 J	231,000	269,000 J	274,000
Alkalinity, total	NV	NV	164,000 J	160,000	166,000 J	160,000	260,000 J	256,000	379,000 J	326,000 J	372,000	227,000 J	231,000	269,000 J	274,000
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	2,350	2,330	2,460	2,660	11,500	11,200	7,760	6,510	8,470	7,990	7,960	8,130	8,660
Fluoride	350	ATSDR	192	171	226	256	263	155	300	315	240	226	179	283	241
Sulfate	250,000	MCL-2	2,760 J	2,640 J	2,980 J	3,040 J	22,800	21,300	22,200	20,900	23,400	31,300	30,900	22,100	22,200
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	0.01	0.005 U	0.005 U	0.005 U	0.03	0.28	5.05	4.66	5.72	0.66	1.13	2.88	3.66
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	81.2 J+	85.4 J	60.7 J+	78.3 J	412	648	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	23.8 J
Manganese	50	MCL-2	171	178	229	229	406	414	0.7 U	0.7 U	0.7 U	97	70.1	77.2	83.7
Total Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	19.9 J	22.3 J	25.5 J	458	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Arsenic	10/0	MCL/MCLG ^(b)	18.9	18.9	23.1	23.6	4.34	4.33	2.64	4.25	2.69	7.27	6.67	1.81 J	1.83 J
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Calcium	NV	NV	22,300	22,100	23,100	23,300	41,600	41,700	66,400	63,200	68,000	43,700	46,400	48,200	48,200
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	6.43	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Cobalt	210	ATSDR	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.546 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Copper	140	ATSDR	0.752 J	4.14 J	130	116	10.9	4.9 J	4.43 J	2.78 J	7.96	26.5	5.61	1.48 J	1.57 J
Iron	300	MCL-2	95.7 J	114	183	189	746	1,430	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	47.9 J	41.2 J
Lead	15	MCL	0.5 U	0.5 U	6.84	6.83	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.87 J	0.5 U	0.5 U	0.5 U
Lithium	40	EPA RSL	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.22 U	4.85 U	4.22 U	4.98 J	4.22 U	4.85 U
Magnesium	NV	NV	9,210	9,320	9,390	9,550	20,300	20,900	35,300	33,400	32,800	16,100	17,800	23,500	22,800
Manganese	50	MCL-2	162	169	229	234	397	409	0.7 U	0.7 U	0.7 U	98.7	67.5	94.2	80.6
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	0.5 U	0.5 U	0.547 J	0.582 J	0.796 J	1.24 J	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	1.14 J
Potassium	NV	NV	2,630	2,570	2,320	2,300	4,710	4,590	2,790	2,940	2,780	2,160	2,180	3,840	3,570
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.269 J	0.25 U	2 U	0.25 U	0.25 U	0.25 U	0.25 U
Silica (as silicon)	NV	NV	45,800	48,100	47,200	50,200	51,700	56,400	51,300	54,000	51,800	39,100	40,000	50,000	52,100
Silicon	NV	NV	21,400	22,500	22,000	23,400	24,200	26,300	24,000	25,200	24,200	18,300	18,700	23,400	24,300
Sodium	NV	NV	28,100	27,800	26,800	25,500	42,000	41,400	54,800	44,600	53,900	35,400	36,600	43,200	42,100
Sulfur	NV	NV	1,070	1,080 J+	982 J	1,000	7,010	7,390	7,610	7,340	8,250	10,800	10,700	7,740	7,600
Vanadium	63	ATSDR	0.529 J	0.708 J	0.52 U	0.52 U	0.52 U	2.16 J	47.9	44.5	47	0.52 U	1.81 J	14.6	16.1
Zinc	2,000	ATSDR	13.6 J	11.2 J	59.8	55 J+	13.3 J	4 U	5.74 J	4 U	4 U	17.6 J	4.66 J	4 U	4 U
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	DETECT	ND	DETECT	ND	ND
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	93,600	93,400	96,400	97,600	188,000	190,000	311,000	295,000	305,000	176,000	189,000	217,000	214,000
Total organic carbon	NV	NV	495 U	495 U	495 U	495 U	1,440	1,560	3,900	2,980	4,200	624 J	655 J	1,600	1,770
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	7.94	8.19	8.11	8.25	7.45	7.53	7.64	7.64	7.79	7.88	7.73	7.84	7.82
Temperature (°C)	NV	NV	15.3	14.6	15.4	15.1	13.6	12.7	11.7	11.7	11.0	14.9	12.6	12.8	12.5
Conductivity (uS/cm)	NV	NV	300.8	293	373	306	84.7	531	919	919	767	486.3	697	710	649
Dissolved Oxygen (mg/L)	NV	NV	6.64	5.77	4.63	0.29	0.24	0.73	4.39	4.39	6.58	0.2	1.81	0.22	0.50
Oxidation-Reduction Potential (mV) ^(f)	NV	NV	-124	-58.6	-69.2	-187.4	-103.6	-120.2	16.6	16.6	214.2	184.4	40.4	39	39.4
Turbidity (NTU)	NV	NV	0.15	1.0	4.36	1.6	5	6.4	3.3	3.3	1.5	2.06	1.9	3.03	2.4

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250429-4	111924-3	20250429-5	111924-6	20250429-6	111924-9	20250429-7	112124-4	20250429-8	111924-7	20250429-9	112024-8	112024-8-DUP
Collection Date:			04/29/2025	11/19/2024	04/29/2025	11/19/2024	04/29/2025	11/19/2024	04/29/2025	11/21/2024	04/29/2025	11/19/2024	04/29/2025	11/20/2024	11/20/2024
Sampling Point:			Pre-Tank		Post-Tank		Post-Tank		Post-Tank		Post-Tank		Post-Tank		
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	152,000 J	163,000	390,000 J	322,000	159,000	158,000	376,000 J	376,000	289,000 J	289,000	337,000	343,000	344,000
Alkalinity, total	NV	NV	165,000 J	163,000	390,000 J	322,000	159,000	158,000	376,000 J	376,000	289,000 J	289,000	337,000	343,000	344,000
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	3,520	3,540	12,700	6,590	3,850	4,070	7,370	13,200	7,640	7,650	8,200	8,790	8,610
Fluoride	350	ATSDR	323	271	406	253	198	165	313	443	379	299	347	445	470
Sulfate	250,000	MCL-2	4,130 J	4,230 J	26,300	19,900	6,160	6,510	21,200	27,000	16,000	16,100	24,200	27,400	26,700
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	0.005 U	0.005 U	10.54	10.66	0.005 U	0.02	8.31	8.53	8.11	7.87	12.06	11.92	11.89
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	18.4 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	344	358	67 J	22.6 U	185	237	22.6 U	259 J	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U
Manganese	50	MCL-2	78.6	74.3	3.84 J	0.7 U	142	158	0.7 U	1.51 J	0.7 U	0.7 U	0.7 U	0.7 U	0.751 J
Total Metals (ug/L)															
Aluminum	200	MCL-2	20.5 J	20.5 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	17.1 J	67.6 J*	973 J*
Arsenic	10/0	MCL/MCLG ^(b)	6.94	7.04	4.67	3.95	22.8	23.5	2.72	4.41	4.75	4.89	3.92	4.25	4.18
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.219 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Calcium	NV	NV	8,360	8,530	60,500	60,700	22,500	23,200	67,300	54,700	44,400	46,000	55,100	60,500	61,500
Chromium	100	MCL	1.28 J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	1.01 J	2.41
Cobalt	210	ATSDR	0.1 U	0.1 U	0.148 J	0.1 U	0.1 U	0.1 U	0.1 U	0.129 J	0.1 U	0.1 U	0.1 J	0.139 J*	1.31 J*
Copper	140	ATSDR	1.6 J	2.44 J	6.25	4.33 J	84.7	7.59	5.41	28.4	9.65	22.6	6.81	5 UJ*	25.6 J*
Iron	300	MCL-2	617	543	22.6 U	22.6 U	250	349	22.6 U	143 J	42.4 J	22.6 U	22.6 U	81.2 J*	1,260 J*
Lead	15	MCL	0.5 U	0.5 U	0.5 U	0.5 U	1.71 J	0.708 J	0.5 U	5.86	0.5 U	0.5 U	0.97 J	0.5 UJ*	7.88 J*
Lithium	40	EPA RSL	9.67 J	6.17 J	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	5.67 J	4.85 U	5.29 J	4.85 U	4.85 U
Magnesium	NV	NV	2,580	2,570	33,000	30,700	7,980	8,490	36,400	28,300	20,000	20,000	25,300	28,100	28,800
Manganese	50	MCL-2	82.3	81.2	1.36 J	0.7 U	144	165	0.792 J	6.03	0.7 U	0.7 U	0.7 U	1.22 J*	12.1 J*
Mercury	2	MCL	0.07 UJ	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	0.758 J	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.688 J	0.578 J	0.5 U	0.5 U	0.774 J*	3.53 J*
Potassium	NV	NV	1,700 J	1,680 J	4,060	2,800	1,830 J	1,950 J	2,880	3,890	4,370	4,410	3,760	3,730	3,830
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Silica (as silicon)	NV	NV	49,500	48,900	56,300	58,000	44,700	45,800	51,500	58,600	50,800	51,400	50,800	53,200	54,600
Silicon	NV	NV	23,100	22,900	26,300	27,100	20,900	21,400	24,100	27,400	23,700	24,000	23,700	24,900	25,500
Sodium	NV	NV	61,400	60,200	87,100	44,400	35,000	32,000	55,700	84,300	67,200	62,300	73,700	68,100	67,700
Sulfur	NV	NV	1,610	1,680	9,310	7,200	2,270	2,490	7,740	9,420	5,810	5,790	8,580	8,920	8,540
Vanadium	63	ATSDR	0.52 U	0.52 U	64	43.7	0.52 U	0.52 U	49.2	66.4	27.7	27	39.5	40.9	44.3
Zinc	2,000	ATSDR	4 U	4 U	19.1 J	4 U	20.3 J	4.51 J	5.48 J	30.5	12.4 J	30.7	9.29 J	25 U	25 U
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	DETECT	DETECT	DETECT	ND	ND	ND
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	31,500	31,900	287,000	278,000	89,100	92,900	318,000	253,000	193,000	197,000	242,000	267,000	272,000
Total organic carbon	NV	NV	578 J	855 J	4,200	2,910	495 U	495 U	3,930	3,730	2,320	2,730	2,630	3,110	3,110
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	8.27	8.57	7.59	8.09	8.07	8.33	7.51	7.63	7.43	7.69	7.63	7.81	7.81
Temperature (°C)	NV	NV	13.8	12.3	11.7	14.9	14.1	13.0	11.9	13.2	12.7	12.0	11.7	11.9	11.9
Conductivity (uS/cm)	NV	NV	316	315	866	508.6	311	318	1,030	823	626.4	632	934	774	774
Dissolved Oxygen (mg/L)	NV	NV	1.12	4.93	1.02	0.11	0.18	4.44	1.46	2.60	6.07	5.90	5.73	6.93	6.93
Oxidation-Reduction Potential (mV)	NV	NV	-137.8	-82.3	19.5	57.5	-178.9	-205.3	25.3	20.8	98.8	155.2	43.6	161.2	161.2
Turbidity (NTU)	NV	NV	1.72	2.9	3.23	2.6	0.29	1.2	2.92	10.0	0.02	1.9	3.97	1.8	1.8

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250430-1	112124-1	20250430-2	112124-2	20250430-3	20250430-3-DUP	112524-9	20250430-4	112024-2	20250430-5	112024-1	20250430-6	112224-5
Collection Date:			04/30/2025	11/21/2024	04/30/2025	11/21/2024	04/30/2025	04/30/2025	11/25/2024	04/30/2025	11/20/2024	04/30/2025	11/20/2024	04/30/2025	11/22/2024
Sampling Point:			Post-Tank		Pre-Tank		Pre-Tank			Post-Treatment		Post-Tank		Post-Tank	
Sample Type:			N	N	N	N	N	FD	N	N	N	N	N	N	N
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	338,000 J	340,000	114,000 J	125,000	460,000 J	461,000 J	453,000	412,000 J	416,000	276,000 J	280,000	124,000 J	121,000
Alkalinity, total	NV	NV	338,000 J	340,000	127,000 J	126,000	460,000 J	461,000 J	453,000	412,000 J	416,000	276,000 J	280,000	124,000 J	121,000
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	7,630	3,030	2,160	2,420	9,970	9,910	9,340	9,580	13,800	7,540	7,070	2,020	1,740
Fluoride	350	ATSDR	166	108 J	431	351	368	336	384	211	272	393	272	249	250
Sulfate	250,000	MCL-2	45,200	18,700	2,400 J	2,170 J	23,200	22,900	22,800	16,800	17,800	26,400	24,800	1,260 J	1,300 J
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	4.67	5.18	0.13	0.005 U	12.96	12.68	12.22	8.51	6.98	2.73	4.66	0.01	0.06
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	178	132	104	634	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	23.1 J	22.6 U	73.4 J	92.5 J
Manganese	50	MCL-2	97.9	104 J	19	45.3	0.708 J	0.7 U	2.61 J	0.7 U	0.7 U	86.9	67.4	126	127
Total Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U	35 J	16 U	16 U	16 U	16 U	19 J	21.8 J
Arsenic	10/0	MCL/MCLG ^(b)	7.3	7.57	19.1	16.6	2.83	2.79	2.78	3.15	3.22	4.28	4.24	3.67	3.7
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	2 U	0.12 U
Calcium	NV	NV	68,700	68,800	6,080	7,500	88,900	88,200	87,600	87,400	87,400	48,900	48,800	16,000	16,200
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.975 J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Cobalt	210	ATSDR	0.123 J	0.1 U	0.1 U	0.1 U	0.1 U	2 U	0.106 J	0.235 J	0.103 J	0.156 J	0.148 J	2 U	0.1 U
Copper	140	ATSDR	50.6	17.4	32.9	7.55	69.2	58.2	76.1	5.34	5 U	2.31 J	5 U	1.77 J	5 U
Iron	300	MCL-2	372	248	90.5 J	587	22.6 U	22.6 U	60.8 J	22.6 U	22.6 U	22.6 U	68.6 J	112	109
Lead	15	MCL	5.56	0.601 J	8.98	1.36 J	37.6 J	22.3 J	3.93	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.34 J
Lithium	40	EPA RSL	4.22 U	4.85 U	8.79 J	4.85 U	4.22 U	5.39 J	4.85 U	4.22 U	4.85 U	5.6 J	4.85 U	6.03 J	4.85 U
Magnesium	NV	NV	33,500	31,000	1,410	1,910	44,800	44,100	41,300	41,900	40,300	22,900	21,700	7,100	6,690
Manganese	50	MCL-2	78.2	83.9 J	16.5	41.7	0.7 U	0.754 J	2.57 J	0.7 U	0.7 U	83	118	129	124
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	1.34 J	0.632 J	0.595 J	0.5 U	1.67 J	1.29 J	1.57 J	1.29 J	0.769 J	0.61 J	0.907 J	0.5 U	0.5 U
Potassium	NV	NV	6,250	6,330	1,220 J	1,420 J	3,930	3,900	3,710	3,970	3,840	4,600	4,460	1,830 J	1,810 J
Selenium	50	MCL	0.323 J	0.397 J	0.25 U	0.25 U	0.25 U	0.25 U	0.281 J	0.25 U	0.25 U	0.543 J	0.695 J	0.25 U	0.25 U
Silica (as silicon)	NV	NV	48,900	50,100	40,900	41,800	50,000	48,500	46,900	47,300	49,100	44,300	44,500	46,900	42,500
Silicon	NV	NV	22,900	23,400	19,100	19,500	23,400	22,700	21,900	22,100	23,000	20,700	20,800	21,900	19,900
Sodium	NV	NV	49,500	45,900	53,100	47,400	73,100	72,000	68,700	47,200	39,300	52,900	48,400	25,700	25,500
Sulfur	NV	NV	14,400	15,900	807 J	1,040	8,180	8,030	7,980	5,600	6,090	8,680	8,720	514 J	461 J
Vanadium	63	ATSDR	6.18	5.53	5.75	4.3 J	61.5	60	59.3	43.4	38.7	15.2	13.8	0.52 U	0.52 U
Zinc	2,000	ATSDR	106	120	39	15.3 J	60	48.3	47.5	15.1 J	4 U	4 U	25 U	4 U	4.53 J
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	DETECT	ND	ND	ND	ND	DETECT	ND	DETECT	DETECT	DETECT	ND	ND
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	310,000	299,000	21,000	26,600	406,000	402,000	389,000	391,000	384,000	216,000	211,000	69,200	68,100
Total organic carbon	NV	NV	1,600	1,590	495 U	495 U	3,310	3,180	2,710	4,380	4,700	1,260	1,590	495 U	495 U
Ferrous Iron ^(d)	NV	NV	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	7.25	7.47	8.49	8.65	7.5	7.5	7.65	7.27	7.55	7.25	7.47	8.17	8.31
Temperature (°C)	NV	NV	12.6	12.4	14.5	14.4	12.9	12.9	12.7	13.6	11.9	13.2	12.9	14.9	14.6
Conductivity (uS/cm)	NV	NV	752	742	294.4	242	1,159	1,159	707	850	849	602.9	598	285.5	235
Dissolved Oxygen (mg/L)	NV	NV	1.22	1.57	0.19	0.09	6.01	6.01	6.69	8.29	8.67	0.87	0.62	0.33	0.09
Oxidation-Reduction Potential (mV)	NV	NV	-1	-20.6	110.4	-128.1	67.7	67.7	34.2	147.8	180.3	156.1	12.5	-42	-63.1
Turbidity (NTU)	NV	NV	0.8	1.9	3.1	4.9	2.3	2.3	2.3	0.02	1.3	0.02	3.2	1.7	1.6

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250430-7	112124-8	20250430-8	112024-3	20250430-9	112024-4	20250501-1	112124-3	20250501-2	112124-5	20250501-3	20250501-3-DUF	112124-9	
Collection Date:			04/30/2025	11/21/2024	04/30/2025	11/20/2024	04/30/2025	11/20/2024	05/01/2025	11/21/2024	05/01/2025	11/21/2024	05/01/2025	05/01/2025	11/21/2024	
Sampling Point:			Post-Tank		Post-Treatment		Post-Tank		Post-Tank		Post-Treatment		Post-Tank			
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	FD	N
Alkalinity (ug/L CaCO ₃)																
Alkalinity, bicarbonate	NV	NV	368,000 J	378,000	448,000 J	428,000	256,000 J	254,000	343,000 J	365,000	202,000 J	202,000	159,000 J	159,000 J	161,000	
Alkalinity, total	NV	NV	368,000 J	378,000	448,000 J	428,000	256,000 J	254,000	343,000 J	365,000	202,000 J	202,000	159,000 J	159,000 J	161,000	
Anions and Cations (ug/L)																
Chloride	250,000	MCL-2	8,740	8,610	15,700	16,700	8,180	8,630	13,500	14,700	7,430	7,820	2,550	2,560	8,110	
Fluoride	350	ATSDR	381	308	357	299	333	341	357	230	361	327	227	229	184	
Sulfate	250,000	MCL-2	35,900	36,100	22,300	20,500	22,800	23,100	22,700	20,100	26,500	28,200	3,230 J	3,170 J	3,830 J	
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	
Nitrogen Compounds (mg/L)																
Nitrate (as nitrogen)	10	MCL	5.56	6.07	11.83	10.6	6.04	5.4	10.29	9.59	0.005 U	0.005 U	0.04 J	0.13 J	0.005 U	
Dissolved Metals (ug/L)																
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	
Iron	300	MCL-2	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.6 U	22.8 J	168	140	112	105	260	
Manganese	50	MCL-2	1.57 J	2.38 J	0.7 U	1.87 J	0.7 U	0.7 U	0.7 U	0.7 U	197	197	167	164	165	
Total Metals (ug/L)																
Aluminum	200	MCL-2	16 U	46.9 J	16 U	42.4 J	16 U	16 U	60.2 J	16 U	16 U	16 U	203	248	16 U	
Arsenic	10/0	MCL/MCLG ^(b)	4.06	4.19	3.63	3.68	2.2	2.32	4.16	3.86	20.2	19.3	22.8	22.6	20.4	
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.129 J	0.12 U	0.12 U	0.12 U	0.12 U	
Calcium	NV	NV	66,200	69,700	80,300	77,400	54,900	52,500	72,800	73,200	37,700	37,000	23,200	23,300	22,400	
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	3.31	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	
Cobalt	210	ATSDR	0.1 U	0.306 J	0.1 U	0.129 J	0.1 U	0.1 U	0.1 U	0.1 U	0.162 J	0.1 U	0.313 J	0.362 J	0.1 U	
Copper	140	ATSDR	19.7	21.4	5.23	5 U	2.51 J	5 U	17.9	29.2	6.4	1.44 J	10.4	11.9	89.9	
Iron	300	MCL-2	22.6 U	71.3 J	22.6 U	70.2 J	22.6 U	22.6 U	22.6 U	22.6 U	229	213	500	604	332	
Lead	15	MCL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.772 J	0.5 U	0.526 J	0.5 U	0.5 U	0.5 U	22	
Lithium	40	EPA RSL	8.95 J	4.85 U	6.66 J	4.85 U	9.73 J	4.85 U	4.22 U	4.85 U	16.5	4.85 U	4.22 U	5.67 J	4.85 U	
Magnesium	NV	NV	30,700	29,800	38,700	36,200	22,900	21,000	35,700	35,800	13,000	11,900	9,860	9,810	8,610	
Manganese	50	MCL-2	0.958 J	37.1	0.7 U	3.09 J	0.7 U	1.13 J	0.7 U	0.7 U	200	199	177	180	162	
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	
Nickel	100	ATSDR	0.732 J	1.39 J	0.5 U	1.75 J	0.5 U	0.5 U	0.52 J	0.5 U	0.5 U	0.5 U	0.582 J	0.773 J	0.5 U	
Potassium	NV	NV	3,840	4,070	4,380	4,470	2,430	2,340	3,010	3,000	2,320	2,240	2,160	2,160	2,080	
Selenium	50	MCL	0.286 J	0.25 U	0.3 J	0.441 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Silica (as silicon)	NV	NV	46,400	49,000	47,200	49,000	46,400	48,600	50,800	51,400	36,000	38,000	47,300	48,400	48,500	
Silicon	NV	NV	21,700	22,900	22,100	22,900	21,700	22,700	23,700	24,000	16,800	17,700	22,100	22,600	22,700	
Sodium	NV	NV	62,000	59,200	83,200	75,600	41,600	36,200	48,800	44,500	40,300	36,600	29,500	29,300	26,400	
Sulfur	NV	NV	11,900	12,500	7,810	7,590	7,460	7,740	7,660	8,060	8,070	8,910	1,060	1,160	1,120	
Vanadium	63	ATSDR	36.7	37.9	73.2	69.9	25	24.9	54.7	53.2	0.52 U	0.52 U	1.04 J	1.24 J	0.52 U	
Zinc	2,000	ATSDR	8.39 J	7.29 J	16.2 J	25 U	4 U	4 U	5.77 J	5.49 J	10.7 J	5.46 J	4.95 J	6.35 J	13.9 J	
Bacteria (Detect/ND) ^(c)																
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DETECT	DETECT	DETECT	
Other (ug/L)																
Hardness (as CaCO ₃)	NV	NV	292,000	297,000	360,000	342,000	232,000	218,000	329,000	330,000	148,000	141,000	98,600	98,500	91,400	
Total organic carbon	NV	NV	3,400	7,150 J-	3,700	3,940	1,470	1,120	2,990	2,850	549 J	805 J	495 U	495 U	883 J	
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water Quality Parameters ^(e)																
pH (SU)	NV	NV	7.54	7.78	7.51	7.61	7.62	7.79	7.6	7.79	8.05	8.27	8.19	8.19	8.33	
Temperature (°C)	NV	NV	12.5	12.0	12.9	17.1	13.5	12.8	12.4	12.5	14	14.4	15	15	15.0	
Conductivity (uS/cm)	NV	NV	777	790	86.2	936	707	561	921	794	427.4	438.2	364.3	364.3	301	
Dissolved Oxygen (mg/L)	NV	NV	3.85	0.34	7.05	5.78	3.62	3.30	0.98	1.62	3	0.06	3.98	3.98	0.07	
Oxidation-Reduction Potential (mV)	NV	NV	158.9	17.4	62.6	62.2	48.4	170.7	18.5	169.5	-136.6	-139.4	-113.3	-113.3	-178.3	
Turbidity (NTU)	NV	NV	0.38	4.5	1.4	3.9	2.8	1.2	1.8	1.2	1.14	6.2	3.3	3.3	5.7	

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250501-4	112524-8	20250501-5	112024-5	20250501-6	112024-7	20250501-7	20250501-8	112124-7	20250501-9	112524-3	20250502-1	112124-10
Collection Date:			05/01/2025	11/25/2024	05/01/2025	11/20/2024	05/01/2025	11/20/2024	05/01/2025	05/01/2025	11/21/2024	05/01/2025	11/25/2024	05/02/2025	11/21/2024
Sampling Point:			Post-Tank		Post-Tank		Post-Tank		Post-Treatment	Post-Tank		Pre-Tank		Pre-Tank	
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	361,000 J	362,000	158,000 J	159,000	209,000 J	204,000	158,000 J	159,000 J	159,000	354,000 J	359,000	192,000 J	185,000
Alkalinity, total	NV	NV	361,000 J	362,000	158,000 J	159,000	209,000 J	204,000	158,000 J	159,000 J	159,000	354,000 J	359,000	192,000 J	192,000
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	22,700	18,800	2,790	2,260	4,530	4,330	2,490	2,660	2,410	18,900	10,600	6,530	6,150
Fluoride	350	ATSDR	289	239	240	166	357	227	266	325	189	331	217	218	202
Sulfate	250,000	MCL-2	27,200	27,400	2,990 J	2,510 J	18,600	18,600	2,950 J	3,470 J	2,730 J	21,600	22,900	22,400 J	15,500
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	6.31 J	12.77	0.05	0.03	2.05	1.62	0.005 U	0.005 U	0.005 U	5.9	5.61	0.005 U	0.005 U
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	24.3 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	22.6 U	22.6 U	67.8 J	90.9 J	22.6 U	50.1 J	22.6 U	81.6 J	118	22.6 U	22.6 U	26.7 J	80.2 J
Manganese	50	MCL-2	1.08 J	1.04 J	171	173	29.9	49.8	1.53 J	228	223	0.732 J	2.27 J	113	118
Total Metals (ug/L)															
Aluminum	200	MCL-2	16 U	16 U	29.8 J	16 U	17.8 J	27.8 J	16 U	17.3 J	170	16 U	16 U	16 U	16 U
Arsenic	10/0	MCL/MCLG ^(b)	4.06	3.9	23.7	21.3	7.94	8.27	11.1	22.8	22.1	2.55	2.43	18.9	17.9
Cadmium	5	MCL	0.12 U	0.12 U	0.326 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Calcium	NV	NV	77,600	76,300	23,700	23,800	34,800	34,300	132 J	19,600	19,400	64,000	66,600	22,100	22,000
Chromium	100	MCL	1.06 J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Cobalt	210	ATSDR	0.1 U	0.1 U	0.343 J	0.1 U	0.1 U	0.127 J	0.1 U	0.1 U	0.233 J	0.1 U	0.141 J	0.1 U	0.1 U
Copper	140	ATSDR	8.61	6.97 J+	4.85 J	5 U	4.07 J	5 U	4.56 J	0.736 J	3.41 J	2.53 J	19.4	0.7 U	0.7 U
Iron	300	MCL-2	22.6 U	22.6 U	126	160	25.5 J	54.4 J	22.6 U	121	450	22.6 U	41.6 J	53.3 J	84.6 J
Lead	15	MCL	0.5 U	0.5 U	0.757 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.838 J	0.5 U	0.5 U
Lithium	40	EPA RSL	7.62 J	4.85 U	11.3 J	4.85 U	7.9 J	4.85 U	7.77 J	7.18 J	4.85 U	8.22 J	4.85 U	4.29 J	4.85 U
Magnesium	NV	NV	43,100	39,600	10,400	10,100	17,800	16,900	82.7 U	8,520	7,900	34,000	32,500	6,560	6,430
Manganese	50	MCL-2	0.7 U	0.7 U	178	172	30.8	50.9	0.7 U	232	242	1.04 J	5.18	120	115
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	0.596 J	0.5 U	0.5 U	0.5 U	0.612 J	0.502 J	0.5 U	0.5 U	0.513 J	0.5 U	0.707 J	0.5 U	0.5 U
Potassium	NV	NV	2,670	2,480	2,260	2,310	3,870	3,820	306 J	2,460	2,400	2,730	2,590	2,350	2,310
Selenium	50	MCL	0.25 U	0.25 U	0.298 J	0.25 U	0.25 U	0.474 J	0.25 U	0.25 U	0.25 U	0.25 U	0.288 J	0.25 U	0.25 U
Silica (as silicon)	NV	NV	51,500	46,500	45,100	45,200	46,300	48,000	52,700	52,800	53,800	44,700	40,100	44,300	47,600
Silicon	NV	NV	24,100	22,800	21,100	21,100	21,700	22,400	24,600	24,700	25,100	20,900	20,000	20,700	22,300
Sodium	NV	NV	46,600	48,200	26,600	24,200	36,900	32,900	74,400	33,800	32,000	48,200	48,600	58,500	56,800
Sulfur	NV	NV	9,550	8,760	941 J	997 J	6,000	6,720	925 J	1,270	1,200 J+	6,990	7,340	5,580	5,910
Vanadium	63	ATSDR	61.5	58.6	3.03 J	2.57 J	16.8	16.8	0.52 U	0.52 U	0.761 J	36.5	34	0.893 J	1.02 J
Zinc	2,000	ATSDR	19.2 J	10.9 J	6.09 J	4 U	5.39 J	4 U	11.2 J	4 U	4 U	33.4	68.8	6.52 J	29.5
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	ND	ND	ND	ND	DETECT	ND	ND	ND	DETECT	DETECT	ND	ND
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	371,000	353,000	102,000	101,000	160,000	155,000	329 J	84,100	81,100	300,000	300,000	82,300	81,400
Total organic carbon	NV	NV	4,310	3,680	495 U	561 J	1,020	1,230	495 U	495 U	495 U	2,470	2,490	536 J	504 J
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	7.48	7.77	7.8	8.03	7.4	7.54	8.17	8.01	8.19	7.31	7.70	8.28	8.46
Temperature (°C)	NV	NV	11.8	11.4	15.3	14.9	12.6	12.2	15.4	15.8	15.0	12.6	11.7	14.7	14.8
Conductivity (uS/cm)	NV	NV	857	828	299.6	300	579.4	426	296.3	366.5	300	746	730	490.2	392
Dissolved Oxygen (mg/L)	NV	NV	2.78	3.64	0.45	0.31	3.3	0.98	8.15	2.98	1.07	4.04	5.74	4.13	1.96
Oxidation-Reduction Potential (mV)	NV	NV	87.7	94.1	-85.1	19.6	8.1	41.7	47.3	-65.3	-150.3	160.9	94.1	-19.1	-163.3
Turbidity (NTU)	NV	NV	0.3	0.8	0.85	2.8	4.14	3.9	0.2	3.3	2.5	2.72	2.6	3.3	1.7

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250502-2	112024-10	20250502-3	112024-9	20250502-4	20250502-4-DUP	112224-6	20250502-5	112524-5	20250502-6	112224-8	20250502-7	112124-6
Collection Date:			05/02/2025	11/20/2024	05/02/2025	11/20/2024	05/02/2025	05/02/2025	11/22/2024	05/02/2025	11/25/2024	05/02/2025	11/22/2024	05/02/2025	11/21/2024
Sampling Point:			Post-Tank		Post-Tank		Pre-Tank			Post-Tank		Pre-Tank		Post-Tank	
Sample Type:			N	N	N	N	N	FD	N	N	N	N	N	N	N
Alkalinity (ug/L CaCO ₃)															
Alkalinity, bicarbonate	NV	NV	159,000 J	152,000	157,000 J	159,000	181,000 J	182,000 J	179,000	154,000 J	263,000	392,000 J	395,000	387,000 J	391,000
Alkalinity, total	NV	NV	159,000 J	154,000	157,000 J	159,000	181,000 J	182,000 J	179,000	154,000 J	263,000	392,000 J	395,000	387,000 J	391,000
Anions and Cations (ug/L)															
Chloride	250,000	MCL-2	2,900	2,810	2,420	2,720	7,440	6,360	6,420	2,340	6,270	39,800	13,300	9,200	9,490
Fluoride	350	ATSDR	155	240	157	151	301 J	176 J	214	193	135 J	373	371	274	244
Sulfate	250,000	MCL-2	6,170	3,360 J	2,790 J	2,690 J	17,800	16,100	15,900	2,590 J	1,240 J	36,500	28,300	16,700	16,000
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)															
Nitrate (as nitrogen)	10	MCL	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01	0.01	0.005 U	0.005 U	20.73	11.56	9.11	9.13
Dissolved Metals (ug/L)															
Aluminum	200	MCL-2	20.4 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	67.4 J	177	178	232	183	187 J	254	92.2 J	98.5 J	22.6 U	22.6 U	22.6 U	29.4 J
Manganese	50	MCL-2	132	127	160	160	398	396 J	395	202	186	1.26 J	0.725 J	0.773 J	0.7 U
Total Metals (ug/L)															
Aluminum	200	MCL-2	16.7 J	16 U	16 U	16 U	32.8 J	16 UJ	16 U	16 UJ	16 U	16 U	16 U	16 U	16 U
Arsenic	10/0	MCL/MCLG ^(b)	20.9	20.1	22.8	22.4	21.9	19.8 J	21.8	22.2 J	4.85	3.8	4.11	2.95	2.89
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 UJ	0.12 U	0.12 UJ	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Calcium	NV	NV	22,800	23,900	25,400	25,300	31,200 J	17,600 J	31,000	30,800 J	30,200	94,700	75,800	75,600	75,300
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 UJ	0.9 U	0.9 UJ	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Cobalt	210	ATSDR	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.166 J	0.173 J	0.1 U	0.1 U
Copper	140	ATSDR	30	6.41	0.7 U	5 U	15.7 J	0.7 UJ	6.74 J+	18.9 J	5 U	15	100	4.45 J	70
Iron	300	MCL-2	148	244	258	285	243	99.2 J-	511	217 J	722	22.6 U	22.6 U	34 J	32 J
Lead	15	MCL	2.76	0.5 U	0.5 U	0.5 U	1.32 J	0.5 UJ	0.61 J	1.49 J	0.5 U	1.23 J	12.1	0.802 J	3.93
Lithium	40	EPA RSL	4.22 U	4.85 U	4.22 U	4.85 U	4.22 U	4.22 U	15 U	4.22 U	4.85 U	4.89 J	15 U	5.42 J	4.85 U
Magnesium	NV	NV	8,120	8,450	10,100	10,200	14,300	6,270 J	14,400	14,300 J	16,700	45,300	36,500	32,800	31,600
Manganese	50	MCL-2	136	139	162	157	395	203 J-	387	392 J	187	0.7 U	0.7 U	2.02 J	1.15 J
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	0.5 U	0.591 J	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.575 J	1.3 J	0.5 U	0.5 U
Potassium	NV	NV	2,520	2,500	2,960	2,900	3,130	2,140 J	3,180	3,110 J	4,820	5,240	4,890	4,190	4,230
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 UJ	0.25 U	0.25 U	0.353 J	0.25 U	0.25 U
Silica (as silicon)	NV	NV	44,600	46,800	41,800	43,500	49,700	49,900	46,400	49,400	45,600	51,500	46,400	49,400	51,100
Silicon	NV	NV	20,800	21,900	19,500	20,300	23,200	23,300	21,700	23,100	22,500	24,100	21,700	23,100	23,900
Sodium	NV	NV	30,400	33,000	23,800	22,500	25,100	37,800 J	26,700	25,100 J	45,100	58,800	66,600	52,000	52,400
Sulfur	NV	NV	1,440 J+	1,740 J+	1,080 J+	1,090	5,540	5,640	5,690	1,080 J+	539 J	13,000	9,750	6,210	6,400
Vanadium	63	ATSDR	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 UJ	0.52 U	0.52 UJ	0.52 U	37.4	35.9	34.3	33.7
Zinc	2,000	ATSDR	419	139	4 U	4 U	29.7	21.1 J	16 J	16.9 J	8.94 J	14.7 J	125	15.3 J	56
Bacteria (Detect/ND) ^(c)															
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other (ug/L)															
Hardness (as CaCO ₃)	NV	NV	90,300	94,500	105,000	105,000	137,000 J	69,900 J	137,000	136,000	144,000	423,000	340,000	320,000	318,000
Total organic carbon	NV	NV	495 U	495 U	495 U	495 U	520 J	523 J	834 J	495 U	1,950	3,940	3,350	2,930	2,220
Ferrous Iron ^(d)	NV	NV	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Quality Parameters ^(e)															
pH (SU)	NV	NV	8.05	8.30	7.96	8.25	7.9	7.9	8.06	7.88	8.13	7.49	7.65	7.49	7.72
Temperature (°C)	NV	NV	15.3	15.3	15	14.7	15.9	15.9	16.2	14.3	13.3	13.5	12.8	13	11.8
Conductivity (uS/cm)	NV	NV	300.5	299	300.9	302	471	471	382	293.9	487	1,243	869	802	804
Dissolved Oxygen (mg/L)	NV	NV	1.94	0.55	5.71	0.07	0.14	0.14	0.50	5.72	6.18	3.41	2.81	7.81	5.67
Oxidation-Reduction Potential (mV)	NV	NV	-148.7	-177.3	-146	-166.1	-115.3	-115.3	-188.2	-92.7	-165.3	-53.6	139.9	97.5	74.8
Turbidity (NTU)	NV	NV	6.32	3.5	0.13	1.6	3	3	3.6	1.25	2.0	4.5	0.8	0.1	1.4

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250502-8	111824-6	20250502-9	112224-9	20250505-1	20250505-1-DUF	112524-1	20250505-2	112524-2	20250505-3	112224-7	20250505-4	20250505-5	112224-3	
Collection Date:			05/02/2025	11/18/2024	05/02/2025	11/22/2024	05/05/2025	05/05/2025	11/25/2024	05/05/2025	11/25/2024	05/05/2025	11/22/2024	05/05/2025	05/05/2025	11/22/2024	
Sampling Point:			Post-Tank		Post-Tank		Pre-Tank			Post-Tank		Post-Tank		Pre-Tank	Pre-Tank		
Sample Type:			N	N	N	N	N	FD	N	N	N	N	N	N	N	N	
Alkalinity (ug/L CaCO ₃)																	
Alkalinity, bicarbonate	NV	NV	152,000 J	158,000	154,000 J	155,000	336,000 J	342,000 J	371,000	173,000 J	167,000	369,000 J	367,000	373,000 J	144,000 J	138,000	
Alkalinity, total	NV	NV	152,000 J	158,000	154,000 J	155,000	336,000 J	342,000 J	371,000	173,000 J	167,000	369,000 J	367,000	373,000 J	144,000 J	140,000	
Anions and Cations (ug/L)																	
Chloride	250,000	MCL-2	2,430	3,320	2,510	2,540	7,210	7,300	9,240	5,400	5,810	11,900	12,900	7,450	2,470	2,510	
Fluoride	350	ATSDR	168	167	224	267	243	247	242	235	243	256	244	299	184	233	
Sulfate	250,000	MCL-2	3,740 J	5,330	2,710 J	2,790 J	19,000	19,200	24,300	6,340	7,440	16,300	17,800	26,800	3,880 J	4,270 J	
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	498	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	
Nitrogen Compounds (mg/L)																	
Nitrate (as nitrogen)	10	MCL	0.01	0.005 U	0.005 U	0.005 U	8.4	8.52	11.1	0.04	0.01	8.03	10.11	10.28	0.005 U	0.005 U	
Dissolved Metals (ug/L)																	
Aluminum	200	MCL-2	16 U	16 U	16 U	19.6 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	
Iron	300	MCL-2	262	1,260	113	327	22.6 U	22.6 U	84 J	156 J+	77.4 J	22.6 U	22.6 U	22.6 U	100 U	22.6 U	
Manganese	50	MCL-2	245	309	247	259	0.7 U	0.7 U	3.09 J	109	103	0.7 U	0.7 U	5 U	142	0.7 U	
Total Metals (ug/L)																	
Aluminum	200	MCL-2	16 U	16 U	16 U	263	16 U	16 U	16 U	16 U	16 U	29.4 J	26.4 J	16 U	16 U	16 U	
Arsenic	10/0	MCL/MCLG ^(b)	22.2	24.1	22.7	23.2	2.6	2.45	2.77	12.5	12.4	7.42	7	4.42	4.95	4.92	
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.536 J	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	
Calcium	NV	NV	21,900	24,500	17,200	17,800	64,000	63,900	70,800	16,400	15,900	67,000	67,400	58,700	23,700	92.5 U	
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	1.48 J	0.9 U	0.9 U	1.36 J	1.31 J	0.9 U	0.9 U	0.9 U	
Cobalt	210	ATSDR	0.1 U	0.1 U	0.1 U	0.273 J	0.1 U	0.1 U	0.58 J	0.1 U	0.1 U	0.1 U	0.1 U	0.107 J	0.152 J	0.1 U	
Copper	140	ATSDR	27.5	8.91	0.749 J	7.01 J+	3.02 J	3.07 J	5 U	0.833 J	5 U	3.36 J	10.4	58.9	2.37 J	16.8	
Iron	300	MCL-2	307	1,330	179	690	22.6 U	22.6 U	22.6 U	174	93.8 J	63.8 J	38 J	22.6 U	67.5 J	22.6 U	
Lead	15	MCL	0.5 U	0.554 J	0.5 U	0.5 U	0.5 U	0.5 U	0.728 J	0.5 U	0.606 J	0.5 U	1.12 J	26.5	0.5 U	0.566 J	
Lithium	40	EPA RSL	4.22 U	4.85 U	4.22 U	15 U	4.22 U	4.22 U	4.85 U	4.22 U	4.85 U	5.34 J	6.49 J	4.22 U	4.22 U	4.85 U	
Magnesium	NV	NV	8,000	9,040	7,640	7,920	40,200	39,700	41,900	6,260	5,760	31,600	31,800	26,600	9,540	82.7 U	
Manganese	50	MCL-2	254	310	253	271	0.7 U	0.7 U	0.93 J	107	99.4	1.21 J	1.67 J	0.7 U	137	0.7 U	
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.0737 J	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.0944 J	0.07 U	
Nickel	100	ATSDR	0.5 U	1.27 J	0.5 U	0.747 J	0.5 U	0.5 U	0.877 J	0.5 U	0.5 U	0.537 J	0.71 J	1.07 J	0.5 U	2.38	
Potassium	NV	NV	2,320	2,490	2,250	2,310	2,400	2,320	2,270	1,790 J	1,640 J	6,790	6,410	4,300	1,160 J	96.5 U	
Selenium	50	MCL	0.25 U	2 U	0.25 U	0.25 U	0.331 J	0.25 U	0.813 J	0.25 U	0.25 U	0.306 J	0.292 J	0.25 U	0.25 U	0.25 U	
Silica (as silicon)	NV	NV	50,700	52,600	48,700	45,000	52,100	51,300	45,700	49,900	44,500	54,000	47,800	52,800	35,500	30,800	
Silicon	NV	NV	23,700	24,600	22,700	21,000	24,400	24,000	22,300	23,300	21,900	25,200	22,300	24,700	16,600	14,400	
Sodium	NV	NV	28,500	28,600	34,500	35,700	43,400	42,700	43,000	52,900	51,000	65,200	66,000	92,700	25,200	71,300	
Sulfur	NV	NV	1,420	2,010 J+	1,140 J+	1,100	7,460	9,720	8,220	2,750 J+	2,570	8,020	6,280	10,300	1,920 J+	1,580	
Vanadium	63	ATSDR	0.52 U	0.52 U	0.52 U	0.856 J	61.9	61.8	56.5	0.52 U	0.52 U	49.2	49.3	64.8	0.52 U	0.52 U	
Zinc	2,000	ATSDR	22.3 J	7.49 J	4 U	7.51 J	8.98 J	9.06 J	13.9 J	7.63 J	4.32 J	4.9 J	7.96 J	45.4	11.4 J	4 U	
Bacteria (Detect/ND) ^(c)																	
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Other (ug/L)																	
Hardness (as CaCO ₃)	NV	NV	87,700	98,300	74,400	77,100	325,000	323,000	350,000	66,800	63,400	298,000	299,000	256,000	98,500	231 U	
Total organic carbon	NV	NV	495 U	495 U	495 U	495 U	2,970	2,840	3,460	495 U	495 U	529 J	2,210	3,030	2,240	495 U	
Ferrous Iron ^(d)	NV	NV	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	
Water Quality Parameters ^(e)																	
pH (SU)	NV	NV	7.87	8.29	7.82	8.20	7.44	7.44	7.66	8.12	8.36	7.43	7.62	7.51	8.13	8.37	
Temperature (°C)	NV	NV	15.3	13.0	15.8	15.5	12.9	12.9	12	15.2	14.7	13.9	14	12.2	13.1	13.1	
Conductivity (uS/cm)	NV	NV	357	313	299.4	299	750	750	780	424	273	806	811	1,020	334.2	274	
Dissolved Oxygen (mg/L)	NV	NV	0.13	0.09	0.28	0.27	17.56	17.56	7.79	0.11	4.90	4.78	3.29	3.27	0.19	0.12	
Oxidation-Reduction Potential (mV)	NV	NV	-130.1	-201.4	-154.9	-211.5	100.5	100.5	197.2	-37.5	-102.9	83.6	11.8	-15.9	-22.2	55.9	
Turbidity (NTU)	NV	NV	2.8	1.7	0.02	0.8	2.62	2.62	1.5	2.6	1.1	0.1	1.3	2.44	3.1	1.3	

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality



Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250505-6	112524-7	20250505-7	112524-4	20250505-8	111924-8	20250506-1	20250506-1-DUP	112224-1	112224-1-DUP	20250506-2	20250506-3	20250506-4	
Collection Date:			05/05/2025	11/25/2024	05/05/2025	11/25/2024	05/05/2025	11/19/2024	05/06/2025	05/06/2025	11/22/2024	11/22/2024	05/06/2025	05/06/2025	05/06/2025	
Sampling Point:			Post-Tank		Post-Tank		Pre-Tank		Post-Tank					Pre-Tank	Pre-Tank	Pre-Tank
Sample Type:			N	N	N	N	N	N	N	N	FD	N	FD	N	N	N
Alkalinity (ug/L CaCO ₃)																
Alkalinity, bicarbonate	NV	NV	401,000 J	356,000	188,000 J	194,000	170,000 J	171,000	143,000 J	140,000 J	129,000	129,000	160,000 J	124,000 J	176,000 J	
Alkalinity, total	NV	NV	401,000 J	356,000	188,000 J	194,000	170,000 J	171,000	143,000 J	142,000 J	133,000	133,000	160,000 J	124,000 J	176,000 J	
Anions and Cations (ug/L)																
Chloride	250,000	MCL-2	8,230	8,700	3,230	3,360	4,280	4,480	2,430	2,400	2,020	1,980	2,890	4,910	5,710	
Fluoride	350	ATSDR	243	247	115 J	82.5 J	152	127 J	1,250	1,240	1,110	1,110	220	339	206	
Sulfate	250,000	MCL-2	27,000	25,800	637 U	637 U	1,200 J	1,130 J	1,880 J	1,870 J	2,200 J	2,160 J	3,750 J	7,190	11,300	
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	50 UJ	50 UJ	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	
Nitrogen Compounds (mg/L)																
Nitrate (as nitrogen)	10	MCL	10.43	13.75	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	1.85 J-	
Dissolved Metals (ug/L)																
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	47.9 J	16 U	16 U	16 U	16 U	16 U	16 U	16 U	
Iron	300	MCL-2	22.6 U	22.6 U	373 J+	394	197 J+	295	22.6 U	22.6 U	22.6 U	22.6 U	121	83.1 J	22.6 U	
Manganese	50	MCL-2	0.7 U	2.1 J	141	138	303	280	8.13	9.18	7.85	8.13	227	154	88	
Total Metals (ug/L)																
Aluminum	200	MCL-2	16 U	16 U	16 U	22.9 J	16 U	1,160	38.3 J	51.8 J	54.2 J	53.2 J	25.9 J	16 U	65.2 J	
Arsenic	10/0	MCL/MCLG ^(b)	2.29	3.81	8.86	11.1	1.1 J	1.37 J	38.6	37	35.8	35.5	14.3	17.4	15.2	
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	
Calcium	NV	NV	80,300	70,100	19,900	20,600	22,000	22,300	2,530	2,420	2,600	2,550	16,000	14,100	35,100	
Chromium	100	MCL	0.96 J	1.03 J	0.9 U	0.9 U	0.9 U	1.58 J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	1.56 J	
Cobalt	210	ATSDR	0.1 U	0.1 U	0.113 J	0.1 U	0.1 U	1.51 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.141 J	
Copper	140	ATSDR	84.1	8.36	6.76	93.9	2.28 J	2.38 J	8.39	14.6	5 U	8.79	41.5	0.7 U	1.53 J	
Iron	300	MCL-2	45.9 J	116	742	1,030	247	2,540	76.5 J	89.8 J	103	99.5 J	179	87.7 J	799	
Lead	15	MCL	10.2	0.902 J	0.898 J	12	0.5 U	0.5 U	0.5 U	0.878 J	0.5 U	1.24 J	1.33 J	0.5 U	0.5 U	
Lithium	40	EPA RSL	15 U	4.85 U	4.22 U	4.85 U	4.22 U	4.85 U	11 J	10.6 J	10.5 J	11.6 J	4.41 J	5.82 J	5.73 J	
Magnesium	NV	NV	42,500	36,200	11,700	11,400	12,400	12,800	229 J	219 J	244 J	235 J	8,090	4,640	11,600	
Manganese	50	MCL-2	0.7 U	21.9	137	148	282	337	8.87	8.71	8.63	8.27	227	153	407	
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	
Nickel	100	ATSDR	0.718 J	0.52 J	0.759 J	0.567 J	3.26	3.17	0.5 UJ	1.68 J	0.5 U	1.25 J	0.522 J	0.5 U	0.5 U	
Potassium	NV	NV	3,240	2,920	5,140	5,130	4,030	3,980	400 J	358 J	380 J	357 J	3,490	2,560	3,370	
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1.12 J	
Silica (as silicon)	NV	NV	49,200	47,500	57,600	53,300	56,700	60,700	15,200	15,300	15,200	15,200	50,200	58,400	46,500	
Silicon	NV	NV	23,000	22,200	26,900	24,900	26,500	28,400	7,100	7,150	7,080	7,120	23,500	27,300	21,700	
Sodium	NV	NV	52,700	48,300	36,400	36,900	29,800	27,500	60,900	59,500	65,100	62,900	33,800	31,900	25,500	
Sulfur	NV	NV	10,400	8,540	1,000 U	284 J	1,000 U	1,000 U	838 J	795 J	846 J	828 J	1,450	2,480	3,880	
Vanadium	63	ATSDR	46.8	44.1	0.52 U	0.52 U	0.52 U	4.01 J	2.31 J	2.2 J	2.45 J	2.43 J	1.5 J	0.781 J	17.9	
Zinc	2,000	ATSDR	13.2 J	8.7 J	5.27 J	27	19.6 J	10.7 J	4 U	4 U	4 U	5.43 J	32.4	4 U	9.25 J	
Bacteria (Detect/ND) ^(c)																
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total coliform	NV	NV	ND	ND	ND	ND	ND	DETECT	ND	ND	ND	DETECT	ND	ND	ND	
Other (ug/L)																
Hardness (as CaCO ₃)	NV	NV	376,000	324,000	97,600	98,600	106,000	108,000	7,270	6,940	7,490	7,330	73,200	54,400	135,000	
Total organic carbon	NV	NV	2,800	3,090	2,920	2,850	1,400	1,140	495 U	495 U	495 U	495 U	495 U	495 U	495 U	
Ferrous Iron ^(d)	NV	NV	0	0	0.5	0	0	0	0	0	0	0	0	0	0	
Water Quality Parameters ^(e)																
pH (SU)	NV	NV	7.44	7.67	7.96	8.08	7.83	8.07	8.5	8.5	8.66	8.66	7.97	7.86	7.81	
Temperature (°C)	NV	NV	12	12.5	13.6	13.2	12.9	12.5	15.6	15.6	15.3	15.3	16.1	17.8	15.2	
Conductivity (uS/cm)	NV	NV	873	611	88.1	287	325.4	327	325.5	325.5	262	262	301.2	310.8	445.7	
Dissolved Oxygen (mg/L)	NV	NV	8.72	6.59	0.16	0.18	2.05	0.13	0.11	0.11	0.10	0.10	13.29	0.79	2.62	
Oxidation-Reduction Potential (mV)	NV	NV	108	-2.6	-143.1	-186.0	-123.9	-138	-18.6	-18.6	51.3	51.3	-134.3	-5.7	-9.4	
Turbidity (NTU)	NV	NV	3.2	1.3	4.7	5.6	4.21	4.1	2.98	2.98	2.1	2.1	3.45	4.84	13.5	

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality

Sample Name:	Selected Screening Level ^(a)	Selected Screening Level Source ⁽¹⁾	20250506-5	20250506-6	112224-2	111924-5	112224-4	112524-6
Collection Date:			05/06/2025	05/06/2025	11/22/2024	11/19/2024	11/22/2024	11/25/2024
Sampling Point:			Post-Tank	Post-Tank		Post-Tank	Post-Tank	Post-Tank
Sample Type:			N	N	N	N	N	N
Alkalinity (ug/L CaCO ₃)								
Alkalinity, bicarbonate	NV	NV	164,000 J	162,000 J	153,000	327,000	391,000	162,000
Alkalinity, total	NV	NV	164,000 J	162,000 J	153,000	327,000	391,000	162,000
Anions and Cations (ug/L)								
Chloride	250,000	MCL-2	2,580	3,020	2,850	8,130	5,880	4,270
Fluoride	350	ATSDR	220	268	236	277	272	179
Sulfate	250,000	MCL-2	2,560 J	3,380 J	3,420 J	21,700	17,800	6,520
Sulfide	NV	NV	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U	25.5 U
Nitrogen Compounds (mg/L)								
Nitrate (as nitrogen)	10	MCL	0.005 U	0.005 U	0.005 U	9.73	6.25	0.04
Dissolved Metals (ug/L)								
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U
Iron	300	MCL-2	365	22.6 U	38 J	43.1 J	22.6 U	202
Manganese	50	MCL-2	190	184	193	2.17 J	0.77 J	294
Total Metals (ug/L)								
Aluminum	200	MCL-2	16 U	16 U	16 U	16 U	16 U	16 U
Arsenic	10/0	MCL/MCLG ^(b)	23.3	27.8	26.8	3.82	1.41 J	23
Cadmium	5	MCL	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Calcium	NV	NV	23,400	19,300	19,000	61,800	76,600	23,600
Chromium	100	MCL	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Cobalt	210	ATSDR	0.1 U	0.1 U	0.1 U	0.1 U	0.127 J	0.1 U
Copper	140	ATSDR	1.47 J	11.9	7.11 J+	8.33	27.1	15
Iron	300	MCL-2	411	47.2 J	66.3 J	49.2 J	22.6 U	342
Lead	15	MCL	0.5 U	0.582 J	0.549 J	0.884 J	1.2 J	1.45 J
Lithium	40	EPA RSL	4.22 U	4.22 U	15 U	4.85 U	15 U	4.85 U
Magnesium	NV	NV	8,830	7,180	7,190	30,000	31,600	9,830
Manganese	50	MCL-2	191	193	193	3.81 J	0.7 U	289
Mercury	2	MCL	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Nickel	100	ATSDR	0.5 U	0.5 U	0.5 U	0.5 U	0.927 J	0.5 U
Potassium	NV	NV	2,250	1,980 J	1,860 J	2,980	3,460	2,860
Selenium	50	MCL	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Silica (as silicon)	NV	NV	40,300	44,600	41,900	55,600	40,000	49,700
Silicon	NV	NV	18,800	20,900	19,600	26,000	18,700	23,200
Sodium	NV	NV	27,200	35,300	36,400	51,300	52,000	30,900
Sulfur	NV	NV	1,030	1,200	1,280	7,890	6,330	2,380
Vanadium	63	ATSDR	0.52 U	0.52 U	0.52 U	42.4	21.5	0.52 U
Zinc	2,000	ATSDR	6.11 J	5.28 J	5.82 J	21.4 J	20 J	15.6 J
Bacteria (Detect/ND) ^(c)								
<i>E. coli</i>	NV	NV	ND	ND	ND	ND	ND	ND
Total coliform	NV	NV	ND	ND	ND	ND	ND	ND
Other (ug/L)								
Hardness (as CaCO ₃)	NV	NV	94,900	77,700	77,000	278,000	322,000	99,300
Total organic carbon	NV	NV	495 U	495 U	495 U	2,840	3,480	495 U
Ferrous Iron ^(d)	NV	NV	0.5	0	0	0	0	0
Water Quality Parameters ^(e)								
pH (SU)	NV	NV	8.15	8.09	8.24	7.84	7.32	8.08
Temperature (°C)	NV	NV	14.9	15.3	15.4	11.3	12.9	14.8
Conductivity (uS/cm)	NV	NV	299.1	364.1	299	726	776	257
Dissolved Oxygen (mg/L)	NV	NV	0.34	0.22	0.55	5.09	7.20	4.45
Oxidation-Reduction Potential (mV)	NV	NV	-227.9	10	-177.9	115.4	180.2	-118.3
Turbidity (NTU)	NV	NV	0.02	3.42	1.3	1.8	1.6	3.8

Table
Summary of Groundwater Analytical Results
Crook County Preliminary and Round 2 Domestic Well Sampling
Oregon Department of Environmental Quality

Notes
Alternating blue shading / no shading is applied to sample names to identify samples collected from the same well across two sampling events.
Shading (color key below) indicates values that exceed screening criteria; non-detects (U and UJ) were not compared with screening criteria.
The "Sampling Point" row refers to the location within each well system where the sample(s) were collected. "Pre-Tank" refers to a sampling point where water was collected upstream of a diversion into a storage tank, or where no storage tank was observed. "Post-Tank" refers to a sampling location located downstream of a storage tank (i.e., water is pumped from the well into a storage tank upstream of the sampling point). "Post-Treatment" refers to a sampling location downstream of any treatment or filtration of the water.
Selected Screening Level Value
Arsenic MCLG
°C = degrees Celcius.
ATSDR = Agency for Toxic Substances and Disease Registry Screening Levels via OHA
CaCO ₃ = calcium carbonate.
EPA RSL = EPA Regional Screening Level
FD = field duplicate sample.
J = result is estimated.
J+ = result is estimated, but the result may be biased high.
J- = result is estimated, but the result may be biased low.
J* = result is estimated. Primary and field duplicate analytical results have significant differences which were confirmed by laboratory reanalysis.
MCL = maximum contaminant level.
MCL-2 = secondary MCL.
MCLG = MCL goal.
mg/L = milligrams per liter.
mV = millivolts.
N = normal field sample.
ND = non-detect.
NV = no value.
NTU = Nephelometric Turbidity Unit.
OHA = Oregon Health Authority
SU = Standard Units.
U = result is non-detect at the method detection limit or method reporting limit.
UJ = result is non-detect with an estimated method detection limit or method reporting limit.
UJ* = result is non-detect with an estimated MDL. Primary and field duplicate analytical results have significant differences which were confirmed by laboratory reanalysis.
ug/L = micrograms per liter.
uS/cm = microsiemens per centimeter.
^(a) Screening levels were selected according to the following hierarchy: (1) drinking water comparison values [with the following hierarchy: EPA MCLs, EPA LTHAs, ATSDR chronic EMEGs, ATSDR chronic RMEGs, and ATSDR intermediate EMEGs].
^(b) MCL for arsenic is 10 ug/L and MCLG is 0 ug/L.
^(c) Total coliform and E. coli reported by laboratory as detected or not detected per 100 milliliters of sample.
^(d) Ferrous iron was measured in the field using a Hach Model IR-18C Color Disk Test Kit.
^(e) Water quality parameters were measured in the field using a portable water quality meter with a flow-through cell. The parameters listed in this table represent the final set of field parameters measured before groundwater sample collection.
^(f) Oxidation-Reduction Potential values, measured in mV, were recorded as instrument readings using a Silver/Silver Chloride reference electrode.

Attachment A

Groundwater Field Sampling Sheets



MAUL
FOSTER
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Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney / Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-1		Frost-free spigot		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	7:06	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:22	86+	7.54	12.2	735	5.27	8.6	1.5
7:25		7.56	12.4	736	5.03	22.9	1.7
7:28		7.56	12.7	736	4.52	43.0	1.6
7:31		7.53	12.4	732	4.22	47.8	2.0
7:34		7.54	12.5	734	4.34	52.0	1.9
7:37		7.56	12.6	737	4.70	54.9	2.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-1			
		Sample Date		04/28/2025	Sample Time		7:37
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Duplicate sample 20250428-1 -DUP collected here. 86-gallon storage tank. Homeowner says water smells more sulfuric in last few weeks.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-2		Frost-free spigot		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:17	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:25	80+	7.42	12.5	664	2.34	64.5	1.6
8:28		7.44	12.6	665	2.32	65.4	1.4
8:31		7.43	12.6	667	2.40	67.9	1.5
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-2			
		Sample Date	04/28/2025	Sample Time	8:35		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Pressure tank not observed;. Purged 80 gallons prior to parameter collection.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-3		Frost-free spigot		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	8:18	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:38	50+	7.36	11.9	651	9.50	95.7	22.1
8:41		7.41	11.9	656	8.41	90.7	19.8
8:44		7.40	12.1	658	7.50	76.9	17.0
8:47		7.40	11.9	658	7.17	72.7	10.0
8:50		7.41	11.7	660	6.98	64.7	12.9
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-3			
		Sample Date	04/28/2025	Sample Time	8:50		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. No storage tank observed; purged 50-gallons. 5-gallon/30 seconds purge rate. Sand at first flush until 08:41.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-4		Spigot on pressure tank		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	09:40	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:48	80+	7.59	12.9	787	4.28	87.5	9.2
9:51		7.63	12.7	791	5.90	55.0	24.0
9:54		7.63	12.6	789	5.93	36.0	13.9
9:57		7.63	12.7	787	5.82	14.7	10.8
10:00		7.61	13.0	787	3.14	0.4	11.9
10:03		7.61	13.1	783	3.13	-16.2	13.1
10:06		7.61	13.1	771	4.65	-32.8	13.1
10:09		7.61	13.1	770	5.15	-39.9	7.5
10:12		7.61	13.1	768	4.43	-43.7	10.7
10:15		7.62	13.1	768	4.55	-46.4	8.9
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Slightly turbid with suspended particulates; colorless; slight sulfuric odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-4			
		Sample Date	04/28/2025	Sample Time	10:18		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0.5 mg/L. 44-gallon storage tank, no filtration or treatment system observed.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez			
Well Information									
Location ID		Sampling Location		Sampling Date		Purge Method			
20250428-5		Frost-free spigot		04/28/2025		Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	09:44	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
9:55	52+	7.41	12.4	809	6.81	132.9	2.8		
9:58		7.41	12.3	810	6.74	132.0	1.6		
10:01		7.43	12.4	810	7.10	131.0	1.0		
10:04		7.43	12.4	803	7.14	129.8	0.2		
10:07		7.44	12.3	809	7.04	129.2	1.5		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250428-5					
		Sample Date		04/28/2025		Sample Time		10:07	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. 52-gallon storage tank.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-6		Frost-free spigot		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:40	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:52	80+	7.95	15.2	301	2.71	-116.4	0.2
10:55		7.95	15.3	301	2.80	-118.7	0.2
10:58		7.94	15.3	301	6.64	-124.0	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-6			
		Sample Date	04/28/2025	Sample Time	10:58		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250428-7		Spigot on pressure tank		04/28/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:50	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:58	90+	8.11	15.3	373	4.63	-36.4	2.5
11:01		8.11	15.3	373	4.63	-46.9	1.9
11:04		8.10	15.3	373	4.62	-59.4	5.2
11:07		8.11	15.4	363	4.63	-62.5	5.1
11:10		8.11	15.4	373	4.63	-69.2	4.4
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-7			
		Sample Date	04/28/2025	Sample Time	11:15		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 86-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.	Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A	Crook County Domestic Well Sampling		April / May 2025		S. Maloney		
Well Information							
Location ID		Sampling Location		Sampling Date	Purge Method		
20250428-8		Spigot on pressure tank		04/28/2025	Purge pressure tank volume prior to parameter collection		
Water Quality Data							
Purge Start Time	11:45	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
12:02	115+	7.45	13.4	90	0.23	-95.0	6.3
12:05		7.46	13.5	82	0.28	-99.6	3.7
12:08		7.45	13.6	83	0.25	-101.1	5.9
12:11		7.45	13.6	85	0.24	-103.6	5.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250428-8			
		Sample Date	04/28/2025	Sample Time	12:15		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Approximately 80-gallon tank, sampled after water softener.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-1		Spigot on pressure tank		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:20	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:28	80+	7.55	11.8	920	7.57	8.8	5.4
7:31		7.58	11.9	918	2.76	7.0	2.1
7:34		7.59	11.8	918	2.67	7.7	1.7
7:37		7.63	11.2	920	4.07	10.5	2.5
7:41		7.63	11.7	919	4.35	14.6	3.6
7:44		7.64	11.7	919	4.39	16.6	3.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-1			
		Sample Date	04/29/2025	Sample Time	7:45		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 44-gallon storage tank, sampled prior to treatment. Duplicate sample 20250429-1-DUP collected here.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-2		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:20	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:31	80+	7.80	14.9	517	0.20	188.2	2.1
7:34		7.81	14.9	506	0.21	187.9	4.2
7:37		7.85	14.9	490	0.20	185.6	1.0
7:40		7.86	14.9	489	0.20	185.7	3.8
7:43		7.88	14.9	486	0.20	184.4	2.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-2			
		Sample Date		04/29/2026	Sample Time		7:43
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-3		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:40	110+	7.78	12.7	763	0.47	44.5	3.6
8:43		7.81	12.7	713	0.24	42.3	4.0
8:46		7.84	12.7	700	0.22	40.1	3.5
8:49		7.84	12.8	710	0.22	39.0	3.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-3			
		Sample Date	04/29/2025	Sample Time	8:55		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-4		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:20	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:30	50+	8.31	13.6	320	1.57	-1.5	1.9
8:33		8.36	13.9	317	1.48	-34.5	0.1
8:36		8.31	13.6	318	1.78	-70.7	0.9
8:39		8.27	13.4	311	1.08	-94.4	3.3
8:42		8.23	14.0	317	1.01	-102.3	1.5
8:45		8.28	13.9	316	0.90	-110.9	2.3
8:48		8.27	13.8	316	1.12	-137.8	1.7
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-4			
		Sample Date		04/29/2025	Sample Time		8:48
		Container Type		Preservative		No. Containers	
		100 mL amber glass		None		2	
General Comments Ferrous Iron = 0 mg/L. No storage tank observed; purged 50 gallons.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:					8

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-5		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	09:27	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:34	50+	7.58	11.8	864	1.31	23.7	2.8
9:37		7.59	11.8	866	1.11	20.9	2.9
9:40		7.59	11.7	866	1.02	19.5	3.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-5			
		Sample Date		04/29/2025	Sample Time		9:45
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 44-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-6		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	09:12	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:22	50+	8.08	14.0	311	0.43	-131.5	1.3
9:25		8.09	13.9	312	0.25	-140.4	0.7
9:28		8.07	14.0	311	0.21	-155.6	0.8
9:31		8.07	14.0	311	0.16	-171.8	0.2
9:34		8.06	14.1	311	0.24	-175.8	0.4
9:37		8.07	14.1	311	0.18	-178.9	0.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-6			
		Sample Date		04/29/2025	Sample Time		9:37
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 50-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250429-7		Frost-free spigot		04/29/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:18	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:37	86+	7.51	11.9	1,027	1.63	26.5	8.5
10:40		7.51	11.9	1,027	1.49	26.1	3.9
10:43		7.51	11.9	1,028	1.50	25.5	3.9
10:46		7.51	11.9	1,030	1.46	25.3	2.9
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-7			
		Sample Date	04/29/2025	Sample Time	10:50		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 86-gallon storage tank located in basement; sample was collected from an outside spigot located after the pressure tank due to access limitations.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.	Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A	Crook County Domestic Well Sampling		April / May 2025		Y. Perez		
Well Information							
Location ID		Sampling Location		Sampling Date	Purge Method		
20250429-8		Frost-free spigot		04/29/2025	Purge pressure tank volume prior to parameter collection		
Water Quality Data							
Purge Start Time	1050	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:55	50+	7.43	12.7	624	5.13	97.6	0.2
10:58		7.43	12.7	626	6.28	97.9	0.2
11:01		7.44	12.7	627	6.10	98.4	0.2
11:04		7.43	12.7	626	6.07	98.8	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-8			
		Sample Date	04/29/2025	Sample Time	11:04		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 44-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID			Sampling Location		Sampling Date	Purge Method	
20250429-9			Spigot on pressure tank		04/29/2025	Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	11:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S/cm}$	mg/L	mV	NTU
11:35	100+	7.61	11.6	934	5.84	42.8	3.0
11:38		7.62	11.6	934	5.84	43.0	2.4
11:41		7.62	11.7	934	5.65	43.3	3.7
11:44		7.63	11.7	934	5.73	43.6	4.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250429-9			
		Sample Date		04/29/2025	Sample Time		11:45
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-1		Spigot on pressure tank		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:16	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:30	81+	7.21	12.6	760	1.37	135.8	2.7
7:33		7.21	12.5	759	1.42	104.1	2.0
7:36		7.22	12.6	756	1.36	85.6	3.3
7:39		7.23	12.6	755	1.43	74.8	1.9
7:42		7.23	12.6	754	1.30	52.8	1.2
7:45		7.23	12.6	752	1.23	23.2	1.2
7:48		7.25	12.6	752	1.22	-1.0	0.8
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-1			
		Sample Date		04/30/2025	Sample Time		7:48
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0.5 mg/L. 81-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-2		Frost-free spigot		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	7:15	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:35	100+	7.92	14.4	361	0.51	156.0	2.6
7:38		8.28	14.4	308	0.35	147.9	2.5
7:41		8.46	14.5	297	0.24	132.9	3.2
7:44		8.47	14.4	296	0.22	125.2	3.1
7:47		8.47	14.4	295	0.22	121.6	3.2
7:50		8.49	14.5	294	0.19	110.4	3.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
S	Clear; colorless; slight sulfuric odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-2			
		Sample Date		04/30/2025	Sample Time		8:00
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 85-gallon storage tank, sampled before storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
Total No. Containers:						8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-3		Spigot on pressure tank		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:31	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:40	90+	7.49	12.9	1,163	6.04	58.9	3.4
8:43		7.49	12.9	1,160	6.03	62.9	3.0
8:46		7.50	12.9	1,159	6.01	67.7	2.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no sheen; no odor.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-3			
		Sample Date	04/30/2025	Sample Time	9:00		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 35- gallon storage tank, "equivalent to 82-gallons", sampled and purged before tank. 20250430-3-DUP collected here.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250430-4			Frost-free spigot		04/30/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	08:24	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
8:48	81+	7.28	12.6	851	9.00	141.9	0.1		
8:51		7.28	12.6	852	9.22	142.9	1.5		
8:54		7.28	12.5	851	8.69	144.6	0.2		
8:57		7.28	12.6	851	8.28	146.8	0.2		
9:00		7.27	13.6	850	8.29	147.8	0.2		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250430-4					
		Sample Date		04/30/2025		Sample Time		9:05	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. Sampling after water treatment. 81-gallon storage tank.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-5		Frost-free spigot		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	0945	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:54	85+	7.29	13.1	605	1.12	161.7	0.2
9:57		7.27	13.2	603	1.02	162.2	0.2
10:00		7.26	13.2	602	0.95	160.5	0.2
10:03		7.25	13.2	602	0.85	157.6	0.2
10:06		7.25	13.2	603	0.87	156.1	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-5			
		Sample Date		04/30/2025	Sample Time		10:06
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 85-gallon tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-6		Frost-free spigot		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	09:35	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:50	150+	8.01	14.6	285	0.42	43.1	2.5
9:53		8.11	14.6	285	0.34	27.7	1.5
9:56		8.16	14.6	285	0.31	-2.4	1.5
9:59		8.18	14.7	286	0.29	-18.4	1.7
10:02		8.18	14.8	286	0.33	-25.3	1.4
10:05		8.17	14.9	286	0.32	-30.0	1.6
10:08		8.17	14.9	286	0.33	-42.0	1.7
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-6			
		Sample Date		04/30/2025	Sample Time		10:10
		Container Type		Preservative		No. Containers	
		100 mL amber glass		None		2	
General Comments Ferrous Iron = 0 mg/L. 81-gallon storage tank, sampled before tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:		8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-7		Frost-free spigot		04/30/2024		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:48	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:58	50+	7.53	12.6	789	5.77	160.8	5.6
11:01		7.54	12.4	784	5.87	160.3	1.9
11:04		7.54	12.5	779	4.07	159.0	2.6
11:08		7.54	12.5	777	3.85	158.9	0.4
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-7			
		Sample Date		04/30/2025	Sample Time		11:08
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 50-gallon tank located underneath the house, no filter system.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-8		Frost-free spigot		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:55	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
11:05	200+	7.51	12.9	87	7.07	69.0	1.4
11:08		7.51	12.9	86	6.98	66.2	1.7
11:11		7.51	12.9	86	7.05	62.6	1.4
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-8			
		Sample Date		04/30/2025	Sample Time		11:10
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 81-gallon storage tank, sampled before tank but after sand filter.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250430-9		Frost-free spigot		04/30/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	11:57	± 0.1	± 3%	± 3%	± 10% if > 0.5	± 10	< 5 or ± 10% if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	uS/cm	mg/L	mV	NTU
12:13	80+	7.61	13.2	704	3.60	51.8	2.2
12:16		7.61	13.5	703	3.57	49.2	2.6
12:19		7.61	13.5	704	3.58	49.4	2.4
12:22		7.62	13.5	707	3.62	48.4	2.8
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250430-9			
		Sample Date		04/30/2025	Sample Time		12:25
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250501-1			Spigot on side of house		05/01/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	07:13	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
7:24	75.0	7.56	12.3	944	1.20	12.7	2.2		
7:27		7.59	12.4	937	1.07	14.5	2.0		
7:30		7.60	12.4	897	1.00	16.0	1.8		
7:33		7.60	12.4	912	1.00	17.0	1.9		
7:36		7.60	12.4	921	0.98	18.5	1.8		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250501-1					
		Sample Date		05/01/2025		Sample Time		7:40	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. 60-gallon storage tank.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-2		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:30	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:54	60+	7.88	13.8	461.7	14.60	52.0	0.7
7:57		7.96	13.8	445.1	10.21	3.9	1.7
8:00		8.02	13.9	433.5	9.01	-65.5	1.2
8:03		8.05	13.9	432.2	6.99	-102.2	1.7
8:06		8.04	14.0	426.4	4.02	-128.9	0.7
8:09		8.05	14.0	427.4	3.00	-136.6	1.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-2			
		Sample Date	05/01/2025	Sample Time	8:09		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 60-gallon storage tank. Sample collected after filtration system; DO and ORP were not stabilized at the time of sampling, however, an additional 15 minutes of purging was conducted after purging the tank volume.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
Total No. Containers:						8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-3		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:43	45+	8.20	14.8	364	2.00	-62.5	2.7
8:46		8.20	14.7	365	1.61	-92.2	2.8
8:49		8.20	14.7	365	1.51	-119.3	3.0
8:52		8.20	15.0	365	3.90	-118.9	3.2
8:55		8.20	15.1	364	3.87	-118.4	3.3
8:58		8.19	15.0	364	3.98	-113.3	3.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-3			
		Sample Date	05/01/2025	Sample Time	9:00		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 45-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-4		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:30	± 0.1	± 3%	± 3%	± 10% if > 0.5	± 10	< 5 or ± 10% if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	uS/cm	mg/L	mV	NTU
8:35	50+	7.48	11.8	861	2.83	88.6	0.2
8:38		7.49	11.8	855	2.82	88.1	1.0
8:41		7.48	11.8	857	2.97	87.6	0.2
8:44		7.48	11.8	857	2.78	87.7	0.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-4			
		Sample Date	05/01/2025	Sample Time	8:44		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 50-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information								
Project No.		Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez		
Well Information								
Location ID			Sampling Location		Sampling Date		Purge Method	
20250501-5			Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data								
Purge Start Time	09:28	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5	
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity	
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU	
9:44	80+	7.83	15.3	303	1.66	29.9	0.7	
9:47		7.81	15.3	300	0.54	-15.0	1.3	
9:50		7.80	15.3	300	0.46	-75.8	2.4	
9:53		7.80	15.4	300	0.45	-79.3	0.2	
9:56		7.80	15.3	300	0.45	-85.1	0.9	
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information				
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot				
		Sample Name		20250501-5				
		Sample Date		05/01/2025	Sample Time		9:56	
		Container Type		Preservative		No. Containers		
General Comments		100 mL amber glass		None		2		
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2		
		250 mL poly		H ₂ SO ₄		1		
		250 mL amber glass		NaOH		1		
		100 mL plastic		None		1		
		125 mL amber glass		Zinc acetate		1		
		125 mL poly		None				
		250 mL amber glass		HCl				
		Total No. Containers:				8		

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-6		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	9:45	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:05	40+	7.41	12.7	576	3.38	11.5	8.0
10:08		7.40	12.7	578	3.43	9.2	14.9
10:11		7.40	12.6	579	3.30	8.1	4.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-6			
		Sample Date	05/01/2025	Sample Time	10:15		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Approximately 50-gallon storage tank; sampled prior to treatment.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-7		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:30	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:46	120+	8.16	15.1	296	8.23	56.2	0.2
10:49		8.17	15.2	296	8.23	51.9	0.2
10:52		8.17	15.4	296	8.15	47.3	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-7			
		Sample Date	05/01/2025	Sample Time	10:52		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 120-gallon storage tank; sampled after filtration system.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-8		Frost-free spigot		05/01/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:45	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:53	30+	8.00	15.7	366	3.15	-20.7	3.3
10:56		8.00	15.7	366	2.99	-42.6	3.2
10:59		8.01	15.9	366	2.90	-61.0	3.4
11:02		8.01	15.8	367	2.98	-65.3	3.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear, colorless, slight rotten egg like odor, no sheen	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-8			
		Sample Date	05/01/2025	Sample Time	11:25		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 30-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250501-9		Frost-free spigot		05/01/2025		Sample from spigot before pressure tank	
Water Quality Data							
Purge Start Time	12:05	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
12:13	80+	7.31	12.6	751	3.97	157.6	1.2
12:16		7.32	12.7	751	3.85	158.6	0.2
12:19		7.31	12.6	746	4.04	160.9	2.7
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250501-9			
		Sample Date	05/01/2025	Sample Time	12:19		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. No storage tank observed; purged 80 gallons.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID			Sampling Location		Sampling Date	Purge Method	
20250502-1			Frost-free spigot		05/02/2025	Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	7:27	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:39	20+	8.26	14.9	491	5.36	18.4	3.8
7:42		8.28	14.7	490	4.22	6.9	3.3
7:45		8.29	14.7	490	4.27	-10.0	3.3
7:48		8.29	14.7	490	4.34	-14.4	3.2
7:51		8.28	14.7	490	4.13	-19.1	3.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-1			
		Sample Date		05/02/2025	Sample Time		8:00
		Container Type		Preservative		No. Containers	
		100 mL amber glass		None		2	
General Comments Ferrous Iron = 0 mg/L. 100-gallon storage tank in garage; sampled before tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:					8

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250502-2		Frost-free spigot		05/02/2005		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:51	172+	7.96	15.3	303	16.63	-112.4	1.0
7:54		8.01	15.3	301	8.44	-134.4	6.6
7:57		8.03	15.3	301	5.76	-138.0	6.4
8:00		8.05	15.4	301	3.42	-140.4	6.9
8:03		8.05	15.4	301	2.82	-143.9	7.0
8:05		8.05	15.3	301	1.94	-148.7	6.3
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-2			
		Sample Date		05/02/2025	Sample Time		8:05
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Two 86-gallon storage tanks.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250502-3		Frost-free spigot		05/02/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	8:30	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:38	80+	8.00	14.7	304	8.64	-135.6	2.7
8:41		7.96	14.7	303	7.99	-140.9	1.3
8:44		7.97	14.8	302	7.58	-149.6	1.6
8:47		7.96	15.0	301	5.71	-146.0	0.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; rotten-egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-3			
		Sample Date	05/02/2025	Sample Time	8:47		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0.5 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250502-4		Frost-free spigot		05/02/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	8:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:40	80+	7.90	16.1	469	0.50	9.1	3.7
8:43		7.89	15.7	469	0.20	-51.6	3.0
8:58		7.90	15.9	471	0.14	-115.3	3.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-4			
		Sample Date	05/02/2025	Sample Time	9:00		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank, sampled prior to tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250502-5			Spigot on building		05/02/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	9:30	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
9:40	100+	7.81	11.6	292	4.69	-40.1	0.8		
9:43		7.80	12.4	293	4.69	-69.0	0.2		
9:46		7.86	13.2	293	5.09	-81.9	0.2		
9:49		7.88	14.0	299	6.57	-89.6	0.2		
9:52		7.89	14.1	294	5.63	-90.5	0.7		
9:55		7.87	14.2	294	5.62	-90.6	0.6		
9:58		7.88	14.3	294	5.72	-92.7	1.3		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250502-5					
		Sample Date		05/02/2025		Sample Time		9:58	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. No storage tank observed; purged 100 gallons.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250502-6			Frost-free spigot		05/02/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	09:45	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
9:56	52+	7.60	13.4	1,293	3.92	-72.4	4.2		
9:59		7.49	13.5	1,261	3.26	-65.7	4.4		
10:02		7.48	13.5	1,267	3.55	-61.0	4.7		
10:05		7.49	13.5	1,268	3.67	-56.2	4.6		
10:08		7.49	13.5	1,243	3.41	-53.6	4.5		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250502-6					
		Sample Date		05/02/2025		Sample Time		10:10	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. 52-gallon storage tank, sampled prior to tank.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information								
Project No.		Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez		
Well Information								
Location ID			Sampling Location		Sampling Date		Purge Method	
20250502-7			Frost-free spigot		05/02/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data								
Purge Start Time	10:40	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5	
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity	
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU	
10:50	100+	7.45	12.9	805	7.56	92.0	0.6	
10:53		7.45	12.9	804	7.57	95.5	0.1	
10:56		7.49	13.0	802	7.81	97.5	0.1	
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information				
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot				
		Sample Name		20250502-7				
		Sample Date	05/02/2025	Sample Time	10:56			
		Container Type		Preservative	No. Containers			
General Comments		100 mL amber glass		None		2		
Ferrous Iron = 0 mg/L. No storage tank observed, but confirmed to exist by homeowner; purged 100 gallons.		250 mL poly		HNO ₃		2		
		250 mL poly		H ₂ SO ₄		1		
		250 mL amber glass		NaOH		1		
		100 mL plastic		None		1		
		125 mL amber glass		Zinc acetate		1		
		125 mL poly		None				
		250 mL amber glass		HCl				
Total No. Containers:						8		

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250502-8		Frost-free spigot		05/02/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:43	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:52	52+	7.87	14.8	351	0.29	-77.2	2.4
10:55		7.87	14.9	352	0.20	-98.3	3.0
10:58		7.87	15.0	353	0.17	-111.8	3.0
11:01		7.87	15.1	354	0.15	-122.1	3.0
11:04		7.87	15.2	354	0.13	-126.3	2.8
11:07		7.87	15.3	357	0.13	-130.1	2.8
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-8			
		Sample Date		05/02/2025	Sample Time		11:10
		Container Type		Preservative		No. Containers	
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0.5 mg/L. 45-gallon storage tank, sampled after tank but prior to treatment.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250502-9		Frost-free spigot		05/02/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	11:44	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
12:00	80+	7.82	15.5	299	0.38	-84.2	0.2
12:03		7.81	15.7	299	0.35	-133.4	0.2
12:06		7.82	15.7	299	0.32	-145.7	0.2
12:09		7.83	15.7	299	0.31	-152.7	0.2
12:12		7.82	15.8	299	0.28	-154.9	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250502-9			
		Sample Date		05/02/2025	Sample Time		12:12
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Approximately 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250505-1			Frost-free spigot		05/05/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	7:10	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
7:16	50+	7.37	12.9	774	22.20	96.7	3.3		
7:19		7.38	12.9	760	19.73	97.2	4.9		
7:21		7.39	12.9	755	18.36	97.7	3.0		
7:24		7.40	12.9	752	18.14	98.4	3.2		
7:27		7.44	12.9	750	17.56	100.5	2.6		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250505-1					
		Sample Date		05/05/2025		Sample Time		7:27	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. No storage tank observed; purged 50 gallons. Collected duplicate 20250505-1-DUP here.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250505-2		Spigot on pressure tank		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:27	± 0.1	± 3%	± 3%	± 10% if > 0.5	± 10	< 5 or ± 10% if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	uS/cm	mg/L	mV	NTU
7:45	120+	7.99	13.0	418	0.58	25.7	4.2
7:48		8.04	13.0	417	0.40	16.6	4.4
7:51		8.07	14.7	414	0.18	4.4	2.5
7:54		8.10	14.3	415	0.27	-4.3	2.6
7:57		8.11	14.9	414	0.14	-10.3	2.8
8:00		8.10	14.8	412	0.23	-17.6	2.7
8:03		8.10	14.6	412	0.14	-24.2	2.8
8:06		8.11	15.1	414	0.12	-31.7	2.4
8:09		8.12	15.2	424	0.11	-37.5	2.6
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight rotten egg-like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250505-2			
		Sample Date	05/02/2025	Sample Time	8:10		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 120-gallon storage tank, sampled after tank (former sampling spigot removed).		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250505-3		Frost-free spigot		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	8:20	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:28	80+	7.45	14.0	803	9.05	75.6	0.6
8:31		7.46	13.9	806	8.98	76.2	0.3
8:34		7.47	13.8	805	8.90	77.0	0.3
8:37		7.44	13.9	806	9.12	79.3	2.2
8:40		7.43	14.0	807	4.25	81.0	1.2
8:43		7.42	14.0	806	4.24	81.4	0.1
8:46		7.43	13.9	806	4.78	83.6	0.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250505-3			
		Sample Date	05/05/2025	Sample Time	8:46		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 80-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250505-4		Spigot on pressure tank		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	08:44	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:50	44+	7.51	12.0	1,021	3.32	-19.7	2.0
8:53		7.51	12.2	1,021	3.28	-18.1	2.2
8:56		7.51	12.2	1,020	3.27	-15.9	2.4
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250505-4			
		Sample Date		05/05/2025	Sample Time		9:15
		Container Type		Preservative		No. Containers	
		100 mL amber glass		None		2	
General Comments Ferrous Iron = 0 mg/L. 44-gallon storage tank; sampled before tank.	250 mL poly		HNO ₃		2		
	250 mL poly		H ₂ SO ₄		1		
	250 mL amber glass		NaOH		1		
	100 mL plastic		None		1		
	125 mL amber glass		Zinc acetate		1		
	125 mL poly		None				
	250 mL amber glass		HCl				
	Total No. Containers:					8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250505-5		Frost-free spigot		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	09:49	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:52	30+	8.16	12.6	348	1.10	-6.5	3.8
9:55		8.16	13.0	335	0.38	-13.0	3.1
9:58		8.13	13.0	334	0.26	-16.4	2.9
10:01		8.13	13.1	334	0.19	-22.2	3.1
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250505-5			
		Sample Date	05/05/2025	Sample Time	10:05		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. No storage tank observed, but homeowner indicated that the storage tank is located after the spigot.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information								
Project No.		Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez		
Well Information								
Location ID			Sampling Location		Sampling Date		Purge Method	
20250505-6			Frost-free spigot		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data								
Purge Start Time	10:05	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5	
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity	
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU	
10:13	80+	7.44	12.1	873	8.92	106.0	8.2	
10:16		7.44	12.1	873	8.71	106.8	5.6	
10:19		7.44	12.0	873	8.72	108.0	3.2	
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information				
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot				
		Sample Name		20250505-6				
		Sample Date		05/05/2025	Sample Time		10:19	
		Container Type		Preservative		No. Containers		
General Comments		100 mL amber glass		None		2		
Ferrous Iron = 0 mg/L. 80-gallon storage tank, sampled prior to filtration system.		250 mL poly		HNO ₃		2		
		250 mL poly		H ₂ SO ₄		1		
		250 mL amber glass		NaOH		1		
		100 mL plastic		None		1		
		125 mL amber glass		Zinc acetate		1		
		125 mL poly		None				
		250 mL amber glass		HCl				
		Total No. Containers:				8		

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney			
Well Information									
Location ID			Sampling Location		Sampling Date	Purge Method			
20250505-7			Frost-free spigot		05/05/2025	Purge pressure tank volume prior to parameter collection			
Water Quality Data									
Purge Start Time	10:38	± 0.1	± 3%	± 3%	± 10% if > 0.5	± 10	< 5 or ± 10% if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	uS/cm	mg/L	mV	NTU		
10:48	81+	7.97	13.5	430	0.15	-123.6	5.7		
10:51		7.97	13.5	429	0.15	-135.4	6.4		
10:54		7.97	13.6	430	0.15	-140.2	5.8		
10:57		7.96	13.6	88	0.16	-143.1	4.7		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; slight yellow tint; no sheen; slight rotten egg-like odor.	Sampling Method		Grab directly from spigot					
		Sample Name		20250505-7					
		Sample Date		05/05/2025		Sample Time		11:00	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0.5 mg/L. 81-gallon storage tank.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information								
Project No.		Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez		
Well Information								
Location ID			Sampling Location		Sampling Date		Purge Method	
20250505-8			Frost-free spigot		05/05/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data								
Purge Start Time	11:55	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5	
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity	
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU	
12:05	30+	7.83	12.7	325	1.73	-83.5	5.1	
12:08		7.84	12.7	325	1.72	-105.5	5.2	
12:11		7.84	12.8	325	1.89	-117.8	5.0	
12:14		7.84	12.8	326	1.97	-122.5	4.4	
12:17		7.83	12.9	325	2.05	-123.9	4.2	
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information				
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; egg-like odor; no sheen.	Sampling Method		Grab directly from spigot				
		Sample Name		20250505-8				
		Sample Date		05/05/2025	Sample Time		12:17	
		Container Type		Preservative		No. Containers		
General Comments		100 mL amber glass		None		2		
Ferrous Iron = 0 mg/L. Sampling before 80-gallon storage tank and water filtration system. 3-gallons/minute. Heavy sediment upon first flush.		250 mL poly		HNO ₃		2		
		250 mL poly		H ₂ SO ₄		1		
		250 mL amber glass		NaOH		1		
		100 mL plastic		None		1		
		125 mL amber glass		Zinc acetate		1		
		125 mL poly		None				
		250 mL amber glass		HCl				
		Total No. Containers:				8		

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250506-1		Frost-free spigot		05/06/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	07:13	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
7:28	20+	8.52	15.2	327	0.14	-10.9	3.1
7:31		8.50	15.5	327	0.14	-11.7	3.8
7:34		8.51	15.4	327	0.12	-15.3	3.6
7:37		8.50	15.6	326	0.11	-18.6	3.0
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250506-1			
		Sample Date	05/06/2025	Sample Time	7:37		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. 81-gallon storage tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250506-2		Spigot in pump house		05/06/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	8:37	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
8:40	20+	7.95	16.0	301	35.69	-115.3	1.1
8:43		7.96	16.0	301	39.67	-118.7	1.6
8:46		7.95	16.0	301	25.21	-121.4	2.0
8:49		7.96	16.1	301	15.22	-132.8	4.9
8:52		7.97	16.1	301	14.35	-132.9	2.4
8:55		7.97	16.1	301	13.29	-134.3	3.5
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; slight egg like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250506-2			
		Sample Date		05/06/2025	Sample Time		8:55
		Container Type		Preservative		No. Containers	
		100 mL amber glass		None		2	
General Comments Ferrous Iron = 0 mg/L. Approximately 80-gallon tank; sampled prior to tank.	250 mL poly		HNO ₃		2		
	250 mL poly		H ₂ SO ₄		1		
	250 mL amber glass		NaOH		1		
	100 mL plastic		None		1		
	125 mL amber glass		Zinc acetate		1		
	125 mL poly		None				
	250 mL amber glass		HCl				
	Total No. Containers:					8	

Groundwater Field Sampling Data Sheet



Project Information									
Project No.		Client / Project Name		Sampling Event		Sampler(s)			
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney			
Well Information									
Location ID			Sampling Location		Sampling Date		Purge Method		
20250506-3			Frost-free spigot		05/06/2025		Purge pressure tank volume prior to parameter collection		
Water Quality Data									
Purge Start Time		± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5		
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity		
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU		
8:55		7.86	17.8	311	0.79	-5.7	4.8		
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information					
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot					
		Sample Name		20250506-3					
		Sample Date		05/06/2025		Sample Time		9:05	
		Container Type		Preservative		No. Containers			
General Comments		100 mL amber glass		None		2			
Ferrous Iron = 0 mg/L. Spigot ran continuously prior to sampling, so sample was collected after one set of parameters.		250 mL poly		HNO ₃		2			
		250 mL poly		H ₂ SO ₄		1			
		250 mL amber glass		NaOH		1			
		100 mL plastic		None		1			
		125 mL amber glass		Zinc acetate		1			
		125 mL poly		None					
		250 mL amber glass		HCl					
		Total No. Containers:				8			

Groundwater Field Sampling Data Sheet



Project Information							
Project No.	Client / Project Name		Sampling Event		Sampler(s)		
M0785.34.001-05A	Crook County Domestic Well Sampling		April / May 2025		S. Maloney		
Well Information							
Location ID		Sampling Location		Sampling Date	Purge Method		
20250506-4		Frost-free spigot		05/01/2025	Purge pressure tank volume prior to parameter collection		
Water Quality Data							
Purge Start Time		± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
9:35		7.81	15.2	446	2.62	-9.4	13.5
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250506-4			
		Sample Date	05/06/2025	Sample Time	9:40		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. Spigot ran continuously prior to sampling, so sample was collected after one set of parameters.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		Y. Perez	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250506-5		Frost-free spigot		05/06/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:15	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:25	50+	8.17	14.7	299	0.54	-174.5	0.2
10:28		8.18	14.8	299	0.40	-213.8	0.2
10:31		8.19	14.8	299	0.38	-222.7	0.2
10:34		8.18	14.9	299	0.35	-229.0	0.2
10:37		8.15	14.9	299	0.34	-227.9	0.2
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; egg like odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250506-5			
		Sample Date	05/06/2025	Sample Time	10:37		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0.5 mg/L. Approximately 50-gallon tank.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Groundwater Field Sampling Data Sheet



Project Information							
Project No.		Client / Project Name		Sampling Event		Sampler(s)	
M0785.34.001-05A		Crook County Domestic Well Sampling		April / May 2025		S. Maloney	
Well Information							
Location ID		Sampling Location		Sampling Date		Purge Method	
20250506-6		Spigot on house		05/06/2025		Purge pressure tank volume prior to parameter collection	
Water Quality Data							
Purge Start Time	10:25	± 0.1	$\pm 3\%$	$\pm 3\%$	$\pm 10\%$ if > 0.5	± 10	< 5 or $\pm 10\%$ if > 5
Time	Cumulative Purge Volume	pH	Temperature	Conductivity	Dissolved Oxygen	ORP	Turbidity
	gal	SU	degrees C	$\mu\text{S}/\text{cm}$	mg/L	mV	NTU
10:47	100+	8.09	15.2	364	0.84	18.1	4.7
10:50		8.09	15.3	364	0.30	13.3	4.0
10:53		8.09	15.3	364	0.22	10.0	3.4
Last row of water quality data are considered final field parameters unless otherwise noted.				Sample Information			
Water Quality Observations (clarity, tint, odor, sheen, etc.)	Clear; colorless; no odor; no sheen.	Sampling Method		Grab directly from spigot			
		Sample Name		20250506-6			
		Sample Date	05/06/2025	Sample Time	10:55		
		Container Type		Preservative	No. Containers		
General Comments		100 mL amber glass		None		2	
Ferrous Iron = 0 mg/L. No storage tank observed; purged 50 gallons.		250 mL poly		HNO ₃		2	
		250 mL poly		H ₂ SO ₄		1	
		250 mL amber glass		NaOH		1	
		100 mL plastic		None		1	
		125 mL amber glass		Zinc acetate		1	
		125 mL poly		None			
		250 mL amber glass		HCl			
		Total No. Containers:				8	

Attachment B

Laboratory Analytical Reports and Data Validation Memorandum



MAUL
FOSTER
ALONGI

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-8

Sample Date: 5/5/25 12:18

Lab Number: 4075-27011

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

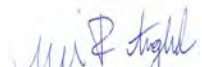
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-7

Sample Date: 5/5/25 11:00

Lab Number: 4075-27010

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-6

Sample Date: 5/5/25 10:19

Lab Number: 4075-27009

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	10.43	10	Fail	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

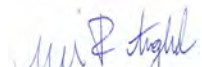
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-5

Sample Date: 5/5/25 10:05

Lab Number: 4075-27008

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-4

Sample Date: 5/5/25 9:15

Lab Number: 4075-27007

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	10.28	10	Fail	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-3

Sample Date: 5/5/25 8:48

Lab Number: 4075-27006

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	8.03	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-2

Sample Date: 5/5/25 8:10

Lab Number: 4075-27005

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	0.04	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

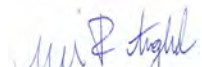
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-1-DUP

Sample Date: 5/5/25 7:27

Lab Number: 4075-27004

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	8.52	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

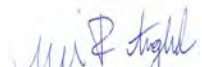
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13267**

Report Date: 5/19/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250505-1

Sample Date: 5/5/25 7:27

Lab Number: 4075-27003

Date Received: 5/5/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/6/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/6/25
14797-55-8	NITRATE-N	8.40	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-5

Sample Date: 5/6/25 10:37

Lab Number: 4075-27328

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

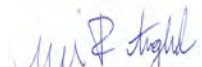
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-2

Sample Date: 5/6/25 8:55

Lab Number: 4075-27327

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

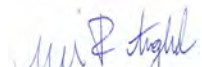
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-1-Dup

Sample Date: 5/6/25 7:37

Lab Number: 4075-27326

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-1

Sample Date: 5/6/25 7:37

Lab Number: 4075-27325

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

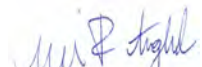
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-6

Sample Date: 5/6/25 10:55

Lab Number: 4075-27324

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-4

Sample Date: 5/6/25 9:40

Lab Number: 4075-27323

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	1.85	10	Pass	e	0.005	mg/L	5/7/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13413**

Report Date: 5/15/25

Approved By: krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250506-3

Sample Date: 5/6/25 9:05

Lab Number: 4075-27322

Date Received: 5/6/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/7/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/7/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/6/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-3-Dup

Sample Date: 4/30/25 9:00

Lab Number: 4075-26187

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	12.68	10	Fail	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

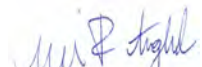
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-9

Sample Date: 4/30/25 12:25

Lab Number: 4075-26186

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	6.04	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

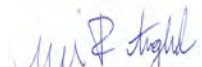
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-8

Sample Date: 4/30/25 11:10

Lab Number: 4075-26185

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	11.83	10	Fail	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

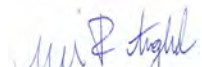
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-6

Sample Date: 4/30/25 10:10

Lab Number: 4075-26184

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	0.01	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

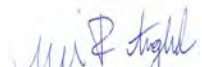
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-3

Sample Date: 4/30/25 9:00

Lab Number: 4075-26183

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	12.96	10	Fail	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

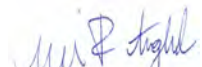
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-2

Sample Date: 4/30/25 8:00

Lab Number: 4075-26182

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	0.13	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

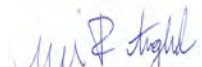
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-7

Sample Date: 4/30/25 11:08

Lab Number: 4075-26181

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	5.56	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

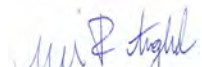
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-5

Sample Date: 4/30/25 10:06

Lab Number: 4075-26180

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Present		Fail	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	2.73	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

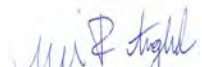
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-4

Sample Date: 4/30/25 9:05

Lab Number: 4075-26179

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	8.51	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12756**

Report Date: 5/13/25

Approved By: kcs,krh,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250430-1

Sample Date: 4/30/25 7:48

Lab Number: 4075-26178

Date Received: 4/30/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/1/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/1/25
14797-55-8	NITRATE-N	4.67	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

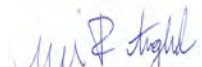
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-9

Sample Date: 5/1/25 12:19

Lab Number: 4075-26502

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Present		Fail	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	5.90	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-8

Sample Date: 5/1/25 11:25

Lab Number: 4075-26501

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-7

Sample Date: 5/1/25 10:52

Lab Number: 4075-26500

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-6

Sample Date: 5/1/25 10:15

Lab Number: 4075-26499

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	2.05	10	Pass	e	0.005	mg/L	5/1/25

Notation:

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QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

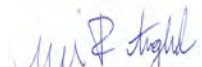
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-5

Sample Date: 5/1/25 9:56

Lab Number: 4075-26498

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	0.05	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-4

Sample Date: 5/1/25 8:44

Lab Number: 4075-26497

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	6.31	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

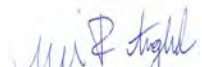
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-3-dup

Sample Date: 5/1/25 9:00

Lab Number: 4075-26496

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Present		Fail	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	0.13	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = '**PASS**', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. '**Exceeds**' indicates EPA secondary limit (Aesthetic) was exceeded. '**Fail**' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

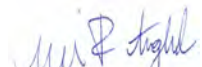
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-3

Sample Date: 5/1/25 9:00

Lab Number: 4075-26495

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Present		Fail	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	0.04	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

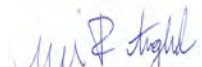
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-2

Sample Date: 5/1/25 8:09

Lab Number: 4075-26494

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12933**

Report Date: 5/13/25

Approved By: kcs,krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250501-1

Sample Date: 5/1/25 7:40

Lab Number: 4075-26493

Date Received: 5/1/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/2/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/2/25
14797-55-8	NITRATE-N	10.29	10	Fail	e	0.005	mg/L	5/1/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-4-DUP

Sample Date: 5/2/25 9:00

Lab Number: 4075-26793

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	0.01	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

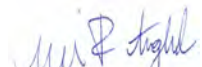
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-9

Sample Date: 5/2/25 12:12

Lab Number: 4075-26792

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

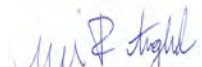
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-8

Sample Date: 5/2/25 11:10

Lab Number: 4075-26791

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	0.01	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-7

Sample Date: 5/2/25 10:56

Lab Number: 4075-26790

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	9.11	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

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CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-6

Sample Date: 5/2/25 10:10

Lab Number: 4075-26789

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	20.73	10	Fail	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

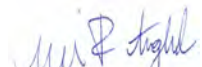
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-5

Sample Date: 5/2/25 9:58

Lab Number: 4075-26788

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

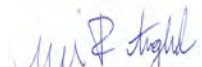
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-4

Sample Date: 5/2/25 9:00

Lab Number: 4075-26787

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

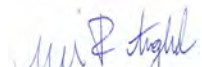
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-3

Sample Date: 5/2/25 8:47

Lab Number: 4075-26786

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

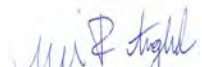
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-2

Sample Date: 5/2/25 8:05

Lab Number: 4075-26785

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

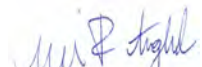
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-13116**

Report Date: 5/5/25

Approved By: krh

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250502-1

Sample Date: 5/2/25 8:00

Lab Number: 4075-26784

Date Received: 5/2/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	5/3/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	5/3/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	5/2/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-1-Dup

Sample Date: 4/29/25 7:45

Lab Number: 4075-25831

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	4.66	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

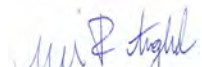
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-9

Sample Date: 4/29/25 11:45

Lab Number: 4075-25830

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	12.06	10	Fail	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

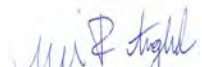
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-8

Sample Date: 4/29/25 11:04

Lab Number: 4075-25829

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Present		Fail	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	8.11	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = '**PASS**', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. '**Exceeds**' indicates EPA secondary limit (Aesthetic) was exceeded. '**Fail**' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-7

Sample Date: 4/29/25 10:50

Lab Number: 4075-25828

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	8.31	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

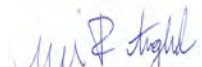
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-6

Sample Date: 4/29/25 9:37

Lab Number: 4075-25827

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-5

Sample Date: 4/29/25 9:45

Lab Number: 4075-25826

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	10.54	10	Fail	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

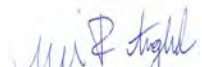
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-4

Sample Date: 4/29/25 8:48

Lab Number: 4075-25825

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-3

Sample Date: 4/29/25 8:55

Lab Number: 4075-25824

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	2.88	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

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Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-2

Sample Date: 4/29/25 7:43

Lab Number: 4075-25823

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	0.66	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

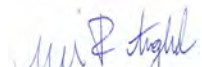
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12576**

Report Date: 4/30/25

Approved By: mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250429-1

Sample Date: 4/29/25 7:45

Lab Number: 4075-25822

Date Received: 4/29/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/30/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/30/25
14797-55-8	NITRATE-N	5.05	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-8

Sample Date: 4/28/25 12:15

Lab Number: 4075-25619

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	0.03	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-7

Sample Date: 4/28/25 11:15

Lab Number: 4075-25618

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	ND	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-6

Sample Date: 4/28/25 10:50

Lab Number: 4075-25617

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	0.01	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

An * in front of the parameter name indicates it is not NELAP accredited but it is accredited through OR DEQ or USEPA Region 10.

These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-5

Sample Date: 4/28/25 10:07

Lab Number: 4075-25616

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	13.68	10	Fail	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-4

Sample Date: 4/28/25 10:15

Lab Number: 4075-25615

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	1.35	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-3

Sample Date: 4/28/25 8:50

Lab Number: 4075-25614

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	1.46	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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If you have any questions concerning this report contact at the above phone number.

Drinking Water Report

Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-2

Sample Date: 4/28/25 8:35

Lab Number: 4075-25613

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	6.71	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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Drinking Water Report

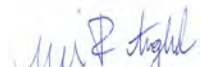
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-1-Dup

Sample Date: 4/28/25 7:37

Lab Number: 4075-25612

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	7.02	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

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Drinking Water Report

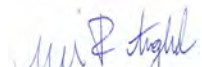
Client Name: Maul Foster & Alongi, Inc
330 E Mill Plain Boulevard
Vancouver, WA 98660

Reference Number: **25-12445**

Report Date: 4/30/25

Approved By: kcs,mra

Authorized by:


Michelle R Angland
Lab Manager, Bend

Project: Crook County Limited Groundwater Investigation

Field ID:

Sample Description: 20250428-1

Sample Date: 4/28/25 7:37

Lab Number: 4075-25611

Date Received: 4/28/25

Sampled By: YP

Sampler Phone:

CAS Number	Analyte	Result	MCL	Pass [^]	Lab	QL	Units	Analyzed
Coli-To-t	TOTAL COLIFORM	Absent		Pass	e	P/A	per 100m	4/29/25
68583-22-2	E. Coli	Absent		Pass	e	Y/N	per 100m	4/29/25
14797-55-8	NITRATE-N	6.93	10	Pass	e	0.005	mg/L	4/29/25

Notation:

MCL = Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

QL = Quantitation Limit is the lower calibration concentration.

ND = Not detected above the listed specified reporting limit (QL).

CAS Number = Chemical Abstract Service Number is an unique identifier of the chemical tested.

[^] = 'PASS', indicates that the parameter tested meets EPA, State, or local jurisdiction MCL. 'Exceeds' indicates EPA secondary limit (Aesthetic) was exceeded. 'Fail' indicates EPA Primary limit (Health) was exceeded.

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These test results meet all the requirements of NELAC, unless otherwise stated in writing, and relate only to these samples.

If you have any questions concerning this report contact at the above phone number.

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854815
Samples Received: 05/03/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

20250502-2 L1854815-01

Collected by
Y. Perez

Collected date/time
05/02/25 08:05

Received date/time
05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:32	05/12/25 18:32	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:38	05/12/25 04:38	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:10	05/04/25 15:10	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 22:14	05/08/25 22:14	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506632	1	05/05/25 04:58	05/05/25 04:58	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 22:01	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:32	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:59	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:38	SJM	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250502-3 L1854815-02

Collected by
Y. Perez

Collected date/time
05/02/25 08:47

Received date/time
05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:34	05/12/25 18:34	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:41	05/12/25 04:41	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:25	05/04/25 15:25	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 22:27	05/08/25 22:27	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506632	1	05/05/25 05:10	05/05/25 05:10	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 22:03	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:34	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/16/25 00:03	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:41	SJM	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250502-5 L1854815-03

Collected by
Y. Perez

Collected date/time
05/02/25 09:58

Received date/time
05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:36	05/12/25 18:36	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:44	05/12/25 04:44	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:35	05/04/25 15:35	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 22:39	05/08/25 22:39	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506632	1	05/05/25 05:23	05/05/25 05:23	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 22:06	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:36	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/16/25 00:06	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:44	SJM	Mt. Juliet, TN

Collected by
Y. Perez

Collected date/time
05/02/25 10:56

Received date/time
05/03/25 08:45

20250502-7 L1854815-04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510393	1	05/12/25 15:20	05/12/25 15:20	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:48	05/12/25 04:48	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:40	05/04/25 15:40	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:59	05/06/25 15:59	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 22:52	05/08/25 22:52	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506632	1	05/05/25 05:37	05/05/25 05:37	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 22:08	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510393	1	05/11/25 13:20	05/11/25 16:26	MAP	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854815

DATE/TIME:

05/16/25 12:34

PAGE:

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SAMPLE SUMMARY

20250502-7 L1854815-04

Collected by
Y. Perez

Collected date/time
05/02/25 10:56

Received date/time
05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2510393	1	05/11/25 13:20	05/12/25 15:20	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/16/25 00:09	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:48	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

20250502-9 L1854815-05

Collected by
Y. Perez

Collected date/time
05/02/25 12:12

Received date/time
05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510393	1	05/12/25 15:22	05/12/25 15:22	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:51	05/12/25 04:51	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:44	05/04/25 15:44	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:59	05/06/25 15:59	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 23:31	05/08/25 23:31	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506632	1	05/05/25 05:51	05/05/25 05:51	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 22:11	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510393	1	05/11/25 13:20	05/11/25 16:28	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510393	1	05/11/25 13:20	05/12/25 15:22	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/16/25 00:12	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:51	SJM	Mt. Juliet, TN

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854815

DATE/TIME:

05/16/25 12:34

PAGE:

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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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	44600		165	428	1	05/12/2025 18:32	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	90300		231	2500	1	05/12/2025 04:38	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	159000		4750	20000	1	05/04/2025 15:10	WG2506469
Alkalinity,Bicarbonate	159000		4750	20000	1	05/04/2025 15:10	WG2506469

Sample Narrative:

L1854815-01 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2900		547	1000	1	05/08/2025 22:14	WG2506495
Fluoride	155		76.1	150	1	05/08/2025 22:14	WG2506495
Sulfate	6170		637	5000	1	05/08/2025 22:14	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/05/2025 04:58	WG2506632

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 22:01	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:32	WG2510389
Silicon	20800		77.1	200	1	05/12/2025 18:32	WG2510389
Sulfur	1440		160	1000	1	05/12/2025 18:32	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	16.7	U	16.0	100	1	05/12/2025 04:38	WG2511436
Aluminum,Dissolved	20.4	U	16.0	100	1	05/15/2025 22:59	WG2510343
Arsenic	20.9		0.120	2.00	1	05/12/2025 04:38	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:38	WG2511436
Calcium	22800		92.5	1000	1	05/12/2025 04:38	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:38	WG2511436
Copper	30.0		0.700	5.00	1	05/12/2025 04:38	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:38	WG2511436
Iron	148		22.6	100	1	05/12/2025 04:38	WG2511436
Iron,Dissolved	67.4	U	22.6	100	1	05/15/2025 22:59	WG2510343
Lead	2.76		0.500	2.00	1	05/12/2025 04:38	WG2511436
Magnesium	8120		82.7	1000	1	05/12/2025 04:38	WG2511436
Manganese	136		0.700	5.00	1	05/12/2025 04:38	WG2511436
Manganese,Dissolved	132		0.700	5.00	1	05/15/2025 22:59	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:38	WG2511436
Potassium	2520		96.5	2000	1	05/12/2025 04:38	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:38	WG2511436
Sodium	30400		142	2000	1	05/12/2025 04:38	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:38	WG2511436
Zinc	419		4.00	25.0	1	05/12/2025 04:38	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	41800		165	428	1	05/12/2025 18:34	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	105000		231	2500	1	05/12/2025 04:41	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	157000		4750	20000	1	05/04/2025 15:25	WG2506469
Alkalinity,Bicarbonate	157000		4750	20000	1	05/04/2025 15:25	WG2506469

Sample Narrative:
L1854815-02 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2420		547	1000	1	05/08/2025 22:27	WG2506495
Fluoride	157		76.1	150	1	05/08/2025 22:27	WG2506495
Sulfate	2790	J	637	5000	1	05/08/2025 22:27	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/05/2025 05:10	WG2506632

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 22:03	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:34	WG2510389
Silicon	19500		77.1	200	1	05/12/2025 18:34	WG2510389
Sulfur	1080		160	1000	1	05/12/2025 18:34	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:41	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/16/2025 00:03	WG2510343
Arsenic	22.8		0.120	2.00	1	05/12/2025 04:41	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:41	WG2511436
Calcium	25400		92.5	1000	1	05/12/2025 04:41	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:41	WG2511436
Copper	U		0.700	5.00	1	05/12/2025 04:41	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:41	WG2511436
Iron	258		22.6	100	1	05/12/2025 04:41	WG2511436
Iron,Dissolved	178		22.6	100	1	05/16/2025 00:03	WG2510343
Lead	U		0.500	2.00	1	05/12/2025 04:41	WG2511436
Magnesium	10100		82.7	1000	1	05/12/2025 04:41	WG2511436
Manganese	162		0.700	5.00	1	05/12/2025 04:41	WG2511436
Manganese,Dissolved	160		0.700	5.00	1	05/16/2025 00:03	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:41	WG2511436
Potassium	2960		96.5	2000	1	05/12/2025 04:41	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:41	WG2511436
Sodium	23800		142	2000	1	05/12/2025 04:41	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:41	WG2511436
Zinc	U		4.00	25.0	1	05/12/2025 04:41	WG2511436

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	49400		165	428	1	05/12/2025 18:36	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	136000		231	2500	1	05/12/2025 04:44	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	154000		4750	20000	1	05/04/2025 15:35	WG2506469
Alkalinity,Bicarbonate	154000		4750	20000	1	05/04/2025 15:35	WG2506469

Sample Narrative:
L1854815-03 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2340		547	1000	1	05/08/2025 22:39	WG2506495
Fluoride	193		76.1	150	1	05/08/2025 22:39	WG2506495
Sulfate	2590	J	637	5000	1	05/08/2025 22:39	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/05/2025 05:23	WG2506632

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 22:06	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:36	WG2510389
Silicon	23100		77.1	200	1	05/12/2025 18:36	WG2510389
Sulfur	1080		160	1000	1	05/12/2025 18:36	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:44	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/16/2025 00:06	WG2510343
Arsenic	22.2		0.120	2.00	1	05/12/2025 04:44	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:44	WG2511436
Calcium	30800		92.5	1000	1	05/12/2025 04:44	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:44	WG2511436
Copper	18.9		0.700	5.00	1	05/12/2025 04:44	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:44	WG2511436
Iron	217		22.6	100	1	05/12/2025 04:44	WG2511436
Iron,Dissolved	92.2	U	22.6	100	1	05/16/2025 00:06	WG2510343
Lead	1.49	U	0.500	2.00	1	05/12/2025 04:44	WG2511436
Magnesium	14300		82.7	1000	1	05/12/2025 04:44	WG2511436
Manganese	392		0.700	5.00	1	05/12/2025 04:44	WG2511436
Manganese,Dissolved	202		0.700	5.00	1	05/16/2025 00:06	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:44	WG2511436
Potassium	3110		96.5	2000	1	05/12/2025 04:44	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:44	WG2511436
Sodium	25100		142	2000	1	05/12/2025 04:44	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:44	WG2511436
Zinc	16.9	U	4.00	25.0	1	05/12/2025 04:44	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	49400		165	428	1	05/12/2025 15:20	WG2510393

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	320000		231	2500	1	05/12/2025 04:48	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	387000		4750	20000	1	05/04/2025 15:40	WG2506469
Alkalinity,Bicarbonate	387000		4750	20000	1	05/04/2025 15:40	WG2506469

Sample Narrative:

L1854815-04 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:59	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	9200		547	1000	1	05/08/2025 22:52	WG2506495
Fluoride	274		76.1	150	1	05/08/2025 22:52	WG2506495
Sulfate	16700		637	5000	1	05/08/2025 22:52	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2930		495	1000	1	05/05/2025 05:37	WG2506632

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 22:08	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	5.42	J	4.22	15.0	1	05/11/2025 16:26	WG2510393
Silicon	23100		77.1	200	1	05/12/2025 15:20	WG2510393
Sulfur	6210		160	1000	1	05/11/2025 16:26	WG2510393

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:48	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/16/2025 00:09	WG2510343
Arsenic	2.95		0.120	2.00	1	05/12/2025 04:48	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:48	WG2511436
Calcium	75600		92.5	1000	1	05/12/2025 04:48	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:48	WG2511436
Copper	4.45	U	0.700	5.00	1	05/12/2025 04:48	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:48	WG2511436
Iron	34.0	U	22.6	100	1	05/12/2025 04:48	WG2511436
Iron,Dissolved	U		22.6	100	1	05/16/2025 00:09	WG2510343
Lead	0.802	U	0.500	2.00	1	05/12/2025 04:48	WG2511436
Magnesium	32800		82.7	1000	1	05/12/2025 04:48	WG2511436
Manganese	2.02	U	0.700	5.00	1	05/12/2025 04:48	WG2511436
Manganese,Dissolved	0.773	U	0.700	5.00	1	05/16/2025 00:09	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:48	WG2511436
Potassium	4190		96.5	2000	1	05/12/2025 04:48	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:48	WG2511436
Sodium	52000		142	2000	1	05/12/2025 04:48	WG2511436
Vanadium	34.3		0.520	5.00	1	05/12/2025 04:48	WG2511436
Zinc	15.3	U	4.00	25.0	1	05/12/2025 04:48	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	48700		165	428	1	05/12/2025 15:22	WG2510393

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	74400		231	2500	1	05/12/2025 04:51	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	154000		4750	20000	1	05/04/2025 15:44	WG2506469
Alkalinity,Bicarbonate	154000		4750	20000	1	05/04/2025 15:44	WG2506469

Sample Narrative:

L1854815-05 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:59	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2510		547	1000	1	05/08/2025 23:31	WG2506495
Fluoride	224		76.1	150	1	05/08/2025 23:31	WG2506495
Sulfate	2710	J	637	5000	1	05/08/2025 23:31	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/05/2025 05:51	WG2506632

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 22:11	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/11/2025 16:28	WG2510393
Silicon	22700		77.1	200	1	05/12/2025 15:22	WG2510393
Sulfur	1140	B	160	1000	1	05/11/2025 16:28	WG2510393

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:51	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/16/2025 00:12	WG2510343
Arsenic	22.7		0.120	2.00	1	05/12/2025 04:51	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:51	WG2511436
Calcium	17200		92.5	1000	1	05/12/2025 04:51	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:51	WG2511436
Copper	0.749	J	0.700	5.00	1	05/12/2025 04:51	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:51	WG2511436
Iron	179		22.6	100	1	05/12/2025 04:51	WG2511436
Iron,Dissolved	113		22.6	100	1	05/16/2025 00:12	WG2510343
Lead	U		0.500	2.00	1	05/12/2025 04:51	WG2511436
Magnesium	7640		82.7	1000	1	05/12/2025 04:51	WG2511436
Manganese	253		0.700	5.00	1	05/12/2025 04:51	WG2511436
Manganese,Dissolved	247		0.700	5.00	1	05/16/2025 00:12	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:51	WG2511436
Potassium	2250		96.5	2000	1	05/12/2025 04:51	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:51	WG2511436
Sodium	34500		142	2000	1	05/12/2025 04:51	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:51	WG2511436
Zinc	U		4.00	25.0	1	05/12/2025 04:51	WG2511436

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4210257-2 05/04/25 13:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1854017-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-10 05/04/25 13:40 • (DUP) R4210257-3 05/04/25 13:44

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	466000	476000	1	2.21		20
Alkalinity,Bicarbonate	466000	476000	1	2.21		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1854815-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854815-02 05/04/25 15:25 • (DUP) R4210257-4 05/04/25 15:30

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	157000	159000	1	0.932		20
Alkalinity,Bicarbonate	157000	159000	1	0.932		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99300	99.3	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4210578-1 05/06/25 15:57

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854815-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1854815-05 05/06/25 15:59 • (DUP) R4210578-5 05/06/25 15:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP RPD Limits
Analyte	ug/l	ug/l		%	%
Sulfide	U	U	1	0.000	20

Laboratory Control Sample (LCS)

(LCS) R4210578-2 05/06/25 15:57

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	470	94.0	85.0-115	

L1854814-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854814-01 05/06/25 15:57 • (MS) R4210578-3 05/06/25 15:57 • (MSD) R4210578-4 05/06/25 15:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	491	491	98.2	98.2	1	80.0-120			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4212428-1 05/08/25 19:27

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1854602-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854602-01 05/08/25 19:53 • (DUP) R4212428-3 05/08/25 20:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	29900	29000	1	3.07		15
Fluoride	125	120	1	4.34	U	15
Sulfate	101000	99000	1	1.62		15

L1854814-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854814-01 05/08/25 20:44 • (DUP) R4212428-6 05/08/25 20:57

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	6530	5930	1	9.65		15
Fluoride	218	214	1	2.04		15
Sulfate	22400	16400	1	30.7	P1	15

Laboratory Control Sample (LCS)

(LCS) R4212428-2 05/08/25 19:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	37500	93.7	80.0-120	
Fluoride	8000	7920	99.0	80.0-120	
Sulfate	40000	37400	93.4	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1854602-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854602-01 05/08/25 19:53 • (MS) R4212428-4 05/08/25 20:18 • (MSD) R4212428-5 05/08/25 20:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	29900	64000	63700	85.3	84.6	1	80.0-120			0.446	15
Fluoride	8000	125	8400	8380	103	103	1	80.0-120			0.304	15
Sulfate	40000	101000	116000	117000	39.5	39.8	1	80.0-120	E J6	E J6	0.115	15

L1854814-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1854814-01 05/08/25 20:44 • (MS) R4212428-7 05/08/25 21:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	6530	45600	97.6	1	80.0-120	
Fluoride	8000	218	8730	106	1	80.0-120	
Sulfate	40000	22400	54100	79.4	1	80.0-120	J6

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Al

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Sc

Method Blank (MB)

(MB) R4209657-2 05/04/25 21:17

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1854907-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1854907-05 05/04/25 23:06 • (DUP) R4209657-3 05/04/25 23:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	12500	12200	1	2.60		20

L1854810-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1854810-03 05/05/25 03:48 • (DUP) R4209657-8 05/05/25 04:03

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	6930	6330	1	9.07		20

Laboratory Control Sample (LCS)

(LCS) R4209657-1 05/04/25 21:05

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	26300	105	80.0-120	

L1854907-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854907-07 05/04/25 23:36 • (MS) R4209657-4 05/04/25 23:53 • (MSD) R4209657-5 05/05/25 00:11

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	10500	37500	37400	108	108	1	75.0-125			0.187	20

L1854810-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854810-02 05/05/25 02:59 • (MS) R4209657-6 05/05/25 03:16 • (MSD) R4209657-7 05/05/25 03:33

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	17400	45700	45200	113	111	1	75.0-125			1.23	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4213106-1 05/11/25 20:51

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4213106-2 05/11/25 20:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.83	94.2	80.0-120	

L1854727-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854727-20 05/11/25 20:56 • (MS) R4213106-4 05/11/25 21:01 • (MSD) R4213106-5 05/11/25 21:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.63	2.38	87.8	79.4	1	75.0-125			9.94	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4213740-1 05/12/25 17:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4213740-2 05/12/25 17:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1020	102	80.0-120	
Silicon	1000	898	89.8	80.0-120	
Sulfur	10000	9490	94.9	80.0-120	

L1854727-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854727-20 05/12/25 17:48 • (MS) R4213740-4 05/12/25 17:52 • (MSD) R4213740-5 05/12/25 17:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	27.1	1060	1050	103	103	1	75.0-125			0.144	20
Silicon	1000	6010	6670	6800	66.1	79.2	1	75.0-125	V		1.93	20
Sulfur	10000	2810	12400	12400	95.5	96.1	1	75.0-125			0.465	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4213152-1 05/11/25 16:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	402	⬇	160	1000

Laboratory Control Sample (LCS)

(LCS) R4213152-2 05/11/25 16:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1100	110	80.0-120	
Silicon	1000	989	98.9	80.0-120	
Sulfur	10000	10100	101	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4215565-1 05/15/25 22:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4215565-2 05/15/25 22:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	909	90.9	80.0-120	
Iron,Dissolved	1000	928	92.8	80.0-120	
Manganese,Dissolved	50.0	48.5	96.9	80.0-120	

L1854814-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854814-01 05/15/25 22:06 • (MS) R4215565-4 05/15/25 22:12 • (MSD) R4215565-6 05/15/25 22:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	894	932	89.4	93.2	1	75.0-125			4.15	20
Iron,Dissolved	1000	26.7	932	992	90.5	96.5	1	75.0-125			6.25	20
Manganese,Dissolved	50.0	113	159	170	92.9	114	1	75.0-125			6.30	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4213176-1 05/12/25 03:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	1080	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

(LCS) R4213176-2 05/12/25 03:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	970	97.0	80.0-120	
Arsenic	50.0	48.3	96.5	80.0-120	
Cadmium	50.0	52.2	104	80.0-120	
Calcium	5000	4870	97.4	80.0-120	
Chromium	50.0	50.0	99.9	80.0-120	
Copper	50.0	48.0	96.0	80.0-120	
Cobalt	50.0	50.2	100	80.0-120	
Iron	1000	984	98.4	80.0-120	
Lead	50.0	48.6	97.2	80.0-120	
Magnesium	5000	4760	95.3	80.0-120	
Manganese	50.0	50.0	100	80.0-120	
Nickel	50.0	50.5	101	80.0-120	
Potassium	5000	4850	97.1	80.0-120	
Selenium	50.0	49.6	99.3	80.0-120	
Sodium	5000	5470	109	80.0-120	
Vanadium	50.0	49.0	97.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4213176-2 05/12/25 03:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	48.2	96.4	80.0-120	

L1854831-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854831-04 05/12/25 03:54 • (MS) R4213176-4 05/12/25 04:00 • (MSD) R4213176-5 05/12/25 04:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	977	973	97.7	97.3	1	75.0-125			0.395	20
Arsenic	50.0	1.14	50.9	51.2	99.5	100	1	75.0-125			0.643	20
Cadmium	50.0	U	52.3	52.7	105	105	1	75.0-125			0.668	20
Calcium	5000	63100	67500	67400	88.2	84.8	1	75.0-125			0.251	20
Chromium	50.0	U	50.2	50.8	100	102	1	75.0-125			1.14	20
Copper	50.0	U	48.4	46.5	96.8	93.1	1	75.0-125			3.88	20
Cobalt	50.0	1.67	51.2	51.2	99.0	99.0	1	75.0-125			0.0479	20
Iron	1000	22.7	1010	1000	98.4	97.9	1	75.0-125			0.521	20
Lead	50.0	U	48.9	49.2	97.9	98.4	1	75.0-125			0.512	20
Magnesium	5000	40300	44700	43600	87.4	65.3	1	75.0-125		V	2.50	20
Manganese	50.0	85.4	133	134	96.0	97.1	1	75.0-125			0.391	20
Nickel	50.0	2.93	52.4	52.0	98.9	98.1	1	75.0-125			0.803	20
Potassium	5000	818	5660	5660	96.8	96.9	1	75.0-125			0.115	20
Selenium	50.0	U	49.8	50.4	99.6	101	1	75.0-125			1.27	20
Sodium	5000	82600	84700	86600	40.8	78.9	1	75.0-125	V		2.22	20
Vanadium	50.0	3.63	53.7	53.9	100	101	1	75.0-125			0.395	20
Zinc	50.0	U	49.1	48.0	98.2	96.0	1	75.0-125			2.34	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

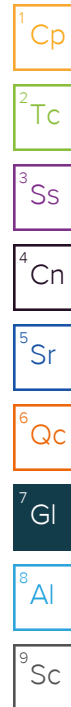
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

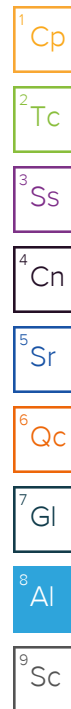
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com ; smaloney@maulfoster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name: Crook County Limited Groundwater Investigation				Sample Preservative										Comments L1854815	
Sampler Name: Ysabel Perez				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3		HCL
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)		Total Organic Carbon (EPA 9060A)
20250502-2	5/2/25 0805	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250502-3	0847	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250502-5	0958	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250502-7	1056	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250502-9	1717	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☐ NCF ☒ OK

RA Screen <0.5 mR/hr: ☒ Y ☐ N

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: Ysabel Perez	Agency/Agent: MFA	Received By: Alexa Mitchell	Agency/Agent: PACE
Signature: Ysabel Perez	Time & Date: 5/2/25 1220	Signature: Alexa Mitchell	Time & Date: 5/3/25 0845
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1855623
Samples Received: 05/06/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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

SAMPLE SUMMARY

20250505-2 L1855623-01

Collected by
Collected date/time
Received date/time

05/05/25 08:10 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:20	05/14/25 10:20	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 03:52	05/14/25 03:52	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 14:53	05/07/25 14:53	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 19:53	05/09/25 19:53	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 17:31	05/07/25 17:31	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:31	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:20	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 15:21	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 03:52	JDB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

20250505-4 L1855623-02

Collected by
Collected date/time
Received date/time

05/05/25 09:15 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:22	05/14/25 10:22	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 03:56	05/14/25 03:56	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:00	05/07/25 15:00	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 20:58	05/09/25 20:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 18:08	05/07/25 18:08	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:37	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:22	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 15:24	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 03:56	JDB	Mt. Juliet, TN

⁷Gl

⁸Al

⁹Sc

20250505-5 L1855623-03

Collected by
Collected date/time
Received date/time

05/05/25 10:05 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:24	05/14/25 10:24	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 03:59	05/14/25 03:59	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:07	05/07/25 15:07	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 21:47	05/09/25 21:47	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 19:49	05/07/25 19:49	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:40	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:24	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 15:27	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 03:59	JDB	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

05/05/25 11:00 05/06/25 08:45

20250505-7 L1855623-04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:26	05/14/25 10:26	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:02	05/14/25 04:02	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:28	05/07/25 15:28	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 22:04	05/09/25 22:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 20:55	05/07/25 20:55	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:43	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:26	MAP	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1855623

DATE/TIME:

05/16/25 08:32

PAGE:

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SAMPLE SUMMARY

20250505-7 L1855623-04

Collected by
Collected date/time
Received date/time

05/05/25 11:00 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 15:30	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:02	JDB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20250505-FB L1855623-05

Collected by
Collected date/time
Received date/time

05/05/25 12:15 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 14:11	JDB	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

20250505-8 L1855623-06

Collected by
Collected date/time
Received date/time

05/05/25 12:18 05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:31	05/14/25 10:31	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:06	05/14/25 04:06	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:35	05/07/25 15:35	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 22:20	05/09/25 22:20	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 21:32	05/07/25 21:32	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:46	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:31	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511414	1	05/13/25 21:03	05/14/25 15:34	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:06	JDB	Mt. Juliet, TN

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1855623

DATE/TIME:

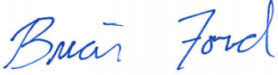
05/16/25 08:32

PAGE:

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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.



Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	49900		165	428	1	05/14/2025 10:20	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	66800		231	2500	1	05/14/2025 03:52	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	173000		4750	20000	1	05/07/2025 14:53	WG2509106
Alkalinity,Bicarbonate	173000		4750	20000	1	05/07/2025 14:53	WG2509106

Sample Narrative:

L1855623-01 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	5400		547	1000	1	05/09/2025 19:53	WG2508903
Fluoride	235		76.1	150	1	05/09/2025 19:53	WG2508903
Sulfate	6340		637	5000	1	05/09/2025 19:53	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/07/2025 17:31	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 21:31	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:20	WG2511424
Silicon	23300		77.1	200	1	05/14/2025 10:20	WG2511424
Sulfur	2750	B	160	1000	1	05/14/2025 10:20	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 03:52	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/14/2025 15:21	WG2511414
Arsenic	12.5		0.120	2.00	1	05/14/2025 03:52	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 03:52	WG2511466
Calcium	16400		92.5	1000	1	05/14/2025 03:52	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 03:52	WG2511466
Copper	0.833	U	0.700	5.00	1	05/14/2025 03:52	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 03:52	WG2511466
Iron	174		22.6	100	1	05/14/2025 03:52	WG2511466
Iron,Dissolved	156		22.6	100	1	05/14/2025 15:21	WG2511414
Lead	U		0.500	2.00	1	05/14/2025 03:52	WG2511466
Magnesium	6260		82.7	1000	1	05/14/2025 03:52	WG2511466
Manganese	107		0.700	5.00	1	05/14/2025 03:52	WG2511466
Manganese,Dissolved	109		0.700	5.00	1	05/14/2025 15:21	WG2511414
Nickel	U		0.500	2.00	1	05/14/2025 03:52	WG2511466
Potassium	1790	U	96.5	2000	1	05/14/2025 03:52	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 03:52	WG2511466
Sodium	52900		142	2000	1	05/14/2025 03:52	WG2511466
Vanadium	U		0.520	5.00	1	05/14/2025 03:52	WG2511466
Zinc	7.63	U	4.00	25.0	1	05/14/2025 03:52	WG2511466

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	52800		165	428	1	05/14/2025 10:22	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	256000		231	2500	1	05/14/2025 03:56	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	373000		4750	20000	1	05/07/2025 15:00	WG2509106
Alkalinity,Bicarbonate	373000		4750	20000	1	05/07/2025 15:00	WG2509106

Sample Narrative:

L1855623-02 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7450		547	1000	1	05/09/2025 20:58	WG2508903
Fluoride	299		76.1	150	1	05/09/2025 20:58	WG2508903
Sulfate	26800		637	5000	1	05/09/2025 20:58	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3030		495	1000	1	05/07/2025 18:08	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 21:37	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:22	WG2511424
Silicon	24700		77.1	200	1	05/14/2025 10:22	WG2511424
Sulfur	10300		160	1000	1	05/14/2025 10:22	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 03:56	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/14/2025 15:24	WG2511414
Arsenic	4.42		0.120	2.00	1	05/14/2025 03:56	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 03:56	WG2511466
Calcium	58700		92.5	1000	1	05/14/2025 03:56	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 03:56	WG2511466
Copper	58.9		0.700	5.00	1	05/14/2025 03:56	WG2511466
Cobalt	0.107	U	0.100	2.00	1	05/14/2025 03:56	WG2511466
Iron	U		22.6	100	1	05/14/2025 03:56	WG2511466
Iron,Dissolved	U		22.6	100	1	05/14/2025 15:24	WG2511414
Lead	26.5		0.500	2.00	1	05/14/2025 03:56	WG2511466
Magnesium	26600		82.7	1000	1	05/14/2025 03:56	WG2511466
Manganese	U		0.700	5.00	1	05/14/2025 03:56	WG2511466
Manganese,Dissolved	1.99	U	0.700	5.00	1	05/14/2025 15:24	WG2511414
Nickel	1.07	U	0.500	2.00	1	05/14/2025 03:56	WG2511466
Potassium	4300		96.5	2000	1	05/14/2025 03:56	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 03:56	WG2511466
Sodium	92700		142	2000	1	05/14/2025 03:56	WG2511466
Vanadium	64.8		0.520	5.00	1	05/14/2025 03:56	WG2511466
Zinc	45.4		4.00	25.0	1	05/14/2025 03:56	WG2511466

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	35500		165	428	1	05/14/2025 10:24	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	98500		231	2500	1	05/14/2025 03:59	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	144000		4750	20000	1	05/07/2025 15:07	WG2509106
Alkalinity,Bicarbonate	144000		4750	20000	1	05/07/2025 15:07	WG2509106

Sample Narrative:

L1855623-03 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2470		547	1000	1	05/09/2025 21:47	WG2508903
Fluoride	184		76.1	150	1	05/09/2025 21:47	WG2508903
Sulfate	3880	J	637	5000	1	05/09/2025 21:47	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2240		495	1000	1	05/07/2025 19:49	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0944	J	0.0700	0.200	1	05/12/2025 21:40	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:24	WG2511424
Silicon	16600		77.1	200	1	05/14/2025 10:24	WG2511424
Sulfur	1920	B	160	1000	1	05/14/2025 10:24	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 03:59	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/14/2025 15:27	WG2511414
Arsenic	4.95		0.120	2.00	1	05/14/2025 03:59	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 03:59	WG2511466
Calcium	23700		92.5	1000	1	05/14/2025 03:59	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 03:59	WG2511466
Copper	2.37	U	0.700	5.00	1	05/14/2025 03:59	WG2511466
Cobalt	0.152	U	0.100	2.00	1	05/14/2025 03:59	WG2511466
Iron	67.5	U	22.6	100	1	05/14/2025 03:59	WG2511466
Iron,Dissolved	55.3	U	22.6	100	1	05/14/2025 15:27	WG2511414
Lead	U		0.500	2.00	1	05/14/2025 03:59	WG2511466
Magnesium	9540		82.7	1000	1	05/14/2025 03:59	WG2511466
Manganese	137		0.700	5.00	1	05/14/2025 03:59	WG2511466
Manganese,Dissolved	142		0.700	5.00	1	05/14/2025 15:27	WG2511414
Nickel	U		0.500	2.00	1	05/14/2025 03:59	WG2511466
Potassium	1160	U	96.5	2000	1	05/14/2025 03:59	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 03:59	WG2511466
Sodium	25200		142	2000	1	05/14/2025 03:59	WG2511466
Vanadium	U		0.520	5.00	1	05/14/2025 03:59	WG2511466
Zinc	11.4	U	4.00	25.0	1	05/14/2025 03:59	WG2511466

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	57600		165	428	1	05/14/2025 10:26	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	97600		231	2500	1	05/14/2025 04:02	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	188000		4750	20000	1	05/07/2025 15:28	WG2509106
Alkalinity,Bicarbonate	188000		4750	20000	1	05/07/2025 15:28	WG2509106

Sample Narrative:

L1855623-04 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	3230		547	1000	1	05/09/2025 22:04	WG2508903
Fluoride	115	J	76.1	150	1	05/09/2025 22:04	WG2508903
Sulfate	U		637	5000	1	05/09/2025 22:04	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2920		495	1000	1	05/07/2025 20:55	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 21:43	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:26	WG2511424
Silicon	26900		77.1	200	1	05/14/2025 10:26	WG2511424
Sulfur	185	B J	160	1000	1	05/14/2025 10:26	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 04:02	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/14/2025 15:30	WG2511414
Arsenic	8.86		0.120	2.00	1	05/14/2025 04:02	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:02	WG2511466
Calcium	19900		92.5	1000	1	05/14/2025 04:02	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 04:02	WG2511466
Copper	6.76		0.700	5.00	1	05/14/2025 04:02	WG2511466
Cobalt	0.113	U	0.100	2.00	1	05/14/2025 04:02	WG2511466
Iron	742		22.6	100	1	05/14/2025 04:02	WG2511466
Iron,Dissolved	373		22.6	100	1	05/14/2025 15:30	WG2511414
Lead	0.898	U	0.500	2.00	1	05/14/2025 04:02	WG2511466
Magnesium	11700		82.7	1000	1	05/14/2025 04:02	WG2511466
Manganese	137		0.700	5.00	1	05/14/2025 04:02	WG2511466
Manganese,Dissolved	141		0.700	5.00	1	05/14/2025 15:30	WG2511414
Nickel	0.759	U	0.500	2.00	1	05/14/2025 04:02	WG2511466
Potassium	5140		96.5	2000	1	05/14/2025 04:02	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 04:02	WG2511466
Sodium	36400		142	2000	1	05/14/2025 04:02	WG2511466
Vanadium	U		0.520	5.00	1	05/14/2025 04:02	WG2511466
Zinc	5.27	U	4.00	25.0	1	05/14/2025 04:02	WG2511466

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	61.0	J	16.0	100	1	05/14/2025 14:11	WG2511414
Iron,Dissolved	43.3	J	22.6	100	1	05/14/2025 14:11	WG2511414
Manganese,Dissolved	1.14	J	0.700	5.00	1	05/14/2025 14:11	WG2511414

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	56700		165	428	1	05/14/2025 10:31	WG2511424

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	106000		231	2500	1	05/14/2025 04:06	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	170000		4750	20000	1	05/07/2025 15:35	WG2509106
Alkalinity,Bicarbonate	170000		4750	20000	1	05/07/2025 15:35	WG2509106

Sample Narrative:

L1855623-06 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	4280		547	1000	1	05/09/2025 22:20	WG2508903
Fluoride	152		76.1	150	1	05/09/2025 22:20	WG2508903
Sulfate	1200	J	637	5000	1	05/09/2025 22:20	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1400		495	1000	1	05/07/2025 21:32	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 21:46	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:31	WG2511424
Silicon	26500		77.1	200	1	05/14/2025 10:31	WG2511424
Sulfur	743	B J	160	1000	1	05/14/2025 10:31	WG2511424

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 04:06	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/14/2025 15:34	WG2511414
Arsenic	1.10	U	0.120	2.00	1	05/14/2025 04:06	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:06	WG2511466
Calcium	22000		92.5	1000	1	05/14/2025 04:06	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 04:06	WG2511466
Copper	2.28	U	0.700	5.00	1	05/14/2025 04:06	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 04:06	WG2511466
Iron	247		22.6	100	1	05/14/2025 04:06	WG2511466
Iron,Dissolved	197		22.6	100	1	05/14/2025 15:34	WG2511414
Lead	U		0.500	2.00	1	05/14/2025 04:06	WG2511466
Magnesium	12400		82.7	1000	1	05/14/2025 04:06	WG2511466
Manganese	282		0.700	5.00	1	05/14/2025 04:06	WG2511466
Manganese,Dissolved	303		0.700	5.00	1	05/14/2025 15:34	WG2511414
Nickel	3.26		0.500	2.00	1	05/14/2025 04:06	WG2511466
Potassium	4030		96.5	2000	1	05/14/2025 04:06	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 04:06	WG2511466
Sodium	29800		142	2000	1	05/14/2025 04:06	WG2511466
Vanadium	U		0.520	5.00	1	05/14/2025 04:06	WG2511466
Zinc	19.6	U	4.00	25.0	1	05/14/2025 04:06	WG2511466

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211292-2 05/07/25 13:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1855536-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1855536-03 05/07/25 14:40 • (DUP) R4211292-3 05/07/25 14:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	7020	8710	1	21.5	J P1	20
Alkalinity,Bicarbonate	7020	8710	1	21.5	J P1	20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1855672-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1855672-04 05/07/25 16:28 • (DUP) R4211292-4 05/07/25 16:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	381000	382000	1	0.154		20
Alkalinity,Bicarbonate	381000	382000	1	0.154		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4211292-1 05/07/25 13:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Alkalinity	100000	101000	101	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211292-1 05/07/25 13:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211250-1 05/07/25 16:20

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1855537-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855537-01 05/07/25 16:23 • (DUP) R4211250-5 05/07/25 16:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1855860-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1855860-02 05/07/25 16:25 • (DUP) R4211250-6 05/07/25 16:25

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4211250-2 05/07/25 16:20

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	498	99.6	85.0-115	

L1855422-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855422-01 05/07/25 16:20 • (MS) R4211250-3 05/07/25 16:21 • (MSD) R4211250-4 05/07/25 16:22

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	524	524	105	105	1	80.0-120			0.000	20

Method Blank (MB)

(MB) R4212779-1 05/09/25 18:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1855623-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-01 05/09/25 19:53 • (DUP) R4212779-3 05/09/25 20:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5400	5400	1	0.117		15
Fluoride	235	235	1	0.170		15
Sulfate	6340	6360	1	0.312		15

L1855623-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-02 05/09/25 20:58 • (DUP) R4212779-6 05/09/25 21:15

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7450	7420	1	0.432		15
Fluoride	299	298	1	0.268		15
Sulfate	26800	26800	1	0.0568		15

Laboratory Control Sample (LCS)

(LCS) R4212779-2 05/09/25 18:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	37900	94.8	80.0-120	
Fluoride	8000	8210	103	80.0-120	
Sulfate	40000	38000	95.0	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1855623-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-01 05/09/25 19:53 • (MS) R4212779-4 05/09/25 20:26 • (MSD) R4212779-5 05/09/25 20:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	40000	5400	42900	43100	93.8	94.2	1	80.0-120			0.370	15
Fluoride	8000	235	8480	8490	103	103	1	80.0-120			0.127	15
Sulfate	40000	6340	44200	44300	94.7	95.0	1	80.0-120			0.270	15

L1855623-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1855623-02 05/09/25 20:58 • (MS) R4212779-7 05/09/25 21:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40000	7450	43800	91.0	1	80.0-120	
Fluoride	8000	299	8320	100	1	80.0-120	
Sulfate	40000	26800	60100	83.4	1	80.0-120	

1
Cp

2
Tc

3
Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4211462-2 05/07/25 13:32

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1855623-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-01 05/07/25 17:31 • (DUP) R4211462-3 05/07/25 17:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

L1855623-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-04 05/07/25 20:55 • (DUP) R4211462-8 05/07/25 21:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	2920	2970	1	1.39		20

Laboratory Control Sample (LCS)

(LCS) R4211462-1 05/07/25 13:13

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24300	97.4	80.0-120	

L1855623-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-02 05/07/25 18:08 • (MS) R4211462-4 05/07/25 18:30 • (MSD) R4211462-5 05/07/25 18:53

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	3030	28000	28000	99.7	99.7	1	75.0-125			0.0358	20

L1855623-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-03 05/07/25 19:49 • (MS) R4211462-6 05/07/25 20:12 • (MSD) R4211462-7 05/07/25 20:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2240	27800	27100	102	99.4	1	75.0-125			2.51	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4213633-5 05/12/25 21:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4213633-1 05/12/25 20:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.87	95.8	80.0-120	

L1855661-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855661-02 05/12/25 20:56 • (MS) R4213633-3 05/12/25 21:01 • (MSD) R4213633-4 05/12/25 21:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.91	2.81	96.8	93.6	1	75.0-125			3.43	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214652-1 05/14/25 09:50

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	594	⌵	160	1000

Laboratory Control Sample (LCS)

(LCS) R4214652-2 05/14/25 09:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Lithium	1000	1000	100	80.0-120	
Silicon	1000	988	98.8	80.0-120	
Sulfur	10000	10200	102	80.0-120	

L1855547-33 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855547-33 05/14/25 09:53 • (MS) R4214652-4 05/14/25 09:57 • (MSD) R4214652-5 05/14/25 09:58

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l		ug/l	ug/l	%	%		%			%	%
Lithium	1000		1010	1050	97.8	101	1	75.0-125			3.22	20
Silicon	1000		7600	7430	89.0	71.6	1	75.0-125	⌵		2.31	20
Sulfur	10000		31500	30800	102	94.8	1	75.0-125			2.20	20

1Cp

2Tc

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4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214629-1 05/14/25 14:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4214629-2 05/14/25 14:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	1010	101	80.0-120	
Iron,Dissolved	1000	1040	104	80.0-120	
Manganese,Dissolved	50.0	52.4	105	80.0-120	

L1855623-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-05 05/14/25 14:11 • (MS) R4214629-4 05/14/25 14:17 • (MSD) R4214629-5 05/14/25 14:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	61.0	1000	1020	94.3	96.0	1	75.0-125			1.75	20
Iron,Dissolved	1000	43.3	1020	1030	97.9	98.4	1	75.0-125			0.503	20
Manganese,Dissolved	50.0	1.14	53.0	52.6	104	103	1	75.0-125			0.703	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4214415-1 05/14/25 03:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	457	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4214415-2 05/14/25 03:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1010	101	80.0-120	
Arsenic	50.0	50.0	100	80.0-120	
Cadmium	50.0	50.6	101	80.0-120	
Calcium	5000	4970	99.3	80.0-120	
Chromium	50.0	49.9	99.9	80.0-120	
Copper	50.0	47.6	95.2	80.0-120	
Cobalt	50.0	51.0	102	80.0-120	
Iron	1000	970	97.0	80.0-120	
Lead	50.0	50.4	101	80.0-120	
Magnesium	5000	5210	104	80.0-120	
Manganese	50.0	50.4	101	80.0-120	
Nickel	50.0	51.5	103	80.0-120	
Potassium	5000	5040	101	80.0-120	
Selenium	50.0	46.5	93.1	80.0-120	
Sodium	5000	4900	98.1	80.0-120	
Vanadium	50.0	49.2	98.5	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4214415-2 05/14/25 03:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	50.6	101	80.0-120	

L1855672-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855672-04 05/14/25 03:19 • (MS) R4214415-4 05/14/25 03:26 • (MSD) R4214415-5 05/14/25 03:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	1060	1040	106	104	1	75.0-125			1.70	20
Arsenic	50.0	0.147	50.7	50.5	101	101	1	75.0-125			0.366	20
Cadmium	50.0	U	49.2	49.3	98.5	98.7	1	75.0-125			0.235	20
Calcium	5000	176000	179000	179000	61.9	57.1	1	75.0-125	V	V	0.136	20
Chromium	50.0	U	50.5	50.0	101	99.9	1	75.0-125			1.14	20
Copper	50.0	1.23	46.3	45.8	90.2	89.1	1	75.0-125			1.23	20
Cobalt	50.0	0.633	50.1	49.5	99.0	97.7	1	75.0-125			1.28	20
Iron	1000	U	999	968	99.9	96.8	1	75.0-125			3.14	20
Lead	50.0	U	50.3	49.2	101	98.3	1	75.0-125			2.37	20
Magnesium	5000	70900	73900	73800	59.1	57.3	1	75.0-125	V	V	0.120	20
Manganese	50.0	2.73	49.1	50.2	92.8	94.9	1	75.0-125			2.14	20
Nickel	50.0	16.8	66.3	65.0	99.0	96.3	1	75.0-125			2.06	20
Potassium	5000	1670	6730	6600	101	98.7	1	75.0-125			1.91	20
Selenium	50.0	1.06	50.1	48.9	98.2	95.6	1	75.0-125			2.57	20
Sodium	5000	31200	35800	35800	92.2	92.0	1	75.0-125			0.0210	20
Vanadium	50.0	U	50.4	49.8	101	99.5	1	75.0-125			1.20	20
Zinc	50.0	U	53.3	53.5	107	107	1	75.0-125			0.394	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

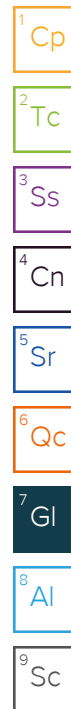
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

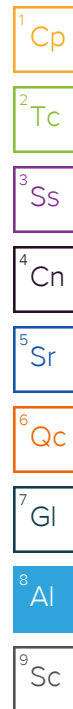
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbezinger@maulfoster.com ; smaloney@maulfoster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name:
Crook County Limited Groundwater Investigation

Sampler Name: *SM*

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative											Comments
				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	HCL	
				Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	
20250505-2	5-5 0810	W	6	X	X	X	X	X	X	X	X	X	X	X	-01
20250505-4	0915		6	X	X	X	X	X	X	X	X	X	X	X	-02
20250505-5	1005		6	X	X	X	X	X	X	X	X	X	X	X	-03
20250505-7	1100		6	X	X	X	X	X	X	X	X	X	X	X	-04
20250505-FB	1215		1			X									-05
20250505-8	1218		6	X	X	X	X	X	X	X	X	X	X	X	-06

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: <i>Sean Maloney</i>	Agency/Agent: <i>MTA</i>	Received By: <i>Alexa Mitchell</i>	Agency/Agent: <i>PAGE</i>
Signature: <i>[Signature]</i>	Time & Date: <i>5-5-25 1240</i>	Signature: <i>Alexa Mitchell</i>	Time & Date: <i>5/6/25 0845</i>
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

Sample Receipt Checklist *1064-4 = 200*

COC Seal Present/Intact: ☒ Y ☐ N ☐ MF 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 Condition: ☐ NCF ☒ OK

RA Screen <0.5 mR/hr: ☒ Y ☐ N

SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY (IER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

TH 4208 1334 2160

May 16, 2025

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

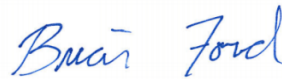
⁹ Sc

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1855625
Samples Received: 05/06/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 mydata.pacelabs.com

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SAMPLE SUMMARY

20250505-1 L1855625-01

Collected by
Y. Perez

Collected date/time
05/05/25 07:27

Received date/time
05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:32	05/14/25 10:32	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:09	05/14/25 04:09	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:41	05/07/25 15:41	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:24	05/07/25 16:24	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 22:36	05/09/25 22:36	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 21:49	05/07/25 21:49	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509187	1	05/12/25 12:45	05/12/25 21:48	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:32	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511416	1	05/12/25 19:14	05/13/25 01:47	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:09	JDB	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250505-1-DUP L1855625-02

Collected by
Y. Perez

Collected date/time
05/05/25 07:27

Received date/time
05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:34	05/14/25 10:34	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:13	05/14/25 04:13	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:48	05/07/25 15:48	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:25	05/07/25 16:25	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 22:53	05/09/25 22:53	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 22:08	05/07/25 22:08	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509189	1	05/12/25 12:55	05/12/25 20:15	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:34	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511416	1	05/12/25 19:14	05/13/25 02:00	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:13	JDB	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250505-3 L1855625-03

Collected by
Y. Perez

Collected date/time
05/05/25 08:46

Received date/time
05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511424	1	05/14/25 10:36	05/14/25 10:36	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:16	05/14/25 04:16	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 15:55	05/07/25 15:55	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:25	05/07/25 16:25	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 23:42	05/09/25 23:42	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 22:25	05/07/25 22:25	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509189	1	05/12/25 12:55	05/12/25 20:18	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511424	1	05/13/25 23:03	05/14/25 10:36	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511416	1	05/12/25 19:14	05/13/25 02:04	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:16	JDB	Mt. Juliet, TN

Collected by
Y. Perez

Collected date/time
05/05/25 10:19

Received date/time
05/06/25 08:45

20250505-6 L1855625-04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2511427	1	05/14/25 10:42	05/14/25 10:42	MAP	Mt. Juliet, TN
Calculated Results	WG2511466	1	05/14/25 04:19	05/14/25 04:19	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509106	1	05/07/25 16:02	05/07/25 16:02	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2509363	1	05/07/25 16:25	05/07/25 16:25	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2508903	1	05/09/25 23:58	05/09/25 23:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2508863	1	05/07/25 22:44	05/07/25 22:44	ASH	Mt. Juliet, TN
Mercury by Method 7470A	WG2509189	1	05/12/25 12:55	05/12/25 20:20	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2511427	1	05/12/25 23:21	05/13/25 07:43	RLS	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1855625

DATE/TIME:

05/16/25 08:32

PAGE:

3 of 29

SAMPLE SUMMARY

20250505-6 L1855625-04

Collected by
Y. Perez

Collected date/time
05/05/25 10:19

Received date/time
05/06/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2511427	1	05/12/25 23:21	05/14/25 10:42	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511416	1	05/12/25 19:14	05/13/25 02:07	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511466	1	05/13/25 09:47	05/14/25 04:19	JDB	Mt. Juliet, TN

¹Cp ${}^2\text{Tc}$ ${}^3S_s$ ${}^4\text{Cn}$ ${}^5\text{Sr}$ ${}^6\text{Qc}$ ${}^7\text{Gf}$ ${}^8\text{Al}$ ${}^9\text{Sc}$

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.



Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	52100		165	428	1	05/14/2025 10:32	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	325000		231	2500	1	05/14/2025 04:09	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	336000		4750	20000	1	05/07/2025 15:41	WG2509106
Alkalinity,Bicarbonate	336000		4750	20000	1	05/07/2025 15:41	WG2509106

Sample Narrative:

L1855625-01 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:24	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7210		547	1000	1	05/09/2025 22:36	WG2508903
Fluoride	243		76.1	150	1	05/09/2025 22:36	WG2508903
Sulfate	19000		637	5000	1	05/09/2025 22:36	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2970		495	1000	1	05/07/2025 21:49	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 21:48	WG2509187

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:32	WG2511424
Silicon	24400		77.1	200	1	05/14/2025 10:32	WG2511424
Sulfur	7460		160	1000	1	05/14/2025 10:32	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 04:09	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/13/2025 01:47	WG2511416
Arsenic	2.60		0.120	2.00	1	05/14/2025 04:09	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:09	WG2511466
Calcium	64000		92.5	1000	1	05/14/2025 04:09	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 04:09	WG2511466
Copper	3.02	U	0.700	5.00	1	05/14/2025 04:09	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 04:09	WG2511466
Iron	U		22.6	100	1	05/14/2025 04:09	WG2511466
Iron,Dissolved	U		22.6	100	1	05/13/2025 01:47	WG2511416
Lead	U		0.500	2.00	1	05/14/2025 04:09	WG2511466
Magnesium	40200		82.7	1000	1	05/14/2025 04:09	WG2511466
Manganese	U		0.700	5.00	1	05/14/2025 04:09	WG2511466
Manganese,Dissolved	U		0.700	5.00	1	05/13/2025 01:47	WG2511416
Nickel	U		0.500	2.00	1	05/14/2025 04:09	WG2511466
Potassium	2400		96.5	2000	1	05/14/2025 04:09	WG2511466
Selenium	0.331	U	0.250	2.00	1	05/14/2025 04:09	WG2511466
Sodium	43400		142	2000	1	05/14/2025 04:09	WG2511466
Vanadium	61.9		0.520	5.00	1	05/14/2025 04:09	WG2511466
Zinc	8.98	U	4.00	25.0	1	05/14/2025 04:09	WG2511466

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	51300		165	428	1	05/14/2025 10:34	WG2511424

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	323000		231	2500	1	05/14/2025 04:13	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	342000		4750	20000	1	05/07/2025 15:48	WG2509106
Alkalinity,Bicarbonate	342000		4750	20000	1	05/07/2025 15:48	WG2509106

Sample Narrative:

L1855625-02 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:25	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7300		547	1000	1	05/09/2025 22:53	WG2508903
Fluoride	247		76.1	150	1	05/09/2025 22:53	WG2508903
Sulfate	19200		637	5000	1	05/09/2025 22:53	WG2508903

Wet Chemistry by Method 9060A

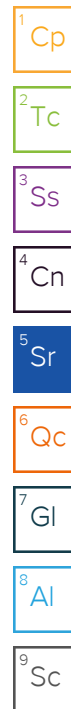
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2840		495	1000	1	05/07/2025 22:08	WG2508863

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	0.0737	J	0.0700	0.200	1	05/12/2025 20:15	WG2509189

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 10:34	WG2511424
Silicon	24000		77.1	200	1	05/14/2025 10:34	WG2511424
Sulfur	9720		160	1000	1	05/14/2025 10:34	WG2511424



Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 04:13	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/13/2025 02:00	WG2511416
Arsenic	2.45		0.120	2.00	1	05/14/2025 04:13	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:13	WG2511466
Calcium	63900		92.5	1000	1	05/14/2025 04:13	WG2511466
Chromium	U		0.900	2.00	1	05/14/2025 04:13	WG2511466
Copper	3.07	J	0.700	5.00	1	05/14/2025 04:13	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 04:13	WG2511466
Iron	U		22.6	100	1	05/14/2025 04:13	WG2511466
Iron,Dissolved	U		22.6	100	1	05/13/2025 02:00	WG2511416
Lead	U		0.500	2.00	1	05/14/2025 04:13	WG2511466
Magnesium	39700		82.7	1000	1	05/14/2025 04:13	WG2511466
Manganese	U		0.700	5.00	1	05/14/2025 04:13	WG2511466
Manganese,Dissolved	U		0.700	5.00	1	05/13/2025 02:00	WG2511416
Nickel	U		0.500	2.00	1	05/14/2025 04:13	WG2511466
Potassium	2320		96.5	2000	1	05/14/2025 04:13	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 04:13	WG2511466
Sodium	42700		142	2000	1	05/14/2025 04:13	WG2511466
Vanadium	61.8		0.520	5.00	1	05/14/2025 04:13	WG2511466
Zinc	9.06	J	4.00	25.0	1	05/14/2025 04:13	WG2511466

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	54000		165	428	1	05/14/2025 10:36	WG2511424

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	298000		231	2500	1	05/14/2025 04:16	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	369000		4750	20000	1	05/07/2025 15:55	WG2509106
Alkalinity,Bicarbonate	369000		4750	20000	1	05/07/2025 15:55	WG2509106

Sample Narrative:

L1855625-03 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:25	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	11900		547	1000	1	05/09/2025 23:42	WG2508903
Fluoride	256		76.1	150	1	05/09/2025 23:42	WG2508903
Sulfate	16300		637	5000	1	05/09/2025 23:42	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	529	J	495	1000	1	05/07/2025 22:25	WG2508863

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 20:18	WG2509189

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	5.34	J	4.22	15.0	1	05/14/2025 10:36	WG2511424
Silicon	25200		77.1	200	1	05/14/2025 10:36	WG2511424
Sulfur	8020		160	1000	1	05/14/2025 10:36	WG2511424

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	29.4	U	16.0	100	1	05/14/2025 04:16	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/13/2025 02:04	WG2511416
Arsenic	7.42		0.120	2.00	1	05/14/2025 04:16	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:16	WG2511466
Calcium	67000		92.5	1000	1	05/14/2025 04:16	WG2511466
Chromium	1.36	U	0.900	2.00	1	05/14/2025 04:16	WG2511466
Copper	3.36	U	0.700	5.00	1	05/14/2025 04:16	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 04:16	WG2511466
Iron	63.8	U	22.6	100	1	05/14/2025 04:16	WG2511466
Iron,Dissolved	U		22.6	100	1	05/13/2025 02:04	WG2511416
Lead	U		0.500	2.00	1	05/14/2025 04:16	WG2511466
Magnesium	31600		82.7	1000	1	05/14/2025 04:16	WG2511466
Manganese	1.21	U	0.700	5.00	1	05/14/2025 04:16	WG2511466
Manganese,Dissolved	U		0.700	5.00	1	05/13/2025 02:04	WG2511416
Nickel	0.537	U	0.500	2.00	1	05/14/2025 04:16	WG2511466
Potassium	6790		96.5	2000	1	05/14/2025 04:16	WG2511466
Selenium	0.306	U	0.250	2.00	1	05/14/2025 04:16	WG2511466
Sodium	65200		142	2000	1	05/14/2025 04:16	WG2511466
Vanadium	49.2		0.520	5.00	1	05/14/2025 04:16	WG2511466
Zinc	4.90	U	4.00	25.0	1	05/14/2025 04:16	WG2511466

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	49200		165	428	1	05/14/2025 10:42	WG2511427

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	376000		231	2500	1	05/14/2025 04:19	WG2511466

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	401000		4750	20000	1	05/07/2025 16:02	WG2509106
Alkalinity,Bicarbonate	401000		4750	20000	1	05/07/2025 16:02	WG2509106

Sample Narrative:

L1855625-04 WG2509106: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/07/2025 16:25	WG2509363

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	8230		547	1000	1	05/09/2025 23:58	WG2508903
Fluoride	243		76.1	150	1	05/09/2025 23:58	WG2508903
Sulfate	27000		637	5000	1	05/09/2025 23:58	WG2508903

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2800		495	1000	1	05/07/2025 22:44	WG2508863

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/12/2025 20:20	WG2509189

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	5.43	B J	4.22	15.0	1	05/13/2025 07:43	WG2511427
Silicon	23000		77.1	200	1	05/14/2025 10:42	WG2511427
Sulfur	10400		160	1000	1	05/13/2025 07:43	WG2511427

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

SAMPLE RESULTS - 04

L1855625

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 04:19	WG2511466
Aluminum,Dissolved	U		16.0	100	1	05/13/2025 02:07	WG2511416
Arsenic	2.29		0.120	2.00	1	05/14/2025 04:19	WG2511466
Cadmium	U		0.120	1.00	1	05/14/2025 04:19	WG2511466
Calcium	80300		92.5	1000	1	05/14/2025 04:19	WG2511466
Chromium	0.960	J	0.900	2.00	1	05/14/2025 04:19	WG2511466
Copper	84.1		0.700	5.00	1	05/14/2025 04:19	WG2511466
Cobalt	U		0.100	2.00	1	05/14/2025 04:19	WG2511466
Iron	45.9	J	22.6	100	1	05/14/2025 04:19	WG2511466
Iron,Dissolved	U		22.6	100	1	05/13/2025 02:07	WG2511416
Lead	10.2		0.500	2.00	1	05/14/2025 04:19	WG2511466
Magnesium	42500		82.7	1000	1	05/14/2025 04:19	WG2511466
Manganese	U		0.700	5.00	1	05/14/2025 04:19	WG2511466
Manganese,Dissolved	U		0.700	5.00	1	05/13/2025 02:07	WG2511416
Nickel	0.718	J	0.500	2.00	1	05/14/2025 04:19	WG2511466
Potassium	3240		96.5	2000	1	05/14/2025 04:19	WG2511466
Selenium	U		0.250	2.00	1	05/14/2025 04:19	WG2511466
Sodium	52700		142	2000	1	05/14/2025 04:19	WG2511466
Vanadium	46.8		0.520	5.00	1	05/14/2025 04:19	WG2511466
Zinc	13.2	J	4.00	25.0	1	05/14/2025 04:19	WG2511466

Method Blank (MB)

(MB) R4211292-2 05/07/25 13:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1855536-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1855536-03 05/07/25 14:40 • (DUP) R4211292-3 05/07/25 14:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	7020	8710	1	21.5	J P1	20
Alkalinity,Bicarbonate	7020	8710	1	21.5	J P1	20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1855672-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1855672-04 05/07/25 16:28 • (DUP) R4211292-4 05/07/25 16:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	381000	382000	1	0.154		20
Alkalinity,Bicarbonate	381000	382000	1	0.154		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4211292-1 05/07/25 13:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	101000	101	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211292-1 05/07/25 13:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211250-1 05/07/25 16:20

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1855537-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855537-01 05/07/25 16:23 • (DUP) R4211250-5 05/07/25 16:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1855860-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1855860-02 05/07/25 16:25 • (DUP) R4211250-6 05/07/25 16:25

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4211250-2 05/07/25 16:20

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	498	99.6	85.0-115	

L1855422-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855422-01 05/07/25 16:20 • (MS) R4211250-3 05/07/25 16:21 • (MSD) R4211250-4 05/07/25 16:22

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	524	524	105	105	1	80.0-120			0.000	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4212779-1 05/09/25 18:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1855623-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-01 05/09/25 19:53 • (DUP) R4212779-3 05/09/25 20:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5400	5400	1	0.117		15
Fluoride	235	235	1	0.170		15
Sulfate	6340	6360	1	0.312		15

L1855623-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-02 05/09/25 20:58 • (DUP) R4212779-6 05/09/25 21:15

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7450	7420	1	0.432		15
Fluoride	299	298	1	0.268		15
Sulfate	26800	26800	1	0.0568		15

Laboratory Control Sample (LCS)

(LCS) R4212779-2 05/09/25 18:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	37900	94.8	80.0-120	
Fluoride	8000	8210	103	80.0-120	
Sulfate	40000	38000	95.0	80.0-120	

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

L1855623-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-01 05/09/25 19:53 • (MS) R4212779-4 05/09/25 20:26 • (MSD) R4212779-5 05/09/25 20:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	40000	5400	42900	43100	93.8	94.2	1	80.0-120			0.370	15
Fluoride	8000	235	8480	8490	103	103	1	80.0-120			0.127	15
Sulfate	40000	6340	44200	44300	94.7	95.0	1	80.0-120			0.270	15

L1855623-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1855623-02 05/09/25 20:58 • (MS) R4212779-7 05/09/25 21:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40000	7450	43800	91.0	1	80.0-120	
Fluoride	8000	299	8320	100	1	80.0-120	
Sulfate	40000	26800	60100	83.4	1	80.0-120	

1
Cp

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Tc

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Ss

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Cn

5
Sr

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Qc

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Gl

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Al

9
Sc

Method Blank (MB)

(MB) R4211462-2 05/07/25 13:32

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1855623-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-01 05/07/25 17:31 • (DUP) R4211462-3 05/07/25 17:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

L1855623-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1855623-04 05/07/25 20:55 • (DUP) R4211462-8 05/07/25 21:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	2920	2970	1	1.39		20

Laboratory Control Sample (LCS)

(LCS) R4211462-1 05/07/25 13:13

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24300	97.4	80.0-120	

L1855623-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-02 05/07/25 18:08 • (MS) R4211462-4 05/07/25 18:30 • (MSD) R4211462-5 05/07/25 18:53

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	3030	28000	28000	99.7	99.7	1	75.0-125			0.0358	20

L1855623-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855623-03 05/07/25 19:49 • (MS) R4211462-6 05/07/25 20:12 • (MSD) R4211462-7 05/07/25 20:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2240	27800	27100	102	99.4	1	75.0-125			2.51	20



Method Blank (MB)

(MB) R4213633-5 05/12/25 21:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4213633-1 05/12/25 20:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.87	95.8	80.0-120	

L1855661-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855661-02 05/12/25 20:56 • (MS) R4213633-3 05/12/25 21:01 • (MSD) R4213633-4 05/12/25 21:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.91	2.81	96.8	93.6	1	75.0-125			3.43	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4213627-1 05/12/25 19:18

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4213627-2 05/12/25 19:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.84	94.7	80.0-120	

L1855811-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855811-04 05/12/25 19:23 • (MS) R4213627-4 05/12/25 19:29 • (MSD) R4213627-5 05/12/25 19:31

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	0.0950	2.96	2.95	95.4	95.1	1	75.0-125			0.339	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214652-1 05/14/25 09:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	594	⌵	160	1000

Laboratory Control Sample (LCS)

(LCS) R4214652-2 05/14/25 09:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1000	100	80.0-120	
Silicon	1000	988	98.8	80.0-120	
Sulfur	10000	10200	102	80.0-120	

L1855547-33 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855547-33 05/14/25 09:53 • (MS) R4214652-4 05/14/25 09:57 • (MSD) R4214652-5 05/14/25 09:58

Analyte	Spike Amount ug/l	Original Result	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000		1010	1050	97.8	101	1	75.0-125			3.22	20
Silicon	1000		7600	7430	89.0	71.6	1	75.0-125		⌵	2.31	20
Sulfur	10000		31500	30800	102	94.8	1	75.0-125			2.20	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4214037-1 05/13/25 07:34

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	7.57	⌵	4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4214037-2 05/13/25 07:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	982	98.2	80.0-120	
Silicon	1000	940	94.0	80.0-120	
Sulfur	10000	9580	95.8	80.0-120	

L1855811-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855811-01 05/13/25 07:37 • (MS) R4214037-4 05/13/25 07:40 • (MSD) R4214037-5 05/13/25 07:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	555	1600	1610	105	105	1	75.0-125			0.457	20
Silicon	1000	32200	32400	32500	19.5	30.5	1	75.0-125	⌵	⌵	0.340	20
Sulfur	10000	548000	549000	543000	11.8	0.000	1	75.0-125	⌵ EV	⌵ EV	1.17	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4213713-5 05/13/25 01:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4213713-10 05/13/25 02:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	971	97.1	80.0-120	
Iron,Dissolved	1000	978	97.8	80.0-120	
Manganese,Dissolved	50.0	49.9	99.8	80.0-120	

L1855625-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855625-01 05/13/25 01:47 • (MS) R4213713-8 05/13/25 01:53 • (MSD) R4213713-9 05/13/25 01:56

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	984	956	98.4	95.6	1	75.0-125			2.82	20
Iron,Dissolved	1000	U	969	972	96.9	97.2	1	75.0-125			0.249	20
Manganese,Dissolved	50.0	U	49.4	49.4	98.8	98.9	1	75.0-125			0.0473	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4214415-1 05/14/25 03:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	457	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4214415-2 05/14/25 03:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1010	101	80.0-120	
Arsenic	50.0	50.0	100	80.0-120	
Cadmium	50.0	50.6	101	80.0-120	
Calcium	5000	4970	99.3	80.0-120	
Chromium	50.0	49.9	99.9	80.0-120	
Copper	50.0	47.6	95.2	80.0-120	
Cobalt	50.0	51.0	102	80.0-120	
Iron	1000	970	97.0	80.0-120	
Lead	50.0	50.4	101	80.0-120	
Magnesium	5000	5210	104	80.0-120	
Manganese	50.0	50.4	101	80.0-120	
Nickel	50.0	51.5	103	80.0-120	
Potassium	5000	5040	101	80.0-120	
Selenium	50.0	46.5	93.1	80.0-120	
Sodium	5000	4900	98.1	80.0-120	
Vanadium	50.0	49.2	98.5	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4214415-2 05/14/25 03:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	50.6	101	80.0-120	

L1855672-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855672-04 05/14/25 03:19 • (MS) R4214415-4 05/14/25 03:26 • (MSD) R4214415-5 05/14/25 03:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	1060	1040	106	104	1	75.0-125			1.70	20
Arsenic	50.0	0.147	50.7	50.5	101	101	1	75.0-125			0.366	20
Cadmium	50.0	U	49.2	49.3	98.5	98.7	1	75.0-125			0.235	20
Calcium	5000	176000	179000	179000	61.9	57.1	1	75.0-125	V	V	0.136	20
Chromium	50.0	U	50.5	50.0	101	99.9	1	75.0-125			1.14	20
Copper	50.0	1.23	46.3	45.8	90.2	89.1	1	75.0-125			1.23	20
Cobalt	50.0	0.633	50.1	49.5	99.0	97.7	1	75.0-125			1.28	20
Iron	1000	U	999	968	99.9	96.8	1	75.0-125			3.14	20
Lead	50.0	U	50.3	49.2	101	98.3	1	75.0-125			2.37	20
Magnesium	5000	70900	73900	73800	59.1	57.3	1	75.0-125	V	V	0.120	20
Manganese	50.0	2.73	49.1	50.2	92.8	94.9	1	75.0-125			2.14	20
Nickel	50.0	16.8	66.3	65.0	99.0	96.3	1	75.0-125			2.06	20
Potassium	5000	1670	6730	6600	101	98.7	1	75.0-125			1.91	20
Selenium	50.0	1.06	50.1	48.9	98.2	95.6	1	75.0-125			2.57	20
Sodium	5000	31200	35800	35800	92.2	92.0	1	75.0-125			0.0210	20
Vanadium	50.0	U	50.4	49.8	101	99.5	1	75.0-125			1.20	20
Zinc	50.0	U	53.3	53.5	107	107	1	75.0-125			0.394	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

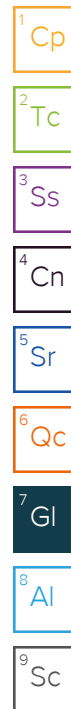
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

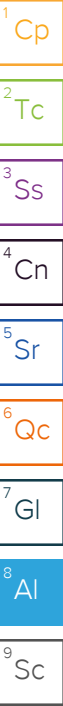
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

B057

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfooster.com; smaloney@maulfooster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name:				Sample Preservative											
Crook County Limited Groundwater Investigation				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	HCL	
Sampler Name: Ysabel Perez yf 5/12/25															
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250505-1	5/5/25 0727	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250505-1-DUP	0727	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250505-3	0840	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250505-6	1019	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
202505 yf 5/12/25															

Notes: Dissolved Metals = aluminum, iron, and manganese
Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: Ysabel Perez	Agency/Agent: MFA	Received By: Alexa Mitchell	Agency/Agent: RACE
Signature: [Signature]	Time & Date: 5/5/25 1240	Signature: alexa mitchell	Time & Date: 5/6/25 0845
Relinquished By: [Signature]	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

Sample Receipt Checklist
COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☐ NCF ☒ OK
RA Screen <0.5 mR/hr: ☒ Y ☐ N

SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

TH 4208 1336 2170

May 16, 2025

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1856254
Samples Received: 05/07/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
Project Manager

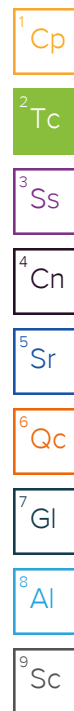
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory 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 mydata.pacelabs.com

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SAMPLE SUMMARY

20250506-1 L1856254-01

Collected by
Y. Perez

Collected date/time
05/06/25 07:37

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513213	1	05/14/25 21:05	05/14/25 21:05	BAG	Mt. Juliet, TN
Calculated Results	WG2513220	1	05/15/25 02:53	05/15/25 02:53	JPD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509570	1	05/08/25 14:39	05/08/25 14:39	ARD	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:50	05/08/25 15:50	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 07:59	05/11/25 07:59	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 20:27	05/08/25 20:27	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:19	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513213	1	05/14/25 08:33	05/14/25 21:05	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 04:54	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513220	1	05/14/25 08:26	05/15/25 02:53	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250506-1-DUP L1856254-02

Collected by
Y. Perez

Collected date/time
05/06/25 07:37

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513213	1	05/14/25 21:07	05/14/25 21:07	BAG	Mt. Juliet, TN
Calculated Results	WG2513220	1	05/15/25 02:57	05/15/25 02:57	JPD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509570	1	05/08/25 14:46	05/08/25 14:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2509570	1	05/08/25 21:06	05/08/25 21:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:50	05/08/25 15:50	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 08:15	05/11/25 08:15	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 21:31	05/08/25 21:31	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:21	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513213	1	05/14/25 08:33	05/14/25 21:07	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 04:57	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513220	1	05/14/25 08:26	05/15/25 02:57	JPD	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250506-2 L1856254-03

Collected by
Y. Perez

Collected date/time
05/06/25 08:55

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513213	1	05/14/25 21:09	05/14/25 21:09	BAG	Mt. Juliet, TN
Calculated Results	WG2513220	1	05/15/25 03:00	05/15/25 03:00	JPD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2510011	1	05/08/25 09:33	05/08/25 09:33	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:51	05/08/25 15:51	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 09:04	05/11/25 09:04	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 22:05	05/08/25 22:05	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:24	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513213	1	05/14/25 08:33	05/14/25 21:09	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 05:01	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513220	1	05/14/25 08:26	05/15/25 03:00	JPD	Mt. Juliet, TN

Collected by
Y. Perez

Collected date/time
05/06/25 10:37

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513213	1	05/14/25 21:10	05/14/25 21:10	BAG	Mt. Juliet, TN
Calculated Results	WG2513220	1	05/15/25 03:03	05/15/25 03:03	JPD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2510011	1	05/08/25 10:03	05/08/25 10:03	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:51	05/08/25 15:51	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 09:20	05/11/25 09:20	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 22:22	05/08/25 22:22	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:27	NDL	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1856254

DATE/TIME:

05/16/25 08:34

PAGE:

3 of 29

SAMPLE SUMMARY

20250506-5 L1856254-04

Collected by Y. Perez
Collected date/time 05/06/25 10:37
Received date/time 05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2513213	1	05/14/25 08:33	05/14/25 21:10	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 05:04	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513220	1	05/14/25 08:26	05/15/25 03:03	JPD	Mt. Juliet, TN

20250506-FB L1856254-05

Collected by Y. Perez
Collected date/time 05/06/25 07:45
Received date/time 05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 04:41	JDB	Mt. Juliet, TN

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

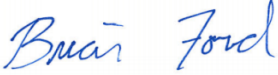
7Gl

8Al

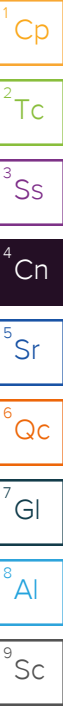
9Sc

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.



Brian Ford
Project Manager



20250506-1

Collected date/time: 05/06/25 07:37

SAMPLE RESULTS - 01

L1856254

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	15200		165	428	1	05/14/2025 21:05	WG2513213

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	7270		231	2500	1	05/15/2025 02:53	WG2513220

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	143000		4750	20000	1	05/08/2025 14:39	WG2509570
Alkalinity,Bicarbonate	143000		4750	20000	1	05/08/2025 14:39	WG2509570

Sample Narrative:

L1856254-01 WG2509570: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U	J6	25.5	50.0	1	05/08/2025 15:50	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2430		547	1000	1	05/11/2025 07:59	WG2509878
Fluoride	1250		76.1	150	1	05/11/2025 07:59	WG2509878
Sulfate	1880	J	637	5000	1	05/11/2025 07:59	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 20:27	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:19	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	11.0	J	4.22	15.0	1	05/14/2025 21:05	WG2513213
Silicon	7100		77.1	200	1	05/14/2025 21:05	WG2513213
Sulfur	838	J	160	1000	1	05/14/2025 21:05	WG2513213

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	38.3	U	16.0	100	1	05/15/2025 02:53	WG2513220
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 04:54	WG2513206
Arsenic	38.6		0.120	2.00	1	05/15/2025 02:53	WG2513220
Cadmium	U		0.120	1.00	1	05/15/2025 02:53	WG2513220
Calcium	2530		92.5	1000	1	05/15/2025 02:53	WG2513220
Chromium	U		0.900	2.00	1	05/15/2025 02:53	WG2513220
Copper	8.39		0.700	5.00	1	05/15/2025 02:53	WG2513220
Cobalt	U		0.100	2.00	1	05/15/2025 02:53	WG2513220
Iron	76.5	U	22.6	100	1	05/15/2025 02:53	WG2513220
Iron,Dissolved	U		22.6	100	1	05/15/2025 04:54	WG2513206
Lead	U		0.500	2.00	1	05/15/2025 02:53	WG2513220
Magnesium	229	U	82.7	1000	1	05/15/2025 02:53	WG2513220
Manganese	8.87		0.700	5.00	1	05/15/2025 02:53	WG2513220
Manganese,Dissolved	8.13		0.700	5.00	1	05/15/2025 04:54	WG2513206
Nickel	U		0.500	2.00	1	05/15/2025 02:53	WG2513220
Potassium	400	U	96.5	2000	1	05/15/2025 02:53	WG2513220
Selenium	U		0.250	2.00	1	05/15/2025 02:53	WG2513220
Sodium	60900		142	2000	1	05/15/2025 02:53	WG2513220
Vanadium	2.31	U	0.520	5.00	1	05/15/2025 02:53	WG2513220
Zinc	U		4.00	25.0	1	05/15/2025 02:53	WG2513220

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	15300		165	428	1	05/14/2025 21:07	WG2513213

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	6940		231	2500	1	05/15/2025 02:57	WG2513220

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	142000		4750	20000	1	05/08/2025 14:46	WG2509570
Alkalinity,Bicarbonate	140000		4750	20000	1	05/08/2025 21:06	WG2509570

Sample Narrative:

L1856254-02 WG2509570: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:50	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2400		547	1000	1	05/11/2025 08:15	WG2509878
Fluoride	1240		76.1	150	1	05/11/2025 08:15	WG2509878
Sulfate	1870	J	637	5000	1	05/11/2025 08:15	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 21:31	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:21	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	10.6	J	4.22	15.0	1	05/14/2025 21:07	WG2513213
Silicon	7150		77.1	200	1	05/14/2025 21:07	WG2513213
Sulfur	795	J	160	1000	1	05/14/2025 21:07	WG2513213

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	51.8	U	16.0	100	1	05/15/2025 02:57	WG2513220
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 04:57	WG2513206
Arsenic	37.0		0.120	2.00	1	05/15/2025 02:57	WG2513220
Cadmium	U		0.120	1.00	1	05/15/2025 02:57	WG2513220
Calcium	2420		92.5	1000	1	05/15/2025 02:57	WG2513220
Chromium	U		0.900	2.00	1	05/15/2025 02:57	WG2513220
Copper	14.6		0.700	5.00	1	05/15/2025 02:57	WG2513220
Cobalt	U		0.100	2.00	1	05/15/2025 02:57	WG2513220
Iron	89.8	U	22.6	100	1	05/15/2025 02:57	WG2513220
Iron,Dissolved	U		22.6	100	1	05/15/2025 04:57	WG2513206
Lead	0.878	U	0.500	2.00	1	05/15/2025 02:57	WG2513220
Magnesium	219	U	82.7	1000	1	05/15/2025 02:57	WG2513220
Manganese	8.71		0.700	5.00	1	05/15/2025 02:57	WG2513220
Manganese,Dissolved	9.18		0.700	5.00	1	05/15/2025 04:57	WG2513206
Nickel	1.68	U	0.500	2.00	1	05/15/2025 02:57	WG2513220
Potassium	358	U	96.5	2000	1	05/15/2025 02:57	WG2513220
Selenium	U		0.250	2.00	1	05/15/2025 02:57	WG2513220
Sodium	59500		142	2000	1	05/15/2025 02:57	WG2513220
Vanadium	2.20	U	0.520	5.00	1	05/15/2025 02:57	WG2513220
Zinc	U		4.00	25.0	1	05/15/2025 02:57	WG2513220

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	50200		165	428	1	05/14/2025 21:09	WG2513213

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	73200		231	2500	1	05/15/2025 03:00	WG2513220

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	160000		4750	20000	1	05/08/2025 09:33	WG2510011
Alkalinity,Bicarbonate	160000		4750	20000	1	05/08/2025 09:33	WG2510011

Sample Narrative:
L1856254-03 WG2510011: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:51	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2890		547	1000	1	05/11/2025 09:04	WG2509878
Fluoride	220		76.1	150	1	05/11/2025 09:04	WG2509878
Sulfate	3750	J	637	5000	1	05/11/2025 09:04	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 22:05	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:24	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	4.41	J	4.22	15.0	1	05/14/2025 21:09	WG2513213
Silicon	23500		77.1	200	1	05/14/2025 21:09	WG2513213
Sulfur	1450		160	1000	1	05/14/2025 21:09	WG2513213

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250506-2

SAMPLE RESULTS - 03

Collected date/time: 05/06/25 08:55

L1856254

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	25.9	U	16.0	100	1	05/15/2025 03:00	WG2513220
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 05:01	WG2513206
Arsenic	14.3		0.120	2.00	1	05/15/2025 03:00	WG2513220
Cadmium	U		0.120	1.00	1	05/15/2025 03:00	WG2513220
Calcium	16000		92.5	1000	1	05/15/2025 03:00	WG2513220
Chromium	U		0.900	2.00	1	05/15/2025 03:00	WG2513220
Copper	41.5		0.700	5.00	1	05/15/2025 03:00	WG2513220
Cobalt	U		0.100	2.00	1	05/15/2025 03:00	WG2513220
Iron	179		22.6	100	1	05/15/2025 03:00	WG2513220
Iron,Dissolved	121		22.6	100	1	05/15/2025 05:01	WG2513206
Lead	1.33	U	0.500	2.00	1	05/15/2025 03:00	WG2513220
Magnesium	8090		82.7	1000	1	05/15/2025 03:00	WG2513220
Manganese	227		0.700	5.00	1	05/15/2025 03:00	WG2513220
Manganese,Dissolved	227		0.700	5.00	1	05/15/2025 05:01	WG2513206
Nickel	0.522	U	0.500	2.00	1	05/15/2025 03:00	WG2513220
Potassium	3490		96.5	2000	1	05/15/2025 03:00	WG2513220
Selenium	U		0.250	2.00	1	05/15/2025 03:00	WG2513220
Sodium	33800		142	2000	1	05/15/2025 03:00	WG2513220
Vanadium	1.50	U	0.520	5.00	1	05/15/2025 03:00	WG2513220
Zinc	32.4		4.00	25.0	1	05/15/2025 03:00	WG2513220

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1856254

DATE/TIME:

05/16/25 08:34

PAGE:

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Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	40300		165	428	1	05/14/2025 21:10	WG2513213

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	94900		231	2500	1	05/15/2025 03:03	WG2513220

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	164000		4750	20000	1	05/08/2025 10:03	WG2510011
Alkalinity,Bicarbonate	164000		4750	20000	1	05/08/2025 10:03	WG2510011

Sample Narrative:
L1856254-04 WG2510011: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:51	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2580		547	1000	1	05/11/2025 09:20	WG2509878
Fluoride	220		76.1	150	1	05/11/2025 09:20	WG2509878
Sulfate	2560	J	637	5000	1	05/11/2025 09:20	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 22:22	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:27	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 21:10	WG2513213
Silicon	18800		77.1	200	1	05/14/2025 21:10	WG2513213
Sulfur	1030		160	1000	1	05/14/2025 21:10	WG2513213

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/15/2025 03:03	WG2513220
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 05:04	WG2513206
Arsenic	23.3		0.120	2.00	1	05/15/2025 03:03	WG2513220
Cadmium	U		0.120	1.00	1	05/15/2025 03:03	WG2513220
Calcium	23400		92.5	1000	1	05/15/2025 03:03	WG2513220
Chromium	U		0.900	2.00	1	05/15/2025 03:03	WG2513220
Copper	1.47	J	0.700	5.00	1	05/15/2025 03:03	WG2513220
Cobalt	U		0.100	2.00	1	05/15/2025 03:03	WG2513220
Iron	411		22.6	100	1	05/15/2025 03:03	WG2513220
Iron,Dissolved	365		22.6	100	1	05/15/2025 05:04	WG2513206
Lead	U		0.500	2.00	1	05/15/2025 03:03	WG2513220
Magnesium	8830		82.7	1000	1	05/15/2025 03:03	WG2513220
Manganese	191		0.700	5.00	1	05/15/2025 03:03	WG2513220
Manganese,Dissolved	190		0.700	5.00	1	05/15/2025 05:04	WG2513206
Nickel	U		0.500	2.00	1	05/15/2025 03:03	WG2513220
Potassium	2250		96.5	2000	1	05/15/2025 03:03	WG2513220
Selenium	U		0.250	2.00	1	05/15/2025 03:03	WG2513220
Sodium	27200		142	2000	1	05/15/2025 03:03	WG2513220
Vanadium	U		0.520	5.00	1	05/15/2025 03:03	WG2513220
Zinc	6.11	J	4.00	25.0	1	05/15/2025 03:03	WG2513220

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 04:41	WG2513206
Iron,Dissolved	U		22.6	100	1	05/15/2025 04:41	WG2513206
Manganese,Dissolved	U		0.700	5.00	1	05/15/2025 04:41	WG2513206

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4212316-2 05/08/25 12:13

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1855526-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855526-01 05/08/25 12:24 • (DUP) R4212316-3 05/08/25 12:29

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	69000	68600	1	0.624		20
Alkalinity,Bicarbonate	69000	68600	1	0.624		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4212316-1 05/08/25 12:06

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	104000	104	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211970-2 05/08/25 09:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1856254-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-03 05/08/25 09:33 • (DUP) R4211970-3 05/08/25 09:39

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	160000	161000	1	0.610		20
Alkalinity,Bicarbonate	160000	161000	1	0.610		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

L1856255-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1856255-03 05/08/25 11:19 • (DUP) R4211970-4 05/08/25 11:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	162000	165000	1	1.50		20
Alkalinity,Bicarbonate	162000	165000	1	1.50		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4211970-1 05/08/25 09:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	105000	105	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211970-1 05/08/25 09:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211857-1 05/08/25 15:49

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1855914-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855914-01 05/08/25 15:50 • (DUP) R4211857-3 05/08/25 15:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	760	771	1	1.44		20

L1856422-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1856422-01 05/08/25 15:54 • (DUP) R4211857-6 05/08/25 15:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4211857-2 05/08/25 15:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	470	94.0	85.0-115	

L1856254-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-01 05/08/25 15:50 • (MS) R4211857-4 05/08/25 15:50 • (MSD) R4211857-5 05/08/25 15:50

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	282	307	56.4	61.4	1	80.0-120	J6	J6	8.49	20

Method Blank (MB)

(MB) R4213051-1 05/10/25 23:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1855672-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1855672-07 05/11/25 00:22 • (DUP) R4213051-3 05/11/25 00:38

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	23500	23500	1	0.169		15
Fluoride	487	493	1	1.18		15
Sulfate	41300	41200	1	0.203		15

L1856254-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-02 05/11/25 08:15 • (DUP) R4213051-6 05/11/25 08:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2400	2410	1	0.461		15
Fluoride	1240	1270	1	2.15		15
Sulfate	1870	1940	1	3.68	U	15

Laboratory Control Sample (LCS)

(LCS) R4213051-2 05/10/25 23:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39000	97.5	80.0-120	
Fluoride	8000	7900	98.8	80.0-120	
Sulfate	40000	39600	99.0	80.0-120	

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Cp

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L1855672-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855672-07 05/11/25 00:22 • (MS) R4213051-4 05/11/25 00:54 • (MSD) R4213051-5 05/11/25 01:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	40000	23500	57900	57900	86.0	85.9	1	80.0-120			0.0491	15
Fluoride	8000	487	8130	8130	95.5	95.5	1	80.0-120			0.0295	15
Sulfate	40000	41300	72100	71900	77.0	76.6	1	80.0-120	<u>J6</u>	<u>J6</u>	0.200	15

L1856254-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1856254-02 05/11/25 08:15 • (MS) R4213051-7 05/11/25 08:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40000	2400	40500	95.2	1	80.0-120	
Fluoride	8000	1240	8630	92.3	1	80.0-120	
Sulfate	40000	1870	40500	96.5	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

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Method Blank (MB)

(MB) R4212130-2 05/08/25 19:58

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1856254-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-02 05/08/25 21:31 • (DUP) R4212130-5 05/08/25 21:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

L1856422-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1856422-04 05/09/25 02:21 • (DUP) R4212130-8 05/09/25 02:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	4140	4180	1	0.938		20

Laboratory Control Sample (LCS)

(LCS) R4212130-1 05/08/25 19:41

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24700	98.7	80.0-120	

L1856254-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-01 05/08/25 20:27 • (MS) R4212130-3 05/08/25 20:51 • (MSD) R4212130-4 05/08/25 21:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	25000	25000	99.8	100	1	75.0-125			0.280	20

L1856422-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856422-03 05/09/25 01:17 • (MS) R4212130-6 05/09/25 01:39 • (MSD) R4212130-7 05/09/25 02:02

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	1810	26800	27000	99.8	101	1	75.0-125			0.856	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214522-1 05/14/25 11:42

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4214522-2 05/14/25 11:44

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.72	90.8	80.0-120	

L1856319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856319-01 05/14/25 11:47 • (MS) R4214522-4 05/14/25 11:52 • (MSD) R4214522-5 05/14/25 11:55

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.99	2.98	99.7	99.4	1	75.0-125			0.270	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

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Method Blank (MB)

(MB) R4214892-1 05/14/25 20:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4214892-2 05/14/25 20:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1060	106	80.0-120	
Silicon	1000	906	90.6	80.0-120	
Sulfur	10000	9480	94.8	80.0-120	

L1856139-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856139-07 05/14/25 20:26 • (MS) R4214892-4 05/14/25 20:29 • (MSD) R4214892-5 05/14/25 20:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	32.3	1090	1100	105	106	1	75.0-125			0.979	20
Silicon	1000	5730	6590	6690	86.7	96.4	1	75.0-125			1.46	20
Sulfur	10000	144000	150000	150000	58.8	55.6	1	75.0-125	V	V	0.218	20

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Method Blank (MB)

(MB) R4215121-1 05/15/25 04:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4215121-2 05/15/25 04:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	981	98.1	80.0-120	
Iron,Dissolved	1000	982	98.2	80.0-120	
Manganese,Dissolved	50.0	49.5	99.0	80.0-120	

L1856254-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-05 05/15/25 04:41 • (MS) R4215121-4 05/15/25 04:48 • (MSD) R4215121-5 05/15/25 04:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	1020	1040	102	104	1	75.0-125			1.88	20
Iron,Dissolved	1000	U	1020	1020	102	102	1	75.0-125			0.567	20
Manganese,Dissolved	50.0	U	50.6	51.5	101	103	1	75.0-125			1.62	20

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Cp

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Tc

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Ss

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4215023-1 05/15/25 01:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

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⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4215023-2 05/15/25 01:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	973	97.3	80.0-120	
Arsenic	50.0	48.0	96.0	80.0-120	
Cadmium	50.0	50.0	100	80.0-120	
Calcium	5000	4770	95.5	80.0-120	
Chromium	50.0	49.1	98.1	80.0-120	
Copper	50.0	50.2	100	80.0-120	
Cobalt	50.0	49.9	99.7	80.0-120	
Iron	1000	963	96.3	80.0-120	
Lead	50.0	48.2	96.3	80.0-120	
Magnesium	5000	5000	100	80.0-120	
Manganese	50.0	49.2	98.5	80.0-120	
Nickel	50.0	50.1	100	80.0-120	
Potassium	5000	4850	97.1	80.0-120	
Selenium	50.0	48.7	97.5	80.0-120	
Sodium	5000	4950	99.0	80.0-120	
Vanadium	50.0	48.7	97.4	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4215023-2 05/15/25 01:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.1	98.3	80.0-120	

L1856007-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856007-07 05/15/25 01:28 • (MS) R4215023-4 05/15/25 01:35 • (MSD) R4215023-5 05/15/25 01:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000		1090	1040	95.1	90.3	1	75.0-125			4.51	20
Arsenic	50.0	2.95	51.1	49.9	96.3	93.8	1	75.0-125			2.49	20
Cadmium	50.0	U	51.1	49.8	102	99.5	1	75.0-125			2.57	20
Calcium	5000	53800	58300	58200	90.8	88.7	1	75.0-125			0.180	20
Chromium	50.0	U	49.8	47.8	99.6	95.5	1	75.0-125			4.23	20
Copper	50.0	1.18	50.8	49.7	99.2	97.1	1	75.0-125			2.18	20
Cobalt	50.0	0.120	49.8	47.5	99.3	94.7	1	75.0-125			4.73	20
Iron	1000	7050	7960	7810	90.5	76.2	1	75.0-125			1.81	20
Lead	50.0	U	48.4	47.2	96.7	94.4	1	75.0-125			2.43	20
Magnesium	5000	16400	21200	21100	95.1	93.7	1	75.0-125			0.353	20
Manganese	50.0	638	680	668	83.9	60.4	1	75.0-125		V	1.74	20
Nickel	50.0	U	49.9	47.4	99.8	94.7	1	75.0-125			5.16	20
Potassium	5000	2450	7320	7030	97.5	91.6	1	75.0-125			4.08	20
Selenium	50.0	U	48.2	47.2	96.5	94.4	1	75.0-125			2.16	20
Sodium	5000	10100	14800	14600	95.6	91.2	1	75.0-125			1.51	20
Vanadium	50.0	U	49.0	47.6	98.0	95.2	1	75.0-125			2.85	20
Zinc	50.0	6.34	54.3	52.6	96.0	92.6	1	75.0-125			3.18	20

1Cp

2Tc

3Ss

4Cn

5Sr

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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.

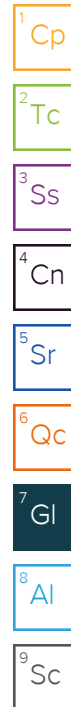
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

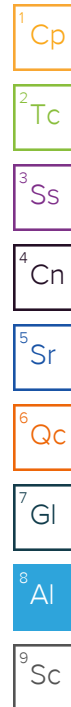
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ			Contract Laboratory Name: ESC			Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work			Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____						
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com			Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696												
Project Name: Crook County Limited Groundwater Investigation Sampler Name: <i>Ysabel Perez</i>			Sample Preservative												
			HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3			HCL
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250506-1	5/10/25 0737	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-91
20250506-1-DUP	0737	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-92
20250506-2	0855	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-93
20250506-5	1037	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-94
20250506-FB	0745	w	1			✓									-95
425709307703 <i>TA 93.1104 = 4.1</i>															
Sample Receipt Checklist Seal Present/Intact: ☒ Y ☐ N ☐ NP If Applicable Signed/Accurate: ☒ Y ☐ N VOA Zero Headspace: ☐ Y ☐ N Samples arrive intact: ☒ Y ☐ N Pres. Correct/Check: ☐ Y ☐ N Correct bottles used: ☒ Y ☐ N Diluent volume sent: ☒ Y ☐ N Condition: ☒ NCF ☐ OK Residual <0.5 mL/hr: ☒ Y ☐ N <i>Containers: 25</i>															
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc															
Relinquished By: <i>YSABEL PEREZ</i>				Agency/Agent: <i>mfa</i>				Received By: <i>[Signature]</i>				Agency/Agent: <i>FACE</i>			
Signature: <i>[Signature]</i>				Time & Date: <i>1130 5/10/25</i>				Signature: <i>[Signature]</i>				Time & Date: <i>5/12/25 0815</i>			
Relinquished By: <i>[Signature]</i>				Agency/Agent:				Received By:				Agency/Agent:			
Signature:				Time & Date:				Signature:				Time & Date:			

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

May 16, 2025

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1856255
Samples Received: 05/07/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
Project Manager

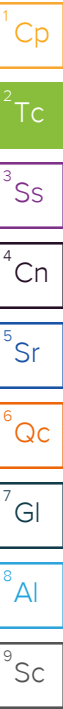
Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory 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 mydata.pacelabs.com

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SAMPLE SUMMARY

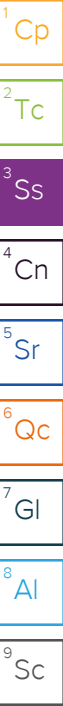
20250506-3 L1856255-01

Collected by
Sean Maloney

Collected date/time
05/06/25 09:05

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513216	1	05/14/25 17:12	05/14/25 17:12	BAG	Mt. Juliet, TN
Calculated Results	WG2513220	1	05/15/25 03:07	05/15/25 03:07	JPD	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2510011	1	05/08/25 10:09	05/08/25 10:09	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:51	05/08/25 15:51	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 09:36	05/11/25 09:36	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 22:42	05/08/25 22:42	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:34	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513216	1	05/14/25 08:32	05/14/25 17:12	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 05:13	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513220	1	05/14/25 08:30	05/15/25 03:07	JPD	Mt. Juliet, TN



20250506-4 L1856255-02

Collected by
Sean Maloney

Collected date/time
05/06/25 09:40

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513216	1	05/14/25 17:14	05/14/25 17:14	BAG	Mt. Juliet, TN
Calculated Results	WG2513223	1	05/14/25 20:54	05/14/25 20:54	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2510011	1	05/08/25 10:15	05/08/25 10:15	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:51	05/08/25 15:51	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 09:53	05/11/25 09:53	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 22:59	05/08/25 22:59	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:37	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513216	1	05/14/25 08:32	05/14/25 17:14	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 05:17	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513223	1	05/14/25 10:09	05/14/25 20:54	UNP	Mt. Juliet, TN

20250506-6 L1856255-03

Collected by
Sean Maloney

Collected date/time
05/06/25 10:55

Received date/time
05/07/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2513216	1	05/14/25 17:17	05/14/25 17:17	BAG	Mt. Juliet, TN
Calculated Results	WG2513223	1	05/14/25 21:08	05/14/25 21:08	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2510011	1	05/08/25 11:19	05/08/25 11:19	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2510493	1	05/08/25 15:51	05/08/25 15:51	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2509878	1	05/11/25 10:09	05/11/25 10:09	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2510685	1	05/08/25 23:17	05/08/25 23:17	TMH	Mt. Juliet, TN
Mercury by Method 7470A	WG2510616	1	05/12/25 15:41	05/14/25 12:39	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2513216	1	05/14/25 08:32	05/14/25 17:17	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513206	1	05/14/25 08:34	05/15/25 05:20	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2513223	1	05/14/25 10:11	05/14/25 21:08	UNP	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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	58400		165	428	1	05/14/2025 17:12	WG2513216

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	54400		231	2500	1	05/15/2025 03:07	WG2513220

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	124000		4750	20000	1	05/08/2025 10:09	WG2510011
Alkalinity,Bicarbonate	124000		4750	20000	1	05/08/2025 10:09	WG2510011

Sample Narrative:
L1856255-01 WG2510011: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:51	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	4910		547	1000	1	05/11/2025 09:36	WG2509878
Fluoride	339		76.1	150	1	05/11/2025 09:36	WG2509878
Sulfate	7190		637	5000	1	05/11/2025 09:36	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 22:42	WG2510685

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:34	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	5.82	J	4.22	15.0	1	05/14/2025 17:12	WG2513216
Silicon	27300		77.1	200	1	05/14/2025 17:12	WG2513216
Sulfur	2480		160	1000	1	05/14/2025 17:12	WG2513216

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/15/2025 03:07	WG2513220
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 05:13	WG2513206
Arsenic	17.4		0.120	2.00	1	05/15/2025 03:07	WG2513220
Cadmium	U		0.120	1.00	1	05/15/2025 03:07	WG2513220
Calcium	14100		92.5	1000	1	05/15/2025 03:07	WG2513220
Chromium	U		0.900	2.00	1	05/15/2025 03:07	WG2513220
Copper	U		0.700	5.00	1	05/15/2025 03:07	WG2513220
Cobalt	U		0.100	2.00	1	05/15/2025 03:07	WG2513220
Iron	87.7	U	22.6	100	1	05/15/2025 03:07	WG2513220
Iron,Dissolved	83.1	U	22.6	100	1	05/15/2025 05:13	WG2513206
Lead	U		0.500	2.00	1	05/15/2025 03:07	WG2513220
Magnesium	4640		82.7	1000	1	05/15/2025 03:07	WG2513220
Manganese	153		0.700	5.00	1	05/15/2025 03:07	WG2513220
Manganese,Dissolved	154		0.700	5.00	1	05/15/2025 05:13	WG2513206
Nickel	U		0.500	2.00	1	05/15/2025 03:07	WG2513220
Potassium	2560		96.5	2000	1	05/15/2025 03:07	WG2513220
Selenium	U		0.250	2.00	1	05/15/2025 03:07	WG2513220
Sodium	31900		142	2000	1	05/15/2025 03:07	WG2513220
Vanadium	0.781	U	0.520	5.00	1	05/15/2025 03:07	WG2513220
Zinc	U		4.00	25.0	1	05/15/2025 03:07	WG2513220

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	46500		165	428	1	05/14/2025 17:14	WG2513216

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	135000		231	2500	1	05/14/2025 20:54	WG2513223

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	176000		4750	20000	1	05/08/2025 10:15	WG2510011
Alkalinity,Bicarbonate	176000		4750	20000	1	05/08/2025 10:15	WG2510011

Sample Narrative:

L1856255-02 WG2510011: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:51	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	5710		547	1000	1	05/11/2025 09:53	WG2509878
Fluoride	206		76.1	150	1	05/11/2025 09:53	WG2509878
Sulfate	11300		637	5000	1	05/11/2025 09:53	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 22:59	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:37	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	5.73	J	4.22	15.0	1	05/14/2025 17:14	WG2513216
Silicon	21700		77.1	200	1	05/14/2025 17:14	WG2513216
Sulfur	3880		160	1000	1	05/14/2025 17:14	WG2513216

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250506-4

SAMPLE RESULTS - 02

Collected date/time: 05/06/25 09:40

L1856255

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	65.2	U	16.0	100	1	05/14/2025 20:54	WG2513223
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 05:17	WG2513206
Arsenic	15.2		0.120	2.00	1	05/14/2025 20:54	WG2513223
Cadmium	U		0.120	1.00	1	05/14/2025 20:54	WG2513223
Calcium	35100		92.5	1000	1	05/14/2025 20:54	WG2513223
Chromium	1.56	U	0.900	2.00	1	05/14/2025 20:54	WG2513223
Copper	1.53	U	0.700	5.00	1	05/14/2025 20:54	WG2513223
Cobalt	0.141	U	0.100	2.00	1	05/14/2025 20:54	WG2513223
Iron	799		22.6	100	1	05/14/2025 20:54	WG2513223
Iron,Dissolved	U		22.6	100	1	05/15/2025 05:17	WG2513206
Lead	U		0.500	2.00	1	05/14/2025 20:54	WG2513223
Magnesium	11600		82.7	1000	1	05/14/2025 20:54	WG2513223
Manganese	407		0.700	5.00	1	05/14/2025 20:54	WG2513223
Manganese,Dissolved	88.0		0.700	5.00	1	05/15/2025 05:17	WG2513206
Nickel	U		0.500	2.00	1	05/14/2025 20:54	WG2513223
Potassium	3370		96.5	2000	1	05/14/2025 20:54	WG2513223
Selenium	1.12	U	0.250	2.00	1	05/14/2025 20:54	WG2513223
Sodium	25500		142	2000	1	05/14/2025 20:54	WG2513223
Vanadium	17.9		0.520	5.00	1	05/14/2025 20:54	WG2513223
Zinc	9.25	U	4.00	25.0	1	05/14/2025 20:54	WG2513223

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1856255

DATE/TIME:

05/16/25 08:34

PAGE:

8 of 26

20250506-6

Collected date/time: 05/06/25 10:55

SAMPLE RESULTS - 03

L1856255

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	44600		165	428	1	05/14/2025 17:17	WG2513216

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	77700		231	2500	1	05/14/2025 21:08	WG2513223

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	162000		4750	20000	1	05/08/2025 11:19	WG2510011
Alkalinity,Bicarbonate	162000		4750	20000	1	05/08/2025 11:19	WG2510011

Sample Narrative:

L1856255-03 WG2510011: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/08/2025 15:51	WG2510493

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	3020		547	1000	1	05/11/2025 10:09	WG2509878
Fluoride	268		76.1	150	1	05/11/2025 10:09	WG2509878
Sulfate	3380	J	637	5000	1	05/11/2025 10:09	WG2509878

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/08/2025 23:17	WG2510685

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/14/2025 12:39	WG2510616

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/14/2025 17:17	WG2513216
Silicon	20900		77.1	200	1	05/14/2025 17:17	WG2513216
Sulfur	1200		160	1000	1	05/14/2025 17:17	WG2513216

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/14/2025 21:08	WG2513223
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 05:20	WG2513206
Arsenic	27.8		0.120	2.00	1	05/14/2025 21:08	WG2513223
Cadmium	U		0.120	1.00	1	05/14/2025 21:08	WG2513223
Calcium	19300		92.5	1000	1	05/14/2025 21:08	WG2513223
Chromium	U		0.900	2.00	1	05/14/2025 21:08	WG2513223
Copper	11.9		0.700	5.00	1	05/14/2025 21:08	WG2513223
Cobalt	U		0.100	2.00	1	05/14/2025 21:08	WG2513223
Iron	47.2	U	22.6	100	1	05/14/2025 21:08	WG2513223
Iron,Dissolved	U		22.6	100	1	05/15/2025 05:20	WG2513206
Lead	0.582	U	0.500	2.00	1	05/14/2025 21:08	WG2513223
Magnesium	7180		82.7	1000	1	05/14/2025 21:08	WG2513223
Manganese	193		0.700	5.00	1	05/14/2025 21:08	WG2513223
Manganese,Dissolved	184		0.700	5.00	1	05/15/2025 05:20	WG2513206
Nickel	U		0.500	2.00	1	05/14/2025 21:08	WG2513223
Potassium	1980	U	96.5	2000	1	05/14/2025 21:08	WG2513223
Selenium	U		0.250	2.00	1	05/14/2025 21:08	WG2513223
Sodium	35300		142	2000	1	05/14/2025 21:08	WG2513223
Vanadium	U		0.520	5.00	1	05/14/2025 21:08	WG2513223
Zinc	5.28	U	4.00	25.0	1	05/14/2025 21:08	WG2513223

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211970-2 05/08/25 09:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1856254-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-03 05/08/25 09:33 • (DUP) R4211970-3 05/08/25 09:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	160000	161000	1	0.610		20
Alkalinity,Bicarbonate	160000	161000	1	0.610		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

L1856255-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1856255-03 05/08/25 11:19 • (DUP) R4211970-4 05/08/25 11:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	162000	165000	1	1.50		20
Alkalinity,Bicarbonate	162000	165000	1	1.50		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4211970-1 05/08/25 09:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Alkalinity	100000	105000	105	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211970-1 05/08/25 09:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211857-1 05/08/25 15:49

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1855914-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1855914-01 05/08/25 15:50 • (DUP) R4211857-3 05/08/25 15:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	760	771	1	1.44		20

L1856422-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1856422-01 05/08/25 15:54 • (DUP) R4211857-6 05/08/25 15:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4211857-2 05/08/25 15:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	470	94.0	85.0-115	

L1856254-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-01 05/08/25 15:50 • (MS) R4211857-4 05/08/25 15:50 • (MSD) R4211857-5 05/08/25 15:50

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	282	307	56.4	61.4	1	80.0-120	J6	J6	8.49	20

Method Blank (MB)

(MB) R4213051-1 05/10/25 23:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1855672-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1855672-07 05/11/25 00:22 • (DUP) R4213051-3 05/11/25 00:38

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	23500	23500	1	0.169		15
Fluoride	487	493	1	1.18		15
Sulfate	41300	41200	1	0.203		15

L1856254-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-02 05/11/25 08:15 • (DUP) R4213051-6 05/11/25 08:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2400	2410	1	0.461		15
Fluoride	1240	1270	1	2.15		15
Sulfate	1870	1940	1	3.68	U	15

Laboratory Control Sample (LCS)

(LCS) R4213051-2 05/10/25 23:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39000	97.5	80.0-120	
Fluoride	8000	7900	98.8	80.0-120	
Sulfate	40000	39600	99.0	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1855672-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1855672-07 05/11/25 00:22 • (MS) R4213051-4 05/11/25 00:54 • (MSD) R4213051-5 05/11/25 01:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	23500	57900	57900	86.0	85.9	1	80.0-120			0.0491	15
Fluoride	8000	487	8130	8130	95.5	95.5	1	80.0-120			0.0295	15
Sulfate	40000	41300	72100	71900	77.0	76.6	1	80.0-120	J6	J6	0.200	15

L1856254-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1856254-02 05/11/25 08:15 • (MS) R4213051-7 05/11/25 08:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	2400	40500	95.2	1	80.0-120	
Fluoride	8000	1240	8630	92.3	1	80.0-120	
Sulfate	40000	1870	40500	96.5	1	80.0-120	

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Al

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Sc

Method Blank (MB)

(MB) R4212130-2 05/08/25 19:58

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1856254-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1856254-02 05/08/25 21:31 • (DUP) R4212130-5 05/08/25 21:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

L1856422-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1856422-04 05/09/25 02:21 • (DUP) R4212130-8 05/09/25 02:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	4140	4180	1	0.938		20

Laboratory Control Sample (LCS)

(LCS) R4212130-1 05/08/25 19:41

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24700	98.7	80.0-120	

L1856254-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-01 05/08/25 20:27 • (MS) R4212130-3 05/08/25 20:51 • (MSD) R4212130-4 05/08/25 21:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	25000	25000	99.8	100	1	75.0-125			0.280	20

L1856422-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856422-03 05/09/25 01:17 • (MS) R4212130-6 05/09/25 01:39 • (MSD) R4212130-7 05/09/25 02:02

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	1810	26800	27000	99.8	101	1	75.0-125			0.856	20



Method Blank (MB)

(MB) R4214522-1 05/14/25 11:42

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4214522-2 05/14/25 11:44

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.72	90.8	80.0-120	

L1856319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856319-01 05/14/25 11:47 • (MS) R4214522-4 05/14/25 11:52 • (MSD) R4214522-5 05/14/25 11:55

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.99	2.98	99.7	99.4	1	75.0-125			0.270	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214911-1 05/14/25 16:24

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4214911-2 05/14/25 16:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Lithium	1000	1090	109	80.0-120	
Silicon	1000	965	96.5	80.0-120	
Sulfur	10000	9550	95.5	80.0-120	

L1856319-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856319-06 05/14/25 16:31 • (MS) R4214911-4 05/14/25 16:36 • (MSD) R4214911-5 05/14/25 16:39

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lithium	1000	U	1080	1080	108	108	1	75.0-125			0.0362	20
Silicon	1000	U	943	953	94.3	95.3	1	75.0-125			1.03	20
Sulfur	10000	U	9430	9480	94.3	94.8	1	75.0-125			0.446	20

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Cp

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Tc

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4215121-1 05/15/25 04:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4215121-2 05/15/25 04:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	981	98.1	80.0-120	
Iron,Dissolved	1000	982	98.2	80.0-120	
Manganese,Dissolved	50.0	49.5	99.0	80.0-120	

L1856254-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856254-05 05/15/25 04:41 • (MS) R4215121-4 05/15/25 04:48 • (MSD) R4215121-5 05/15/25 04:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	1020	1040	102	104	1	75.0-125			1.88	20
Iron,Dissolved	1000	U	1020	1020	102	102	1	75.0-125			0.567	20
Manganese,Dissolved	50.0	U	50.6	51.5	101	103	1	75.0-125			1.62	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4215023-1 05/15/25 01:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4215023-2 05/15/25 01:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	973	97.3	80.0-120	
Arsenic	50.0	48.0	96.0	80.0-120	
Cadmium	50.0	50.0	100	80.0-120	
Calcium	5000	4770	95.5	80.0-120	
Chromium	50.0	49.1	98.1	80.0-120	
Copper	50.0	50.2	100	80.0-120	
Cobalt	50.0	49.9	99.7	80.0-120	
Iron	1000	963	96.3	80.0-120	
Lead	50.0	48.2	96.3	80.0-120	
Magnesium	5000	5000	100	80.0-120	
Manganese	50.0	49.2	98.5	80.0-120	
Nickel	50.0	50.1	100	80.0-120	
Potassium	5000	4850	97.1	80.0-120	
Selenium	50.0	48.7	97.5	80.0-120	
Sodium	5000	4950	99.0	80.0-120	
Vanadium	50.0	48.7	97.4	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4215023-2 05/15/25 01:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.1	98.3	80.0-120	

L1856007-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856007-07 05/15/25 01:28 • (MS) R4215023-4 05/15/25 01:35 • (MSD) R4215023-5 05/15/25 01:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000		1090	1040	95.1	90.3	1	75.0-125			4.51	20
Arsenic	50.0	2.95	51.1	49.9	96.3	93.8	1	75.0-125			2.49	20
Cadmium	50.0	U	51.1	49.8	102	99.5	1	75.0-125			2.57	20
Calcium	5000	53800	58300	58200	90.8	88.7	1	75.0-125			0.180	20
Chromium	50.0	U	49.8	47.8	99.6	95.5	1	75.0-125			4.23	20
Copper	50.0	1.18	50.8	49.7	99.2	97.1	1	75.0-125			2.18	20
Cobalt	50.0	0.120	49.8	47.5	99.3	94.7	1	75.0-125			4.73	20
Iron	1000	7050	7960	7810	90.5	76.2	1	75.0-125			1.81	20
Lead	50.0	U	48.4	47.2	96.7	94.4	1	75.0-125			2.43	20
Magnesium	5000	16400	21200	21100	95.1	93.7	1	75.0-125			0.353	20
Manganese	50.0	638	680	668	83.9	60.4	1	75.0-125		V	1.74	20
Nickel	50.0	U	49.9	47.4	99.8	94.7	1	75.0-125			5.16	20
Potassium	5000	2450	7320	7030	97.5	91.6	1	75.0-125			4.08	20
Selenium	50.0	U	48.2	47.2	96.5	94.4	1	75.0-125			2.16	20
Sodium	5000	10100	14800	14600	95.6	91.2	1	75.0-125			1.51	20
Vanadium	50.0	U	49.0	47.6	98.0	95.2	1	75.0-125			2.85	20
Zinc	50.0	6.34	54.3	52.6	96.0	92.6	1	75.0-125			3.18	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4214873-1 05/14/25 20:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4214873-2 05/14/25 20:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1060	106	80.0-120	
Arsenic	50.0	53.5	107	80.0-120	
Cadmium	50.0	49.3	98.6	80.0-120	
Calcium	5000	5140	103	80.0-120	
Chromium	50.0	51.9	104	80.0-120	
Copper	50.0	50.8	102	80.0-120	
Cobalt	50.0	52.3	105	80.0-120	
Iron	1000	1020	102	80.0-120	
Lead	50.0	50.8	102	80.0-120	
Magnesium	5000	5000	100	80.0-120	
Manganese	50.0	51.7	103	80.0-120	
Nickel	50.0	52.5	105	80.0-120	
Potassium	5000	5190	104	80.0-120	
Selenium	50.0	51.6	103	80.0-120	
Sodium	5000	5240	105	80.0-120	
Vanadium	50.0	51.8	104	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4214873-2 05/14/25 20:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	51.9	104	80.0-120	

L1856372-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1856372-09 05/14/25 20:32 • (MS) R4214873-4 05/14/25 20:38 • (MSD) R4214873-5 05/14/25 20:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	19.2	1020	1000	100	98.0	1	75.0-125			1.93	20
Arsenic	50.0	U	52.0	52.2	104	104	1	75.0-125			0.360	20
Cadmium	50.0	U	49.3	48.8	98.6	97.7	1	75.0-125			0.961	20
Chromium	50.0	U	50.9	50.3	102	101	1	75.0-125			1.09	20
Iron	1000	U	1000	1010	100	101	1	75.0-125			0.496	20
Lead	50.0	U	50.0	49.1	99.9	98.2	1	75.0-125			1.73	20
Sodium	5000	U	5170	5200	103	104	1	75.0-125			0.616	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.

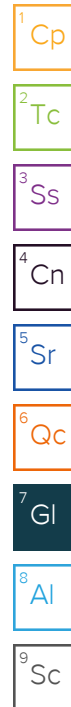
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

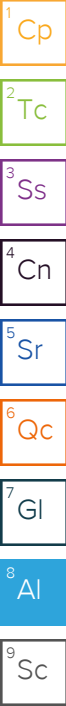
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

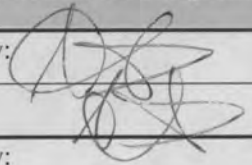
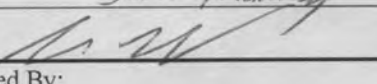
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Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina 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.



Agency, Authorized Purchaser or Agent: Oregon DEQ					Contract Laboratory Name: ESC					Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work					Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____				
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com					Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696														
Project Name: Crook County Limited Groundwater Investigation Sampler Name: Sean Maloney					Sample Preservative														
					HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3					
Sample ID#	Collection Date/Time	Matrix	Number of Containers		Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments			
20250506-3	5-6 0905	W	6		X	X	X	X	X	X	X	X	X	X	X	Dissolved sample - 01			
20250506-4	1 0940	W	6		X	X	X	X	X	X	X	X	X	X	X	bottles are field - 02			
20250506-6	1 1055	W	6		X	X	X	X	X	X	X	X	X	X	X	Filtered - marked - 03			
4208 13362218 TA93.6+0.4=4.0 Sample Receipt Checklist Seal Present/Intact: ☒ Y ☐ N ☐ NP If Applicable Signed/Accurate: ☒ Y ☐ N VOA Zero Headspace: ☐ Y ☐ N Samples arrive intact: ☒ Y ☐ N Pres Correct/Check: ☐ Y ☐ N Correct bottles used: ☒ Y ☐ N Correct volume sent: ☒ Y ☐ N Condition: NCF ☒ OK Residual <0.5 mR/hr: ☒ Y ☐ N Containers: 18																			
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc																			
Relinquished By: Sean Maloney					Agency/Agent:					Received By: 					Agency/Agent: DALB				
Signature: 					Time & Date:					Signature:					Time & Date: 5/17/25 0845				
Relinquished By:					Agency/Agent:					Received By:					Agency/Agent:				
Signature:					Time & Date:					Signature:					Time & Date:				

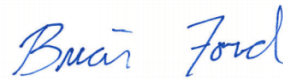
THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854814
Samples Received: 05/03/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20250502-1 L1854814-01

Collected by SM
Collected date/time 05/02/25 08:00
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:20	05/12/25 18:20	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:16	05/12/25 04:16	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 14:43	05/04/25 14:43	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:57	05/06/25 15:57	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 20:44	05/08/25 20:44	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506048	1	05/04/25 22:10	05/04/25 22:10	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 21:34	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:20	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:06	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:16	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

20250502-4 L1854814-02

Collected by SM
Collected date/time 05/02/25 09:00
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:21	05/12/25 18:21	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:25	05/12/25 04:25	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 14:48	05/04/25 14:48	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 21:23	05/08/25 21:23	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506048	1	05/04/25 22:27	05/04/25 22:27	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 21:36	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:21	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:31	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:25	SJM	Mt. Juliet, TN

⁷Gl

⁸Al

⁹Sc

20250502-4-DUP L1854814-03

Collected by SM
Collected date/time 05/02/25 09:00
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:23	05/12/25 18:23	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:29	05/12/25 04:29	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 14:54	05/04/25 14:54	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 21:35	05/08/25 21:35	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506048	1	05/04/25 22:44	05/04/25 22:44	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 21:39	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:23	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:34	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:29	SJM	Mt. Juliet, TN

20250502-6 L1854814-04

Collected by SM
Collected date/time 05/02/25 10:10
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:29	05/12/25 18:29	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 12:24	05/12/25 12:24	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:00	05/04/25 15:00	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 21:48	05/08/25 21:48	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506048	1	05/04/25 23:03	05/04/25 23:03	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 21:56	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:29	MAP	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854814

DATE/TIME:

05/29/25 15:38

PAGE:

3 of 30

SAMPLE SUMMARY

20250502-6 L1854814-04

Collected by SM
Collected date/time 05/02/25 10:10
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:50	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:32	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	5	05/11/25 18:28	05/12/25 12:24	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

20250502-8 L1854814-05

Collected by SM
Collected date/time 05/02/25 11:10
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510389	1	05/12/25 18:31	05/12/25 18:31	MAP	Mt. Juliet, TN
Calculated Results	WG2511436	1	05/12/25 04:35	05/12/25 04:35	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 15:04	05/04/25 15:04	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2506475	1	05/06/25 15:58	05/06/25 15:58	JEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2506495	1	05/08/25 22:01	05/08/25 22:01	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2506048	1	05/04/25 23:20	05/04/25 23:20	SJF	Mt. Juliet, TN
Mercury by Method 7470A	WG2506758	1	05/10/25 16:28	05/11/25 21:58	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510389	1	05/12/25 09:21	05/12/25 18:31	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:53	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2511436	1	05/11/25 18:28	05/12/25 04:35	SJM	Mt. Juliet, TN

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

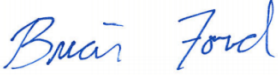
20250502-FB L1854814-06

Collected by SM
Collected date/time 05/02/25 11:40
Received date/time 05/03/25 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2510343	1	05/15/25 19:02	05/15/25 22:56	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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	44300		165	428	1	05/12/2025 18:20	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	82300		231	2500	1	05/12/2025 04:16	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	192000		4750	20000	1	05/04/2025 14:43	WG2506469
Alkalinity,Bicarbonate	192000		4750	20000	1	05/04/2025 14:43	WG2506469

Sample Narrative:

L1854814-01 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:57	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6530		547	1000	1	05/08/2025 20:44	WG2506495
Fluoride	218		76.1	150	1	05/08/2025 20:44	WG2506495
Sulfate	22400	J6 P1	637	5000	1	05/08/2025 20:44	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	536	J	495	1000	1	05/04/2025 22:10	WG2506048

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 21:34	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	4.29	J	4.22	15.0	1	05/12/2025 18:20	WG2510389
Silicon	20700		77.1	200	1	05/12/2025 18:20	WG2510389
Sulfur	5580		160	1000	1	05/12/2025 18:20	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:16	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:06	WG2510343
Arsenic	18.9		0.120	2.00	1	05/12/2025 04:16	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:16	WG2511436
Calcium	22100		92.5	1000	1	05/12/2025 04:16	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:16	WG2511436
Copper	U		0.700	5.00	1	05/12/2025 04:16	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:16	WG2511436
Iron	53.3	U	22.6	100	1	05/12/2025 04:16	WG2511436
Iron,Dissolved	26.7	U	22.6	100	1	05/15/2025 22:06	WG2510343
Lead	U		0.500	2.00	1	05/12/2025 04:16	WG2511436
Magnesium	6560		82.7	1000	1	05/12/2025 04:16	WG2511436
Manganese	120		0.700	5.00	1	05/12/2025 04:16	WG2511436
Manganese,Dissolved	113		0.700	5.00	1	05/15/2025 22:06	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:16	WG2511436
Potassium	2350		96.5	2000	1	05/12/2025 04:16	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:16	WG2511436
Sodium	58500		142	2000	1	05/12/2025 04:16	WG2511436
Vanadium	0.893	U	0.520	5.00	1	05/12/2025 04:16	WG2511436
Zinc	6.52	U	4.00	25.0	1	05/12/2025 04:16	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	49700		165	428	1	05/12/2025 18:21	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	137000		231	2500	1	05/12/2025 04:25	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	181000		4750	20000	1	05/04/2025 14:48	WG2506469
Alkalinity,Bicarbonate	181000		4750	20000	1	05/04/2025 14:48	WG2506469

Sample Narrative:

L1854814-02 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7440		547	1000	1	05/08/2025 21:23	WG2506495
Fluoride	301		76.1	150	1	05/08/2025 21:23	WG2506495
Sulfate	17800		637	5000	1	05/08/2025 21:23	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	520	J	495	1000	1	05/04/2025 22:27	WG2506048

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 21:36	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:21	WG2510389
Silicon	23200		77.1	200	1	05/12/2025 18:21	WG2510389
Sulfur	5540		160	1000	1	05/12/2025 18:21	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	32.8	U	16.0	100	1	05/12/2025 04:25	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:31	WG2510343
Arsenic	21.9		0.120	2.00	1	05/12/2025 04:25	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:25	WG2511436
Calcium	31200		92.5	1000	1	05/12/2025 04:25	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:25	WG2511436
Copper	15.7		0.700	5.00	1	05/12/2025 04:25	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:25	WG2511436
Iron	243		22.6	100	1	05/12/2025 04:25	WG2511436
Iron,Dissolved	183		22.6	100	1	05/15/2025 22:31	WG2510343
Lead	1.32	U	0.500	2.00	1	05/12/2025 04:25	WG2511436
Magnesium	14300		82.7	1000	1	05/12/2025 04:25	WG2511436
Manganese	395		0.700	5.00	1	05/12/2025 04:25	WG2511436
Manganese,Dissolved	398		0.700	5.00	1	05/15/2025 22:31	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:25	WG2511436
Potassium	3130		96.5	2000	1	05/12/2025 04:25	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:25	WG2511436
Sodium	25100		142	2000	1	05/12/2025 04:25	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:25	WG2511436
Zinc	29.7		4.00	25.0	1	05/12/2025 04:25	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	49900		165	428	1	05/12/2025 18:23	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	69900		231	2500	1	05/12/2025 04:29	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	182000		4750	20000	1	05/04/2025 14:54	WG2506469
Alkalinity,Bicarbonate	182000		4750	20000	1	05/04/2025 14:54	WG2506469

Sample Narrative:

L1854814-03 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6360		547	1000	1	05/08/2025 21:35	WG2506495
Fluoride	176		76.1	150	1	05/08/2025 21:35	WG2506495
Sulfate	16100		637	5000	1	05/08/2025 21:35	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	523	J	495	1000	1	05/04/2025 22:44	WG2506048

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 21:39	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:23	WG2510389
Silicon	23300		77.1	200	1	05/12/2025 18:23	WG2510389
Sulfur	5640		160	1000	1	05/12/2025 18:23	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:29	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:34	WG2510343
Arsenic	19.8		0.120	2.00	1	05/12/2025 04:29	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:29	WG2511436
Calcium	17600		92.5	1000	1	05/12/2025 04:29	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:29	WG2511436
Copper	U		0.700	5.00	1	05/12/2025 04:29	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:29	WG2511436
Iron	99.2	U	22.6	100	1	05/12/2025 04:29	WG2511436
Iron,Dissolved	187		22.6	100	1	05/15/2025 22:34	WG2510343
Lead	U		0.500	2.00	1	05/12/2025 04:29	WG2511436
Magnesium	6270		82.7	1000	1	05/12/2025 04:29	WG2511436
Manganese	203		0.700	5.00	1	05/12/2025 04:29	WG2511436
Manganese,Dissolved	396		0.700	5.00	1	05/15/2025 22:34	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:29	WG2511436
Potassium	2140		96.5	2000	1	05/12/2025 04:29	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:29	WG2511436
Sodium	37800		142	2000	1	05/12/2025 04:29	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:29	WG2511436
Zinc	21.1	U	4.00	25.0	1	05/12/2025 04:29	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	51500		165	428	1	05/12/2025 18:29	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	423000		1150	12500	1	05/12/2025 12:24	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	392000		4750	20000	1	05/04/2025 15:00	WG2506469
Alkalinity,Bicarbonate	392000		4750	20000	1	05/04/2025 15:00	WG2506469

Sample Narrative:
L1854814-04 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	39800		547	1000	1	05/08/2025 21:48	WG2506495
Fluoride	373		76.1	150	1	05/08/2025 21:48	WG2506495
Sulfate	36500		637	5000	1	05/08/2025 21:48	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3940		495	1000	1	05/04/2025 23:03	WG2506048

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 21:56	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	4.89	J	4.22	15.0	1	05/12/2025 18:29	WG2510389
Silicon	24100		77.1	200	1	05/12/2025 18:29	WG2510389
Sulfur	13000		160	1000	1	05/12/2025 18:29	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:32	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:50	WG2510343
Arsenic	3.80		0.120	2.00	1	05/12/2025 04:32	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:32	WG2511436
Calcium	94700		462	5000	5	05/12/2025 12:24	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:32	WG2511436
Copper	15.0		0.700	5.00	1	05/12/2025 04:32	WG2511436
Cobalt	0.166	U	0.100	2.00	1	05/12/2025 04:32	WG2511436
Iron	U		22.6	100	1	05/12/2025 04:32	WG2511436
Iron,Dissolved	U		22.6	100	1	05/15/2025 22:50	WG2510343
Lead	1.23	U	0.500	2.00	1	05/12/2025 04:32	WG2511436
Magnesium	45300		414	5000	5	05/12/2025 12:24	WG2511436
Manganese	U		0.700	5.00	1	05/12/2025 04:32	WG2511436
Manganese,Dissolved	1.26	U	0.700	5.00	1	05/15/2025 22:50	WG2510343
Nickel	0.575	U	0.500	2.00	1	05/12/2025 04:32	WG2511436
Potassium	5240		96.5	2000	1	05/12/2025 04:32	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:32	WG2511436
Sodium	58800		142	2000	1	05/12/2025 04:32	WG2511436
Vanadium	37.4		0.520	5.00	1	05/12/2025 04:32	WG2511436
Zinc	14.7	U	4.00	25.0	1	05/12/2025 04:32	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	50700		165	428	1	05/12/2025 18:31	WG2510389

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	87700		231	2500	1	05/12/2025 04:35	WG2511436

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	152000		4750	20000	1	05/04/2025 15:04	WG2506469
Alkalinity,Bicarbonate	152000		4750	20000	1	05/04/2025 15:04	WG2506469

Sample Narrative:
L1854814-05 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/06/2025 15:58	WG2506475

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2430		547	1000	1	05/08/2025 22:01	WG2506495
Fluoride	168		76.1	150	1	05/08/2025 22:01	WG2506495
Sulfate	3740	J	637	5000	1	05/08/2025 22:01	WG2506495

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/04/2025 23:20	WG2506048

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/11/2025 21:58	WG2506758

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/12/2025 18:31	WG2510389
Silicon	23700		77.1	200	1	05/12/2025 18:31	WG2510389
Sulfur	1420		160	1000	1	05/12/2025 18:31	WG2510389

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/12/2025 04:35	WG2511436
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:53	WG2510343
Arsenic	22.2		0.120	2.00	1	05/12/2025 04:35	WG2511436
Cadmium	U		0.120	1.00	1	05/12/2025 04:35	WG2511436
Calcium	21900		92.5	1000	1	05/12/2025 04:35	WG2511436
Chromium	U		0.900	2.00	1	05/12/2025 04:35	WG2511436
Copper	27.5		0.700	5.00	1	05/12/2025 04:35	WG2511436
Cobalt	U		0.100	2.00	1	05/12/2025 04:35	WG2511436
Iron	307		22.6	100	1	05/12/2025 04:35	WG2511436
Iron,Dissolved	262		22.6	100	1	05/15/2025 22:53	WG2510343
Lead	U		0.500	2.00	1	05/12/2025 04:35	WG2511436
Magnesium	8000		82.7	1000	1	05/12/2025 04:35	WG2511436
Manganese	254		0.700	5.00	1	05/12/2025 04:35	WG2511436
Manganese,Dissolved	245		0.700	5.00	1	05/15/2025 22:53	WG2510343
Nickel	U		0.500	2.00	1	05/12/2025 04:35	WG2511436
Potassium	2320		96.5	2000	1	05/12/2025 04:35	WG2511436
Selenium	U		0.250	2.00	1	05/12/2025 04:35	WG2511436
Sodium	28500		142	2000	1	05/12/2025 04:35	WG2511436
Vanadium	U		0.520	5.00	1	05/12/2025 04:35	WG2511436
Zinc	22.3	U	4.00	25.0	1	05/12/2025 04:35	WG2511436

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/15/2025 22:56	WG2510343
Iron,Dissolved	U		22.6	100	1	05/15/2025 22:56	WG2510343
Manganese,Dissolved	U		0.700	5.00	1	05/15/2025 22:56	WG2510343

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4210257-2 05/04/25 13:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1854017-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-10 05/04/25 13:40 • (DUP) R4210257-3 05/04/25 13:44

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	466000	476000	1	2.21		20
Alkalinity,Bicarbonate	466000	476000	1	2.21		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1854815-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854815-02 05/04/25 15:25 • (DUP) R4210257-4 05/04/25 15:30

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	157000	159000	1	0.932		20
Alkalinity,Bicarbonate	157000	159000	1	0.932		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99300	99.3	90.0-110	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4210578-1 05/06/25 15:57

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854815-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1854815-05 05/06/25 15:59 • (DUP) R4210578-5 05/06/25 15:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4210578-2 05/06/25 15:57

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	470	94.0	85.0-115	

L1854814-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854814-01 05/06/25 15:57 • (MS) R4210578-3 05/06/25 15:57 • (MSD) R4210578-4 05/06/25 15:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	491	491	98.2	98.2	1	80.0-120			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4212428-1 05/08/25 19:27

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1854602-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854602-01 05/08/25 19:53 • (DUP) R4212428-3 05/08/25 20:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	29900	29000	1	3.07		15
Fluoride	125	120	1	4.34	U	15
Sulfate	101000	99000	1	1.62		15

L1854814-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854814-01 05/08/25 20:44 • (DUP) R4212428-6 05/08/25 20:57

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	6530	5930	1	9.65		15
Fluoride	218	214	1	2.04		15
Sulfate	22400	16400	1	30.7	P1	15

Laboratory Control Sample (LCS)

(LCS) R4212428-2 05/08/25 19:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	37500	93.7	80.0-120	
Fluoride	8000	7920	99.0	80.0-120	
Sulfate	40000	37400	93.4	80.0-120	

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L1854602-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854602-01 05/08/25 19:53 • (MS) R4212428-4 05/08/25 20:18 • (MSD) R4212428-5 05/08/25 20:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	29900	64000	63700	85.3	84.6	1	80.0-120			0.446	15
Fluoride	8000	125	8400	8380	103	103	1	80.0-120			0.304	15
Sulfate	40000	101000	116000	117000	39.5	39.8	1	80.0-120	E J6	E J6	0.115	15

L1854814-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1854814-01 05/08/25 20:44 • (MS) R4212428-7 05/08/25 21:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	6530	45600	97.6	1	80.0-120	
Fluoride	8000	218	8730	106	1	80.0-120	
Sulfate	40000	22400	54100	79.4	1	80.0-120	J6

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Ss

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Cn

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Sr

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Method Blank (MB)

(MB) R4209658-1 05/04/25 14:14

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1854599-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854599-01 05/04/25 16:00 • (DUP) R4209658-5 05/04/25 16:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	2230	2160	1	3.47		20

L1854635-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1854635-06 05/04/25 20:41 • (DUP) R4209658-8 05/04/25 20:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	505	U	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R4209658-2 05/04/25 14:36

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24700	98.7	80.0-120	

L1854175-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854175-08 05/04/25 14:56 • (MS) R4209658-3 05/04/25 15:18 • (MSD) R4209658-4 05/04/25 15:41

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	12300	41500	41200	117	116	1	75.0-125			0.726	20

L1854635-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854635-03 05/04/25 19:40 • (MS) R4209658-6 05/04/25 20:02 • (MSD) R4209658-7 05/04/25 20:24

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	24900	25100	99.6	100	1	75.0-125			0.720	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4213106-1 05/11/25 20:51

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4213106-2 05/11/25 20:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.83	94.2	80.0-120	

L1854727-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854727-20 05/11/25 20:56 • (MS) R4213106-4 05/11/25 21:01 • (MSD) R4213106-5 05/11/25 21:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.63	2.38	87.8	79.4	1	75.0-125			9.94	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4213740-1 05/12/25 17:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4213740-2 05/12/25 17:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1020	102	80.0-120	
Silicon	1000	898	89.8	80.0-120	
Sulfur	10000	9490	94.9	80.0-120	

L1854727-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854727-20 05/12/25 17:48 • (MS) R4213740-4 05/12/25 17:52 • (MSD) R4213740-5 05/12/25 17:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	27.1	1060	1050	103	103	1	75.0-125			0.144	20
Silicon	1000	6010	6670	6800	66.1	79.2	1	75.0-125	V		1.93	20
Sulfur	10000	2810	12400	12400	95.5	96.1	1	75.0-125			0.465	20

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Method Blank (MB)

(MB) R4215565-1 05/15/25 22:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4215565-2 05/15/25 22:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	909	90.9	80.0-120	
Iron,Dissolved	1000	928	92.8	80.0-120	
Manganese,Dissolved	50.0	48.5	96.9	80.0-120	

L1854814-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854814-01 05/15/25 22:06 • (MS) R4215565-4 05/15/25 22:12 • (MSD) R4215565-6 05/15/25 22:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	894	932	89.4	93.2	1	75.0-125			4.15	20
Iron,Dissolved	1000	26.7	932	992	90.5	96.5	1	75.0-125			6.25	20
Manganese,Dissolved	50.0	113	159	170	92.9	114	1	75.0-125			6.30	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4213176-1 05/12/25 03:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	1080	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4213176-2 05/12/25 03:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	970	97.0	80.0-120	
Arsenic	50.0	48.3	96.5	80.0-120	
Cadmium	50.0	52.2	104	80.0-120	
Calcium	5000	4870	97.4	80.0-120	
Chromium	50.0	50.0	99.9	80.0-120	
Copper	50.0	48.0	96.0	80.0-120	
Cobalt	50.0	50.2	100	80.0-120	
Iron	1000	984	98.4	80.0-120	
Lead	50.0	48.6	97.2	80.0-120	
Magnesium	5000	4760	95.3	80.0-120	
Manganese	50.0	50.0	100	80.0-120	
Nickel	50.0	50.5	101	80.0-120	
Potassium	5000	4850	97.1	80.0-120	
Selenium	50.0	49.6	99.3	80.0-120	
Sodium	5000	5470	109	80.0-120	
Vanadium	50.0	49.0	97.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4213176-2 05/12/25 03:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	48.2	96.4	80.0-120	

L1854831-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854831-04 05/12/25 03:54 • (MS) R4213176-4 05/12/25 04:00 • (MSD) R4213176-5 05/12/25 04:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	977	973	97.7	97.3	1	75.0-125			0.395	20
Arsenic	50.0	1.14	50.9	51.2	99.5	100	1	75.0-125			0.643	20
Cadmium	50.0	U	52.3	52.7	105	105	1	75.0-125			0.668	20
Calcium	5000	63100	67500	67400	88.2	84.8	1	75.0-125			0.251	20
Chromium	50.0	U	50.2	50.8	100	102	1	75.0-125			1.14	20
Copper	50.0	U	48.4	46.5	96.8	93.1	1	75.0-125			3.88	20
Cobalt	50.0	1.67	51.2	51.2	99.0	99.0	1	75.0-125			0.0479	20
Iron	1000	22.7	1010	1000	98.4	97.9	1	75.0-125			0.521	20
Lead	50.0	U	48.9	49.2	97.9	98.4	1	75.0-125			0.512	20
Magnesium	5000	40300	44700	43600	87.4	65.3	1	75.0-125		V	2.50	20
Manganese	50.0	85.4	133	134	96.0	97.1	1	75.0-125			0.391	20
Nickel	50.0	2.93	52.4	52.0	98.9	98.1	1	75.0-125			0.803	20
Potassium	5000	818	5660	5660	96.8	96.9	1	75.0-125			0.115	20
Selenium	50.0	U	49.8	50.4	99.6	101	1	75.0-125			1.27	20
Sodium	5000	82600	84700	86600	40.8	78.9	1	75.0-125	V		2.22	20
Vanadium	50.0	3.63	53.7	53.9	100	101	1	75.0-125			0.395	20
Zinc	50.0	U	49.1	48.0	98.2	96.0	1	75.0-125			2.34	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

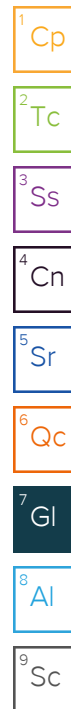
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

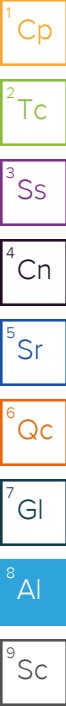
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name: Crook County Limited Groundwater Investigation				Sample Preservative HNO3 HNO3 HNO3 None None None NaOH None None HNO3 HCL										Comments L1854524	
Sampler Name: Sean Maloney															
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	
20250502-1	5/2/25 0600	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250502-4	0900	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250502-4-DUP	0900	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250502-6	1010	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250502-8	1110	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05
20250502-FB	1140	W	1			✓									-06

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: Sean Maloney	Agency/Agent: MFA	Received By: Alexa Mitchell	Agency/Agent: PACE
Signature: [Signature]	Time & Date: 5-2-25 1215	Signature: Alexa Mitchell	Time & Date: 5/3/25 0845
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

394-4 = 4.3

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N NP 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 Condition: ☐ NCF ☒ OK

RA Screen <0.5 mR/hr: ☒ Y ☐ N

SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS NS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY IER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

May 08, 2025

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

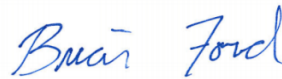
⁹ Sc

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1853025
Samples Received: 04/29/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
Project Manager

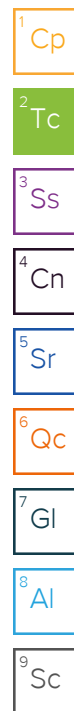
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Pace Analytical National

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SAMPLE SUMMARY

20250428-3 L1853025-01 GW

Collected by
Collected date/time
Received date/time

04/28/25 08:35 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/07/25 21:47	05/07/25 21:47	MAP	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:36	05/08/25 00:36	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:47	04/30/25 12:47	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 15:01	04/30/25 15:01	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2503224	1	05/01/25 16:13	05/01/25 16:13	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 15:04	04/30/25 15:04	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503547	1	05/03/25 15:43	05/05/25 12:01	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:47	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 03:00	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:36	UNP	Mt. Juliet, TN



20250428-FB L1853025-02 GW

Collected by
Collected date/time
Received date/time

04/28/25 09:20 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 03:03	SJM	Mt. Juliet, TN

20250428-5 L1853025-03 GW

Collected by
Collected date/time
Received date/time

04/28/25 10:07 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/07/25 21:49	05/07/25 21:49	MAP	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:39	05/08/25 00:39	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:51	04/30/25 12:51	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 15:01	04/30/25 15:01	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2503224	1	05/01/25 16:39	05/01/25 16:39	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 15:25	04/30/25 15:25	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503547	1	05/03/25 15:43	05/05/25 12:03	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:49	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 03:06	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:39	UNP	Mt. Juliet, TN

20250428-6 L1853025-04 GW

Collected by
Collected date/time
Received date/time

04/28/25 10:58 04/29/25 09:00

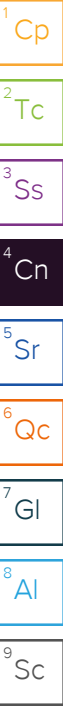
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/07/25 21:51	05/07/25 21:51	MAP	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:42	05/08/25 00:42	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:55	04/30/25 12:55	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 15:02	04/30/25 15:02	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2503224	1	05/01/25 16:52	05/01/25 16:52	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 15:44	04/30/25 15:44	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503547	1	05/03/25 15:43	05/05/25 12:06	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:51	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 03:16	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:42	UNP	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.



Brian Ford
Project Manager



Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	48800		165	428	1	05/07/2025 21:47	WG2507714

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	255000		231	2500	1	05/08/2025 00:36	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	356000		4750	20000	1	04/30/2025 12:47	WG2503408
Alkalinity,Bicarbonate	356000		4750	20000	1	04/30/2025 12:47	WG2503408

Sample Narrative:

L1853025-01 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 15:01	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	4270		547	1000	1	05/01/2025 16:13	WG2503224
Fluoride	304		76.1	150	1	05/01/2025 16:13	WG2503224
Sulfate	21500		637	5000	1	05/01/2025 16:13	WG2503224

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3310		495	1000	1	04/30/2025 15:04	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 12:01	WG2503547

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:47	WG2507714
Silicon	22800		77.1	200	1	05/07/2025 21:47	WG2507714
Sulfur	6970		160	1000	1	05/07/2025 21:47	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	24.3	U	16.0	100	1	05/08/2025 00:36	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 03:00	WG2507701
Arsenic	5.91		0.120	2.00	1	05/08/2025 00:36	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:36	WG2507719
Calcium	58500		92.5	1000	1	05/08/2025 00:36	WG2507719
Chromium	0.978	U	0.900	2.00	1	05/08/2025 00:36	WG2507719
Copper	3.48	U	0.700	5.00	1	05/08/2025 00:36	WG2507719
Cobalt	0.133	U	0.100	2.00	1	05/08/2025 00:36	WG2507719
Iron	603		22.6	100	1	05/08/2025 00:36	WG2507719
Iron,Dissolved	68.4	B	22.6	100	1	05/07/2025 03:00	WG2507701
Lead	U		0.500	2.00	1	05/08/2025 00:36	WG2507719
Magnesium	26500		82.7	1000	1	05/08/2025 00:36	WG2507719
Manganese	124		0.700	5.00	1	05/08/2025 00:36	WG2507719
Manganese,Dissolved	84.9		0.700	5.00	1	05/07/2025 03:00	WG2507701
Nickel	0.649	U	0.500	2.00	1	05/08/2025 00:36	WG2507719
Potassium	4370		96.5	2000	1	05/08/2025 00:36	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:36	WG2507719
Sodium	51900		142	2000	1	05/08/2025 00:36	WG2507719
Vanadium	28.9		0.520	5.00	1	05/08/2025 00:36	WG2507719
Zinc	9.50	U	4.00	25.0	1	05/08/2025 00:36	WG2507719

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 03:03	WG2507701
Iron,Dissolved	U		22.6	100	1	05/07/2025 03:03	WG2507701
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 03:03	WG2507701

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	48100		165	428	1	05/07/2025 21:49	WG2507714

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	252000		231	2500	1	05/08/2025 00:39	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	358000		4750	20000	1	04/30/2025 12:51	WG2503408
Alkalinity,Bicarbonate	358000		4750	20000	1	04/30/2025 12:51	WG2503408

Sample Narrative:

L1853025-03 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 15:01	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8930		547	1000	1	05/01/2025 16:39	WG2503224
Fluoride	264		76.1	150	1	05/01/2025 16:39	WG2503224
Sulfate	27100		637	5000	1	05/01/2025 16:39	WG2503224

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2750		495	1000	1	04/30/2025 15:25	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 12:03	WG2503547

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:49	WG2507714
Silicon	22500		77.1	200	1	05/07/2025 21:49	WG2507714
Sulfur	8850		160	1000	1	05/07/2025 21:49	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	32.3	U	16.0	100	1	05/08/2025 00:39	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 03:06	WG2507701
Arsenic	5.43		0.120	2.00	1	05/08/2025 00:39	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:39	WG2507719
Calcium	56700		92.5	1000	1	05/08/2025 00:39	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:39	WG2507719
Copper	34.3		0.700	5.00	1	05/08/2025 00:39	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:39	WG2507719
Iron	59.8	U	22.6	100	1	05/08/2025 00:39	WG2507719
Iron,Dissolved	U		22.6	100	1	05/07/2025 03:06	WG2507701
Lead	0.651	U	0.500	2.00	1	05/08/2025 00:39	WG2507719
Magnesium	26900		82.7	1000	1	05/08/2025 00:39	WG2507719
Manganese	1.46	U	0.700	5.00	1	05/08/2025 00:39	WG2507719
Manganese,Dissolved	0.819	U	0.700	5.00	1	05/07/2025 03:06	WG2507701
Nickel	0.805	U	0.500	2.00	1	05/08/2025 00:39	WG2507719
Potassium	4800		96.5	2000	1	05/08/2025 00:39	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:39	WG2507719
Sodium	83300		142	2000	1	05/08/2025 00:39	WG2507719
Vanadium	31.9		0.520	5.00	1	05/08/2025 00:39	WG2507719
Zinc	38.2		4.00	25.0	1	05/08/2025 00:39	WG2507719

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	45800		165	428	1	05/07/2025 21:51	WG2507714

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	93600		231	2500	1	05/08/2025 00:42	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	164000		4750	20000	1	04/30/2025 12:55	WG2503408
Alkalinity,Bicarbonate	164000		4750	20000	1	04/30/2025 12:55	WG2503408

Sample Narrative:

L1853025-04 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 15:02	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2350		547	1000	1	05/01/2025 16:52	WG2503224
Fluoride	192		76.1	150	1	05/01/2025 16:52	WG2503224
Sulfate	2760	J	637	5000	1	05/01/2025 16:52	WG2503224

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	04/30/2025 15:44	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 12:06	WG2503547

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:51	WG2507714
Silicon	21400		77.1	200	1	05/07/2025 21:51	WG2507714
Sulfur	1070		160	1000	1	05/07/2025 21:51	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 00:42	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 03:16	WG2507701
Arsenic	18.9		0.120	2.00	1	05/08/2025 00:42	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:42	WG2507719
Calcium	22300		92.5	1000	1	05/08/2025 00:42	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:42	WG2507719
Copper	0.752	U	0.700	5.00	1	05/08/2025 00:42	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:42	WG2507719
Iron	95.7	U	22.6	100	1	05/08/2025 00:42	WG2507719
Iron,Dissolved	81.2	B J	22.6	100	1	05/07/2025 03:16	WG2507701
Lead	U		0.500	2.00	1	05/08/2025 00:42	WG2507719
Magnesium	9210		82.7	1000	1	05/08/2025 00:42	WG2507719
Manganese	162		0.700	5.00	1	05/08/2025 00:42	WG2507719
Manganese,Dissolved	171		0.700	5.00	1	05/07/2025 03:16	WG2507701
Nickel	U		0.500	2.00	1	05/08/2025 00:42	WG2507719
Potassium	2630		96.5	2000	1	05/08/2025 00:42	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:42	WG2507719
Sodium	28100		142	2000	1	05/08/2025 00:42	WG2507719
Vanadium	0.529	U	0.520	5.00	1	05/08/2025 00:42	WG2507719
Zinc	13.6	U	4.00	25.0	1	05/08/2025 00:42	WG2507719

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4207797-2 04/30/25 11:21

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1853001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853001-01 04/30/25 11:50 • (DUP) R4207797-3 04/30/25 11:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	259000	258000	1	0.164		20
Alkalinity,Bicarbonate	259000	258000	1	0.164		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1853131-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853131-02 04/30/25 13:46 • (DUP) R4207797-4 04/30/25 13:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	292000	290000	1	0.597		20
Alkalinity,Bicarbonate	292000	290000	1	0.597		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4207797-1 04/30/25 11:14

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	98300	98.3	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4207797-1 04/30/25 11:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4207708-1 04/30/25 14:54

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1852995-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-02 04/30/25 14:58 • (DUP) R4207708-5 04/30/25 14:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1852995-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-03 04/30/25 14:58 • (DUP) R4207708-6 04/30/25 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4207708-2 04/30/25 14:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	536	107	85.0-115	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 04/30/25 14:57 • (MS) R4207708-3 04/30/25 14:57 • (MSD) R4207708-4 04/30/25 14:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	523	528	105	106	1	80.0-120			0.951	20

L1853165-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853165-02 04/30/25 15:03 • (MS) R4207708-7 04/30/25 15:04 • (MSD) R4207708-8 04/30/25 15:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	528	501	106	100	1	80.0-120			5.25	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4208961-1 05/01/25 14:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1852995-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-06 05/01/25 14:49 • (DUP) R4208961-3 05/01/25 15:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6640	6770	1	1.81		15
Fluoride	274	280	1	2.13		15
Sulfate	15700	16100	1	2.81		15

L1853025-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853025-01 05/01/25 16:13 • (DUP) R4208961-4 05/01/25 16:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4270	4080	1	4.54		15
Fluoride	304	266	1	13.4		15
Sulfate	21500	20900	1	2.60		15

Laboratory Control Sample (LCS)

(LCS) R4208961-2 05/01/25 14:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39500	98.8	80.0-120	
Fluoride	8000	8040	101	80.0-120	
Sulfate	40000	40900	102	80.0-120	

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

L1852995-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-06 05/01/25 14:49 • (MS) R4208961-5 05/01/25 21:41 • (MSD) R4208961-6 05/01/25 21:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	40000	6640	45300	46700	96.6	100	1	80.0-120			3.06	15
Fluoride	8000	274	8220	8530	99.3	103	1	80.0-120			3.73	15
Sulfate	40000	15700	54700	56600	97.5	102	1	80.0-120			3.51	15

L1853025-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853025-01 05/01/25 16:13 • (MS) R4208961-7 05/01/25 22:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40000	4270	45100	102	1	80.0-120	
Fluoride	8000	304	8670	105	1	80.0-120	
Sulfate	40000	21500	62000	101	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4207944-2 04/30/25 10:58

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1852995-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-02 04/30/25 13:00 • (DUP) R4207944-5 04/30/25 13:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	1400	1390	1	0.646		20

L1853085-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853085-02 04/30/25 20:15 • (DUP) R4207944-11 04/30/25 20:34

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	554	588	1	5.94	⬇	20

Laboratory Control Sample (LCS)

(LCS) R4207944-1 04/30/25 10:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24200	97.0	80.0-120	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 04/30/25 11:50 • (MS) R4207944-3 04/30/25 12:15 • (MSD) R4207944-4 04/30/25 12:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2140	26600	26600	98.0	97.7	1	75.0-125			0.263	20

L1853085-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853085-01 04/30/25 19:06 • (MS) R4207944-9 04/30/25 19:31 • (MSD) R4207944-10 04/30/25 19:55

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	24700	24600	98.9	98.2	1	75.0-125			0.649	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209799-1 05/05/25 11:27

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4209799-2 05/05/25 11:29

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	3.10	103	80.0-120	

L1852247-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852247-04 05/05/25 11:32 • (MS) R4209799-4 05/05/25 11:37 • (MSD) R4209799-5 05/05/25 11:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.75	2.93	91.6	97.6	1	75.0-125			6.34	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211472-1 05/07/25 21:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4211472-2 05/07/25 21:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	988	98.8	80.0-120	
Silicon	1000	898	89.8	80.0-120	
Sulfur	10000	9190	91.9	80.0-120	

L1853001-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853001-01 05/07/25 21:08 • (MS) R4211472-4 05/07/25 21:12 • (MSD) R4211472-5 05/07/25 21:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	52.4	1080	1070	103	102	1	75.0-125			0.884	20
Silicon	1000	8000	8760	8720	75.8	71.5	1	75.0-125		V	0.494	20
Sulfur	10000	261000	264000	266000	29.4	48.2	1	75.0-125	EV	EV	0.710	20

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Cp

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Method Blank (MB)

(MB) R4210885-1 05/07/25 01:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	32.6	J	22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4210885-2 05/07/25 01:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	976	97.6	80.0-120	
Iron,Dissolved	1000	930	93.0	80.0-120	
Manganese,Dissolved	50.0	48.7	97.3	80.0-120	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 05/07/25 01:22 • (MS) R4210885-4 05/07/25 01:29 • (MSD) R4210885-5 05/07/25 01:32

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	983	940	98.3	94.0	1	75.0-125			4.46	20
Iron,Dissolved	1000	U	935	944	93.5	94.4	1	75.0-125			1.01	20
Manganese,Dissolved	50.0	U	49.5	50.3	98.9	101	1	75.0-125			1.68	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4211439-1 05/07/25 23:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	191	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211439-2 05/07/25 23:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1020	102	80.0-120	
Arsenic	50.0	48.0	96.0	80.0-120	
Cadmium	50.0	52.1	104	80.0-120	
Calcium	5000	5160	103	80.0-120	
Chromium	50.0	48.7	97.5	80.0-120	
Copper	50.0	53.4	107	80.0-120	
Cobalt	50.0	49.4	98.8	80.0-120	
Iron	1000	1000	100	80.0-120	
Lead	50.0	49.4	98.9	80.0-120	
Magnesium	5000	5060	101	80.0-120	
Manganese	50.0	49.2	98.3	80.0-120	
Nickel	50.0	49.4	98.7	80.0-120	
Potassium	5000	5100	102	80.0-120	
Selenium	50.0	48.9	97.8	80.0-120	
Sodium	5000	5270	105	80.0-120	
Vanadium	50.0	48.3	96.7	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4211439-2 05/07/25 23:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.8	99.6	80.0-120	

L1853012-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853012-01 05/07/25 23:52 • (MS) R4211439-4 05/07/25 23:59 • (MSD) R4211439-5 05/08/25 00:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	79.4	1110	1140	103	107	1	75.0-125			3.24	20
Arsenic	50.0	0.787	50.2	51.2	98.8	101	1	75.0-125			1.91	20
Cadmium	50.0	U	51.9	52.2	104	104	1	75.0-125			0.528	20
Calcium	5000	23800	28200	28800	89.5	100	1	75.0-125			1.89	20
Chromium	50.0	U	50.1	51.0	100	102	1	75.0-125			1.83	20
Copper	50.0	4.10	57.6	56.8	107	105	1	75.0-125			1.37	20
Cobalt	50.0	20.4	70.2	72.2	99.5	104	1	75.0-125			2.84	20
Iron	1000	2500	3540	3670	104	117	1	75.0-125			3.63	20
Lead	50.0	U	51.3	51.6	103	103	1	75.0-125			0.567	20
Magnesium	5000	8270	13100	13200	97.3	98.1	1	75.0-125			0.320	20
Manganese	50.0	1140	1170	1210	61.6	139	1	75.0-125	V	V	3.24	20
Nickel	50.0	1.68	51.9	52.6	101	102	1	75.0-125			1.22	20
Potassium	5000	2220	7280	7270	101	101	1	75.0-125			0.172	20
Selenium	50.0	U	50.5	51.0	101	102	1	75.0-125			1.06	20
Sodium	5000	31000	34600	34700	70.4	72.9	1	75.0-125	V	V	0.358	20
Vanadium	50.0	U	49.5	50.8	99.0	102	1	75.0-125			2.50	20
Zinc	50.0	18.5	66.7	67.1	96.4	97.1	1	75.0-125			0.475	20

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Cp

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Tc

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Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

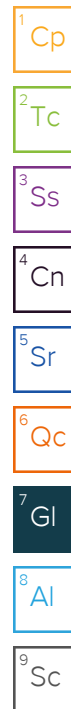
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

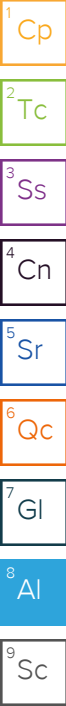
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT AND TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Continued

Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y	☐ N	NP	If Applicable	
COC Signed/Accurate:	☒ Y	☐ N		VOA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y	☐ N		Fres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y	☐ N			
Sufficient volume sent:	☒ Y	☐ N		Condition:	☒ NCF ☐ OK
RA Screen <0.5 mR/hr:	☒ Y	☐ N			

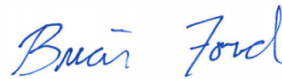
11/11/14 14:25:53

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1853501
Samples Received: 04/30/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

20250429-2 L1853501-01 GW

Collected by
Collected date/time
Received date/time

04/29/25 07:43 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508184	1	05/08/25 14:47	05/08/25 14:47	MAP	Mt. Juliet, TN
Calculated Results	WG2508246	1	05/08/25 06:38	05/08/25 06:38	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 11:45	05/01/25 11:45	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:34	05/01/25 10:34	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 03:16	05/02/25 03:16	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 16:42	05/01/25 16:42	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504114	1	05/06/25 15:53	05/07/25 12:22	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 00:20	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 14:47	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:33	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	1	05/07/25 18:13	05/08/25 06:38	JDB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

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⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20250429-4 L1853501-02 GW

Collected by
Collected date/time
Received date/time

04/29/25 08:48 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508184	1	05/08/25 14:49	05/08/25 14:49	MAP	Mt. Juliet, TN
Calculated Results	WG2508246	1	05/08/25 06:41	05/08/25 06:41	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 14:27	05/01/25 14:27	BMD	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:34	05/01/25 10:34	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 03:29	05/02/25 03:29	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 17:39	05/01/25 17:39	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 16:46	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/07/25 23:09	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 14:49	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:36	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	1	05/07/25 18:13	05/08/25 06:41	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	5	05/07/25 18:13	05/08/25 12:34	JDB	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

04/29/25 09:37 04/30/25 09:00

20250429-6 L1853501-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508184	1	05/08/25 14:51	05/08/25 14:51	MAP	Mt. Juliet, TN
Calculated Results	WG2508246	1	05/08/25 06:51	05/08/25 06:51	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504612	1	05/01/25 15:20	05/01/25 15:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:34	05/01/25 10:34	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 04:08	05/02/25 04:08	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 18:40	05/01/25 18:40	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:07	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/07/25 23:11	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 14:51	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:39	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	1	05/07/25 18:13	05/08/25 06:51	JDB	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

04/29/25 11:04 04/30/25 09:00

20250429-8 L1853501-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508184	1	05/08/25 14:52	05/08/25 14:52	MAP	Mt. Juliet, TN
Calculated Results	WG2508246	1	05/08/25 12:37	05/08/25 12:37	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 11:59	05/01/25 11:59	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:34	05/01/25 10:34	PAN	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1853501

DATE/TIME:

05/08/25 20:35

PAGE:

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SAMPLE SUMMARY

20250429-8 L1853501-04 GW

Collected by
Collected date/time
Received date/time

04/29/25 11:04 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 04:21	05/02/25 04:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 19:17	05/01/25 19:17	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:18	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/07/25 23:14	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 14:52	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:42	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	1	05/07/25 18:13	05/08/25 06:54	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	5	05/07/25 18:13	05/08/25 12:37	JDB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

20250429-FB L1853501-05 GW

Collected by
Collected date/time
Received date/time

04/29/25 12:15 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:45	LD	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

20250429-9 L1853501-06 GW

Collected by
Collected date/time
Received date/time

04/29/25 11:45 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508184	1	05/08/25 14:54	05/08/25 14:54	MAP	Mt. Juliet, TN
Calculated Results	WG2508246	1	05/08/25 12:40	05/08/25 12:40	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504612	1	05/01/25 15:27	05/01/25 15:27	KRB	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:35	05/01/25 10:35	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 04:33	05/02/25 04:33	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 19:36	05/01/25 19:36	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:20	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/07/25 23:17	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508184	1	05/07/25 08:40	05/08/25 14:54	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:48	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	1	05/07/25 18:13	05/08/25 06:58	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508246	5	05/07/25 18:13	05/08/25 12:40	JDB	Mt. Juliet, TN

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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	39100		165	428	1	05/08/2025 14:47	WG2508184

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	176000		231	2500	1	05/08/2025 06:38	WG2508246

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	227000		4750	20000	1	05/01/2025 11:45	WG2504319
Alkalinity,Bicarbonate	227000		4750	20000	1	05/01/2025 11:45	WG2504319

Sample Narrative:

L1853501-01 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:34	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7990		547	1000	1	05/02/2025 03:16	WG2504227
Fluoride	226		76.1	150	1	05/02/2025 03:16	WG2504227
Sulfate	31300		637	5000	1	05/02/2025 03:16	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	624	J	495	1000	1	05/01/2025 16:42	WG2504121

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/07/2025 12:22	WG2504114

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 00:20	WG2508184
Silicon	18300		77.1	200	1	05/08/2025 14:47	WG2508184
Sulfur	10800		160	1000	1	05/08/2025 00:20	WG2508184

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 06:38	WG2508246
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:33	WG2508160
Arsenic	7.27		0.120	2.00	1	05/08/2025 06:38	WG2508246
Cadmium	U		0.120	1.00	1	05/08/2025 06:38	WG2508246
Calcium	43700		92.5	1000	1	05/08/2025 06:38	WG2508246
Chromium	U		0.900	2.00	1	05/08/2025 06:38	WG2508246
Copper	26.5		0.700	5.00	1	05/08/2025 06:38	WG2508246
Cobalt	U		0.100	2.00	1	05/08/2025 06:38	WG2508246
Iron	U		22.6	100	1	05/08/2025 06:38	WG2508246
Iron,Dissolved	U		22.6	100	1	05/07/2025 16:33	WG2508160
Lead	1.87	U	0.500	2.00	1	05/08/2025 06:38	WG2508246
Magnesium	16100		82.7	1000	1	05/08/2025 06:38	WG2508246
Manganese	98.7		0.700	5.00	1	05/08/2025 06:38	WG2508246
Manganese,Dissolved	97.0		0.700	5.00	1	05/07/2025 16:33	WG2508160
Nickel	U		0.500	2.00	1	05/08/2025 06:38	WG2508246
Potassium	2160		96.5	2000	1	05/08/2025 06:38	WG2508246
Selenium	U		0.250	2.00	1	05/08/2025 06:38	WG2508246
Sodium	35400		142	2000	1	05/08/2025 06:38	WG2508246
Vanadium	U		0.520	5.00	1	05/08/2025 06:38	WG2508246
Zinc	17.6	U	4.00	25.0	1	05/08/2025 06:38	WG2508246

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250429-4

Collected date/time: 04/29/25 08:48

SAMPLE RESULTS - 02

L1853501

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	49500		165	428	1	05/08/2025 14:49	WG2508184

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	31500		231	2500	1	05/08/2025 06:41	WG2508246

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	165000		4750	20000	1	05/01/2025 14:27	WG2504319
Alkalinity,Bicarbonate	152000		4750	20000	1	05/01/2025 14:27	WG2504319

Sample Narrative:

L1853501-02 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:34	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	3520		547	1000	1	05/02/2025 03:29	WG2504227
Fluoride	323		76.1	150	1	05/02/2025 03:29	WG2504227
Sulfate	4130	J	637	5000	1	05/02/2025 03:29	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	578	J	495	1000	1	05/01/2025 17:39	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U	J6	0.0700	0.200	1	05/04/2025 16:46	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	9.67	J	4.22	15.0	1	05/07/2025 23:09	WG2508184
Silicon	23100		77.1	200	1	05/08/2025 14:49	WG2508184
Sulfur	1610		160	1000	1	05/07/2025 23:09	WG2508184

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	20.5	U	16.0	100	1	05/08/2025 06:41	WG2508246
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:36	WG2508160
Arsenic	6.94		0.120	2.00	1	05/08/2025 06:41	WG2508246
Cadmium	U		0.120	1.00	1	05/08/2025 06:41	WG2508246
Calcium	8360		92.5	1000	1	05/08/2025 06:41	WG2508246
Chromium	1.28	U	0.900	2.00	1	05/08/2025 06:41	WG2508246
Copper	1.60	U	0.700	5.00	1	05/08/2025 06:41	WG2508246
Cobalt	U		0.100	2.00	1	05/08/2025 06:41	WG2508246
Iron	617		22.6	100	1	05/08/2025 06:41	WG2508246
Iron,Dissolved	344		22.6	100	1	05/07/2025 16:36	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 06:41	WG2508246
Magnesium	2580		82.7	1000	1	05/08/2025 06:41	WG2508246
Manganese	82.3		0.700	5.00	1	05/08/2025 06:41	WG2508246
Manganese,Dissolved	78.6		0.700	5.00	1	05/07/2025 16:36	WG2508160
Nickel	0.758	U	0.500	2.00	1	05/08/2025 06:41	WG2508246
Potassium	1700	U	96.5	2000	1	05/08/2025 06:41	WG2508246
Selenium	U		0.250	2.00	1	05/08/2025 06:41	WG2508246
Sodium	61400		710	10000	5	05/08/2025 12:34	WG2508246
Vanadium	U		0.520	5.00	1	05/08/2025 06:41	WG2508246
Zinc	U		4.00	25.0	1	05/08/2025 06:41	WG2508246

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	44700		165	428	1	05/08/2025 14:51	WG2508184

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	89100		231	2500	1	05/08/2025 06:51	WG2508246

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	159000		4750	20000	1	05/01/2025 15:20	WG2504612
Alkalinity,Bicarbonate	159000		4750	20000	1	05/01/2025 15:20	WG2504612

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:34	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	3850		547	1000	1	05/02/2025 04:08	WG2504227
Fluoride	198		76.1	150	1	05/02/2025 04:08	WG2504227
Sulfate	6160		637	5000	1	05/02/2025 04:08	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/01/2025 18:40	WG2504121

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:07	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 23:11	WG2508184
Silicon	20900		77.1	200	1	05/08/2025 14:51	WG2508184
Sulfur	2270		160	1000	1	05/07/2025 23:11	WG2508184

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 06:51	WG2508246
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:39	WG2508160
Arsenic	22.8		0.120	2.00	1	05/08/2025 06:51	WG2508246
Cadmium	U		0.120	1.00	1	05/08/2025 06:51	WG2508246
Calcium	22500		92.5	1000	1	05/08/2025 06:51	WG2508246
Chromium	U		0.900	2.00	1	05/08/2025 06:51	WG2508246

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Copper	84.7		0.700	5.00	1	05/08/2025 06:51	WG2508246
Cobalt	U		0.100	2.00	1	05/08/2025 06:51	WG2508246
Iron	250		22.6	100	1	05/08/2025 06:51	WG2508246
Iron,Dissolved	185		22.6	100	1	05/07/2025 16:39	WG2508160
Lead	1.71	U	0.500	2.00	1	05/08/2025 06:51	WG2508246
Magnesium	7980		82.7	1000	1	05/08/2025 06:51	WG2508246
Manganese	144		0.700	5.00	1	05/08/2025 06:51	WG2508246
Manganese,Dissolved	142		0.700	5.00	1	05/07/2025 16:39	WG2508160
Nickel	U		0.500	2.00	1	05/08/2025 06:51	WG2508246
Potassium	1830	U	96.5	2000	1	05/08/2025 06:51	WG2508246
Selenium	U		0.250	2.00	1	05/08/2025 06:51	WG2508246
Sodium	35000		142	2000	1	05/08/2025 06:51	WG2508246
Vanadium	U		0.520	5.00	1	05/08/2025 06:51	WG2508246
Zinc	20.3	U	4.00	25.0	1	05/08/2025 06:51	WG2508246

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	50800		165	428	1	05/08/2025 14:52	WG2508184

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	193000		341	4120	1	05/08/2025 12:37	WG2508246

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	289000		4750	20000	1	05/01/2025 11:59	WG2504319
Alkalinity,Bicarbonate	289000		4750	20000	1	05/01/2025 11:59	WG2504319

Sample Narrative:
L1853501-04 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:34	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7640		547	1000	1	05/02/2025 04:21	WG2504227
Fluoride	379		76.1	150	1	05/02/2025 04:21	WG2504227
Sulfate	16000		637	5000	1	05/02/2025 04:21	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2320		495	1000	1	05/01/2025 19:17	WG2504121

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:18	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	5.67	J	4.22	15.0	1	05/07/2025 23:14	WG2508184
Silicon	23700		77.1	200	1	05/08/2025 14:52	WG2508184
Sulfur	5810		160	1000	1	05/07/2025 23:14	WG2508184

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 06:54	WG2508246
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:42	WG2508160
Arsenic	4.75		0.120	2.00	1	05/08/2025 06:54	WG2508246
Cadmium	U		0.120	1.00	1	05/08/2025 06:54	WG2508246
Calcium	44400		462	5000	5	05/08/2025 12:37	WG2508246
Chromium	U		0.900	2.00	1	05/08/2025 06:54	WG2508246
Copper	9.65		0.700	5.00	1	05/08/2025 06:54	WG2508246
Cobalt	U		0.100	2.00	1	05/08/2025 06:54	WG2508246
Iron	42.4	U	22.6	100	1	05/08/2025 06:54	WG2508246
Iron,Dissolved	U		22.6	100	1	05/07/2025 16:42	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 06:54	WG2508246
Magnesium	20000		82.7	1000	1	05/08/2025 06:54	WG2508246
Manganese	U		0.700	5.00	1	05/08/2025 06:54	WG2508246
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 16:42	WG2508160
Nickel	0.578	U	0.500	2.00	1	05/08/2025 06:54	WG2508246
Potassium	4370		96.5	2000	1	05/08/2025 06:54	WG2508246
Selenium	U		0.250	2.00	1	05/08/2025 06:54	WG2508246
Sodium	67200		710	10000	5	05/08/2025 12:37	WG2508246
Vanadium	27.7		0.520	5.00	1	05/08/2025 06:54	WG2508246
Zinc	12.4	U	4.00	25.0	1	05/08/2025 06:54	WG2508246

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:45	WG2508160
Iron,Dissolved	U		22.6	100	1	05/07/2025 16:45	WG2508160
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 16:45	WG2508160

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250429-9

Collected date/time: 04/29/25 11:45

SAMPLE RESULTS - 06

L1853501

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	50800		165	428	1	05/08/2025 14:54	WG2508184

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	242000		341	4120	1	05/08/2025 12:40	WG2508246

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	337000		4750	20000	1	05/01/2025 15:27	WG2504612
Alkalinity,Bicarbonate	337000		4750	20000	1	05/01/2025 15:27	WG2504612

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:35	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8200		547	1000	1	05/02/2025 04:33	WG2504227
Fluoride	347		76.1	150	1	05/02/2025 04:33	WG2504227
Sulfate	24200		637	5000	1	05/02/2025 04:33	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2630		495	1000	1	05/01/2025 19:36	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:20	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	5.29	J	4.22	15.0	1	05/07/2025 23:17	WG2508184
Silicon	23700		77.1	200	1	05/08/2025 14:54	WG2508184
Sulfur	8580		160	1000	1	05/07/2025 23:17	WG2508184

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Aluminum	17.1	J	16.0	100	1	05/08/2025 06:58	WG2508246
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:48	WG2508160
Arsenic	3.92		0.120	2.00	1	05/08/2025 06:58	WG2508246
Cadmium	U		0.120	1.00	1	05/08/2025 06:58	WG2508246
Calcium	55100		462	5000	5	05/08/2025 12:40	WG2508246
Chromium	U		0.900	2.00	1	05/08/2025 06:58	WG2508246

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Copper	6.81		0.700	5.00	1	05/08/2025 06:58	WG2508246
Cobalt	0.100	J	0.100	2.00	1	05/08/2025 06:58	WG2508246
Iron	U		22.6	100	1	05/08/2025 06:58	WG2508246
Iron,Dissolved	U		22.6	100	1	05/07/2025 16:48	WG2508160
Lead	0.970	J	0.500	2.00	1	05/08/2025 06:58	WG2508246
Magnesium	25300		82.7	1000	1	05/08/2025 06:58	WG2508246
Manganese	U		0.700	5.00	1	05/08/2025 06:58	WG2508246
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 16:48	WG2508160
Nickel	U		0.500	2.00	1	05/08/2025 06:58	WG2508246
Potassium	3760		96.5	2000	1	05/08/2025 06:58	WG2508246
Selenium	U		0.250	2.00	1	05/08/2025 06:58	WG2508246
Sodium	73700		710	10000	5	05/08/2025 12:40	WG2508246
Vanadium	39.5		0.520	5.00	1	05/08/2025 06:58	WG2508246
Zinc	9.29	J	4.00	25.0	1	05/08/2025 06:58	WG2508246

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4208300-2 05/01/25 10:04

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1853400-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853400-03 05/01/25 10:30 • (DUP) R4208300-3 05/01/25 10:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	986000	982000	1	0.329		20
Alkalinity,Bicarbonate	986000	982000	1	0.329		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

L1853506-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1853506-05 05/01/25 12:46 • (DUP) R4208300-4 05/01/25 12:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	376000	378000	1	0.293		20
Alkalinity,Bicarbonate	376000	378000	1	0.293		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4208300-1 05/01/25 09:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	104000	104	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4208300-1 05/01/25 09:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4208500-2 05/01/25 15:07

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1853581-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853581-01 05/01/25 15:34 • (DUP) R4208500-3 05/01/25 15:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	413000	413000	1	0.141		20
Alkalinity,Bicarbonate	413000	413000	1	0.141		20

Sample Narrative:
DUP: Endpoint pH 4.5

L1853631-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1853631-06 05/01/25 16:59 • (DUP) R4208500-4 05/01/25 17:07

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	312000	316000	1	1.48		20
Alkalinity,Bicarbonate	312000	316000	1	1.48		20

Sample Narrative:
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4208500-1 05/01/25 15:01

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	103000	103	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4208130-1 05/01/25 10:31

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1853496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-01 05/01/25 10:31 • (DUP) R4208130-3 05/01/25 10:31

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1853501-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1853501-04 05/01/25 10:34 • (DUP) R4208130-6 05/01/25 10:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4208130-2 05/01/25 10:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	518	104	85.0-115	

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/01/25 10:31 • (MS) R4208130-4 05/01/25 10:31 • (MSD) R4208130-5 05/01/25 10:32

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	508	496	102	99.2	1	80.0-120			2.39	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4208816-1 05/02/25 00:04

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1853419-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1853419-12 05/02/25 00:42 • (DUP) R4208816-3 05/02/25 00:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	27800	27100	1	2.73		15
Fluoride	346	335	1	3.14		15
Sulfate	70700	68800	1	2.67		15

L1853496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-01 05/02/25 01:21 • (DUP) R4208816-5 05/02/25 01:34

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	2100	2070	1	1.60		15
Fluoride	82.9	126	1	41.1	J P1	15
Sulfate	10400	10400	1	0.218		15

Laboratory Control Sample (LCS)

(LCS) R4208816-2 05/02/25 00:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39800	99.5	80.0-120	
Fluoride	8000	8340	104	80.0-120	
Sulfate	40000	40400	101	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1853419-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853419-12 05/02/25 00:42 • (MS) R4208816-4 05/02/25 01:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	27800	61500	84.2	1	80.0-120	
Fluoride	8000	346	8670	104	1	80.0-120	
Sulfate	40000	70700	94900	60.6	1	80.0-120	J6

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/02/25 01:21 • (MS) R4208816-6 05/02/25 01:47 • (MSD) R4208816-7 05/02/25 01:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	2100	41600	41100	98.7	97.5	1	80.0-120			1.20	15
Fluoride	8000	82.9	8450	8310	105	103	1	80.0-120			1.68	15
Sulfate	40000	10400	48800	48500	96.2	95.2	1	80.0-120			0.794	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4208582-2 05/01/25 10:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1853496-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-02 05/01/25 14:45 • (DUP) R4208582-5 05/01/25 15:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	799	843	1	5.29	⌵	20

L1853501-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853501-03 05/01/25 18:40 • (DUP) R4208582-8 05/01/25 18:57

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4208582-1 05/01/25 10:42

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24400	97.7	80.0-120	

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/01/25 13:41 • (MS) R4208582-3 05/01/25 14:03 • (MSD) R4208582-4 05/01/25 14:25

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	4650	28200	29200	94.2	98.0	1	75.0-125			3.28	20

L1853501-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853501-02 05/01/25 17:39 • (MS) R4208582-6 05/01/25 18:01 • (MSD) R4208582-7 05/01/25 18:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	578	25200	24900	98.5	97.4	1	75.0-125			1.12	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211063-1 05/07/25 11:00

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4211063-2 05/07/25 11:03

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.80	93.3	80.0-120	

L1853367-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853367-07 05/07/25 11:05 • (MS) R4211063-4 05/07/25 11:10 • (MSD) R4211063-5 05/07/25 11:13

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.83	2.81	94.2	93.8	1	75.0-125			0.415	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209795-1 05/04/25 16:35

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4209795-2 05/04/25 16:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.70	90.0	80.0-120	

L1853501-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853501-02 05/04/25 16:46 • (MS) R4209795-4 05/04/25 16:51 • (MSD) R4209795-5 05/04/25 16:54

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	1.86	2.08	62.1	69.4	1	75.0-125	<u>J6</u>	<u>J6</u>	11.1	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211675-1 05/07/25 23:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4211675-2 05/07/25 23:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1070	107	80.0-120	
Silicon	1000	919	91.9	80.0-120	
Sulfur	10000	9860	98.6	80.0-120	

L1853419-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853419-01 05/07/25 23:30 • (MS) R4211675-4 05/07/25 23:35 • (MSD) R4211675-5 05/07/25 23:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	66.3	1140	1140	107	107	1	75.0-125			0.257	20
Silicon	1000	21800	22700	22400	84.7	55.1	1	75.0-125	V		1.31	20
Sulfur	10000	37100	46900	46700	98.0	95.4	1	75.0-125			0.574	20

1
Cp

2
Tc

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Ss

4
Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4211274-1 05/07/25 15:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4211274-2 05/07/25 15:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	988	98.8	80.0-120	
Iron,Dissolved	1000	984	98.4	80.0-120	
Manganese,Dissolved	50.0	47.6	95.2	80.0-120	

L1853506-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853506-02 05/07/25 15:48 • (MS) R4211274-4 05/07/25 15:54 • (MSD) R4211274-5 05/07/25 15:57

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	1020	1030	102	103	1	75.0-125			1.25	20
Iron,Dissolved	1000	U	1000	1000	100	100	1	75.0-125			0.232	20
Manganese,Dissolved	50.0	77.2	126	124	97.5	93.4	1	75.0-125			1.63	20

1
Cp

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Tc

3
Ss

4
Cn

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Sr

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Qc

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Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4211547-1 05/08/25 05:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4211547-2 05/08/25 05:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	934	93.4	80.0-120	
Arsenic	50.0	47.2	94.5	80.0-120	
Cadmium	50.0	50.5	101	80.0-120	
Calcium	5000	4890	97.8	80.0-120	
Chromium	50.0	48.5	97.1	80.0-120	
Copper	50.0	51.1	102	80.0-120	
Cobalt	50.0	49.5	99.1	80.0-120	
Iron	1000	912	91.2	80.0-120	
Lead	50.0	49.2	98.4	80.0-120	
Magnesium	5000	4750	95.0	80.0-120	
Manganese	50.0	48.2	96.5	80.0-120	
Nickel	50.0	49.8	99.7	80.0-120	
Potassium	5000	4820	96.3	80.0-120	
Selenium	50.0	47.9	95.9	80.0-120	
Sodium	5000	4810	96.2	80.0-120	
Vanadium	50.0	47.7	95.5	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4211547-2 05/08/25 05:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	46.2	92.5	80.0-120	

L1853481-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853481-01 05/08/25 05:38 • (MS) R4211547-4 05/08/25 05:44 • (MSD) R4211547-5 05/08/25 05:48

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	921	932	92.1	93.2	1	75.0-125			1.20	20
Arsenic	50.0	26.6	73.5	71.9	93.8	90.5	1	75.0-125			2.23	20
Cadmium	50.0	U	49.3	49.1	98.7	98.1	1	75.0-125			0.533	20
Calcium	5000	76200	81300	80400	102	85.7	1	75.0-125			1.04	20
Chromium	50.0	U	48.7	47.5	97.4	94.9	1	75.0-125			2.51	20
Copper	50.0	1.84	47.4	46.1	91.1	88.6	1	75.0-125			2.67	20
Cobalt	50.0	2.06	50.0	49.6	95.9	95.0	1	75.0-125			0.881	20
Iron	1000	2410	3730	3490	132	108	1	75.0-125	J5		6.71	20
Lead	50.0	0.538	49.6	48.0	98.1	94.9	1	75.0-125			3.26	20
Magnesium	5000	37400	41400	41100	79.0	72.5	1	75.0-125		V	0.791	20
Manganese	50.0	1520	1580	1540	107	27.7	1	75.0-125		V	2.54	20
Nickel	50.0	19.3	68.2	65.9	97.7	93.1	1	75.0-125			3.42	20
Potassium	5000	286	5010	5070	94.5	95.8	1	75.0-125			1.28	20
Selenium	50.0	U	48.6	48.6	97.3	97.2	1	75.0-125			0.0337	20
Sodium	5000	130000	137000	134000	138	88.0	1	75.0-125	V		1.84	20
Vanadium	50.0	U	48.5	48.0	96.9	96.0	1	75.0-125			0.945	20
Zinc	50.0	U	46.9	45.8	93.9	91.6	1	75.0-125			2.42	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.

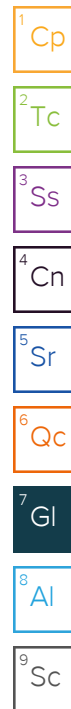
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

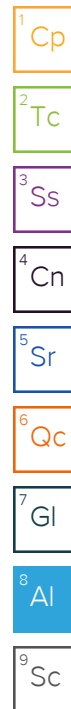
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ		Contract Laboratory Name: ESC		Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work		Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____	
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com		Lab Batch #:					
		Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel #: 503-229-5696					

Project Name: Crook County Limited Groundwater Investigation				Sample Preservative										11853501	
Sampler Name:				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3		HCL
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)		Total Organic Carbon (EPA 9060A)
20250429-2	4/30/25 8:43	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250429-4	0848	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250429-6	0937	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250429-8	1104	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250429-FB	1215	w	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05
20250429-9	1145	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-06
Sample Receipt Checklist															
COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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															

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☒ NCF ☐ OK

RA Screen <0.5 mR/hr: ☒ Y ☐ N

Notes: Dissolved Metals = aluminum, iron, and manganese
Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: <i>[Signature]</i>	Agency/Agent: MFA	Received By: Alexa Mitchell	Agency/Agent: PACE
Signature: <i>[Signature]</i>	Time & Date: 4/29/2025 12:00	Signature: <i>[Signature]</i>	Time & Date: 4/30/25 0900
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.



ANALYTICAL REPORT

June 10, 2025

Revised Report

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1853506
Samples Received: 04/30/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entire Report Reviewed By:

Brian Ford

Brian Ford
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 mydata.pacelabs.com

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1853506

DATE/TIME:

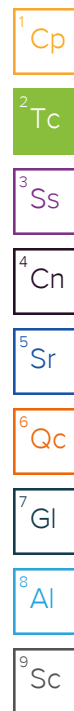
06/10/25 09:23

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20250429-1-DUP L1853506-03	10
20250429-5 L1853506-04	12
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SAMPLE SUMMARY

20250429-1 L1853506-01

Collected by
Collected date/time
Received date/time

04/29/25 07:45 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508195	1	05/08/25 11:11	05/08/25 11:11	BAG	Mt. Juliet, TN
Calculated Results	WG2508250	1	05/08/25 22:35	05/08/25 22:35	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 12:06	05/01/25 12:06	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:35	05/01/25 10:35	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 05:12	05/02/25 05:12	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 19:55	05/01/25 19:55	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:23	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508195	1	05/07/25 20:22	05/08/25 11:11	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 16:58	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508250	1	05/08/25 09:55	05/08/25 22:35	UNP	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250429-3 L1853506-02

Collected by
Collected date/time
Received date/time

04/29/25 07:45 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508195	1	05/08/25 11:13	05/08/25 11:13	BAG	Mt. Juliet, TN
Calculated Results	WG2508250	1	05/08/25 22:50	05/08/25 22:50	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 12:14	05/01/25 12:14	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:35	05/01/25 10:35	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 05:25	05/02/25 05:25	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 20:14	05/01/25 20:14	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:25	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508195	1	05/07/25 20:22	05/08/25 11:13	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 15:48	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508250	1	05/08/25 09:55	05/08/25 22:50	UNP	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250429-1-DUP L1853506-03

Collected by
Collected date/time
Received date/time

04/29/25 08:55 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508195	1	05/08/25 11:14	05/08/25 11:14	BAG	Mt. Juliet, TN
Calculated Results	WG2508250	1	05/08/25 22:54	05/08/25 22:54	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 12:21	05/01/25 12:21	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:36	05/01/25 10:36	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 05:37	05/02/25 05:37	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 20:34	05/01/25 20:34	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:28	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508195	1	05/07/25 20:22	05/08/25 11:14	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 17:01	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508250	1	05/08/25 09:55	05/08/25 22:54	UNP	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

04/29/25 09:45 04/30/25 09:00

20250429-5 L1853506-04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508195	1	05/08/25 11:16	05/08/25 11:16	BAG	Mt. Juliet, TN
Calculated Results	WG2508250	1	05/08/25 22:57	05/08/25 22:57	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 12:40	05/01/25 12:40	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:36	05/01/25 10:36	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 05:50	05/02/25 05:50	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 20:53	05/01/25 20:53	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:31	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508195	1	05/07/25 20:22	05/08/25 11:16	RLS	Mt. Juliet, TN

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SAMPLE SUMMARY

20250429-5 L1853506-04

Collected by
Collected date/time
Received date/time

04/29/25 09:45 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 17:04	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508250	1	05/08/25 09:55	05/08/25 22:57	UNP	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20250429-7 L1853506-05

Collected by
Collected date/time
Received date/time

04/29/25 10:50 04/30/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2508195	1	05/08/25 11:18	05/08/25 11:18	BAG	Mt. Juliet, TN
Calculated Results	WG2508250	1	05/08/25 23:06	05/08/25 23:06	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2504319	1	05/01/25 12:46	05/01/25 12:46	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2504246	1	05/01/25 10:36	05/01/25 10:36	PAN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2504227	1	05/02/25 06:03	05/02/25 06:03	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2504121	1	05/01/25 21:12	05/01/25 21:12	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2504401	1	05/03/25 15:50	05/04/25 17:33	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2508195	1	05/07/25 20:22	05/08/25 11:18	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508160	1	05/07/25 12:54	05/07/25 17:07	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2508250	1	05/08/25 09:55	05/08/25 23:06	UNP	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

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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.



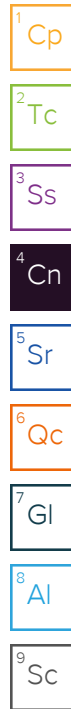
Brian Ford
Project Manager

Report Revision History

Level II Report - Version 1: 05/10/25 11:25
Level II Report - Version 2: 06/09/25 12:10

Project Narrative

updated sample IDs per client request, see COC at end of report for more information.



Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	51300		165	428	1	05/08/2025 11:11	WG2508195

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	311000		231	2500	1	05/08/2025 22:35	WG2508250

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	379000		4750	20000	1	05/01/2025 12:06	WG2504319
Alkalinity,Bicarbonate	379000		4750	20000	1	05/01/2025 12:06	WG2504319

Sample Narrative:

L1853506-01 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:35	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7760		547	1000	1	05/02/2025 05:12	WG2504227
Fluoride	300		76.1	150	1	05/02/2025 05:12	WG2504227
Sulfate	22200		637	5000	1	05/02/2025 05:12	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3900		495	1000	1	05/01/2025 19:55	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:23	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 11:11	WG2508195
Silicon	24000		77.1	200	1	05/08/2025 11:11	WG2508195
Sulfur	7610		160	1000	1	05/08/2025 11:11	WG2508195

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 22:35	WG2508250
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 16:58	WG2508160
Arsenic	2.64		0.120	2.00	1	05/08/2025 22:35	WG2508250
Cadmium	U		0.120	1.00	1	05/08/2025 22:35	WG2508250
Calcium	66400		92.5	1000	1	05/08/2025 22:35	WG2508250
Chromium	U		0.900	2.00	1	05/08/2025 22:35	WG2508250
Copper	4.43	U	0.700	5.00	1	05/08/2025 22:35	WG2508250
Cobalt	U		0.100	2.00	1	05/08/2025 22:35	WG2508250
Iron	U		22.6	100	1	05/08/2025 22:35	WG2508250
Iron,Dissolved	U		22.6	100	1	05/07/2025 16:58	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 22:35	WG2508250
Magnesium	35300		82.7	1000	1	05/08/2025 22:35	WG2508250
Manganese	U		0.700	5.00	1	05/08/2025 22:35	WG2508250
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 16:58	WG2508160
Nickel	0.638	U	0.500	2.00	1	05/08/2025 22:35	WG2508250
Potassium	2790		96.5	2000	1	05/08/2025 22:35	WG2508250
Selenium	0.269	U	0.250	2.00	1	05/08/2025 22:35	WG2508250
Sodium	54800		142	2000	1	05/08/2025 22:35	WG2508250
Vanadium	47.9		0.520	5.00	1	05/08/2025 22:35	WG2508250
Zinc	5.74	U	4.00	25.0	1	05/08/2025 22:35	WG2508250

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	50000		165	428	1	05/08/2025 11:13	WG2508195

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	217000		231	2500	1	05/08/2025 22:50	WG2508250

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	269000		4750	20000	1	05/01/2025 12:14	WG2504319
Alkalinity,Bicarbonate	269000		4750	20000	1	05/01/2025 12:14	WG2504319

Sample Narrative:

L1853506-02 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:35	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8130		547	1000	1	05/02/2025 05:25	WG2504227
Fluoride	283		76.1	150	1	05/02/2025 05:25	WG2504227
Sulfate	22100		637	5000	1	05/02/2025 05:25	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1600		495	1000	1	05/01/2025 20:14	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:25	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 11:13	WG2508195
Silicon	23400		77.1	200	1	05/08/2025 11:13	WG2508195
Sulfur	7740		160	1000	1	05/08/2025 11:13	WG2508195

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250429-3

SAMPLE RESULTS - 02

Collected date/time: 04/29/25 07:45

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Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch	¹ Cp
Aluminum	U		16.0	100	1	05/08/2025 22:50	WG2508250	² Tc
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 15:48	WG2508160	³ Ss
Arsenic	1.81	U	0.120	2.00	1	05/08/2025 22:50	WG2508250	⁴ Cn
Cadmium	U		0.120	1.00	1	05/08/2025 22:50	WG2508250	⁵ Sr
Calcium	48200		92.5	1000	1	05/08/2025 22:50	WG2508250	⁶ Qc
Chromium	U		0.900	2.00	1	05/08/2025 22:50	WG2508250	⁷ Gl
Copper	1.48	U	0.700	5.00	1	05/08/2025 22:50	WG2508250	⁸ Al
Cobalt	U		0.100	2.00	1	05/08/2025 22:50	WG2508250	⁹ Sc
Iron	47.9	U	22.6	100	1	05/08/2025 22:50	WG2508250	
Iron,Dissolved	U		22.6	100	1	05/07/2025 15:48	WG2508160	
Lead	U		0.500	2.00	1	05/08/2025 22:50	WG2508250	
Magnesium	23500		82.7	1000	1	05/08/2025 22:50	WG2508250	
Manganese	94.2		0.700	5.00	1	05/08/2025 22:50	WG2508250	
Manganese,Dissolved	77.2		0.700	5.00	1	05/07/2025 15:48	WG2508160	
Nickel	U		0.500	2.00	1	05/08/2025 22:50	WG2508250	
Potassium	3840		96.5	2000	1	05/08/2025 22:50	WG2508250	
Selenium	U		0.250	2.00	1	05/08/2025 22:50	WG2508250	
Sodium	43200		142	2000	1	05/08/2025 22:50	WG2508250	
Vanadium	14.6		0.520	5.00	1	05/08/2025 22:50	WG2508250	
Zinc	U		4.00	25.0	1	05/08/2025 22:50	WG2508250	

ACCOUNT:

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Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	54000		165	428	1	05/08/2025 11:14	WG2508195

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	295000		231	2500	1	05/08/2025 22:54	WG2508250

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	326000		4750	20000	1	05/01/2025 12:21	WG2504319
Alkalinity,Bicarbonate	326000		4750	20000	1	05/01/2025 12:21	WG2504319

Sample Narrative:

L1853506-03 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:36	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6510		547	1000	1	05/02/2025 05:37	WG2504227
Fluoride	315		76.1	150	1	05/02/2025 05:37	WG2504227
Sulfate	20900		637	5000	1	05/02/2025 05:37	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2980		495	1000	1	05/01/2025 20:34	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:28	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 11:14	WG2508195
Silicon	25200		77.1	200	1	05/08/2025 11:14	WG2508195
Sulfur	7340		160	1000	1	05/08/2025 11:14	WG2508195

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 22:54	WG2508250
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 17:01	WG2508160
Arsenic	4.25		0.120	2.00	1	05/08/2025 22:54	WG2508250
Cadmium	U		0.120	1.00	1	05/08/2025 22:54	WG2508250
Calcium	63200		92.5	1000	1	05/08/2025 22:54	WG2508250
Chromium	U		0.900	2.00	1	05/08/2025 22:54	WG2508250
Copper	2.78	U	0.700	5.00	1	05/08/2025 22:54	WG2508250
Cobalt	U		0.100	2.00	1	05/08/2025 22:54	WG2508250
Iron	U		22.6	100	1	05/08/2025 22:54	WG2508250
Iron,Dissolved	U		22.6	100	1	05/07/2025 17:01	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 22:54	WG2508250
Magnesium	33400		82.7	1000	1	05/08/2025 22:54	WG2508250
Manganese	U		0.700	5.00	1	05/08/2025 22:54	WG2508250
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 17:01	WG2508160
Nickel	0.535	U	0.500	2.00	1	05/08/2025 22:54	WG2508250
Potassium	2940		96.5	2000	1	05/08/2025 22:54	WG2508250
Selenium	U		0.250	2.00	1	05/08/2025 22:54	WG2508250
Sodium	44600		142	2000	1	05/08/2025 22:54	WG2508250
Vanadium	44.5		0.520	5.00	1	05/08/2025 22:54	WG2508250
Zinc	U		4.00	25.0	1	05/08/2025 22:54	WG2508250

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250429-5

Collected date/time: 04/29/25 09:45

SAMPLE RESULTS - 04

L1853506

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	56300		165	428	1	05/08/2025 11:16	WG2508195

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	287000		231	2500	1	05/08/2025 22:57	WG2508250

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	390000		4750	20000	1	05/01/2025 12:40	WG2504319
Alkalinity,Bicarbonate	390000		4750	20000	1	05/01/2025 12:40	WG2504319

Sample Narrative:

L1853506-04 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:36	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	12700		547	1000	1	05/02/2025 05:50	WG2504227
Fluoride	406		76.1	150	1	05/02/2025 05:50	WG2504227
Sulfate	26300		637	5000	1	05/02/2025 05:50	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4200		495	1000	1	05/01/2025 20:53	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:31	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 11:16	WG2508195
Silicon	26300		77.1	200	1	05/08/2025 11:16	WG2508195
Sulfur	9310		160	1000	1	05/08/2025 11:16	WG2508195

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 22:57	WG2508250
Aluminum,Dissolved	18.4	U	16.0	100	1	05/07/2025 17:04	WG2508160
Arsenic	4.67		0.120	2.00	1	05/08/2025 22:57	WG2508250
Cadmium	U		0.120	1.00	1	05/08/2025 22:57	WG2508250
Calcium	60500		92.5	1000	1	05/08/2025 22:57	WG2508250
Chromium	U		0.900	2.00	1	05/08/2025 22:57	WG2508250
Copper	6.25		0.700	5.00	1	05/08/2025 22:57	WG2508250
Cobalt	0.148	U	0.100	2.00	1	05/08/2025 22:57	WG2508250
Iron	U		22.6	100	1	05/08/2025 22:57	WG2508250
Iron,Dissolved	67.0	U	22.6	100	1	05/07/2025 17:04	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 22:57	WG2508250
Magnesium	33000		82.7	1000	1	05/08/2025 22:57	WG2508250
Manganese	1.36	U	0.700	5.00	1	05/08/2025 22:57	WG2508250
Manganese,Dissolved	3.84	U	0.700	5.00	1	05/07/2025 17:04	WG2508160
Nickel	0.965	U	0.500	2.00	1	05/08/2025 22:57	WG2508250
Potassium	4060		96.5	2000	1	05/08/2025 22:57	WG2508250
Selenium	U		0.250	2.00	1	05/08/2025 22:57	WG2508250
Sodium	87100		142	2000	1	05/08/2025 22:57	WG2508250
Vanadium	64.0		0.520	5.00	1	05/08/2025 22:57	WG2508250
Zinc	19.1	U	4.00	25.0	1	05/08/2025 22:57	WG2508250

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	51500		165	428	1	05/08/2025 11:18	WG2508195

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	318000		231	2500	1	05/08/2025 23:06	WG2508250

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	376000		4750	20000	1	05/01/2025 12:46	WG2504319
Alkalinity,Bicarbonate	376000		4750	20000	1	05/01/2025 12:46	WG2504319

Sample Narrative:

L1853506-05 WG2504319: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/01/2025 10:36	WG2504246

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7370		547	1000	1	05/02/2025 06:03	WG2504227
Fluoride	313		76.1	150	1	05/02/2025 06:03	WG2504227
Sulfate	21200		637	5000	1	05/02/2025 06:03	WG2504227

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3930		495	1000	1	05/01/2025 21:12	WG2504121

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/04/2025 17:33	WG2504401

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 11:18	WG2508195
Silicon	24100		77.1	200	1	05/08/2025 11:18	WG2508195
Sulfur	7740		160	1000	1	05/08/2025 11:18	WG2508195

20250429-7

SAMPLE RESULTS - 05

Collected date/time: 04/29/25 10:50

L1853506

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 23:06	WG2508250
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 17:07	WG2508160
Arsenic	2.72		0.120	2.00	1	05/08/2025 23:06	WG2508250
Cadmium	U		0.120	1.00	1	05/08/2025 23:06	WG2508250
Calcium	67300		92.5	1000	1	05/08/2025 23:06	WG2508250
Chromium	U		0.900	2.00	1	05/08/2025 23:06	WG2508250
Copper	5.41		0.700	5.00	1	05/08/2025 23:06	WG2508250
Cobalt	U		0.100	2.00	1	05/08/2025 23:06	WG2508250
Iron	U		22.6	100	1	05/08/2025 23:06	WG2508250
Iron,Dissolved	U		22.6	100	1	05/07/2025 17:07	WG2508160
Lead	U		0.500	2.00	1	05/08/2025 23:06	WG2508250
Magnesium	36400		82.7	1000	1	05/08/2025 23:06	WG2508250
Manganese	0.792	U	0.700	5.00	1	05/08/2025 23:06	WG2508250
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 17:07	WG2508160
Nickel	U		0.500	2.00	1	05/08/2025 23:06	WG2508250
Potassium	2880		96.5	2000	1	05/08/2025 23:06	WG2508250
Selenium	U		0.250	2.00	1	05/08/2025 23:06	WG2508250
Sodium	55700		142	2000	1	05/08/2025 23:06	WG2508250
Vanadium	49.2		0.520	5.00	1	05/08/2025 23:06	WG2508250
Zinc	5.48	U	4.00	25.0	1	05/08/2025 23:06	WG2508250

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1853506

DATE/TIME:

06/10/25 09:23

PAGE:

15 of 29

Method Blank (MB)

(MB) R4208300-2 05/01/25 10:04

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1853400-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853400-03 05/01/25 10:30 • (DUP) R4208300-3 05/01/25 10:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	986000	982000	1	0.329		20
Alkalinity,Bicarbonate	986000	982000	1	0.329		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1853506-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1853506-05 05/01/25 12:46 • (DUP) R4208300-4 05/01/25 12:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	376000	378000	1	0.293		20
Alkalinity,Bicarbonate	376000	378000	1	0.293		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4208300-1 05/01/25 09:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	104000	104	90.0-110	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4208300-1 05/01/25 09:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4208130-1 05/01/25 10:31

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1853496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-01 05/01/25 10:31 • (DUP) R4208130-3 05/01/25 10:31

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1853501-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1853501-04 05/01/25 10:34 • (DUP) R4208130-6 05/01/25 10:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4208130-2 05/01/25 10:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	518	104	85.0-115	

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/01/25 10:31 • (MS) R4208130-4 05/01/25 10:31 • (MSD) R4208130-5 05/01/25 10:32

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	508	496	102	99.2	1	80.0-120			2.39	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4208816-1 05/02/25 00:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1853419-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1853419-12 05/02/25 00:42 • (DUP) R4208816-3 05/02/25 00:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	27800	27100	1	2.73		15
Fluoride	346	335	1	3.14		15
Sulfate	70700	68800	1	2.67		15

L1853496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-01 05/02/25 01:21 • (DUP) R4208816-5 05/02/25 01:34

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2100	2070	1	1.60		15
Fluoride	82.9	126	1	41.1	J P1	15
Sulfate	10400	10400	1	0.218		15

Laboratory Control Sample (LCS)

(LCS) R4208816-2 05/02/25 00:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39800	99.5	80.0-120	
Fluoride	8000	8340	104	80.0-120	
Sulfate	40000	40400	101	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1853419-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853419-12 05/02/25 00:42 • (MS) R4208816-4 05/02/25 01:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	27800	61500	84.2	1	80.0-120	
Fluoride	8000	346	8670	104	1	80.0-120	
Sulfate	40000	70700	94900	60.6	1	80.0-120	J6

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/02/25 01:21 • (MS) R4208816-6 05/02/25 01:47 • (MSD) R4208816-7 05/02/25 01:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	2100	41600	41100	98.7	97.5	1	80.0-120			1.20	15
Fluoride	8000	82.9	8450	8310	105	103	1	80.0-120			1.68	15
Sulfate	40000	10400	48800	48500	96.2	95.2	1	80.0-120			0.794	15

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4208582-2 05/01/25 10:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1853496-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853496-02 05/01/25 14:45 • (DUP) R4208582-5 05/01/25 15:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	799	843	1	5.29	⌵	20

L1853501-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853501-03 05/01/25 18:40 • (DUP) R4208582-8 05/01/25 18:57

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4208582-1 05/01/25 10:42

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24400	97.7	80.0-120	

L1853496-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853496-01 05/01/25 13:41 • (MS) R4208582-3 05/01/25 14:03 • (MSD) R4208582-4 05/01/25 14:25

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	4650	28200	29200	94.2	98.0	1	75.0-125			3.28	20

L1853501-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853501-02 05/01/25 17:39 • (MS) R4208582-6 05/01/25 18:01 • (MSD) R4208582-7 05/01/25 18:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	578	25200	24900	98.5	97.4	1	75.0-125			1.12	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209795-1 05/04/25 16:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4209795-2 05/04/25 16:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.70	90.0	80.0-120	

L1853501-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853501-02 05/04/25 16:46 • (MS) R4209795-4 05/04/25 16:51 • (MSD) R4209795-5 05/04/25 16:54

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	1.86	2.08	62.1	69.4	1	75.0-125	J6	J6	11.1	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4211921-1 05/08/25 13:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4211921-2 05/08/25 13:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Lithium	1000	1010	101	80.0-120	
Silicon	1000	901	90.1	80.0-120	
Sulfur	10000	9340	93.4	80.0-120	

L1853508-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853508-01 05/08/25 13:23 • (MS) R4211921-4 05/08/25 13:27 • (MSD) R4211921-5 05/08/25 13:28

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lithium	1000	U	1030	1020	103	102	1	75.0-125			0.813	20
Silicon	1000	3590	4560	4540	96.7	94.3	1	75.0-125			0.513	20
Sulfur	10000	644	10000	10100	93.8	94.3	1	75.0-125			0.517	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211274-1 05/07/25 15:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4211274-2 05/07/25 15:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	988	98.8	80.0-120	
Iron,Dissolved	1000	984	98.4	80.0-120	
Manganese,Dissolved	50.0	47.6	95.2	80.0-120	

L1853506-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853506-02 05/07/25 15:48 • (MS) R4211274-4 05/07/25 15:54 • (MSD) R4211274-5 05/07/25 15:57

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	1020	1030	102	103	1	75.0-125			1.25	20
Iron,Dissolved	1000	U	1000	1000	100	100	1	75.0-125			0.232	20
Manganese,Dissolved	50.0	77.2	126	124	97.5	93.4	1	75.0-125			1.63	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4212073-1 05/08/25 22:29

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	0.599	U	0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4212073-2 05/08/25 22:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Aluminum	1000	1020	102	80.0-120	
Arsenic	50.0	50.1	100	80.0-120	
Cadmium	50.0	51.0	102	80.0-120	
Calcium	5000	5110	102	80.0-120	
Chromium	50.0	50.4	101	80.0-120	
Copper	50.0	51.7	103	80.0-120	
Cobalt	50.0	49.6	99.2	80.0-120	
Iron	1000	1000	100	80.0-120	
Lead	50.0	49.2	98.4	80.0-120	
Magnesium	5000	5150	103	80.0-120	
Manganese	50.0	50.6	101	80.0-120	
Nickel	50.0	51.8	104	80.0-120	
Potassium	5000	5080	102	80.0-120	
Selenium	50.0	49.5	99.0	80.0-120	
Sodium	5000	5150	103	80.0-120	
Vanadium	50.0	49.7	99.3	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4212073-2 05/08/25 22:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	51.5	103	80.0-120	

L1853506-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853506-01 05/08/25 22:35 • (MS) R4212073-4 05/08/25 22:41 • (MSD) R4212073-5 05/08/25 22:44

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	1040	1050	104	105	1	75.0-125			1.03	20
Arsenic	50.0	2.64	55.5	55.4	106	105	1	75.0-125			0.336	20
Cadmium	50.0	U	51.6	51.6	103	103	1	75.0-125			0.0299	20
Calcium	5000	66400	71500	70900	101	88.2	1	75.0-125			0.884	20
Chromium	50.0	U	52.4	52.6	105	105	1	75.0-125			0.241	20
Copper	50.0	4.43	54.8	54.5	101	100	1	75.0-125			0.467	20
Cobalt	50.0	U	51.1	50.8	102	102	1	75.0-125			0.649	20
Iron	1000	U	1040	1040	104	104	1	75.0-125			0.0618	20
Lead	50.0	U	51.3	51.7	103	103	1	75.0-125			0.735	20
Magnesium	5000	35300	39700	39300	87.4	80.5	1	75.0-125			0.865	20
Manganese	50.0	U	51.9	52.4	104	105	1	75.0-125			0.948	20
Nickel	50.0	0.638	51.8	51.6	102	102	1	75.0-125			0.508	20
Potassium	5000	2790	7910	7930	102	103	1	75.0-125			0.241	20
Selenium	50.0	0.269	52.3	52.1	104	104	1	75.0-125			0.393	20
Sodium	5000	54800	60800	59800	119	99.7	1	75.0-125			1.58	20
Vanadium	50.0	47.9	101	100	106	104	1	75.0-125			0.963	20
Zinc	50.0	5.74	54.1	53.8	96.7	96.1	1	75.0-125			0.557	20

1Cp

2Tc

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5Sr

6Qc

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8Al

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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.

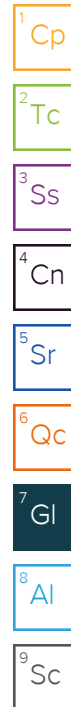
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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



ACCREDITATIONS & LOCATIONS

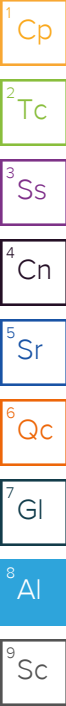
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

Agency, Authorized Purchaser or Agent: Oregon DEQ				Contract Laboratory Name: ESC				Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work				Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____							
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com ; smaloney@maulfoster.com				Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696															
Project Name: Crook County Limited Groundwater Investigation				Sample Preservative															
				HNO3	HNO3	HNO3	None	None	None	NaOH	None					None	HNO3	HCL	
Sampler Name:																Comments L1853506			
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)					
20250429 - 1	4:28 0745	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01				
20250429 - 1-DUP	0745	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02				
20250429 - 3	0855	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03				
20250429 - 5	0945	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04				
20250429 - 7	1050	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05				
20250429 - 9		W	6																
JP 4/29/25				JP 4/29/25															
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, vanadium, and zinc				Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☒ N ☒ NP 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 Condition: ☒ NCF ☒ OK Sufficient volume sent: ☒ Y ☒ N RA Screen <0.5 mR/hr: ☒ Y ☒ N T49 3.510.4 = 3.9															
Relinquished By: <i>[Signature]</i>				Agency/Agent: <i>MFA</i>				Received By: <i>Dorothy Kennedy</i>				Agency/Agent:							
Signature: <i>Sean Maloney</i>				Time & Date: 4-29-25 12:40				Signature: <i>[Signature]</i>				Time & Date: 4/30/25 0900							
Relinquished By:				Agency/Agent:				Received By:				Agency/Agent:							
Signature:				Time & Date:				Signature:				Time & Date:							



ANALYTICAL REPORT

June 10, 2025

Revised Report

Oregon Dept. of Env. Quality - ODEQ

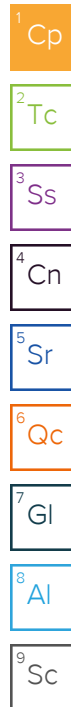
Sample Delivery Group: L1852995
Samples Received: 04/29/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:

Brian Ford
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.

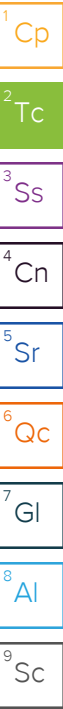


Pace Analytical National

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

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SAMPLE SUMMARY

20250428-1 L1852995-01

Collected by
Collected date/time
Received date/time

04/28/25 07:57 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507713	1	05/07/25 12:21	05/07/25 12:21	RLS	Mt. Juliet, TN
Calculated Results	WG2507729	1	05/07/25 00:59	05/07/25 00:59	JDB	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 11:57	04/30/25 11:57	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 14:57	04/30/25 14:57	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2502485	1	05/01/25 08:05	05/01/25 08:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 11:50	04/30/25 11:50	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/05/25 23:53	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 04:33	RLS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 12:21	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 01:22	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507729	1	05/06/25 13:41	05/07/25 00:59	JDB	Mt. Juliet, TN

¹Cp

²Tc

³Ss

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⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20250428-2 L1852995-02

Collected by
Collected date/time
Received date/time

04/28/25 08:35 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507713	1	05/07/25 12:23	05/07/25 12:23	RLS	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:05	05/08/25 00:05	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:01	04/30/25 12:01	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 14:58	04/30/25 14:58	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2502485	1	05/01/25 08:58	05/01/25 08:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 13:00	04/30/25 13:00	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/05/25 23:55	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 04:35	RLS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 12:23	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 02:29	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:05	UNP	Mt. Juliet, TN

20250428-4 L1852995-03

Collected by
Collected date/time
Received date/time

04/28/25 10:18 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507713	1	05/07/25 12:24	05/07/25 12:24	RLS	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:08	05/08/25 00:08	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:05	04/30/25 12:05	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 14:58	04/30/25 14:58	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2502485	1	05/01/25 10:05	05/01/25 10:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 13:41	04/30/25 13:41	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/05/25 23:58	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 04:37	RLS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507713	1	05/06/25 23:08	05/07/25 12:24	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 02:33	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:08	UNP	Mt. Juliet, TN

20250428-7 L1852995-04

Collected by
Collected date/time
Received date/time

04/28/25 11:15 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/08/25 10:10	05/08/25 10:10	RLS	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:11	05/08/25 00:11	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:09	04/30/25 12:09	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 14:59	04/30/25 14:59	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2502485	1	05/01/25 10:19	05/01/25 10:19	ZSA	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1852995

DATE/TIME:

06/10/25 10:12

PAGE:

3 of 38

SAMPLE SUMMARY

20250428-7 L1852995-04

Collected by
Collected date/time
Received date/time

04/28/25 11:15 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 14:00	04/30/25 14:00	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/06/25 00:00	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:15	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/08/25 10:10	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 02:36	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:11	UNP	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

20250428-8 L1852995-05

Collected by
Collected date/time
Received date/time

04/28/25 12:15 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/08/25 10:12	05/08/25 10:12	RLS	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:14	05/08/25 00:14	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:14	04/30/25 12:14	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 15:00	04/30/25 15:00	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2502485	1	05/01/25 10:32	05/01/25 10:32	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 14:22	04/30/25 14:22	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/06/25 00:03	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:17	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/08/25 10:12	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 02:53	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:14	UNP	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

⁹Sc

20250428-1-DUP L1852995-06

Collected by
Collected date/time
Received date/time

04/28/25 07:37 04/29/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2507714	1	05/08/25 10:14	05/08/25 10:14	RLS	Mt. Juliet, TN
Calculated Results	WG2507719	1	05/08/25 00:23	05/08/25 00:23	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2503408	1	04/30/25 12:18	04/30/25 12:18	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2503505	1	04/30/25 15:00	04/30/25 15:00	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2503224	1	05/01/25 14:49	05/01/25 14:49	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2503040	1	04/30/25 14:42	04/30/25 14:42	AF	Mt. Juliet, TN
Mercury by Method 7470A	WG2503056	1	05/04/25 14:23	05/06/25 00:05	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/07/25 21:19	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2507714	1	05/07/25 10:27	05/08/25 10:14	RLS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507701	1	05/06/25 10:20	05/07/25 02:56	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2507719	1	05/07/25 09:52	05/08/25 00:23	UNP	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.



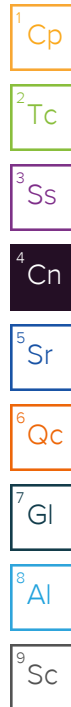
Brian Ford
Project Manager

Report Revision History

Level II Report - Version 1: 05/10/25 11:25
Level II Report - Version 2: 06/09/25 12:27
Level II Report - Version 3: 06/09/25 13:37
Level II Report - Version 4: 06/09/25 14:04
Level II Report - Version 5: 06/09/25 14:19
Level II Report - Version 6: 06/09/25 14:53
Level II Report - Version 7: 06/09/25 15:59

Project Narrative

partial.
revised: Sulfide for -01 was received in the correct container with the correct preservative. Previous case narrative was incorrect.



Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	49900		165	428	1	05/07/2025 12:21	WG2507713

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	217000		231	2500	1	05/07/2025 00:59	WG2507729

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	286000		4750	20000	1	04/30/2025 11:57	WG2503408
Alkalinity,Bicarbonate	286000		4750	20000	1	04/30/2025 11:57	WG2503408

Sample Narrative:

L1852995-01 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 14:57	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7230		547	1000	1	05/01/2025 08:05	WG2502485
Fluoride	362		76.1	150	1	05/01/2025 08:05	WG2502485
Sulfate	17000		637	5000	1	05/01/2025 08:05	WG2502485

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2140		495	1000	1	04/30/2025 11:50	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 23:53	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 04:33	WG2507713
Silicon	23300		77.1	200	1	05/07/2025 12:21	WG2507713
Sulfur	5650		160	1000	1	05/07/2025 04:33	WG2507713

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/07/2025 00:59	WG2507729
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 01:22	WG2507701
Arsenic	3.63		0.120	2.00	1	05/07/2025 00:59	WG2507729
Cadmium	U		0.120	1.00	1	05/07/2025 00:59	WG2507729
Calcium	48300		92.5	1000	1	05/07/2025 00:59	WG2507729
Chromium	U		0.900	2.00	1	05/07/2025 00:59	WG2507729
Copper	4.59	B J	0.700	5.00	1	05/07/2025 00:59	WG2507729
Cobalt	U		0.100	2.00	1	05/07/2025 00:59	WG2507729
Iron	U		22.6	100	1	05/07/2025 00:59	WG2507729
Iron,Dissolved	U		22.6	100	1	05/07/2025 01:22	WG2507701
Lead	U		0.500	2.00	1	05/07/2025 00:59	WG2507729
Magnesium	23300		82.7	1000	1	05/07/2025 00:59	WG2507729
Manganese	1.15	U J	0.700	5.00	1	05/07/2025 00:59	WG2507729
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 01:22	WG2507701
Nickel	0.786	U J	0.500	2.00	1	05/07/2025 00:59	WG2507729
Potassium	4120		96.5	2000	1	05/07/2025 00:59	WG2507729
Selenium	U		0.250	2.00	1	05/07/2025 00:59	WG2507729
Sodium	53100		142	2000	1	05/07/2025 00:59	WG2507729
Vanadium	21.5		0.520	5.00	1	05/07/2025 00:59	WG2507729
Zinc	10.8	U J	4.00	25.0	1	05/07/2025 00:59	WG2507729

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	52100		165	428	1	05/07/2025 12:23	WG2507713

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	211000		231	2500	1	05/08/2025 00:05	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	255000		4750	20000	1	04/30/2025 12:01	WG2503408
Alkalinity,Bicarbonate	255000		4750	20000	1	04/30/2025 12:01	WG2503408

Sample Narrative:

L1852995-02 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 14:58	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6520		547	1000	1	05/01/2025 08:58	WG2502485
Fluoride	311		76.1	150	1	05/01/2025 08:58	WG2502485
Sulfate	18900		637	5000	1	05/01/2025 08:58	WG2502485

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1400		495	1000	1	04/30/2025 13:00	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 23:55	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 04:35	WG2507713
Silicon	24400		77.1	200	1	05/07/2025 12:23	WG2507713
Sulfur	6140		160	1000	1	05/07/2025 04:35	WG2507713

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 00:05	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 02:29	WG2507701
Arsenic	2.56		0.120	2.00	1	05/08/2025 00:05	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:05	WG2507719
Calcium	47100		92.5	1000	1	05/08/2025 00:05	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:05	WG2507719
Copper	3.91	U	0.700	5.00	1	05/08/2025 00:05	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:05	WG2507719
Iron	U		22.6	100	1	05/08/2025 00:05	WG2507719
Iron,Dissolved	U		22.6	100	1	05/07/2025 02:29	WG2507701
Lead	0.632	U	0.500	2.00	1	05/08/2025 00:05	WG2507719
Magnesium	22700		82.7	1000	1	05/08/2025 00:05	WG2507719
Manganese	U		0.700	5.00	1	05/08/2025 00:05	WG2507719
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 02:29	WG2507701
Nickel	U		0.500	2.00	1	05/08/2025 00:05	WG2507719
Potassium	3630		96.5	2000	1	05/08/2025 00:05	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:05	WG2507719
Sodium	36400		142	2000	1	05/08/2025 00:05	WG2507719
Vanadium	21.5		0.520	5.00	1	05/08/2025 00:05	WG2507719
Zinc	16.6	U	4.00	25.0	1	05/08/2025 00:05	WG2507719

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	52400		165	428	1	05/07/2025 12:24	WG2507713

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	223000		231	2500	1	05/08/2025 00:08	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	314000		4750	20000	1	04/30/2025 12:05	WG2503408
Alkalinity,Bicarbonate	314000		4750	20000	1	04/30/2025 12:05	WG2503408

Sample Narrative:

L1852995-03 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 14:58	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	9220		547	1000	1	05/01/2025 10:05	WG2502485
Fluoride	281		76.1	150	1	05/01/2025 10:05	WG2502485
Sulfate	27800		637	5000	1	05/01/2025 10:05	WG2502485

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1870		495	1000	1	04/30/2025 13:41	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/05/2025 23:58	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 04:37	WG2507713
Silicon	24500		77.1	200	1	05/07/2025 12:24	WG2507713
Sulfur	9010		160	1000	1	05/07/2025 04:37	WG2507713

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	27.8	U	16.0	100	1	05/08/2025 00:08	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 02:33	WG2507701
Arsenic	1.34	U	0.120	2.00	1	05/08/2025 00:08	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:08	WG2507719
Calcium	48900		92.5	1000	1	05/08/2025 00:08	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:08	WG2507719
Copper	14.8		0.700	5.00	1	05/08/2025 00:08	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:08	WG2507719
Iron	618		22.6	100	1	05/08/2025 00:08	WG2507719
Iron,Dissolved	172	B	22.6	100	1	05/07/2025 02:33	WG2507701
Lead	0.687	U	0.500	2.00	1	05/08/2025 00:08	WG2507719
Magnesium	24400		82.7	1000	1	05/08/2025 00:08	WG2507719
Manganese	464		0.700	5.00	1	05/08/2025 00:08	WG2507719
Manganese,Dissolved	438		0.700	5.00	1	05/07/2025 02:33	WG2507701
Nickel	0.657	U	0.500	2.00	1	05/08/2025 00:08	WG2507719
Potassium	4720		96.5	2000	1	05/08/2025 00:08	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:08	WG2507719
Sodium	50100		142	2000	1	05/08/2025 00:08	WG2507719
Vanadium	5.29		0.520	5.00	1	05/08/2025 00:08	WG2507719
Zinc	13.8	U	4.00	25.0	1	05/08/2025 00:08	WG2507719

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	47200		165	428	1	05/08/2025 10:10	WG2507714

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	96400		231	2500	1	05/08/2025 00:11	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	166000		4750	20000	1	04/30/2025 12:09	WG2503408
Alkalinity,Bicarbonate	166000		4750	20000	1	04/30/2025 12:09	WG2503408

Sample Narrative:

L1852995-04 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 14:59	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2460		547	1000	1	05/01/2025 10:19	WG2502485
Fluoride	226		76.1	150	1	05/01/2025 10:19	WG2502485
Sulfate	2980	J	637	5000	1	05/01/2025 10:19	WG2502485

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	04/30/2025 14:00	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 00:00	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:15	WG2507714
Silicon	22000		77.1	200	1	05/08/2025 10:10	WG2507714
Sulfur	982	J	160	1000	1	05/07/2025 21:15	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250428-7

SAMPLE RESULTS - 04

Collected date/time: 04/28/25 11:15

L1852995

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	19.9	J	16.0	100	1	05/08/2025 00:11	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 02:36	WG2507701
Arsenic	23.1		0.120	2.00	1	05/08/2025 00:11	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:11	WG2507719
Calcium	23100		92.5	1000	1	05/08/2025 00:11	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:11	WG2507719
Copper	130		0.700	5.00	1	05/08/2025 00:11	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:11	WG2507719
Iron	183		22.6	100	1	05/08/2025 00:11	WG2507719
Iron,Dissolved	60.7	B J	22.6	100	1	05/07/2025 02:36	WG2507701
Lead	6.84		0.500	2.00	1	05/08/2025 00:11	WG2507719
Magnesium	9390		82.7	1000	1	05/08/2025 00:11	WG2507719
Manganese	229		0.700	5.00	1	05/08/2025 00:11	WG2507719
Manganese,Dissolved	229		0.700	5.00	1	05/07/2025 02:36	WG2507701
Nickel	0.547	J	0.500	2.00	1	05/08/2025 00:11	WG2507719
Potassium	2320		96.5	2000	1	05/08/2025 00:11	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:11	WG2507719
Sodium	26800		142	2000	1	05/08/2025 00:11	WG2507719
Vanadium	U		0.520	5.00	1	05/08/2025 00:11	WG2507719
Zinc	59.8		4.00	25.0	1	05/08/2025 00:11	WG2507719

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1852995

DATE/TIME:

06/10/25 10:12

PAGE:

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Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	51700		165	428	1	05/08/2025 10:12	WG2507714

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	188000		231	2500	1	05/08/2025 00:14	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	260000		4750	20000	1	04/30/2025 12:14	WG2503408
Alkalinity,Bicarbonate	260000		4750	20000	1	04/30/2025 12:14	WG2503408

Sample Narrative:

L1852995-05 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 15:00	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	11500		547	1000	1	05/01/2025 10:32	WG2502485
Fluoride	263		76.1	150	1	05/01/2025 10:32	WG2502485
Sulfate	22800		637	5000	1	05/01/2025 10:32	WG2502485

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1440		495	1000	1	04/30/2025 14:22	WG2503040

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 00:03	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:17	WG2507714
Silicon	24200		77.1	200	1	05/08/2025 10:12	WG2507714
Sulfur	7010		160	1000	1	05/07/2025 21:17	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	25.5	U	16.0	100	1	05/08/2025 00:14	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 02:53	WG2507701
Arsenic	4.34		0.120	2.00	1	05/08/2025 00:14	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:14	WG2507719
Calcium	41600		92.5	1000	1	05/08/2025 00:14	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:14	WG2507719
Copper	10.9		0.700	5.00	1	05/08/2025 00:14	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:14	WG2507719
Iron	746		22.6	100	1	05/08/2025 00:14	WG2507719
Iron,Dissolved	412		22.6	100	1	05/07/2025 02:53	WG2507701
Lead	U		0.500	2.00	1	05/08/2025 00:14	WG2507719
Magnesium	20300		82.7	1000	1	05/08/2025 00:14	WG2507719
Manganese	397		0.700	5.00	1	05/08/2025 00:14	WG2507719
Manganese,Dissolved	406		0.700	5.00	1	05/07/2025 02:53	WG2507701
Nickel	0.796	U	0.500	2.00	1	05/08/2025 00:14	WG2507719
Potassium	4710		96.5	2000	1	05/08/2025 00:14	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:14	WG2507719
Sodium	42000		142	2000	1	05/08/2025 00:14	WG2507719
Vanadium	U		0.520	5.00	1	05/08/2025 00:14	WG2507719
Zinc	13.3	U	4.00	25.0	1	05/08/2025 00:14	WG2507719

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	48000		165	428	1	05/08/2025 10:14	WG2507714

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	208000		231	2500	1	05/08/2025 00:23	WG2507719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	285000		4750	20000	1	04/30/2025 12:18	WG2503408
Alkalinity,Bicarbonate	285000		4750	20000	1	04/30/2025 12:18	WG2503408

Sample Narrative:

L1852995-06 WG2503408: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	04/30/2025 15:00	WG2503505

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6640		547	1000	1	05/01/2025 14:49	WG2503224
Fluoride	274		76.1	150	1	05/01/2025 14:49	WG2503224
Sulfate	15700		637	5000	1	05/01/2025 14:49	WG2503224

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2120		495	1000	1	04/30/2025 14:42	WG2503040

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 00:05	WG2503056

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/07/2025 21:19	WG2507714
Silicon	22400		77.1	200	1	05/08/2025 10:14	WG2507714
Sulfur	5490		160	1000	1	05/07/2025 21:19	WG2507714

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 00:23	WG2507719
Aluminum,Dissolved	U		16.0	100	1	05/07/2025 02:56	WG2507701
Arsenic	3.56		0.120	2.00	1	05/08/2025 00:23	WG2507719
Cadmium	U		0.120	1.00	1	05/08/2025 00:23	WG2507719
Calcium	47400		92.5	1000	1	05/08/2025 00:23	WG2507719
Chromium	U		0.900	2.00	1	05/08/2025 00:23	WG2507719
Copper	4.87	U	0.700	5.00	1	05/08/2025 00:23	WG2507719
Cobalt	U		0.100	2.00	1	05/08/2025 00:23	WG2507719
Iron	U		22.6	100	1	05/08/2025 00:23	WG2507719
Iron,Dissolved	U		22.6	100	1	05/07/2025 02:56	WG2507701
Lead	0.783	U	0.500	2.00	1	05/08/2025 00:23	WG2507719
Magnesium	21700		82.7	1000	1	05/08/2025 00:23	WG2507719
Manganese	U		0.700	5.00	1	05/08/2025 00:23	WG2507719
Manganese,Dissolved	U		0.700	5.00	1	05/07/2025 02:56	WG2507701
Nickel	0.540	U	0.500	2.00	1	05/08/2025 00:23	WG2507719
Potassium	4090		96.5	2000	1	05/08/2025 00:23	WG2507719
Selenium	U		0.250	2.00	1	05/08/2025 00:23	WG2507719
Sodium	53800		142	2000	1	05/08/2025 00:23	WG2507719
Vanadium	20.4		0.520	5.00	1	05/08/2025 00:23	WG2507719
Zinc	13.1	U	4.00	25.0	1	05/08/2025 00:23	WG2507719

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4207797-2 04/30/25 11:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1853001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853001-01 04/30/25 11:50 • (DUP) R4207797-3 04/30/25 11:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	259000	258000	1	0.164		20
Alkalinity,Bicarbonate	259000	258000	1	0.164		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1853131-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853131-02 04/30/25 13:46 • (DUP) R4207797-4 04/30/25 13:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Alkalinity	292000	290000	1	0.597		20
Alkalinity,Bicarbonate	292000	290000	1	0.597		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4207797-1 04/30/25 11:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Alkalinity	100000	98300	98.3	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4207797-1 04/30/25 11:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4207708-1 04/30/25 14:54

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1852995-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-02 04/30/25 14:58 • (DUP) R4207708-5 04/30/25 14:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1852995-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-03 04/30/25 14:58 • (DUP) R4207708-6 04/30/25 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4207708-2 04/30/25 14:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	536	107	85.0-115	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 04/30/25 14:57 • (MS) R4207708-3 04/30/25 14:57 • (MSD) R4207708-4 04/30/25 14:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	523	528	105	106	1	80.0-120			0.951	20

L1853165-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853165-02 04/30/25 15:03 • (MS) R4207708-7 04/30/25 15:04 • (MSD) R4207708-8 04/30/25 15:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	528	501	106	100	1	80.0-120			5.25	20

Method Blank (MB)

(MB) R4208752-1 05/01/25 00:29

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1852995-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-01 05/01/25 08:05 • (DUP) R4208752-3 05/01/25 08:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	7230	7170	1	0.907		15
Fluoride	362	356	1	1.45		15
Sulfate	17000	16900	1	0.542		15

L1852995-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-02 05/01/25 08:58 • (DUP) R4208752-6 05/01/25 09:12

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	6520	6510	1	0.201		15
Fluoride	311	304	1	2.44		15
Sulfate	18900	18700	1	0.721		15

Laboratory Control Sample (LCS)

(LCS) R4208752-2 05/01/25 00:42

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	38500	96.2	80.0-120	
Fluoride	8000	7860	98.2	80.0-120	
Sulfate	40000	40500	101	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 05/01/25 08:05 • (MS) R4208752-4 05/01/25 08:31 • (MSD) R4208752-5 05/01/25 08:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	40000	7230	46200	46000	97.4	96.8	1	80.0-120			0.550	15
Fluoride	8000	362	8420	8470	101	101	1	80.0-120			0.560	15
Sulfate	40000	17000	55500	55600	96.4	96.5	1	80.0-120			0.0913	15

L1852995-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1852995-02 05/01/25 08:58 • (MS) R4208752-7 05/01/25 09:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40000	6520	44700	95.5	1	80.0-120	
Fluoride	8000	311	8200	98.7	1	80.0-120	
Sulfate	40000	18900	55800	92.4	1	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4208961-1 05/01/25 14:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1852995-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-06 05/01/25 14:49 • (DUP) R4208961-3 05/01/25 15:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6640	6770	1	1.81		15
Fluoride	274	280	1	2.13		15
Sulfate	15700	16100	1	2.81		15

L1853025-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1853025-01 05/01/25 16:13 • (DUP) R4208961-4 05/01/25 16:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4270	4080	1	4.54		15
Fluoride	304	266	1	13.4		15
Sulfate	21500	20900	1	2.60		15

Laboratory Control Sample (LCS)

(LCS) R4208961-2 05/01/25 14:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39500	98.8	80.0-120	
Fluoride	8000	8040	101	80.0-120	
Sulfate	40000	40900	102	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1852995-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-06 05/01/25 14:49 • (MS) R4208961-5 05/01/25 21:41 • (MSD) R4208961-6 05/01/25 21:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	6640	45300	46700	96.6	100	1	80.0-120			3.06	15
Fluoride	8000	274	8220	8530	99.3	103	1	80.0-120			3.73	15
Sulfate	40000	15700	54700	56600	97.5	102	1	80.0-120			3.51	15

L1853025-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853025-01 05/01/25 16:13 • (MS) R4208961-7 05/01/25 22:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	4270	45100	102	1	80.0-120	
Fluoride	8000	304	8670	105	1	80.0-120	
Sulfate	40000	21500	62000	101	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4207944-2 04/30/25 10:58

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1852995-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1852995-02 04/30/25 13:00 • (DUP) R4207944-5 04/30/25 13:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	1400	1390	1	0.646		20

L1853085-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853085-02 04/30/25 20:15 • (DUP) R4207944-11 04/30/25 20:34

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	554	588	1	5.94	⬇	20

L1853070-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853070-02 04/30/25 18:08 • (DUP) R4207944-8 04/30/25 18:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4207944-1 04/30/25 10:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24200	97.0	80.0-120	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 04/30/25 11:50 • (MS) R4207944-3 04/30/25 12:15 • (MSD) R4207944-4 04/30/25 12:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	25000	2140	26600	26600	98.0	97.7	1	75.0-125			0.263	20

L1853085-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853085-01 04/30/25 19:06 • (MS) R4207944-9 04/30/25 19:31 • (MSD) R4207944-10 04/30/25 19:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	25000	U	24700	24600	98.9	98.2	1	75.0-125			0.649	20

L1853070-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853070-01 04/30/25 16:59 • (MS) R4207944-6 04/30/25 17:24 • (MSD) R4207944-7 04/30/25 17:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	25000	6630	31000	31100	97.6	97.7	1	75.0-125			0.0644	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4210163-1 05/05/25 23:05

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4210163-2 05/05/25 23:07

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.49	82.9	80.0-120	

L1852920-23 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852920-23 05/05/25 23:10 • (MS) R4210163-4 05/05/25 23:15 • (MSD) R4210163-5 05/05/25 23:22

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	0.965	0.962	32.2	32.1	1	75.0-125	J6	J6	0.294	20

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Cp

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Cn

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4210927-1 05/07/25 03:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	163	⌵	160	1000

Laboratory Control Sample (LCS)

(LCS) R4210927-2 05/07/25 03:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	962	96.2	80.0-120	
Silicon	1000	887	88.7	80.0-120	
Sulfur	10000	9350	93.5	80.0-120	

L1852920-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852920-12 05/07/25 03:48 • (MS) R4210927-4 05/07/25 03:51 • (MSD) R4210927-5 05/07/25 03:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	12.2	991	976	97.9	96.4	1	75.0-125			1.45	20
Silicon	1000	19700	20300	20300	66.1	64.7	1	75.0-125	⌵	⌵	0.0694	20
Sulfur	10000	2040	11500	11400	94.4	94.1	1	75.0-125			0.240	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211472-1 05/07/25 21:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Method Blank (MB)

(MB) R4211919-1 05/08/25 10:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Silicon	U		77.1	200

Laboratory Control Sample (LCS)

(LCS) R4211472-2 05/07/25 21:06

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Lithium	1000	988	98.8	80.0-120	
Silicon	1000	898	89.8	80.0-120	
Sulfur	10000	9190	91.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4211919-2 05/08/25 10:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Silicon	1000	903	90.3	80.0-120	

L1853001-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853001-01 05/07/25 21:08 • (MS) R4211472-4 05/07/25 21:12 • (MSD) R4211472-5 05/07/25 21:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lithium	1000	52.4	1080	1070	103	102	1	75.0-125			0.884	20
Silicon	1000	8000	8760	8720	75.8	71.5	1	75.0-125		V	0.494	20
Sulfur	10000	261000	264000	266000	29.4	48.2	1	75.0-125	E V	E V	0.710	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1853001-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853001-01 05/08/25 10:03 • (MS) R4211919-4 05/08/25 10:07 • (MSD) R4211919-5 05/08/25 10:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Silicon	1000	8090	8890	8790	80.6	70.5	1	75.0-125		<u>V</u>	1.13	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4210885-1 05/07/25 01:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	32.6	J	22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4210885-2 05/07/25 01:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	976	97.6	80.0-120	
Iron,Dissolved	1000	930	93.0	80.0-120	
Manganese,Dissolved	50.0	48.7	97.3	80.0-120	

L1852995-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1852995-01 05/07/25 01:22 • (MS) R4210885-4 05/07/25 01:29 • (MSD) R4210885-5 05/07/25 01:32

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	983	940	98.3	94.0	1	75.0-125			4.46	20
Iron,Dissolved	1000	U	935	944	93.5	94.4	1	75.0-125			1.01	20
Manganese,Dissolved	50.0	U	49.5	50.3	98.9	101	1	75.0-125			1.68	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211439-1 05/07/25 23:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	191	U	142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4211439-2 05/07/25 23:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1020	102	80.0-120	
Arsenic	50.0	48.0	96.0	80.0-120	
Cadmium	50.0	52.1	104	80.0-120	
Calcium	5000	5160	103	80.0-120	
Chromium	50.0	48.7	97.5	80.0-120	
Copper	50.0	53.4	107	80.0-120	
Cobalt	50.0	49.4	98.8	80.0-120	
Iron	1000	1000	100	80.0-120	
Lead	50.0	49.4	98.9	80.0-120	
Magnesium	5000	5060	101	80.0-120	
Manganese	50.0	49.2	98.3	80.0-120	
Nickel	50.0	49.4	98.7	80.0-120	
Potassium	5000	5100	102	80.0-120	
Selenium	50.0	48.9	97.8	80.0-120	
Sodium	5000	5270	105	80.0-120	
Vanadium	50.0	48.3	96.7	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4211439-2 05/07/25 23:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.8	99.6	80.0-120	

L1853012-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853012-01 05/07/25 23:52 • (MS) R4211439-4 05/07/25 23:59 • (MSD) R4211439-5 05/08/25 00:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	79.4	1110	1140	103	107	1	75.0-125			3.24	20
Arsenic	50.0	0.787	50.2	51.2	98.8	101	1	75.0-125			1.91	20
Cadmium	50.0	U	51.9	52.2	104	104	1	75.0-125			0.528	20
Calcium	5000	23800	28200	28800	89.5	100	1	75.0-125			1.89	20
Chromium	50.0	U	50.1	51.0	100	102	1	75.0-125			1.83	20
Copper	50.0	4.10	57.6	56.8	107	105	1	75.0-125			1.37	20
Cobalt	50.0	20.4	70.2	72.2	99.5	104	1	75.0-125			2.84	20
Iron	1000	2500	3540	3670	104	117	1	75.0-125			3.63	20
Lead	50.0	U	51.3	51.6	103	103	1	75.0-125			0.567	20
Magnesium	5000	8270	13100	13200	97.3	98.1	1	75.0-125			0.320	20
Manganese	50.0	1140	1170	1210	61.6	139	1	75.0-125	V	V	3.24	20
Nickel	50.0	1.68	51.9	52.6	101	102	1	75.0-125			1.22	20
Potassium	5000	2220	7280	7270	101	101	1	75.0-125			0.172	20
Selenium	50.0	U	50.5	51.0	101	102	1	75.0-125			1.06	20
Sodium	5000	31000	34600	34700	70.4	72.9	1	75.0-125	V	V	0.358	20
Vanadium	50.0	U	49.5	50.8	99.0	102	1	75.0-125			2.50	20
Zinc	50.0	18.5	66.7	67.1	96.4	97.1	1	75.0-125			0.475	20

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Ss

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Cn

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Sr

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Qc

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Method Blank (MB)

(MB) R4210818-1 05/07/25 01:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	1.09	U	0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

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Cp

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Laboratory Control Sample (LCS)

(LCS) R4210818-2 05/07/25 02:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1030	103	80.0-120	
Arsenic	50.0	49.9	99.8	80.0-120	
Cadmium	50.0	51.9	104	80.0-120	
Calcium	5000	5170	103	80.0-120	
Chromium	50.0	51.2	102	80.0-120	
Copper	50.0	51.5	103	80.0-120	
Cobalt	50.0	52.0	104	80.0-120	
Iron	1000	1000	100	80.0-120	
Lead	50.0	50.6	101	80.0-120	
Magnesium	5000	5120	102	80.0-120	
Manganese	50.0	51.8	104	80.0-120	
Nickel	50.0	51.5	103	80.0-120	
Potassium	5000	5020	100	80.0-120	
Selenium	50.0	50.1	100	80.0-120	
Sodium	5000	5130	103	80.0-120	
Vanadium	50.0	50.4	101	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4210818-2 05/07/25 02:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.8	99.6	80.0-120	

L1853165-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853165-02 05/07/25 02:04 • (MS) R4210818-4 05/07/25 02:10 • (MSD) R4210818-5 05/07/25 02:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	U	1020	1050	102	105	1	75.0-125			2.59	20
Arsenic	50.0	0.218	51.1	51.4	102	102	1	75.0-125			0.687	20
Cadmium	50.0	U	50.9	51.4	102	103	1	75.0-125			0.943	20
Calcium	5000	77000	81600	80700	92.2	74.0	1	75.0-125		V	1.12	20
Chromium	50.0	U	51.3	51.7	103	103	1	75.0-125			0.660	20
Copper	50.0	1.64	49.0	49.8	94.7	96.4	1	75.0-125			1.76	20
Cobalt	50.0	0.101	51.0	51.0	102	102	1	75.0-125			0.0926	20
Iron	1000	U	1010	1000	101	100	1	75.0-125			0.317	20
Lead	50.0	U	50.8	51.9	102	104	1	75.0-125			2.02	20
Magnesium	5000	34200	39400	39700	105	110	1	75.0-125			0.671	20
Manganese	50.0	0.956	51.6	51.8	101	102	1	75.0-125			0.409	20
Nickel	50.0	0.864	65.5	50.8	129	99.8	1	75.0-125	J5	J3	25.4	20
Potassium	5000	1490	6460	6550	99.4	101	1	75.0-125			1.45	20
Selenium	50.0	0.340	50.2	51.9	99.8	103	1	75.0-125			3.27	20
Sodium	5000	15400	20600	20600	104	103	1	75.0-125			0.176	20
Vanadium	50.0	U	50.9	52.1	102	104	1	75.0-125			2.25	20
Zinc	50.0	U	50.3	49.4	101	98.8	1	75.0-125			1.79	20

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Cp

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Tc

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Ss

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Qc

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GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

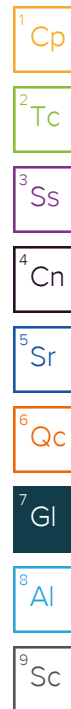
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

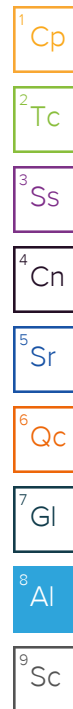
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

B020

Agency, Authorized Purchaser or Agent: Oregon DEQ				Contract Laboratory Name: ESC				Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work				Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____					
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com				Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696													
Project Name: Crook County Limited Groundwater Investigation				Sample Preservative													
				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3				
Sampler Name:														Comments L1852995			
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)				
20250428-1	4-28 0757	W	6	X	X	X	X	X	X	X	X	X	X	X	Dissolved metals - 01 poly is field - -02 filtered for -03 each sample. -04 -05 -06		
20250428-2	0835		6	X	X	X	X	X	X	X	X	X	X	X			
20250428-4	1018		6	X	X	X	X	X	X	X	X	X	X	X			
20250428-7	1115		6	X	X	X	X	X	X	X	X	X	X	X			
20250428-8	1215		6	X	X	X	X	X	X	X	X	X	X	X			
20250428-1-DUP	0757		6	X	X	X	X	X	X	X	X	X	X	X			
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc				Sample Receipt Checklist 3.21.4=3.0 COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☐ NCF ☒ OK RA Screen <0.5 mR/hr: ☒ Y ☐ N													
Relinquished By: <i>Sean Maloney</i>		Agency/Agent: <i>MFA</i>		Received By: <i>Alexa Mitchell</i>				Agency/Agent: <i>PACE</i>									
Signature: <i>[Signature]</i>		Time & Date: <i>4-28-25 1245</i>		Signature: <i>Alexa Mitchell</i>				Time & Date: <i>4/29/25 0900</i>									
Relinquished By:		Agency/Agent:		Received By:				Agency/Agent:									
Signature:		Time & Date:		Signature:				Time & Date:									

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854040
Samples Received: 05/01/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

20250430-2 L1854040-01

Collected by SM
Collected date/time 04/30/25 08:00
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509315	1	05/08/25 18:18	05/08/25 18:18	BAG	Mt. Juliet, TN
Calculated Results	WG2509336	1	05/08/25 18:00	05/08/25 18:00	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 12:28	05/02/25 12:28	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:48	05/02/25 15:48	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505186	1	05/04/25 08:01	05/04/25 08:01	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 18:09	05/02/25 18:09	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:31	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509315	1	05/08/25 12:44	05/08/25 18:18	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 12:47	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509336	1	05/08/25 10:59	05/08/25 18:00	UNP	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250430-3 L1854040-02

Collected by SM
Collected date/time 04/30/25 09:00
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509315	1	05/08/25 18:23	05/08/25 18:23	BAG	Mt. Juliet, TN
Calculated Results	WG2509336	1	05/08/25 18:03	05/08/25 18:03	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 12:35	05/02/25 12:35	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:50	05/02/25 15:50	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505186	1	05/04/25 08:15	05/04/25 08:15	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 18:26	05/02/25 18:26	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 20:57	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509315	1	05/08/25 12:44	05/08/25 18:23	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 12:50	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509336	1	05/08/25 10:59	05/08/25 18:03	UNP	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250430-3-DUP L1854040-03

Collected by SM
Collected date/time 04/30/25 09:00
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 20:53	05/08/25 20:53	BAG	Mt. Juliet, TN
Calculated Results	WG2509336	1	05/08/25 18:21	05/08/25 18:21	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 12:42	05/02/25 12:42	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:51	05/02/25 15:51	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505186	1	05/04/25 08:28	05/04/25 08:28	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 18:45	05/02/25 18:45	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:34	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 20:53	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 12:53	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509336	1	05/08/25 11:02	05/08/25 18:21	UNP	Mt. Juliet, TN

20250430-6 L1854040-04

Collected by SM
Collected date/time 04/30/25 10:10
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 20:55	05/08/25 20:55	BAG	Mt. Juliet, TN
Calculated Results	WG2509336	1	05/08/25 18:24	05/08/25 18:24	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 12:49	05/02/25 12:49	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:53	05/02/25 15:53	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505186	1	05/04/25 08:41	05/04/25 08:41	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 19:05	05/02/25 19:05	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:36	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 20:55	BAG	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854040

DATE/TIME:

05/10/25 11:31

PAGE:

3 of 31

SAMPLE SUMMARY

20250430-6 L1854040-04

Collected by SM
Collected date/time 04/30/25 10:10
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 12:56	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509336	1	05/08/25 11:02	05/08/25 18:24	UNP	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20250430-8 L1854040-05

Collected by SM
Collected date/time 04/30/25 09:15
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 20:57	05/08/25 20:57	BAG	Mt. Juliet, TN
Calculated Results	WG2509336	1	05/08/25 18:27	05/08/25 18:27	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 12:56	05/02/25 12:56	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:53	05/02/25 15:53	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505186	1	05/04/25 08:55	05/04/25 08:55	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 19:24	05/02/25 19:24	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:39	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 20:57	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 12:59	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509336	1	05/08/25 11:02	05/08/25 18:27	UNP	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20250430-FB L1854040-06

Collected by SM
Collected date/time 04/30/25 11:10
Received date/time 05/01/25 09:00

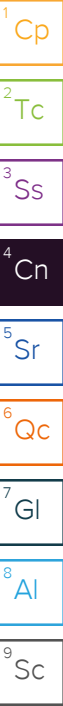
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2509282	1	05/08/25 04:38	05/08/25 13:02	JPD	Mt. Juliet, TN

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.



Brian Ford
Project Manager



20250430-2

Collected date/time: 04/30/25 08:00

SAMPLE RESULTS - 01

L1854040

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	40900		165	428	1	05/08/2025 18:18	WG2509315

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	21000		231	2500	1	05/08/2025 18:00	WG2509336

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	127000		4750	20000	1	05/02/2025 12:28	WG2505170
Alkalinity,Bicarbonate	114000		4750	20000	1	05/02/2025 12:28	WG2505170

Sample Narrative:

L1854040-01 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:48	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2160		547	1000	1	05/04/2025 08:01	WG2505186
Fluoride	431		76.1	150	1	05/04/2025 08:01	WG2505186
Sulfate	2400	J	637	5000	1	05/04/2025 08:01	WG2505186

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/02/2025 18:09	WG2505194

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:31	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	8.79	J	4.22	15.0	1	05/08/2025 18:18	WG2509315
Silicon	19100		77.1	200	1	05/08/2025 18:18	WG2509315
Sulfur	807	J	160	1000	1	05/08/2025 18:18	WG2509315

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 18:00	WG2509336
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 12:47	WG2509282
Arsenic	19.1		0.120	2.00	1	05/08/2025 18:00	WG2509336
Cadmium	U		0.120	1.00	1	05/08/2025 18:00	WG2509336
Calcium	6080		92.5	1000	1	05/08/2025 18:00	WG2509336
Chromium	U		0.900	2.00	1	05/08/2025 18:00	WG2509336
Copper	32.9		0.700	5.00	1	05/08/2025 18:00	WG2509336
Cobalt	U		0.100	2.00	1	05/08/2025 18:00	WG2509336
Iron	90.5	U	22.6	100	1	05/08/2025 18:00	WG2509336
Iron,Dissolved	104		22.6	100	1	05/08/2025 12:47	WG2509282
Lead	8.98		0.500	2.00	1	05/08/2025 18:00	WG2509336
Magnesium	1410		82.7	1000	1	05/08/2025 18:00	WG2509336
Manganese	16.5		0.700	5.00	1	05/08/2025 18:00	WG2509336
Manganese,Dissolved	19.0		0.700	5.00	1	05/08/2025 12:47	WG2509282
Nickel	0.595	U	0.500	2.00	1	05/08/2025 18:00	WG2509336
Potassium	1220	U	96.5	2000	1	05/08/2025 18:00	WG2509336
Selenium	U		0.250	2.00	1	05/08/2025 18:00	WG2509336
Sodium	53100		142	2000	1	05/08/2025 18:00	WG2509336
Vanadium	5.75		0.520	5.00	1	05/08/2025 18:00	WG2509336
Zinc	39.0		4.00	25.0	1	05/08/2025 18:00	WG2509336

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	50000		165	428	1	05/08/2025 18:23	WG2509315

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	406000		231	2500	1	05/08/2025 18:03	WG2509336

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	460000		4750	20000	1	05/02/2025 12:35	WG2505170
Alkalinity,Bicarbonate	460000		4750	20000	1	05/02/2025 12:35	WG2505170

Sample Narrative:

L1854040-02 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:50	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	9970		547	1000	1	05/04/2025 08:15	WG2505186
Fluoride	368		76.1	150	1	05/04/2025 08:15	WG2505186
Sulfate	23200		637	5000	1	05/04/2025 08:15	WG2505186

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3310		495	1000	1	05/02/2025 18:26	WG2505194

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 20:57	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 18:23	WG2509315
Silicon	23400		77.1	200	1	05/08/2025 18:23	WG2509315
Sulfur	8180		160	1000	1	05/08/2025 18:23	WG2509315

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 18:03	WG2509336
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 12:50	WG2509282
Arsenic	2.83		0.120	2.00	1	05/08/2025 18:03	WG2509336
Cadmium	U		0.120	1.00	1	05/08/2025 18:03	WG2509336
Calcium	88900		92.5	1000	1	05/08/2025 18:03	WG2509336
Chromium	U		0.900	2.00	1	05/08/2025 18:03	WG2509336
Copper	69.2		0.700	5.00	1	05/08/2025 18:03	WG2509336
Cobalt	U		0.100	2.00	1	05/08/2025 18:03	WG2509336
Iron	U		22.6	100	1	05/08/2025 18:03	WG2509336
Iron,Dissolved	U		22.6	100	1	05/08/2025 12:50	WG2509282
Lead	37.6		0.500	2.00	1	05/08/2025 18:03	WG2509336
Magnesium	44800		82.7	1000	1	05/08/2025 18:03	WG2509336
Manganese	U		0.700	5.00	1	05/08/2025 18:03	WG2509336
Manganese,Dissolved	0.708	U	0.700	5.00	1	05/08/2025 12:50	WG2509282
Nickel	1.67	U	0.500	2.00	1	05/08/2025 18:03	WG2509336
Potassium	3930		96.5	2000	1	05/08/2025 18:03	WG2509336
Selenium	U		0.250	2.00	1	05/08/2025 18:03	WG2509336
Sodium	73100		142	2000	1	05/08/2025 18:03	WG2509336
Vanadium	61.5		0.520	5.00	1	05/08/2025 18:03	WG2509336
Zinc	60.0		4.00	25.0	1	05/08/2025 18:03	WG2509336

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	48500		165	428	1	05/08/2025 20:53	WG2509318

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	402000		231	2500	1	05/08/2025 18:21	WG2509336

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	461000		4750	20000	1	05/02/2025 12:42	WG2505170
Alkalinity,Bicarbonate	461000		4750	20000	1	05/02/2025 12:42	WG2505170

Sample Narrative:

L1854040-03 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:51	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	9910		547	1000	1	05/04/2025 08:28	WG2505186
Fluoride	336		76.1	150	1	05/04/2025 08:28	WG2505186
Sulfate	22900		637	5000	1	05/04/2025 08:28	WG2505186

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3180		495	1000	1	05/02/2025 18:45	WG2505194

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:34	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	5.39	J	4.22	15.0	1	05/08/2025 20:53	WG2509318
Silicon	22700		77.1	200	1	05/08/2025 20:53	WG2509318
Sulfur	8030		160	1000	1	05/08/2025 20:53	WG2509318

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 18:21	WG2509336
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 12:53	WG2509282
Arsenic	2.79		0.120	2.00	1	05/08/2025 18:21	WG2509336
Cadmium	U		0.120	1.00	1	05/08/2025 18:21	WG2509336
Calcium	88200		92.5	1000	1	05/08/2025 18:21	WG2509336
Chromium	U		0.900	2.00	1	05/08/2025 18:21	WG2509336
Copper	58.2		0.700	5.00	1	05/08/2025 18:21	WG2509336
Cobalt	0.101	BJ	0.100	2.00	1	05/08/2025 18:21	WG2509336
Iron	U		22.6	100	1	05/08/2025 18:21	WG2509336
Iron,Dissolved	U		22.6	100	1	05/08/2025 12:53	WG2509282
Lead	22.3		0.500	2.00	1	05/08/2025 18:21	WG2509336
Magnesium	44100		82.7	1000	1	05/08/2025 18:21	WG2509336
Manganese	0.754	U	0.700	5.00	1	05/08/2025 18:21	WG2509336
Manganese,Dissolved	U		0.700	5.00	1	05/08/2025 12:53	WG2509282
Nickel	1.29	U	0.500	2.00	1	05/08/2025 18:21	WG2509336
Potassium	3900		96.5	2000	1	05/08/2025 18:21	WG2509336
Selenium	U		0.250	2.00	1	05/08/2025 18:21	WG2509336
Sodium	72000		142	2000	1	05/08/2025 18:21	WG2509336
Vanadium	60.0		0.520	5.00	1	05/08/2025 18:21	WG2509336
Zinc	48.3		4.00	25.0	1	05/08/2025 18:21	WG2509336

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	46900		165	428	1	05/08/2025 20:55	WG2509318

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	69200		231	2500	1	05/08/2025 18:24	WG2509336

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	124000		4750	20000	1	05/02/2025 12:49	WG2505170
Alkalinity,Bicarbonate	124000		4750	20000	1	05/02/2025 12:49	WG2505170

Sample Narrative:

L1854040-04 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:53	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2020		547	1000	1	05/04/2025 08:41	WG2505186
Fluoride	249		76.1	150	1	05/04/2025 08:41	WG2505186
Sulfate	1260	J	637	5000	1	05/04/2025 08:41	WG2505186

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/02/2025 19:05	WG2505194

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:36	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	6.03	J	4.22	15.0	1	05/08/2025 20:55	WG2509318
Silicon	21900		77.1	200	1	05/08/2025 20:55	WG2509318
Sulfur	514	J	160	1000	1	05/08/2025 20:55	WG2509318

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	19.0	J	16.0	100	1	05/08/2025 18:24	WG2509336
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 12:56	WG2509282
Arsenic	3.67		0.120	2.00	1	05/08/2025 18:24	WG2509336
Cadmium	0.150	B J	0.120	1.00	1	05/08/2025 18:24	WG2509336
Calcium	16000		92.5	1000	1	05/08/2025 18:24	WG2509336
Chromium	U		0.900	2.00	1	05/08/2025 18:24	WG2509336
Copper	1.77	J	0.700	5.00	1	05/08/2025 18:24	WG2509336
Cobalt	0.148	B J	0.100	2.00	1	05/08/2025 18:24	WG2509336
Iron	112		22.6	100	1	05/08/2025 18:24	WG2509336
Iron,Dissolved	73.4	J	22.6	100	1	05/08/2025 12:56	WG2509282
Lead	U		0.500	2.00	1	05/08/2025 18:24	WG2509336
Magnesium	7100		82.7	1000	1	05/08/2025 18:24	WG2509336
Manganese	129		0.700	5.00	1	05/08/2025 18:24	WG2509336
Manganese,Dissolved	126		0.700	5.00	1	05/08/2025 12:56	WG2509282
Nickel	U		0.500	2.00	1	05/08/2025 18:24	WG2509336
Potassium	1830	J	96.5	2000	1	05/08/2025 18:24	WG2509336
Selenium	U		0.250	2.00	1	05/08/2025 18:24	WG2509336
Sodium	25700		142	2000	1	05/08/2025 18:24	WG2509336
Vanadium	U		0.520	5.00	1	05/08/2025 18:24	WG2509336
Zinc	U		4.00	25.0	1	05/08/2025 18:24	WG2509336

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	47200		165	428	1	05/08/2025 20:57	WG2509318

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	360000		231	2500	1	05/08/2025 18:27	WG2509336

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	448000		4750	20000	1	05/02/2025 12:56	WG2505170
Alkalinity,Bicarbonate	448000		4750	20000	1	05/02/2025 12:56	WG2505170

Sample Narrative:

L1854040-05 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:53	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	15700		547	1000	1	05/04/2025 08:55	WG2505186
Fluoride	357		76.1	150	1	05/04/2025 08:55	WG2505186
Sulfate	22300		637	5000	1	05/04/2025 08:55	WG2505186

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3700		495	1000	1	05/02/2025 19:24	WG2505194

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:39	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	6.66	J	4.22	15.0	1	05/08/2025 20:57	WG2509318
Silicon	22100		77.1	200	1	05/08/2025 20:57	WG2509318
Sulfur	7810		160	1000	1	05/08/2025 20:57	WG2509318

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/08/2025 18:27	WG2509336
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 12:59	WG2509282
Arsenic	3.63		0.120	2.00	1	05/08/2025 18:27	WG2509336
Cadmium	U		0.120	1.00	1	05/08/2025 18:27	WG2509336
Calcium	80300		92.5	1000	1	05/08/2025 18:27	WG2509336
Chromium	U		0.900	2.00	1	05/08/2025 18:27	WG2509336
Copper	5.23		0.700	5.00	1	05/08/2025 18:27	WG2509336
Cobalt	U		0.100	2.00	1	05/08/2025 18:27	WG2509336
Iron	U		22.6	100	1	05/08/2025 18:27	WG2509336
Iron,Dissolved	U		22.6	100	1	05/08/2025 12:59	WG2509282
Lead	U		0.500	2.00	1	05/08/2025 18:27	WG2509336
Magnesium	38700		82.7	1000	1	05/08/2025 18:27	WG2509336
Manganese	U		0.700	5.00	1	05/08/2025 18:27	WG2509336
Manganese,Dissolved	U		0.700	5.00	1	05/08/2025 12:59	WG2509282
Nickel	U		0.500	2.00	1	05/08/2025 18:27	WG2509336
Potassium	4380		96.5	2000	1	05/08/2025 18:27	WG2509336
Selenium	0.300	U	0.250	2.00	1	05/08/2025 18:27	WG2509336
Sodium	83200		142	2000	1	05/08/2025 18:27	WG2509336
Vanadium	73.2		0.520	5.00	1	05/08/2025 18:27	WG2509336
Zinc	16.2	U	4.00	25.0	1	05/08/2025 18:27	WG2509336

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/08/2025 13:02	WG2509282
Iron,Dissolved	U		22.6	100	1	05/08/2025 13:02	WG2509282
Manganese,Dissolved	U		0.700	5.00	1	05/08/2025 13:02	WG2509282

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209071-2 05/02/25 08:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1854017-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-01 05/02/25 10:06 • (DUP) R4209071-3 05/02/25 10:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	240000	244000	1	1.28		20
Alkalinity,Bicarbonate	240000	244000	1	1.28		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1854053-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854053-01 05/02/25 13:29 • (DUP) R4209071-4 05/02/25 13:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	50700	51600	1	1.80		20
Alkalinity,Bicarbonate	50700	51600	1	1.80		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4209071-1 05/02/25 08:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	103000	103	90.0-110	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4209071-1 05/02/25 08:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209088-1 05/02/25 15:47

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854040-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854040-02 05/02/25 15:50 • (DUP) R4209088-5 05/02/25 15:51

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1854040-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1854040-03 05/02/25 15:51 • (DUP) R4209088-6 05/02/25 15:52

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4209088-2 05/02/25 15:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	490	98.0	85.0-115	

L1854040-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854040-01 05/02/25 15:48 • (MS) R4209088-3 05/02/25 15:49 • (MSD) R4209088-4 05/02/25 15:50

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	442	408	88.4	81.6	1	80.0-120			8.00	20

L1854175-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854175-08 05/02/25 16:59 • (MS) R4209088-7 05/02/25 16:59 • (MSD) R4209088-8 05/02/25 16:59

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	460	431	92.0	86.2	1	80.0-120			6.51	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209712-1 05/04/25 01:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1853929-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1853929-02 05/04/25 02:26 • (DUP) R4209712-3 05/04/25 02:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	8180	8030	1	1.89		15
Fluoride	289	290	1	0.519		15
Sulfate	6940	6860	1	1.06		15

L1854017-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-08 05/04/25 05:34 • (DUP) R4209712-5 05/04/25 05:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	55000	55200	1	0.229		15
Fluoride	434	434	1	0.0230		15

L1854017-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-08 05/04/25 06:27 • (DUP) R4209712-8 05/04/25 06:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	215000	213000	10	0.745		15

Laboratory Control Sample (LCS)

(LCS) R4209712-2 05/04/25 01:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	38900	97.3	80.0-120	
Fluoride	8000	7830	97.8	80.0-120	
Sulfate	40000	40800	102	80.0-120	



L1853929-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853929-02 05/04/25 02:26 • (MS) R4209712-4 05/04/25 02:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	8180	45200	92.7	1	80.0-120	
Fluoride	8000	289	8020	96.7	1	80.0-120	
Sulfate	40000	6940	46200	98.3	1	80.0-120	

L1854017-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854017-08 05/04/25 05:34 • (MS) R4209712-6 05/04/25 06:01 • (MSD) R4209712-7 05/04/25 06:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	55000	81000	81100	65.0	65.0	1	80.0-120	J6	J6	0.0220	15
Fluoride	8000	434	8060	8110	95.3	96.0	1	80.0-120			0.687	15
Sulfate	40000	204000	198000	197000	0.000	0.000	1	80.0-120	E V	E V	0.376	15

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4209173-2 05/02/25 10:54

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1853992-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1853992-07 05/02/25 14:46 • (DUP) R4209173-5 05/02/25 15:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	1290	1390	1	7.62		20

L1854037-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1854037-03 05/02/25 17:34 • (DUP) R4209173-8 05/02/25 17:51

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	795	587	1	30.1	J P1	20

Laboratory Control Sample (LCS)

(LCS) R4209173-1 05/02/25 10:37

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24500	98.0	80.0-120	

L1853992-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853992-06 05/02/25 13:43 • (MS) R4209173-3 05/02/25 14:05 • (MSD) R4209173-4 05/02/25 14:26

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2000	26300	26700	97.4	98.7	1	75.0-125			1.25	20

L1854037-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854037-02 05/02/25 16:34 • (MS) R4209173-6 05/02/25 16:56 • (MSD) R4209173-7 05/02/25 17:17

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	24100	25000	96.4	100	1	75.0-125			3.83	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4210756-1 05/06/25 20:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4210756-2 05/06/25 20:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	3.16	105	80.0-120	

L1854040-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854040-02 05/06/25 20:57 • (MS) R4210756-4 05/06/25 21:02 • (MSD) R4210756-5 05/06/25 21:05

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	3.20	3.05	107	102	1	75.0-125			4.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211925-1 05/08/25 15:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4211925-2 05/08/25 15:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1030	103	80.0-120	
Silicon	1000	930	93.0	80.0-120	
Sulfur	10000	9590	95.9	80.0-120	

L1853929-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853929-04 05/08/25 15:40 • (MS) R4211925-4 05/08/25 15:43 • (MSD) R4211925-5 05/08/25 15:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	16.8	1080	1070	106	105	1	75.0-125			0.859	20
Silicon	1000	6210	7160	7230	95.4	102	1	75.0-125			0.961	20
Sulfur	10000	1660	11500	11300	98.5	96.7	1	75.0-125			1.56	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4212061-1 05/08/25 20:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4212061-2 05/08/25 20:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	933	93.3	80.0-120	
Silicon	1000	970	97.0	80.0-120	
Sulfur	10000	9430	94.3	80.0-120	

L1854067-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854067-01 05/08/25 20:46 • (MS) R4212061-4 05/08/25 20:50 • (MSD) R4212061-5 05/08/25 20:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	254	1260	1260	101	101	1	75.0-125			0.0707	20
Silicon	1000	5150	6130	6350	98.2	120	1	75.0-125			3.47	20
Sulfur	10000	177000	185000	183000	82.6	66.5	1	75.0-125		V	0.875	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4211696-1 05/08/25 10:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4211696-2 05/08/25 11:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	1010	101	80.0-120	
Iron,Dissolved	1000	1060	106	80.0-120	
Manganese,Dissolved	50.0	51.4	103	80.0-120	

L1853823-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853823-01 05/08/25 11:06 • (MS) R4211696-4 05/08/25 11:12 • (MSD) R4211696-5 05/08/25 11:15

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	1010	1020	101	102	1	75.0-125			0.596	20
Iron,Dissolved	1000	46.3	1080	1090	103	105	1	75.0-125			1.55	20
Manganese,Dissolved	50.0	986	1010	1020	52.7	71.7	1	75.0-125	V	V	0.935	20

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4211988-1 05/08/25 16:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	0.212	U	0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	0.202	U	0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4211988-2 05/08/25 16:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1050	105	80.0-120	
Arsenic	50.0	50.9	102	80.0-120	
Cadmium	50.0	55.9	112	80.0-120	
Calcium	5000	5140	103	80.0-120	
Chromium	50.0	53.6	107	80.0-120	
Copper	50.0	52.4	105	80.0-120	
Cobalt	50.0	55.2	110	80.0-120	
Iron	1000	1090	109	80.0-120	
Lead	50.0	51.2	102	80.0-120	
Magnesium	5000	5470	109	80.0-120	
Manganese	50.0	52.7	105	80.0-120	
Nickel	50.0	55.7	111	80.0-120	
Potassium	5000	5090	102	80.0-120	
Selenium	50.0	51.3	103	80.0-120	
Sodium	5000	5530	111	80.0-120	
Vanadium	50.0	53.0	106	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4211988-2 05/08/25 16:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	53.0	106	80.0-120	

L1853954-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853954-10 05/08/25 16:43 • (MS) R4211988-4 05/08/25 16:49 • (MSD) R4211988-5 05/08/25 16:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	1360	2330	2410	97.8	106	1	75.0-125			3.38	20
Arsenic	50.0	9.50	60.6	61.2	102	103	1	75.0-125			1.10	20
Cadmium	50.0	1.29	55.9	56.2	109	110	1	75.0-125			0.437	20
Calcium	5000	471000	466000	471000	0.000	0.000	1	75.0-125	V	V	1.07	20
Chromium	50.0	10.3	62.2	63.7	104	107	1	75.0-125			2.33	20
Copper	50.0	22.2	71.8	72.0	99.1	99.5	1	75.0-125			0.286	20
Cobalt	50.0	11.8	63.1	64.2	103	105	1	75.0-125			1.73	20
Iron	1000	1850	2840	2940	98.7	109	1	75.0-125			3.64	20
Lead	50.0	2.69	53.9	54.3	102	103	1	75.0-125			0.760	20
Magnesium	5000	150000	149000	151000	0.000	29.1	1	75.0-125	V	V	1.25	20
Manganese	50.0	1430	1440	1470	19.8	93.9	1	75.0-125	V		2.55	20
Nickel	50.0	60.7	110	112	98.2	102	1	75.0-125			1.73	20
Potassium	5000	11500	16200	16400	95.6	99.2	1	75.0-125			1.10	20
Selenium	50.0	18.6	72.4	72.9	108	109	1	75.0-125			0.591	20
Sodium	5000	572000	560000	570000	0.000	0.000	1	75.0-125	V	V	1.66	20
Vanadium	50.0	104	154	158	99.5	107	1	75.0-125			2.55	20
Zinc	50.0	18.9	67.7	69.9	97.6	102	1	75.0-125			3.23	20

1Cp

2Tc

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5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

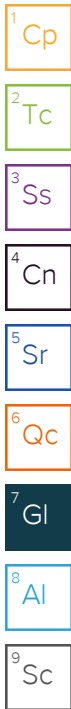
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
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.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

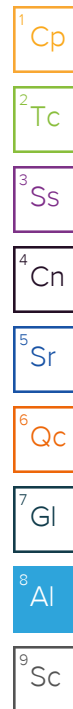
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ				Contract Laboratory Name: ESC				Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work				Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____			
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com				Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696											
Project Name: Crook County Limited Groundwater Investigation				Sample Preservative											
Sampler Name: S. Maloney				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	HCL	
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250430-2	4/30/25 0800	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250430-3	0900	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250430-3-DUP	0900	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250430-6	1010	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250430-8	1110	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05
20250430-FB	0915	w	1			✓									-06
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc				425709307791 TL92910.4=3.3 Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N NP 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 Condition: ☐ NCF ☒ OK RA Screen <0.5 mR/hr: ☒ Y ☐ N Containers: 31											
Relinquished By: Sean Maloney				Agency/Agent: MFA				Received By: [Signature]				Agency/Agent: PALE			
Signature: [Signature]				Time & Date: 4-30-25 1210				Signature: [Signature]				Time & Date: 5/1/25 0900			
Relinquished By:				Agency/Agent:				Received By:				Agency/Agent:			
Signature:				Time & Date:				Signature:				Time & Date:			

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

May 12, 2025

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

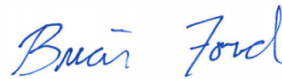
⁹ Sc

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854043
Samples Received: 05/01/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 mydata.pacelabs.com

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Sc: Sample Chain of Custody	30



SAMPLE SUMMARY

20250430-1 L1854043-01

Collected by
Y. Perez

Collected date/time
04/30/25 07:40

Received date/time
05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 20:58	05/08/25 20:58	BAG	Mt. Juliet, TN
Calculated Results	WG2509344	1	05/09/25 19:00	05/09/25 19:00	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 13:03	05/02/25 13:03	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:53	05/02/25 15:53	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505189	1	05/03/25 11:56	05/03/25 11:56	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 19:43	05/02/25 19:43	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:42	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 20:58	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509285	1	05/08/25 19:19	05/09/25 18:38	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509344	1	05/08/25 14:30	05/09/25 19:00	UNP	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

20250430-4 L1854043-02

Collected by
Y. Perez

Collected date/time
04/30/25 09:05

Received date/time
05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 21:04	05/08/25 21:04	BAG	Mt. Juliet, TN
Calculated Results	WG2509344	1	05/09/25 19:03	05/09/25 19:03	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 13:11	05/02/25 13:11	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:56	05/02/25 15:56	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505189	1	05/03/25 12:10	05/03/25 12:10	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 20:02	05/02/25 20:02	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:44	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 21:04	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509285	1	05/08/25 19:19	05/09/25 18:50	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509344	1	05/08/25 14:30	05/09/25 19:03	UNP	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

20250430-5 L1854043-03

Collected by
Y. Perez

Collected date/time
04/30/25 10:06

Received date/time
05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 21:05	05/08/25 21:05	BAG	Mt. Juliet, TN
Calculated Results	WG2509344	1	05/09/25 19:13	05/09/25 19:13	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 13:41	05/02/25 13:41	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:57	05/02/25 15:57	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505189	1	05/03/25 12:23	05/03/25 12:23	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505194	1	05/02/25 20:21	05/02/25 20:21	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 21:47	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 21:05	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509285	1	05/08/25 19:19	05/09/25 18:53	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509344	1	05/08/25 14:30	05/09/25 19:13	UNP	Mt. Juliet, TN

Collected by
Y. Perez

Collected date/time
04/30/25 11:08

Received date/time
05/01/25 09:00

20250430-7 L1854043-04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 21:07	05/08/25 21:07	BAG	Mt. Juliet, TN
Calculated Results	WG2509344	1	05/09/25 19:16	05/09/25 19:16	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 13:47	05/02/25 13:47	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:57	05/02/25 15:57	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505189	1	05/03/25 12:37	05/03/25 12:37	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505289	1	05/02/25 16:02	05/02/25 16:02	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 22:03	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 21:07	BAG	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854043

DATE/TIME:

05/12/25 16:31

PAGE:

3 of 30

SAMPLE SUMMARY

20250430-7 L1854043-04

Collected by Y. Perez
Collected date/time 04/30/25 11:08
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2509285	1	05/08/25 19:19	05/09/25 18:56	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509344	1	05/08/25 14:30	05/09/25 19:16	UNP	Mt. Juliet, TN

20250430-9 L1854043-05

Collected by Y. Perez
Collected date/time 04/30/25 12:25
Received date/time 05/01/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2509318	1	05/08/25 21:09	05/08/25 21:09	BAG	Mt. Juliet, TN
Calculated Results	WG2509344	1	05/09/25 19:19	05/09/25 19:19	UNP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505170	1	05/02/25 13:54	05/02/25 13:54	RJP	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505503	1	05/02/25 15:57	05/02/25 15:57	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505189	1	05/03/25 12:50	05/03/25 12:50	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505289	1	05/02/25 16:29	05/02/25 16:29	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2505007	1	05/05/25 21:03	05/06/25 22:05	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2509318	1	05/08/25 09:52	05/08/25 21:09	BAG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509285	1	05/08/25 19:19	05/09/25 18:59	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2509344	1	05/08/25 14:30	05/09/25 19:19	UNP	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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	48900		165	428	1	05/08/2025 20:58	WG2509318

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	310000		231	2500	1	05/09/2025 19:00	WG2509344

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	338000		4750	20000	1	05/02/2025 13:03	WG2505170
Alkalinity,Bicarbonate	338000		4750	20000	1	05/02/2025 13:03	WG2505170

Sample Narrative:

L1854043-01 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:53	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7630		547	1000	1	05/03/2025 11:56	WG2505189
Fluoride	166		76.1	150	1	05/03/2025 11:56	WG2505189
Sulfate	45200		637	5000	1	05/03/2025 11:56	WG2505189

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1600		495	1000	1	05/02/2025 19:43	WG2505194

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:42	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 20:58	WG2509318
Silicon	22900		77.1	200	1	05/08/2025 20:58	WG2509318
Sulfur	14400		160	1000	1	05/08/2025 20:58	WG2509318

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/09/2025 19:00	WG2509344
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 18:38	WG2509285
Arsenic	7.30		0.120	2.00	1	05/09/2025 19:00	WG2509344
Cadmium	U		0.120	1.00	1	05/09/2025 19:00	WG2509344
Calcium	68700		92.5	1000	1	05/09/2025 19:00	WG2509344
Chromium	U		0.900	2.00	1	05/09/2025 19:00	WG2509344
Copper	50.6		0.700	5.00	1	05/09/2025 19:00	WG2509344
Cobalt	0.123	U	0.100	2.00	1	05/09/2025 19:00	WG2509344
Iron	372		22.6	100	1	05/09/2025 19:00	WG2509344
Iron,Dissolved	178		22.6	100	1	05/09/2025 18:38	WG2509285
Lead	5.56		0.500	2.00	1	05/09/2025 19:00	WG2509344
Magnesium	33500		82.7	1000	1	05/09/2025 19:00	WG2509344
Manganese	78.2		0.700	5.00	1	05/09/2025 19:00	WG2509344
Manganese,Dissolved	97.9		0.700	5.00	1	05/09/2025 18:38	WG2509285
Nickel	1.34	U	0.500	2.00	1	05/09/2025 19:00	WG2509344
Potassium	6250		96.5	2000	1	05/09/2025 19:00	WG2509344
Selenium	0.323	U	0.250	2.00	1	05/09/2025 19:00	WG2509344
Sodium	49500		142	2000	1	05/09/2025 19:00	WG2509344
Vanadium	6.18		0.520	5.00	1	05/09/2025 19:00	WG2509344
Zinc	106		4.00	25.0	1	05/09/2025 19:00	WG2509344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	47300		165	428	1	05/08/2025 21:04	WG2509318

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	391000		231	2500	1	05/09/2025 19:03	WG2509344

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	412000		4750	20000	1	05/02/2025 13:11	WG2505170
Alkalinity,Bicarbonate	412000		4750	20000	1	05/02/2025 13:11	WG2505170

Sample Narrative:

L1854043-02 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:56	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	9580		547	1000	1	05/03/2025 12:10	WG2505189
Fluoride	211		76.1	150	1	05/03/2025 12:10	WG2505189
Sulfate	16800		637	5000	1	05/03/2025 12:10	WG2505189

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4380		495	1000	1	05/02/2025 20:02	WG2505194

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:44	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/08/2025 21:04	WG2509318
Silicon	22100		77.1	200	1	05/08/2025 21:04	WG2509318
Sulfur	5600		160	1000	1	05/08/2025 21:04	WG2509318

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/09/2025 19:03	WG2509344
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 18:50	WG2509285
Arsenic	3.15		0.120	2.00	1	05/09/2025 19:03	WG2509344
Cadmium	U		0.120	1.00	1	05/09/2025 19:03	WG2509344
Calcium	87400		92.5	1000	1	05/09/2025 19:03	WG2509344
Chromium	0.975	U	0.900	2.00	1	05/09/2025 19:03	WG2509344
Copper	5.34		0.700	5.00	1	05/09/2025 19:03	WG2509344
Cobalt	0.235	U	0.100	2.00	1	05/09/2025 19:03	WG2509344
Iron	U		22.6	100	1	05/09/2025 19:03	WG2509344
Iron,Dissolved	U		22.6	100	1	05/09/2025 18:50	WG2509285
Lead	U		0.500	2.00	1	05/09/2025 19:03	WG2509344
Magnesium	41900		82.7	1000	1	05/09/2025 19:03	WG2509344
Manganese	U		0.700	5.00	1	05/09/2025 19:03	WG2509344
Manganese,Dissolved	U		0.700	5.00	1	05/09/2025 18:50	WG2509285
Nickel	1.29	U	0.500	2.00	1	05/09/2025 19:03	WG2509344
Potassium	3970		96.5	2000	1	05/09/2025 19:03	WG2509344
Selenium	U		0.250	2.00	1	05/09/2025 19:03	WG2509344
Sodium	47200		142	2000	1	05/09/2025 19:03	WG2509344
Vanadium	43.4		0.520	5.00	1	05/09/2025 19:03	WG2509344
Zinc	15.1	U	4.00	25.0	1	05/09/2025 19:03	WG2509344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	44300		165	428	1	05/08/2025 21:05	WG2509318

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	216000		231	2500	1	05/09/2025 19:13	WG2509344

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	276000		4750	20000	1	05/02/2025 13:41	WG2505170
Alkalinity,Bicarbonate	276000		4750	20000	1	05/02/2025 13:41	WG2505170

Sample Narrative:

L1854043-03 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:57	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7540		547	1000	1	05/03/2025 12:23	WG2505189
Fluoride	393		76.1	150	1	05/03/2025 12:23	WG2505189
Sulfate	26400		637	5000	1	05/03/2025 12:23	WG2505189

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1260		495	1000	1	05/02/2025 20:21	WG2505194

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 21:47	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	5.60	J	4.22	15.0	1	05/08/2025 21:05	WG2509318
Silicon	20700		77.1	200	1	05/08/2025 21:05	WG2509318
Sulfur	8680		160	1000	1	05/08/2025 21:05	WG2509318

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/09/2025 19:13	WG2509344
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 18:53	WG2509285
Arsenic	4.28		0.120	2.00	1	05/09/2025 19:13	WG2509344
Cadmium	U		0.120	1.00	1	05/09/2025 19:13	WG2509344
Calcium	48900		92.5	1000	1	05/09/2025 19:13	WG2509344
Chromium	U		0.900	2.00	1	05/09/2025 19:13	WG2509344
Copper	2.31	U	0.700	5.00	1	05/09/2025 19:13	WG2509344
Cobalt	0.156	U	0.100	2.00	1	05/09/2025 19:13	WG2509344
Iron	U		22.6	100	1	05/09/2025 19:13	WG2509344
Iron,Dissolved	23.1	U	22.6	100	1	05/09/2025 18:53	WG2509285
Lead	U		0.500	2.00	1	05/09/2025 19:13	WG2509344
Magnesium	22900		82.7	1000	1	05/09/2025 19:13	WG2509344
Manganese	83.0		0.700	5.00	1	05/09/2025 19:13	WG2509344
Manganese,Dissolved	86.9		0.700	5.00	1	05/09/2025 18:53	WG2509285
Nickel	0.610	U	0.500	2.00	1	05/09/2025 19:13	WG2509344
Potassium	4600		96.5	2000	1	05/09/2025 19:13	WG2509344
Selenium	0.543	U	0.250	2.00	1	05/09/2025 19:13	WG2509344
Sodium	52900		142	2000	1	05/09/2025 19:13	WG2509344
Vanadium	15.2		0.520	5.00	1	05/09/2025 19:13	WG2509344
Zinc	U		4.00	25.0	1	05/09/2025 19:13	WG2509344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	46400		165	428	1	05/08/2025 21:07	WG2509318

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	292000		231	2500	1	05/09/2025 19:16	WG2509344

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	368000		4750	20000	1	05/02/2025 13:47	WG2505170
Alkalinity,Bicarbonate	368000		4750	20000	1	05/02/2025 13:47	WG2505170

Sample Narrative:

L1854043-04 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:57	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8740		547	1000	1	05/03/2025 12:37	WG2505189
Fluoride	381		76.1	150	1	05/03/2025 12:37	WG2505189
Sulfate	35900		637	5000	1	05/03/2025 12:37	WG2505189

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3400		495	1000	1	05/02/2025 16:02	WG2505289

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 22:03	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	8.95	J	4.22	15.0	1	05/08/2025 21:07	WG2509318
Silicon	21700		77.1	200	1	05/08/2025 21:07	WG2509318
Sulfur	11900		160	1000	1	05/08/2025 21:07	WG2509318

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/09/2025 19:16	WG2509344
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 18:56	WG2509285
Arsenic	4.06		0.120	2.00	1	05/09/2025 19:16	WG2509344
Cadmium	U		0.120	1.00	1	05/09/2025 19:16	WG2509344
Calcium	66200		92.5	1000	1	05/09/2025 19:16	WG2509344
Chromium	U		0.900	2.00	1	05/09/2025 19:16	WG2509344
Copper	19.7		0.700	5.00	1	05/09/2025 19:16	WG2509344
Cobalt	U		0.100	2.00	1	05/09/2025 19:16	WG2509344
Iron	U		22.6	100	1	05/09/2025 19:16	WG2509344
Iron,Dissolved	U		22.6	100	1	05/09/2025 18:56	WG2509285
Lead	U		0.500	2.00	1	05/09/2025 19:16	WG2509344
Magnesium	30700		82.7	1000	1	05/09/2025 19:16	WG2509344
Manganese	0.958	U	0.700	5.00	1	05/09/2025 19:16	WG2509344
Manganese,Dissolved	1.57	U	0.700	5.00	1	05/09/2025 18:56	WG2509285
Nickel	0.732	U	0.500	2.00	1	05/09/2025 19:16	WG2509344
Potassium	3840		96.5	2000	1	05/09/2025 19:16	WG2509344
Selenium	0.286	U	0.250	2.00	1	05/09/2025 19:16	WG2509344
Sodium	62000		142	2000	1	05/09/2025 19:16	WG2509344
Vanadium	36.7		0.520	5.00	1	05/09/2025 19:16	WG2509344
Zinc	8.39	U	4.00	25.0	1	05/09/2025 19:16	WG2509344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	46400		165	428	1	05/08/2025 21:09	WG2509318

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	232000		231	2500	1	05/09/2025 19:19	WG2509344

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	256000		4750	20000	1	05/02/2025 13:54	WG2505170
Alkalinity,Bicarbonate	256000		4750	20000	1	05/02/2025 13:54	WG2505170

Sample Narrative:

L1854043-05 WG2505170: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/02/2025 15:57	WG2505503

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	8180		547	1000	1	05/03/2025 12:50	WG2505189
Fluoride	333		76.1	150	1	05/03/2025 12:50	WG2505189
Sulfate	22800		637	5000	1	05/03/2025 12:50	WG2505189

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1470		495	1000	1	05/02/2025 16:29	WG2505289

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/06/2025 22:05	WG2505007

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	9.73	J	4.22	15.0	1	05/08/2025 21:09	WG2509318
Silicon	21700		77.1	200	1	05/08/2025 21:09	WG2509318
Sulfur	7460		160	1000	1	05/08/2025 21:09	WG2509318

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/09/2025 19:19	WG2509344
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 18:59	WG2509285
Arsenic	2.20		0.120	2.00	1	05/09/2025 19:19	WG2509344
Cadmium	U		0.120	1.00	1	05/09/2025 19:19	WG2509344
Calcium	54900		92.5	1000	1	05/09/2025 19:19	WG2509344
Chromium	U		0.900	2.00	1	05/09/2025 19:19	WG2509344
Copper	2.51	J	0.700	5.00	1	05/09/2025 19:19	WG2509344
Cobalt	U		0.100	2.00	1	05/09/2025 19:19	WG2509344
Iron	U		22.6	100	1	05/09/2025 19:19	WG2509344
Iron,Dissolved	U		22.6	100	1	05/09/2025 18:59	WG2509285
Lead	U		0.500	2.00	1	05/09/2025 19:19	WG2509344
Magnesium	22900		82.7	1000	1	05/09/2025 19:19	WG2509344
Manganese	U		0.700	5.00	1	05/09/2025 19:19	WG2509344
Manganese,Dissolved	U		0.700	5.00	1	05/09/2025 18:59	WG2509285
Nickel	U		0.500	2.00	1	05/09/2025 19:19	WG2509344
Potassium	2430		96.5	2000	1	05/09/2025 19:19	WG2509344
Selenium	U		0.250	2.00	1	05/09/2025 19:19	WG2509344
Sodium	41600		142	2000	1	05/09/2025 19:19	WG2509344
Vanadium	25.0		0.520	5.00	1	05/09/2025 19:19	WG2509344
Zinc	U		4.00	25.0	1	05/09/2025 19:19	WG2509344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209071-2 05/02/25 08:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1854017-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-01 05/02/25 10:06 • (DUP) R4209071-3 05/02/25 10:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	240000	244000	1	1.28		20
Alkalinity,Bicarbonate	240000	244000	1	1.28		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1854053-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854053-01 05/02/25 13:29 • (DUP) R4209071-4 05/02/25 13:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	50700	51600	1	1.80		20
Alkalinity,Bicarbonate	50700	51600	1	1.80		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4209071-1 05/02/25 08:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	103000	103	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4209071-1 05/02/25 08:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209088-1 05/02/25 15:47

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854040-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854040-02 05/02/25 15:50 • (DUP) R4209088-5 05/02/25 15:51

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1854040-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1854040-03 05/02/25 15:51 • (DUP) R4209088-6 05/02/25 15:52

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4209088-2 05/02/25 15:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	490	98.0	85.0-115	

L1854040-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854040-01 05/02/25 15:48 • (MS) R4209088-3 05/02/25 15:49 • (MSD) R4209088-4 05/02/25 15:50

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	442	408	88.4	81.6	1	80.0-120			8.00	20

L1854175-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854175-08 05/02/25 16:59 • (MS) R4209088-7 05/02/25 16:59 • (MSD) R4209088-8 05/02/25 16:59

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	460	431	92.0	86.2	1	80.0-120			6.51	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209711-1 05/03/25 09:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1853028-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853028-03 05/03/25 09:56 • (DUP) R4209711-3 05/03/25 10:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	19900	20200	1	1.16		15
Fluoride	U	U	1	0.000		15
Sulfate	27400	28000	1	1.87		15

L1853515-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1853515-10 05/03/25 11:16 • (DUP) R4209711-6 05/03/25 11:30

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	34700	35000	1	0.999		15
Fluoride	420	384	1	9.04		15
Sulfate	6120	6050	1	1.18		15

Laboratory Control Sample (LCS)

(LCS) R4209711-2 05/03/25 09:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38800	96.9	80.0-120	
Fluoride	8000	7910	98.9	80.0-120	
Sulfate	40000	40800	102	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1853028-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853028-03 05/03/25 09:56 • (MS) R4209711-4 05/03/25 10:22 • (MSD) R4209711-5 05/03/25 10:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	19900	55100	55300	88.0	88.4	1	80.0-120			0.282	15
Fluoride	8000	U	8020	8000	100	100	1	80.0-120			0.242	15
Sulfate	40000	27400	62700	62500	88.2	87.6	1	80.0-120			0.380	15

L1853515-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1853515-10 05/03/25 11:16 • (MS) R4209711-7 05/03/25 11:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	34700	66000	78.3	1	80.0-120	J6
Fluoride	8000	420	8100	96.0	1	80.0-120	
Sulfate	40000	6120	44900	97.1	1	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4209173-2 05/02/25 10:54

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1853992-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1853992-07 05/02/25 14:46 • (DUP) R4209173-5 05/02/25 15:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	1290	1390	1	7.62		20

L1854037-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1854037-03 05/02/25 17:34 • (DUP) R4209173-8 05/02/25 17:51

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	795	587	1	30.1	J P1	20

Laboratory Control Sample (LCS)

(LCS) R4209173-1 05/02/25 10:37

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24500	98.0	80.0-120	

L1853992-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853992-06 05/02/25 13:43 • (MS) R4209173-3 05/02/25 14:05 • (MSD) R4209173-4 05/02/25 14:26

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2000	26300	26700	97.4	98.7	1	75.0-125			1.25	20

L1854037-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854037-02 05/02/25 16:34 • (MS) R4209173-6 05/02/25 16:56 • (MSD) R4209173-7 05/02/25 17:17

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	U	24100	25000	96.4	100	1	75.0-125			3.83	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209186-2 05/02/25 13:57

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1854043-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1854043-04 05/02/25 16:02 • (DUP) R4209186-5 05/02/25 16:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	3400	3190	1	6.34		20

L1854059-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1854059-13 05/02/25 19:36 • (DUP) R4209186-8 05/02/25 19:49

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	1280	1200	1	6.46		20

Laboratory Control Sample (LCS)

(LCS) R4209186-1 05/02/25 13:44

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24900	99.7	80.0-120	

L1853515-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1853515-10 05/02/25 15:15 • (MS) R4209186-3 05/02/25 15:32 • (MSD) R4209186-4 05/02/25 15:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	9770	36000	35900	105	104	1	75.0-125			0.278	20

L1854059-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854059-10 05/02/25 18:45 • (MS) R4209186-6 05/02/25 19:01 • (MSD) R4209186-7 05/02/25 19:17

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	4990	31100	31000	104	104	1	75.0-125			0.387	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4210756-1 05/06/25 20:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4210756-2 05/06/25 20:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	3.16	105	80.0-120	

L1854040-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854040-02 05/06/25 20:57 • (MS) R4210756-4 05/06/25 21:02 • (MSD) R4210756-5 05/06/25 21:05

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	3.20	3.05	107	102	1	75.0-125			4.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4212061-1 05/08/25 20:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4212061-2 05/08/25 20:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	933	93.3	80.0-120	
Silicon	1000	970	97.0	80.0-120	
Sulfur	10000	9430	94.3	80.0-120	

L1854067-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854067-01 05/08/25 20:46 • (MS) R4212061-4 05/08/25 20:50 • (MSD) R4212061-5 05/08/25 20:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	254	1260	1260	101	101	1	75.0-125			0.0707	20
Silicon	1000	5150	6130	6350	98.2	120	1	75.0-125			3.47	20
Sulfur	10000	177000	185000	183000	82.6	66.5	1	75.0-125		V	0.875	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4212540-1 05/09/25 18:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4212540-2 05/09/25 18:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	1010	101	80.0-120	
Iron,Dissolved	1000	972	97.2	80.0-120	
Manganese,Dissolved	50.0	50.1	100	80.0-120	

L1854043-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854043-01 05/09/25 18:38 • (MS) R4212540-4 05/09/25 18:44 • (MSD) R4212540-5 05/09/25 18:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	U	979	994	97.9	99.4	1	75.0-125			1.51	20
Iron,Dissolved	1000	178	1140	1140	96.5	96.0	1	75.0-125			0.385	20
Manganese,Dissolved	50.0	97.9	147	146	97.9	97.2	1	75.0-125			0.241	20

1
Cp

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4212551-1 05/09/25 18:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4212551-2 05/09/25 18:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	996	99.6	80.0-120	
Arsenic	50.0	49.8	99.6	80.0-120	
Cadmium	50.0	50.9	102	80.0-120	
Calcium	5000	4990	99.7	80.0-120	
Chromium	50.0	50.8	102	80.0-120	
Copper	50.0	51.1	102	80.0-120	
Cobalt	50.0	50.8	102	80.0-120	
Iron	1000	996	99.6	80.0-120	
Lead	50.0	50.2	100	80.0-120	
Magnesium	5000	5040	101	80.0-120	
Manganese	50.0	50.2	100	80.0-120	
Nickel	50.0	50.6	101	80.0-120	
Potassium	5000	5080	102	80.0-120	
Selenium	50.0	48.1	96.2	80.0-120	
Sodium	5000	5100	102	80.0-120	
Vanadium	50.0	50.3	101	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4212551-2 05/09/25 18:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	49.3	98.6	80.0-120	

L1854042-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854042-22 05/09/25 18:42 • (MS) R4212551-4 05/09/25 18:48 • (MSD) R4212551-5 05/09/25 18:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	100	1040	1050	94.1	95.0	1	75.0-125			0.829	20
Arsenic	50.0	1.10	50.1	50.3	98.1	98.4	1	75.0-125			0.319	20
Cadmium	50.0	0.125	49.1	49.3	98.0	98.4	1	75.0-125			0.411	20
Calcium	5000	86200	91800	92300	111	122	1	75.0-125			0.614	20
Chromium	50.0	U	48.5	48.5	96.9	97.0	1	75.0-125			0.0868	20
Copper	50.0	3.31	51.8	50.9	97.0	95.3	1	75.0-125			1.73	20
Cobalt	50.0	1.38	49.2	49.7	95.7	96.7	1	75.0-125			1.02	20
Iron	1000	293	1240	1270	95.1	97.8	1	75.0-125			2.09	20
Lead	50.0	U	48.5	47.4	97.0	94.7	1	75.0-125			2.36	20
Magnesium	5000	23600	27900	27700	86.2	80.9	1	75.0-125			0.948	20
Manganese	50.0	37.4	84.8	85.3	94.9	95.9	1	75.0-125			0.615	20
Nickel	50.0	3.72	51.3	51.5	95.2	95.5	1	75.0-125			0.334	20
Potassium	5000	3650	8270	8490	92.5	96.9	1	75.0-125			2.61	20
Selenium	50.0	42.6	93.1	91.7	101	98.3	1	75.0-125			1.45	20
Sodium	5000	222000	226000	228000	78.7	115	1	75.0-125			0.803	20
Vanadium	50.0	1.75	49.9	50.7	96.3	97.9	1	75.0-125			1.63	20
Zinc	50.0	17.1	64.8	64.3	95.3	94.4	1	75.0-125			0.756	20

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Cp

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Tc

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Qc

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Al

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Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

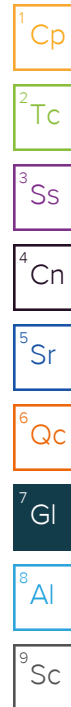
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

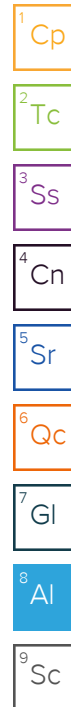
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ				Contract Laboratory Name: ESC				Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work				Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____			
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com ; smaloney@maulfoster.com				Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696											
Project Name: Crook County Limited Groundwater Investigation Sampler Name: <i>Isabel Perez</i>				Sample Preservative											
				HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	HCL	
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250430-1	4/30/25 0748	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250430-4	1 0905	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250430-5	1006	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250430-7	1108	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250430-9	1225	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05
				42570930-7758 Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☐ NCF ☒ OK Sufficient volume sent: ☒ Y ☐ N RA Screen <0.5 mR/hr: ☒ Y ☐ N Containers: 30											
Notes: Dissolved Metals = aluminum, iron, and manganese Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc															
Relinquished By: <i>Isabel Perez</i>				Agency/Agent: <i>MFA</i>				Received By: <i>[Signature]</i>				Agency/Agent: <i>PAGE</i>			
Signature: <i>[Signature]</i>				Time & Date: <i>4/30/2025 1230</i>				Signature: <i>[Signature]</i>				Time & Date: <i>5/1/25 0900</i>			
Relinquished By:				Agency/Agent:				Received By:				Agency/Agent:			
Signature:				Time & Date:				Signature:				Time & Date:			

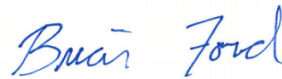
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Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854490
Samples Received: 05/02/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

20250501-2 L1854490-01

Collected by Y. Perez
Collected date/time 05/01/25 08:09
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:02	05/11/25 14:02	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:27	05/10/25 16:27	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505882	1	05/04/25 10:48	05/04/25 10:48	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:43	05/03/25 15:43	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/04/25 23:46	05/04/25 23:46	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 12:40	05/03/25 12:40	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:22	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:13	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:02	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510327	1	05/08/25 19:34	05/09/25 03:24	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:27	SJM	Mt. Juliet, TN

¹Cp

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⁹Sc

20250501-4 L1854490-02

Collected by Y. Perez
Collected date/time 05/01/25 08:44
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:03	05/11/25 14:03	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/11/25 11:11	05/11/25 11:11	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505882	1	05/04/25 10:53	05/04/25 10:53	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:43	05/03/25 15:43	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 08:41	05/05/25 08:41	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 13:42	05/03/25 13:42	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:24	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:15	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:03	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510327	1	05/08/25 19:34	05/09/25 03:28	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:31	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	5	05/10/25 03:28	05/11/25 11:11	SJM	Mt. Juliet, TN

20250501-5 L1854490-03

Collected by Y. Perez
Collected date/time 05/01/25 09:56
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:05	05/11/25 14:05	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:34	05/10/25 16:34	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505882	1	05/04/25 10:58	05/04/25 10:58	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:44	05/03/25 15:44	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 08:55	05/05/25 08:55	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 14:28	05/03/25 14:28	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:27	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:17	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:05	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510327	1	05/08/25 19:34	05/09/25 03:31	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:34	SJM	Mt. Juliet, TN

20250501-7 L1854490-04

Collected by Y. Perez
Collected date/time 05/01/25 10:52
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:07	05/11/25 14:07	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:37	05/10/25 16:37	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505882	1	05/04/25 11:04	05/04/25 11:04	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:45	05/03/25 15:45	DAM	Mt. Juliet, TN

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854490

DATE/TIME:

05/12/25 16:31

PAGE:

3 of 29

SAMPLE SUMMARY

20250501-7 L1854490-04

Collected by Y. Perez
Collected date/time 05/01/25 10:52
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 09:08	05/05/25 09:08	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 14:45	05/03/25 14:45	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:30	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:18	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:07	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510327	1	05/08/25 19:34	05/09/25 03:34	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:37	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	5	05/10/25 03:28	05/11/25 11:14	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

20250501-9 L1854490-05

Collected by Y. Perez
Collected date/time 05/01/25 12:19
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:08	05/11/25 14:08	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/11/25 11:17	05/11/25 11:17	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2505882	1	05/04/25 11:10	05/04/25 11:10	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:45	05/03/25 15:45	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 13:38	05/05/25 13:38	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 15:02	05/03/25 15:02	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:32	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:20	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:08	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510327	1	05/08/25 19:34	05/09/25 03:44	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:40	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	5	05/10/25 03:28	05/11/25 11:17	SJM	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

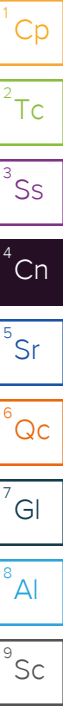
⁹Sc

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.



Brian Ford
Project Manager



Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	36000		165	428	1	05/11/2025 14:02	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	148000		231	2500	1	05/10/2025 16:27	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	202000		4750	20000	1	05/04/2025 10:48	WG2505882
Alkalinity,Bicarbonate	202000		4750	20000	1	05/04/2025 10:48	WG2505882

Sample Narrative:
L1854490-01 WG2505882: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:43	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7430		547	1000	1	05/04/2025 23:46	WG2505891
Fluoride	361		76.1	150	1	05/04/2025 23:46	WG2505891
Sulfate	26500		637	5000	1	05/04/2025 23:46	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	549	J	495	1000	1	05/03/2025 12:40	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:22	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	16.5		4.22	15.0	1	05/10/2025 18:13	WG2510374
Silicon	16800		77.1	200	1	05/11/2025 14:02	WG2510374
Sulfur	8070		160	1000	1	05/10/2025 18:13	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/10/2025 16:27	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 03:24	WG2510327
Arsenic	20.2		0.120	2.00	1	05/10/2025 16:27	WG2510423
Cadmium	0.129	U	0.120	1.00	1	05/10/2025 16:27	WG2510423
Calcium	37700		92.5	1000	1	05/10/2025 16:27	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:27	WG2510423
Copper	6.40		0.700	5.00	1	05/10/2025 16:27	WG2510423
Cobalt	0.162	U	0.100	2.00	1	05/10/2025 16:27	WG2510423
Iron	229		22.6	100	1	05/10/2025 16:27	WG2510423
Iron,Dissolved	168		22.6	100	1	05/09/2025 03:24	WG2510327
Lead	0.526	U	0.500	2.00	1	05/10/2025 16:27	WG2510423
Magnesium	13000		82.7	1000	1	05/10/2025 16:27	WG2510423
Manganese	200		0.700	5.00	1	05/10/2025 16:27	WG2510423
Manganese,Dissolved	197		0.700	5.00	1	05/09/2025 03:24	WG2510327
Nickel	U		0.500	2.00	1	05/10/2025 16:27	WG2510423
Potassium	2320		96.5	2000	1	05/10/2025 16:27	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:27	WG2510423
Sodium	40300		142	2000	1	05/10/2025 16:27	WG2510423
Vanadium	U		0.520	5.00	1	05/10/2025 16:27	WG2510423
Zinc	10.7	U	4.00	25.0	1	05/10/2025 16:27	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	51500		165	428	1	05/11/2025 14:03	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	371000		341	4120	1	05/11/2025 11:11	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	361000		4750	20000	1	05/04/2025 10:53	WG2505882
Alkalinity,Bicarbonate	361000		4750	20000	1	05/04/2025 10:53	WG2505882

Sample Narrative:
L1854490-02 WG2505882: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:43	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	22700		547	1000	1	05/05/2025 08:41	WG2505891
Fluoride	289		76.1	150	1	05/05/2025 08:41	WG2505891
Sulfate	27200		637	5000	1	05/05/2025 08:41	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4310		495	1000	1	05/03/2025 13:42	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:24	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	7.62	J	4.22	15.0	1	05/10/2025 18:15	WG2510374
Silicon	24100		77.1	200	1	05/11/2025 14:03	WG2510374
Sulfur	9550		160	1000	1	05/10/2025 18:15	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/10/2025 16:31	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 03:28	WG2510327
Arsenic	4.06		0.120	2.00	1	05/10/2025 16:31	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:31	WG2510423
Calcium	77600		462	5000	5	05/11/2025 11:11	WG2510423
Chromium	1.06	U	0.900	2.00	1	05/10/2025 16:31	WG2510423
Copper	8.61		0.700	5.00	1	05/10/2025 16:31	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 16:31	WG2510423
Iron	U		22.6	100	1	05/10/2025 16:31	WG2510423
Iron,Dissolved	U		22.6	100	1	05/09/2025 03:28	WG2510327
Lead	U		0.500	2.00	1	05/10/2025 16:31	WG2510423
Magnesium	43100		82.7	1000	1	05/10/2025 16:31	WG2510423
Manganese	U		0.700	5.00	1	05/10/2025 16:31	WG2510423
Manganese,Dissolved	1.08	U	0.700	5.00	1	05/09/2025 03:28	WG2510327
Nickel	0.596	U	0.500	2.00	1	05/10/2025 16:31	WG2510423
Potassium	2670		96.5	2000	1	05/10/2025 16:31	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:31	WG2510423
Sodium	46600		710	10000	5	05/11/2025 11:11	WG2510423
Vanadium	61.5		0.520	5.00	1	05/10/2025 16:31	WG2510423
Zinc	19.2	U	4.00	25.0	1	05/10/2025 16:31	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	45100		165	428	1	05/11/2025 14:05	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	102000		231	2500	1	05/10/2025 16:34	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	158000		4750	20000	1	05/04/2025 10:58	WG2505882
Alkalinity,Bicarbonate	158000		4750	20000	1	05/04/2025 10:58	WG2505882

Sample Narrative:

L1854490-03 WG2505882: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:44	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2790		547	1000	1	05/05/2025 08:55	WG2505891
Fluoride	240		76.1	150	1	05/05/2025 08:55	WG2505891
Sulfate	2990	J	637	5000	1	05/05/2025 08:55	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/03/2025 14:28	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:27	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	11.3	J	4.22	15.0	1	05/10/2025 18:17	WG2510374
Silicon	21100		77.1	200	1	05/11/2025 14:05	WG2510374
Sulfur	941	J	160	1000	1	05/10/2025 18:17	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	29.8	U	16.0	100	1	05/10/2025 16:34	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 03:31	WG2510327
Arsenic	23.7		0.120	2.00	1	05/10/2025 16:34	WG2510423
Cadmium	0.326	U	0.120	1.00	1	05/10/2025 16:34	WG2510423
Calcium	23700		92.5	1000	1	05/10/2025 16:34	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:34	WG2510423
Copper	4.85	U	0.700	5.00	1	05/10/2025 16:34	WG2510423
Cobalt	0.343	U	0.100	2.00	1	05/10/2025 16:34	WG2510423
Iron	126		22.6	100	1	05/10/2025 16:34	WG2510423
Iron,Dissolved	67.8	U	22.6	100	1	05/09/2025 03:31	WG2510327
Lead	0.757	U	0.500	2.00	1	05/10/2025 16:34	WG2510423
Magnesium	10400		82.7	1000	1	05/10/2025 16:34	WG2510423
Manganese	178		0.700	5.00	1	05/10/2025 16:34	WG2510423
Manganese,Dissolved	171		0.700	5.00	1	05/09/2025 03:31	WG2510327
Nickel	U		0.500	2.00	1	05/10/2025 16:34	WG2510423
Potassium	2260		96.5	2000	1	05/10/2025 16:34	WG2510423
Selenium	0.298	U	0.250	2.00	1	05/10/2025 16:34	WG2510423
Sodium	26600		142	2000	1	05/10/2025 16:34	WG2510423
Vanadium	3.03	U	0.520	5.00	1	05/10/2025 16:34	WG2510423
Zinc	6.09	U	4.00	25.0	1	05/10/2025 16:34	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	52700		165	428	1	05/11/2025 14:07	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	329	J	231	2500	1	05/10/2025 16:37	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	158000		4750	20000	1	05/04/2025 11:04	WG2505882
Alkalinity,Bicarbonate	158000		4750	20000	1	05/04/2025 11:04	WG2505882

Sample Narrative:
L1854490-04 WG2505882: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:45	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2490		547	1000	1	05/05/2025 09:08	WG2505891
Fluoride	266		76.1	150	1	05/05/2025 09:08	WG2505891
Sulfate	2950	J	637	5000	1	05/05/2025 09:08	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/03/2025 14:45	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:30	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	7.77	J	4.22	15.0	1	05/10/2025 18:18	WG2510374
Silicon	24600		77.1	200	1	05/11/2025 14:07	WG2510374
Sulfur	925	J	160	1000	1	05/10/2025 18:18	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

20250501-7

SAMPLE RESULTS - 04

Collected date/time: 05/01/25 10:52

L1854490

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/10/2025 16:37	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 03:34	WG2510327
Arsenic	11.1		0.120	2.00	1	05/10/2025 16:37	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:37	WG2510423
Calcium	132	U	92.5	1000	1	05/10/2025 16:37	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:37	WG2510423
Copper	4.56	U	0.700	5.00	1	05/10/2025 16:37	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 16:37	WG2510423
Iron	U		22.6	100	1	05/10/2025 16:37	WG2510423
Iron,Dissolved	U		22.6	100	1	05/09/2025 03:34	WG2510327
Lead	U		0.500	2.00	1	05/10/2025 16:37	WG2510423
Magnesium	U		82.7	1000	1	05/10/2025 16:37	WG2510423
Manganese	U		0.700	5.00	1	05/10/2025 16:37	WG2510423
Manganese,Dissolved	1.53	U	0.700	5.00	1	05/09/2025 03:34	WG2510327
Nickel	U		0.500	2.00	1	05/10/2025 16:37	WG2510423
Potassium	306	U	96.5	2000	1	05/10/2025 16:37	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:37	WG2510423
Sodium	74400		710	10000	5	05/11/2025 11:14	WG2510423
Vanadium	U		0.520	5.00	1	05/10/2025 16:37	WG2510423
Zinc	11.2	U	4.00	25.0	1	05/10/2025 16:37	WG2510423

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

ACCOUNT:

Oregon Dept. of Env. Quality - ODEQ

PROJECT:

SDG:

L1854490

DATE/TIME:

05/12/25 16:31

PAGE:

13 of 29

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	44700		165	428	1	05/11/2025 14:08	WG2510374

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	300000		341	4120	1	05/11/2025 11:17	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	354000		4750	20000	1	05/04/2025 11:10	WG2505882
Alkalinity,Bicarbonate	354000		4750	20000	1	05/04/2025 11:10	WG2505882

Sample Narrative:

L1854490-05 WG2505882: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:45	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18900		547	1000	1	05/05/2025 13:38	WG2505891
Fluoride	331		76.1	150	1	05/05/2025 13:38	WG2505891
Sulfate	21600		637	5000	1	05/05/2025 13:38	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2470		495	1000	1	05/03/2025 15:02	WG2505868

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:32	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	8.22	J	4.22	15.0	1	05/10/2025 18:20	WG2510374
Silicon	20900		77.1	200	1	05/11/2025 14:08	WG2510374
Sulfur	6990		160	1000	1	05/10/2025 18:20	WG2510374

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	U		16.0	100	1	05/10/2025 16:40	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/09/2025 03:44	WG2510327
Arsenic	2.55		0.120	2.00	1	05/10/2025 16:40	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:40	WG2510423
Calcium	64000		462	5000	5	05/11/2025 11:17	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:40	WG2510423
Copper	2.53	U	0.700	5.00	1	05/10/2025 16:40	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 16:40	WG2510423
Iron	U		22.6	100	1	05/10/2025 16:40	WG2510423
Iron,Dissolved	U		22.6	100	1	05/09/2025 03:44	WG2510327
Lead	U		0.500	2.00	1	05/10/2025 16:40	WG2510423
Magnesium	34000		82.7	1000	1	05/10/2025 16:40	WG2510423
Manganese	1.04	U	0.700	5.00	1	05/10/2025 16:40	WG2510423
Manganese,Dissolved	0.732	U	0.700	5.00	1	05/09/2025 03:44	WG2510327
Nickel	U		0.500	2.00	1	05/10/2025 16:40	WG2510423
Potassium	2730		96.5	2000	1	05/10/2025 16:40	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:40	WG2510423
Sodium	48200		710	10000	5	05/11/2025 11:17	WG2510423
Vanadium	36.5		0.520	5.00	1	05/10/2025 16:40	WG2510423
Zinc	33.4		4.00	25.0	1	05/10/2025 16:40	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209514-2 05/04/25 10:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1854635-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854635-02 05/04/25 10:43 • (DUP) R4209514-4 05/04/25 10:45

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	71900	71500	1	0.649		20
Alkalinity,Bicarbonate	71900	71500	1	0.649		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1854407-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854407-02 05/04/25 12:38 • (DUP) R4209514-6 05/04/25 12:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	312000	313000	1	0.159		20
Alkalinity,Bicarbonate	312000	313000	1	0.159		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4209514-1 05/04/25 10:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	100000	100	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4209514-1 05/04/25 10:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209343-1 05/03/25 15:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854247-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1854247-15 05/03/25 15:39 • (DUP) R4209343-7 05/03/25 15:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1854300-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854300-01 05/03/25 15:39 • (DUP) R4209343-8 05/03/25 15:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4209343-2 05/03/25 15:36

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	515	103	85.0-115	

L1854247-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854247-13 05/03/25 15:36 • (MS) R4209343-3 05/03/25 15:36 • (MSD) R4209343-4 05/03/25 15:36

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	500	479	100	95.8	1	80.0-120			4.29	20

L1854247-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854247-14 05/03/25 15:37 • (MS) R4209343-5 05/03/25 15:37 • (MSD) R4209343-6 05/03/25 15:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	437	429	87.4	85.8	1	80.0-120			1.85	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209905-1 05/04/25 21:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1854376-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1854376-14 05/04/25 22:13 • (DUP) R4209905-3 05/04/25 22:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	U	U	1	0.000		15
Fluoride	U	U	1	0.000		15
Sulfate	U	U	1	0.000		15

L1854547-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854547-02 05/05/25 11:36 • (DUP) R4209905-5 05/05/25 11:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10300	10100	1	1.75		15
Fluoride	265	221	1	18.1	P1	15
Sulfate	28200	25900	1	8.28		15

Laboratory Control Sample (LCS)

(LCS) R4209905-2 05/04/25 21:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38200	95.4	80.0-120	
Fluoride	8000	7730	96.6	80.0-120	
Sulfate	40000	40400	101	80.0-120	

1
Cp

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Tc

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Ss

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Cn

5
Sr

6
Qc

7
Gl

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Al

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Sc

L1854376-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L1854376-14 05/04/25 22:13 • (MS) R4209905-4 05/04/25 22:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	U	39800	99.6	1	80.0-120	
Fluoride	8000	U	8100	101	1	80.0-120	
Sulfate	40000	U	41900	105	1	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/05/25 11:36 • (MS) R4209905-6 05/05/25 12:03 • (MSD) R4209905-7 05/05/25 12:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	10300	49000	49200	96.6	97.2	1	80.0-120			0.504	15
Fluoride	8000	265	8330	8470	101	103	1	80.0-120			1.61	15
Sulfate	40000	28200	63100	62100	87.3	84.9	1	80.0-120			1.54	15

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209423-2 05/03/25 12:12

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1854490-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854490-02 05/03/25 13:42 • (DUP) R4209423-5 05/03/25 14:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	4310	4470	1	3.56		20

L1854562-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1854562-04 05/03/25 18:31 • (DUP) R4209423-8 05/03/25 18:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	881	891	1	1.14	⬇	20

Laboratory Control Sample (LCS)

(LCS) R4209423-1 05/03/25 11:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24700	98.8	80.0-120	

L1854490-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854490-01 05/03/25 12:40 • (MS) R4209423-3 05/03/25 13:02 • (MSD) R4209423-4 05/03/25 13:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	549	25200	25400	98.8	99.5	1	75.0-125			0.750	20

L1854562-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854562-03 05/03/25 17:27 • (MS) R4209423-6 05/03/25 17:49 • (MSD) R4209423-7 05/03/25 18:11

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2120	27400	27100	101	99.9	1	75.0-125			1.10	20

1

Cp

2

Tc

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Ss

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Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4211806-1 05/08/25 12:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4211806-2 05/08/25 12:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	2.92	97.4	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/08/25 12:43 • (MS) R4211806-4 05/08/25 12:53 • (MSD) R4211806-5 05/08/25 12:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	3.00	U	2.84	2.64	94.6	88.0	1	75.0-125			7.25	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4212944-1 05/10/25 17:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4212944-2 05/10/25 17:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1010	101	80.0-120	
Silicon	1000	978	97.8	80.0-120	
Sulfur	10000	9850	98.5	80.0-120	

L1854515-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854515-02 05/10/25 17:54 • (MS) R4212944-4 05/10/25 17:57 • (MSD) R4212944-5 05/10/25 17:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	141	1180	1150	104	101	1	75.0-125			2.44	20
Silicon	1000	10300	11000	10900	72.2	62.2	1	75.0-125	V	V	0.909	20
Sulfur	10000	20400	29100	29000	87.7	86.7	1	75.0-125			0.326	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

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Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4212137-1 05/09/25 03:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4212137-2 05/09/25 03:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	945	94.5	80.0-120	
Iron,Dissolved	1000	983	98.3	80.0-120	
Manganese,Dissolved	50.0	47.3	94.7	80.0-120	

L1854505-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854505-08 05/09/25 03:11 • (MS) R4212137-4 05/09/25 03:18 • (MSD) R4212137-5 05/09/25 03:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	29.3	949	949	92.0	92.0	1	75.0-125			0.0381	20
Iron,Dissolved	1000	4840	6160	6060	132	122	1	75.0-125	V		1.74	20
Manganese,Dissolved	50.0	221	277	271	113	100	1	75.0-125			2.42	20

1
Cp

2
Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R4212893-1 05/10/25 15:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

1
Cp

2
Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R4212893-2 05/10/25 15:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1040	104	80.0-120	
Arsenic	50.0	50.1	100	80.0-120	
Cadmium	50.0	51.5	103	80.0-120	
Calcium	5000	5040	101	80.0-120	
Chromium	50.0	51.7	103	80.0-120	
Copper	50.0	49.8	99.7	80.0-120	
Cobalt	50.0	52.1	104	80.0-120	
Iron	1000	1040	104	80.0-120	
Lead	50.0	51.2	102	80.0-120	
Magnesium	5000	5280	106	80.0-120	
Manganese	50.0	52.0	104	80.0-120	
Nickel	50.0	52.8	106	80.0-120	
Potassium	5000	5070	101	80.0-120	
Selenium	50.0	49.9	99.8	80.0-120	
Sodium	5000	5400	108	80.0-120	
Vanadium	50.0	51.5	103	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4212893-2 05/10/25 15:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	55.5	111	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/10/25 15:52 • (MS) R4212893-4 05/10/25 15:59 • (MSD) R4212893-5 05/10/25 16:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	150	1210	1230	106	108	1	75.0-125			0.966	20
Arsenic	50.0	23.2	74.2	73.7	102	101	1	75.0-125			0.733	20
Cadmium	50.0	U	53.2	52.6	106	105	1	75.0-125			1.16	20
Calcium	5000	161000	164000	164000	72.8	59.4	1	75.0-125	V	V	0.406	20
Chromium	50.0	U	52.0	51.7	104	103	1	75.0-125			0.573	20
Copper	50.0	1.87	50.1	49.6	96.5	95.4	1	75.0-125			1.12	20
Cobalt	50.0	0.817	51.8	52.4	102	103	1	75.0-125			1.23	20
Iron	1000	23100	24000	24200	87.7	109	1	75.0-125			0.902	20
Lead	50.0	0.637	51.8	51.7	102	102	1	75.0-125			0.281	20
Magnesium	5000	43900	49500	48300	111	87.9	1	75.0-125			2.40	20
Manganese	50.0	3790	3790	3810	1.94	41.5	1	75.0-125	V	V	0.520	20
Nickel	50.0	1.83	52.1	52.5	101	101	1	75.0-125			0.769	20
Potassium	5000	6050	11100	11100	101	102	1	75.0-125			0.650	20
Selenium	50.0	0.307	50.6	49.9	101	99.1	1	75.0-125			1.53	20
Sodium	5000	16300	21200	20800	96.7	90.3	1	75.0-125			1.54	20
Vanadium	50.0	1.08	52.7	52.1	103	102	1	75.0-125			1.27	20
Zinc	50.0	4.01	52.2	52.5	96.4	97.0	1	75.0-125			0.580	20

1
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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.

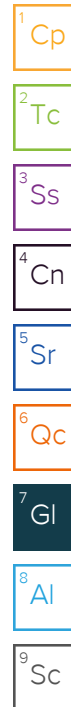
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

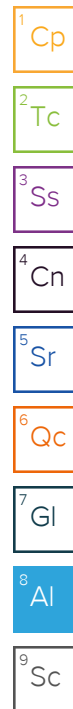
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



State of Oregon Chain of Custody

B181

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfooster.com ; smaloney@maulfooster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name: Crook County Limited Groundwater Investigation				Sample Preservative HNO3 HNO3 HNO3 None None None NaOH None None HNO3 HCL										Comments L1854490
Sampler Name: Y. SABEL PEREZ														
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)
20250501-2	5/1/25 0807	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20250501-4	0844	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20250501-5	0956	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20250501-7	1032	w	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20250501-9	1219	w	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample Receipt Checklist
 COC Seal Present/Intact: ☒ Y ☐ N ☐ NP 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 Condition: ☐ NCF ☒ OK
 RA Screen <0.5 mR/hr: ☒ Y ☐ N

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: <i>[Signature]</i>	Agency/Agent: <i>MFA</i>	Received By: <i>Alexa Mitchell</i>	Agency/Agent: <i>PAGE</i>
Signature: <i>[Signature]</i>	Time & Date: <i>5/1/2025 1245</i>	Signature: <i>Alexa Mitchell</i>	Time & Date: <i>5/2/25 0900</i>
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

T#420813662181

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group: L1854524
Samples Received: 05/02/2025
Project Number:
Description: Crook County Limited Groundwater Investigation

Report To: Amy Patton
700 NE Multnomah St
Suite 600
Portland, OR 97232

Entire Report Reviewed By:



Brian Ford
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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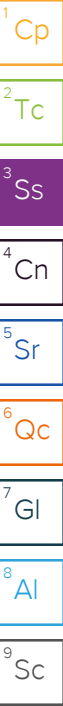
¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20250501-1 L1854524-01

Collected by SM
Collected date/time 05/01/25 07:40
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:10	05/11/25 14:10	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/11/25 11:20	05/11/25 11:20	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506400	1	05/04/25 11:04	05/04/25 11:04	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:46	05/03/25 15:46	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 10:15	05/05/25 10:15	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 15:21	05/03/25 15:21	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:35	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:23	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:10	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 08:54	05/10/25 01:33	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:43	SJM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	5	05/10/25 03:28	05/11/25 11:20	SJM	Mt. Juliet, TN



20250501-3 L1854524-02

Collected by SM
Collected date/time 05/01/25 09:00
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:12	05/11/25 14:12	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:47	05/10/25 16:47	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506400	1	05/04/25 11:30	05/04/25 11:30	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:47	05/03/25 15:47	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 10:29	05/05/25 10:29	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 15:40	05/03/25 15:40	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:37	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:25	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:12	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 08:54	05/10/25 01:42	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:47	SJM	Mt. Juliet, TN

20250501-3-DUP L1854524-03

Collected by SM
Collected date/time 05/01/25 09:00
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:13	05/11/25 14:13	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:50	05/10/25 16:50	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506400	1	05/04/25 11:36	05/04/25 11:36	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:48	05/03/25 15:48	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 10:42	05/05/25 10:42	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 15:58	05/03/25 15:58	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:45	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:30	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:13	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 08:54	05/10/25 01:45	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:50	SJM	Mt. Juliet, TN

20250501-6 L1854524-04

Collected by SM
Collected date/time 05/01/25 10:15
Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:15	05/11/25 14:15	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 16:53	05/10/25 16:53	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506469	1	05/04/25 14:34	05/04/25 14:34	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:48	05/03/25 15:48	DAM	Mt. Juliet, TN

SAMPLE SUMMARY

20250501-6 L1854524-04

Collected by SM Collected date/time 05/01/25 10:15 Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 10:56	05/05/25 10:56	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 16:15	05/03/25 16:15	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:48	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:32	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:15	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 09:05	05/10/25 01:48	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 16:53	SJM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

20250501-8 L1854524-05

Collected by SM Collected date/time 05/01/25 11:25 Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2510374	1	05/11/25 14:17	05/11/25 14:17	MAP	Mt. Juliet, TN
Calculated Results	WG2510423	1	05/10/25 17:03	05/10/25 17:03	SJM	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2506400	1	05/04/25 11:45	05/04/25 11:45	BJM	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2505989	1	05/03/25 15:49	05/03/25 15:49	DAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2505891	1	05/05/25 11:09	05/05/25 11:09	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG2505868	1	05/03/25 16:32	05/03/25 16:32	KAM	Mt. Juliet, TN
Mercury by Method 7470A	WG2506235	1	05/07/25 13:26	05/08/25 13:51	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/10/25 18:33	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2510374	1	05/10/25 01:30	05/11/25 14:17	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 08:54	05/10/25 01:51	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2510423	1	05/10/25 03:28	05/10/25 17:03	SJM	Mt. Juliet, TN

⁶Qc

⁷Gl

⁸Al

⁹Sc

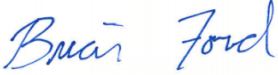
20250501-FB L1854524-06

Collected by SM Collected date/time 05/01/25 07:50 Received date/time 05/02/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2510329	1	05/09/25 08:54	05/10/25 01:54	UNP	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.



Brian Ford
Project Manager

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

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	50800		165	428	1	05/11/2025 14:10	WG2510374

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	329000		341	4120	1	05/11/2025 11:20	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	343000		4750	20000	1	05/04/2025 11:04	WG2506400
Alkalinity,Bicarbonate	343000		4750	20000	1	05/04/2025 11:04	WG2506400

Sample Narrative:

L1854524-01 WG2506400: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:46	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	13500		547	1000	1	05/05/2025 10:15	WG2505891
Fluoride	357		76.1	150	1	05/05/2025 10:15	WG2505891
Sulfate	22700		637	5000	1	05/05/2025 10:15	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2990		495	1000	1	05/03/2025 15:21	WG2505868

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:35	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/11/2025 14:10	WG2510374
Silicon	23700		77.1	200	1	05/11/2025 14:10	WG2510374
Sulfur	7660		160	1000	1	05/10/2025 18:23	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	60.2	U	16.0	100	1	05/10/2025 16:43	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:33	WG2510329
Arsenic	4.16		0.120	2.00	1	05/10/2025 16:43	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:43	WG2510423
Calcium	72800		462	5000	5	05/11/2025 11:20	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:43	WG2510423
Copper	17.9		0.700	5.00	1	05/10/2025 16:43	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 16:43	WG2510423
Iron	U		22.6	100	1	05/10/2025 16:43	WG2510423
Iron,Dissolved	U		22.6	100	1	05/10/2025 01:33	WG2510329
Lead	0.772	U	0.500	2.00	1	05/10/2025 16:43	WG2510423
Magnesium	35700		82.7	1000	1	05/10/2025 16:43	WG2510423
Manganese	U		0.700	5.00	1	05/10/2025 16:43	WG2510423
Manganese,Dissolved	U		0.700	5.00	1	05/10/2025 01:33	WG2510329
Nickel	0.520	U	0.500	2.00	1	05/10/2025 16:43	WG2510423
Potassium	3010		96.5	2000	1	05/10/2025 16:43	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:43	WG2510423
Sodium	48800		710	10000	5	05/11/2025 11:20	WG2510423
Vanadium	54.7		0.520	5.00	1	05/10/2025 16:43	WG2510423
Zinc	5.77	U	4.00	25.0	1	05/10/2025 16:43	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	47300		165	428	1	05/11/2025 14:12	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	98600		231	2500	1	05/10/2025 16:47	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	159000		4750	20000	1	05/04/2025 11:30	WG2506400
Alkalinity,Bicarbonate	159000		4750	20000	1	05/04/2025 11:30	WG2506400

Sample Narrative:
L1854524-02 WG2506400: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:47	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2550		547	1000	1	05/05/2025 10:29	WG2505891
Fluoride	227		76.1	150	1	05/05/2025 10:29	WG2505891
Sulfate	3230	J	637	5000	1	05/05/2025 10:29	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/03/2025 15:40	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:37	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	U		4.22	15.0	1	05/10/2025 18:25	WG2510374
Silicon	22100		77.1	200	1	05/11/2025 14:12	WG2510374
Sulfur	1060		160	1000	1	05/10/2025 18:25	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	203		16.0	100	1	05/10/2025 16:47	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:42	WG2510329
Arsenic	22.8		0.120	2.00	1	05/10/2025 16:47	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:47	WG2510423
Calcium	23200		92.5	1000	1	05/10/2025 16:47	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:47	WG2510423
Copper	10.4		0.700	5.00	1	05/10/2025 16:47	WG2510423
Cobalt	0.313	U	0.100	2.00	1	05/10/2025 16:47	WG2510423
Iron	500		22.6	100	1	05/10/2025 16:47	WG2510423
Iron,Dissolved	112		22.6	100	1	05/10/2025 01:42	WG2510329
Lead	U		0.500	2.00	1	05/10/2025 16:47	WG2510423
Magnesium	9860		82.7	1000	1	05/10/2025 16:47	WG2510423
Manganese	177		0.700	5.00	1	05/10/2025 16:47	WG2510423
Manganese,Dissolved	167		0.700	5.00	1	05/10/2025 01:42	WG2510329
Nickel	0.582	U	0.500	2.00	1	05/10/2025 16:47	WG2510423
Potassium	2160		96.5	2000	1	05/10/2025 16:47	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:47	WG2510423
Sodium	29500		142	2000	1	05/10/2025 16:47	WG2510423
Vanadium	1.04	U	0.520	5.00	1	05/10/2025 16:47	WG2510423
Zinc	4.95	U	4.00	25.0	1	05/10/2025 16:47	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	48400		165	428	1	05/11/2025 14:13	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	98500		231	2500	1	05/10/2025 16:50	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	159000		4750	20000	1	05/04/2025 11:36	WG2506400
Alkalinity,Bicarbonate	159000		4750	20000	1	05/04/2025 11:36	WG2506400

Sample Narrative:

L1854524-03 WG2506400: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:48	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2560		547	1000	1	05/05/2025 10:42	WG2505891
Fluoride	229		76.1	150	1	05/05/2025 10:42	WG2505891
Sulfate	3170	J	637	5000	1	05/05/2025 10:42	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/03/2025 15:58	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:45	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	5.67	J	4.22	15.0	1	05/10/2025 18:30	WG2510374
Silicon	22600		77.1	200	1	05/11/2025 14:13	WG2510374
Sulfur	1160		160	1000	1	05/10/2025 18:30	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	248		16.0	100	1	05/10/2025 16:50	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:45	WG2510329
Arsenic	22.6		0.120	2.00	1	05/10/2025 16:50	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:50	WG2510423
Calcium	23300		92.5	1000	1	05/10/2025 16:50	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:50	WG2510423
Copper	11.9		0.700	5.00	1	05/10/2025 16:50	WG2510423
Cobalt	0.362	U	0.100	2.00	1	05/10/2025 16:50	WG2510423
Iron	604		22.6	100	1	05/10/2025 16:50	WG2510423
Iron,Dissolved	105		22.6	100	1	05/10/2025 01:45	WG2510329
Lead	U		0.500	2.00	1	05/10/2025 16:50	WG2510423
Magnesium	9810		82.7	1000	1	05/10/2025 16:50	WG2510423
Manganese	180		0.700	5.00	1	05/10/2025 16:50	WG2510423
Manganese,Dissolved	164		0.700	5.00	1	05/10/2025 01:45	WG2510329
Nickel	0.773	U	0.500	2.00	1	05/10/2025 16:50	WG2510423
Potassium	2160		96.5	2000	1	05/10/2025 16:50	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:50	WG2510423
Sodium	29300		142	2000	1	05/10/2025 16:50	WG2510423
Vanadium	1.24	U	0.520	5.00	1	05/10/2025 16:50	WG2510423
Zinc	6.35	U	4.00	25.0	1	05/10/2025 16:50	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Silica	46300		165	428	1	05/11/2025 14:15	WG2510374

Calculated Results

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	160000		231	2500	1	05/10/2025 16:53	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	209000		4750	20000	1	05/04/2025 14:34	WG2506469
Alkalinity,Bicarbonate	209000		4750	20000	1	05/04/2025 14:34	WG2506469

Sample Narrative:

L1854524-04 WG2506469: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:48	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	4530		547	1000	1	05/05/2025 10:56	WG2505891
Fluoride	357		76.1	150	1	05/05/2025 10:56	WG2505891
Sulfate	18600		637	5000	1	05/05/2025 10:56	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1020		495	1000	1	05/03/2025 16:15	WG2505868

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:48	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lithium	7.90	J	4.22	15.0	1	05/10/2025 18:32	WG2510374
Silicon	21700		77.1	200	1	05/11/2025 14:15	WG2510374
Sulfur	6000		160	1000	1	05/10/2025 18:32	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	17.8	U	16.0	100	1	05/10/2025 16:53	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:48	WG2510329
Arsenic	7.94		0.120	2.00	1	05/10/2025 16:53	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 16:53	WG2510423
Calcium	34800		92.5	1000	1	05/10/2025 16:53	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 16:53	WG2510423
Copper	4.07	U	0.700	5.00	1	05/10/2025 16:53	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 16:53	WG2510423
Iron	25.5	U	22.6	100	1	05/10/2025 16:53	WG2510423
Iron,Dissolved	U		22.6	100	1	05/10/2025 01:48	WG2510329
Lead	U		0.500	2.00	1	05/10/2025 16:53	WG2510423
Magnesium	17800		82.7	1000	1	05/10/2025 16:53	WG2510423
Manganese	30.8		0.700	5.00	1	05/10/2025 16:53	WG2510423
Manganese,Dissolved	29.9		0.700	5.00	1	05/10/2025 01:48	WG2510329
Nickel	0.612	U	0.500	2.00	1	05/10/2025 16:53	WG2510423
Potassium	3870		96.5	2000	1	05/10/2025 16:53	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 16:53	WG2510423
Sodium	36900		142	2000	1	05/10/2025 16:53	WG2510423
Vanadium	16.8		0.520	5.00	1	05/10/2025 16:53	WG2510423
Zinc	5.39	U	4.00	25.0	1	05/10/2025 16:53	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Silica	52800		165	428	1	05/11/2025 14:17	WG2510374

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hardness (calculated) as CaCO3	84100		231	2500	1	05/10/2025 17:03	WG2510423

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	159000		4750	20000	1	05/04/2025 11:45	WG2506400
Alkalinity,Bicarbonate	159000		4750	20000	1	05/04/2025 11:45	WG2506400

Sample Narrative:

L1854524-05 WG2506400: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Sulfide	U		25.5	50.0	1	05/03/2025 15:49	WG2505989

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2660		547	1000	1	05/05/2025 11:09	WG2505891
Fluoride	325		76.1	150	1	05/05/2025 11:09	WG2505891
Sulfate	3470	J	637	5000	1	05/05/2025 11:09	WG2505891

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	U		495	1000	1	05/03/2025 16:32	WG2505868

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0700	0.200	1	05/08/2025 13:51	WG2506235

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lithium	7.18	J	4.22	15.0	1	05/10/2025 18:33	WG2510374
Silicon	24700		77.1	200	1	05/11/2025 14:17	WG2510374
Sulfur	1270		160	1000	1	05/10/2025 18:33	WG2510374

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum	17.3	U	16.0	100	1	05/10/2025 17:03	WG2510423
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:51	WG2510329
Arsenic	22.8		0.120	2.00	1	05/10/2025 17:03	WG2510423
Cadmium	U		0.120	1.00	1	05/10/2025 17:03	WG2510423
Calcium	19600		92.5	1000	1	05/10/2025 17:03	WG2510423
Chromium	U		0.900	2.00	1	05/10/2025 17:03	WG2510423
Copper	0.736	U	0.700	5.00	1	05/10/2025 17:03	WG2510423
Cobalt	U		0.100	2.00	1	05/10/2025 17:03	WG2510423
Iron	121		22.6	100	1	05/10/2025 17:03	WG2510423
Iron,Dissolved	81.6	U	22.6	100	1	05/10/2025 01:51	WG2510329
Lead	U		0.500	2.00	1	05/10/2025 17:03	WG2510423
Magnesium	8520		82.7	1000	1	05/10/2025 17:03	WG2510423
Manganese	232		0.700	5.00	1	05/10/2025 17:03	WG2510423
Manganese,Dissolved	228		0.700	5.00	1	05/10/2025 01:51	WG2510329
Nickel	U		0.500	2.00	1	05/10/2025 17:03	WG2510423
Potassium	2460		96.5	2000	1	05/10/2025 17:03	WG2510423
Selenium	U		0.250	2.00	1	05/10/2025 17:03	WG2510423
Sodium	33800		142	2000	1	05/10/2025 17:03	WG2510423
Vanadium	U		0.520	5.00	1	05/10/2025 17:03	WG2510423
Zinc	U		4.00	25.0	1	05/10/2025 17:03	WG2510423

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Aluminum,Dissolved	U		16.0	100	1	05/10/2025 01:54	WG2510329
Iron,Dissolved	U		22.6	100	1	05/10/2025 01:54	WG2510329
Manganese,Dissolved	U		0.700	5.00	1	05/10/2025 01:54	WG2510329

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209512-2 05/04/25 10:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1854524-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854524-01 05/04/25 11:04 • (DUP) R4209512-3 05/04/25 11:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	343000	351000	1	2.28		20
Alkalinity,Bicarbonate	343000	351000	1	2.28		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1854852-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854852-01 05/04/25 14:08 • (DUP) R4209512-4 05/04/25 14:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	60400	63700	1	5.36		20
Alkalinity,Bicarbonate	60400	63700	1	5.36		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4209512-1 05/04/25 10:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	105000	105	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4209512-1 05/04/25 10:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
	ug/l	ug/l	%	%	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4210257-2 05/04/25 13:23

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity	U		4750	20000
Alkalinity,Bicarbonate	U		4750	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1854017-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1854017-10 05/04/25 13:40 • (DUP) R4210257-3 05/04/25 13:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	466000	476000	1	2.21		20
Alkalinity,Bicarbonate	466000	476000	1	2.21		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

L1854815-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854815-02 05/04/25 15:25 • (DUP) R4210257-4 05/04/25 15:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	157000	159000	1	0.932		20
Alkalinity,Bicarbonate	157000	159000	1	0.932		20

Sample Narrative:
OS: Endpoint pH 4.5 Headspace
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Alkalinity	100000	99300	99.3	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4210257-1 05/04/25 13:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4209343-1 05/03/25 15:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Sulfide	U		25.5	50.0

L1854247-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1854247-15 05/03/25 15:39 • (DUP) R4209343-7 05/03/25 15:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

L1854300-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854300-01 05/03/25 15:39 • (DUP) R4209343-8 05/03/25 15:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfide	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4209343-2 05/03/25 15:36

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Sulfide	500	515	103	85.0-115	

L1854247-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854247-13 05/03/25 15:36 • (MS) R4209343-3 05/03/25 15:36 • (MSD) R4209343-4 05/03/25 15:36

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	500	479	100	95.8	1	80.0-120			4.29	20

L1854247-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854247-14 05/03/25 15:37 • (MS) R4209343-5 05/03/25 15:37 • (MSD) R4209343-6 05/03/25 15:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfide	500	U	437	429	87.4	85.8	1	80.0-120			1.85	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209905-1 05/04/25 21:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		547	1000
Fluoride	U		76.1	150
Sulfate	U		637	5000

L1854376-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1854376-14 05/04/25 22:13 • (DUP) R4209905-3 05/04/25 22:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	U	U	1	0.000		15
Fluoride	U	U	1	0.000		15
Sulfate	U	U	1	0.000		15

L1854547-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854547-02 05/05/25 11:36 • (DUP) R4209905-5 05/05/25 11:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10300	10100	1	1.75		15
Fluoride	265	221	1	18.1	P1	15
Sulfate	28200	25900	1	8.28		15

Laboratory Control Sample (LCS)

(LCS) R4209905-2 05/04/25 21:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38200	95.4	80.0-120	
Fluoride	8000	7730	96.6	80.0-120	
Sulfate	40000	40400	101	80.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1854376-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L1854376-14 05/04/25 22:13 • (MS) R4209905-4 05/04/25 22:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	U	39800	99.6	1	80.0-120	
Fluoride	8000	U	8100	101	1	80.0-120	
Sulfate	40000	U	41900	105	1	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/05/25 11:36 • (MS) R4209905-6 05/05/25 12:03 • (MSD) R4209905-7 05/05/25 12:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	10300	49000	49200	96.6	97.2	1	80.0-120			0.504	15
Fluoride	8000	265	8330	8470	101	103	1	80.0-120			1.61	15
Sulfate	40000	28200	63100	62100	87.3	84.9	1	80.0-120			1.54	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4209423-2 05/03/25 12:12

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		495	1000

L1854490-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1854490-02 05/03/25 13:42 • (DUP) R4209423-5 05/03/25 14:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	4310	4470	1	3.56		20

L1854562-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1854562-04 05/03/25 18:31 • (DUP) R4209423-8 05/03/25 18:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	881	891	1	1.14	⬇	20

Laboratory Control Sample (LCS)

(LCS) R4209423-1 05/03/25 11:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
TOC (Total Organic Carbon)	25000	24700	98.8	80.0-120	

L1854490-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854490-01 05/03/25 12:40 • (MS) R4209423-3 05/03/25 13:02 • (MSD) R4209423-4 05/03/25 13:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	549	25200	25400	98.8	99.5	1	75.0-125			0.750	20

L1854562-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854562-03 05/03/25 17:27 • (MS) R4209423-6 05/03/25 17:49 • (MSD) R4209423-7 05/03/25 18:11

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	25000	2120	27400	27100	101	99.9	1	75.0-125			1.10	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4211806-1 05/08/25 12:38

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0700	0.200

Laboratory Control Sample (LCS)

(LCS) R4211806-2 05/08/25 12:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Mercury	3.00	2.92	97.4	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/08/25 12:43 • (MS) R4211806-4 05/08/25 12:53 • (MSD) R4211806-5 05/08/25 12:55

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.84	2.64	94.6	88.0	1	75.0-125			7.25	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4212944-1 05/10/25 17:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lithium	U		4.22	15.0
Silicon	U		77.1	200
Sulfur	U		160	1000

Laboratory Control Sample (LCS)

(LCS) R4212944-2 05/10/25 17:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1000	1010	101	80.0-120	
Silicon	1000	978	97.8	80.0-120	
Sulfur	10000	9850	98.5	80.0-120	

L1854515-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854515-02 05/10/25 17:54 • (MS) R4212944-4 05/10/25 17:57 • (MSD) R4212944-5 05/10/25 17:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1000	141	1180	1150	104	101	1	75.0-125			2.44	20
Silicon	1000	10300	11000	10900	72.2	62.2	1	75.0-125	V	V	0.909	20
Sulfur	10000	20400	29100	29000	87.7	86.7	1	75.0-125			0.326	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4212631-1 05/10/25 00:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum,Dissolved	U		16.0	100
Iron,Dissolved	U		22.6	100
Manganese,Dissolved	U		0.700	5.00

Laboratory Control Sample (LCS)

(LCS) R4212631-2 05/10/25 00:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum,Dissolved	1000	1000	100	80.0-120	
Iron,Dissolved	1000	1020	102	80.0-120	
Manganese,Dissolved	50.0	50.8	102	80.0-120	

L1854505-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854505-20 05/10/25 00:37 • (MS) R4212631-4 05/10/25 00:40 • (MSD) R4212631-5 05/10/25 00:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	1000	25.2	996	1030	97.1	100	1	75.0-125			2.91	20
Iron,Dissolved	1000	17500	18300	18400	79.9	88.9	1	75.0-125			0.489	20
Manganese,Dissolved	50.0	509	553	558	87.6	97.6	1	75.0-125			0.904	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R4212893-1 05/10/25 15:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Aluminum	U		16.0	100
Arsenic	U		0.120	2.00
Cadmium	U		0.120	1.00
Calcium	U		92.5	1000
Chromium	U		0.900	2.00
Copper	U		0.700	5.00
Cobalt	U		0.100	2.00
Iron	U		22.6	100
Lead	U		0.500	2.00
Magnesium	U		82.7	1000
Manganese	U		0.700	5.00
Nickel	U		0.500	2.00
Potassium	U		96.5	2000
Selenium	U		0.250	2.00
Sodium	U		142	2000
Vanadium	U		0.520	5.00
Zinc	U		4.00	25.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4212893-2 05/10/25 15:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	1040	104	80.0-120	
Arsenic	50.0	50.1	100	80.0-120	
Cadmium	50.0	51.5	103	80.0-120	
Calcium	5000	5040	101	80.0-120	
Chromium	50.0	51.7	103	80.0-120	
Copper	50.0	49.8	99.7	80.0-120	
Cobalt	50.0	52.1	104	80.0-120	
Iron	1000	1040	104	80.0-120	
Lead	50.0	51.2	102	80.0-120	
Magnesium	5000	5280	106	80.0-120	
Manganese	50.0	52.0	104	80.0-120	
Nickel	50.0	52.8	106	80.0-120	
Potassium	5000	5070	101	80.0-120	
Selenium	50.0	49.9	99.8	80.0-120	
Sodium	5000	5400	108	80.0-120	
Vanadium	50.0	51.5	103	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4212893-2 05/10/25 15:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Zinc	50.0	55.5	111	80.0-120	

L1854547-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1854547-02 05/10/25 15:52 • (MS) R4212893-4 05/10/25 15:59 • (MSD) R4212893-5 05/10/25 16:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	1000	150	1210	1230	106	108	1	75.0-125			0.966	20
Arsenic	50.0	23.2	74.2	73.7	102	101	1	75.0-125			0.733	20
Cadmium	50.0	U	53.2	52.6	106	105	1	75.0-125			1.16	20
Calcium	5000	161000	164000	164000	72.8	59.4	1	75.0-125	V	V	0.406	20
Chromium	50.0	U	52.0	51.7	104	103	1	75.0-125			0.573	20
Copper	50.0	1.87	50.1	49.6	96.5	95.4	1	75.0-125			1.12	20
Cobalt	50.0	0.817	51.8	52.4	102	103	1	75.0-125			1.23	20
Iron	1000	23100	24000	24200	87.7	109	1	75.0-125			0.902	20
Lead	50.0	0.637	51.8	51.7	102	102	1	75.0-125			0.281	20
Magnesium	5000	43900	49500	48300	111	87.9	1	75.0-125			2.40	20
Manganese	50.0	3790	3790	3810	1.94	41.5	1	75.0-125	V	V	0.520	20
Nickel	50.0	1.83	52.1	52.5	101	101	1	75.0-125			0.769	20
Potassium	5000	6050	11100	11100	101	102	1	75.0-125			0.650	20
Selenium	50.0	0.307	50.6	49.9	101	99.1	1	75.0-125			1.53	20
Sodium	5000	16300	21200	20800	96.7	90.3	1	75.0-125			1.54	20
Vanadium	50.0	1.08	52.7	52.1	103	102	1	75.0-125			1.27	20
Zinc	50.0	4.01	52.2	52.5	96.4	97.0	1	75.0-125			0.580	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.

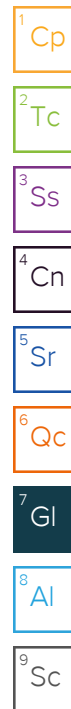
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

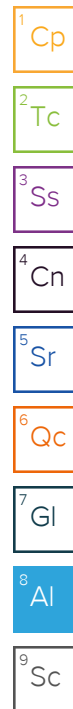
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC		Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbezinger@maulfoster.com ; smaloney@maulfoster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696			

Project Name: Crook County Limited Groundwater Investigation					Sample Preservative										
					HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	
Sampler Name: Sean Maloney															
Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250501-1	5-1 0740	W	6	X	X	X	X	X	X	X	X	X	X	X	-01
20250501-3	0900	W	6	X	X	X	X	X	X	X	X	X	X	X	-02
20250501-3-DUP	0900	W	6	X	X	X	X	X	X	X	X	X	X	X	-03
20250501-6	1015	W	6	X	X	X	X	X	X	X	X	X	X	X	-04
20250501-8	1125	W	6	X	X	X	X	X	X	X	X	X	X	X	-05
20250501-FB	0750	W	1			X									-06

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: Sean Maloney	Agency/Agent: MFA	Received By:	Agency/Agent:
Signature:	Time & Date: 5-1-25 12:45	Signature:	Time & Date: 5-2-25 0900
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Containers: 31

Sample Receipt Checklist

Seal Present/Intact:	☒ Y ☐ N	NP	If Applicable
Ignited/Accurate:	☒ Y ☐ N	VOA Zero Headspace:	☒ Y ☐ N
es arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
ct bottles used:	☒ Y ☐ N		
cient volume sent:	☒ Y ☐ N	Condition:	NCF ☒ OK
reen <0.5 mR/hr:	☒ Y ☐ N		

TAP 4.3 to 4.7 4257 0930 7064

State of Oregon Chain of Custody

B208

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: ESC	Lab Selection Criteria: ☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	Turn Around Time: ☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____
Send Lab Report To: Amy Patton Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 971-349-7747 E-mail: Amy.PATTON@deq.oregon.gov mbenzinger@maulfoster.com; smaloney@maulfoster.com	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah St, Suite 600 Portland, OR 97232 Tel. #: 503-229-5696		

Project Name: Crook County Limited Groundwater Investigation	Sample Preservative										
Sampler Name: Sean Maloney	HNO3	HNO3	HNO3	None	None	None	NaOH	None	None	HNO3	HCL

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Total Metals EPA 6010/6020	Total Mercury EPA 7470A	Dissolved Metals EPA 6020	Chloride (EPA 9056A)	Fluoride (EPA 9056A)	Sulfate (EPA 9056)	Sulfide (SM 4500-S2 D-2011)	Alkalinity (SM 2320)	Bicarbonate alkalinity (SM 2320)	Hardness (as CaCO3) (SM 2340B)	Total Organic Carbon (EPA 9060A)	Comments
20250502-1	5/2/25 0600	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-01
20250502-4	0900	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-02
20250502-4-DUP	0900	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-03
20250502-6	1010	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-04
20250502-8	1110	W	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-05
20250502-FB	1140	W	1			✓									-06

Notes: Dissolved Metals = aluminum, iron, and manganese
 Total Metals by EPA 6010 = lithium, silica (as silicon), and sulfur
 Total Metals by EPA 6020 = aluminum, arsenic, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc

Relinquished By: Sean Maloney	Agency/Agent: MFA	Received By: Alexa Mitchell	Agency/Agent: PACE
Signature: [Signature]	Time & Date: 5-2-25 1215	Signature: [Signature]	Time & Date: 5/3/25 0845
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

Sample Receipt Checklist

3AT-4=4.3

COC Seal Present/Intact: ☒ Y ☐ N NP 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 Condition: ☐ NCF ☒ OK

SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS NS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY IER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Data Validation Memorandum

Project No. M0785.34.001 | June 4, 2025 | Oregon Department of Environmental Quality

Maul Foster & Alongi, Inc. (MFA), conducted an independent Stage 2A review of the quality of analytical results for groundwater and associated quality control samples collected in April and May 2025 from domestic water supply wells located in the vicinity of the Knife River Corporation Woodward sand and gravel pit mine at 4755 NW Stahancyk Lane in Prineville, Oregon.

Pace Analytical National Center for Testing and Innovation (Pace-N) located in Mt. Juliet, Tennessee, and Edge Analytical Laboratory located in Bend, Oregon (EAL-BD) performed the analyses. MFA reviewed Pace-N report numbers L1852995, L1853025, L1853501, L1853506, L1854040, L1854043, L1854490, L1854524, L1854814, L1854815, L1855623, L1855625, L1856254, and L1856255, and EAL-BD report numbers 25-12445, 25-12576, 25-12756, 25-12933, 25-13116, 25-13267, and 25-13413. The analyses performed and the samples analyzed are listed in the following tables. The groundwater and associated field duplicate samples were analyzed by both Pace-N and EAL-BD, so these samples are listed twice, with the associated laboratory report number.

Analysis	Reference
Alkalinity (bicarbonate, total)	SM 2320B-2011
Anions	EPA 9056A
E. coli, total coliform	SM 9223B
Dissolved metals	EPA 6020B
Hardness as CaCO ₃	EPA 6020B calculation ^(a)
Mercury, total	EPA 7470A
Nitrate as nitrogen	SM 4500-NO3 F
Silica	EPA 6010D calculation ^(b)
Sulfide	SM 4500S2-D-2011
Total metals	EPA 6010D, 6020B
Total organic carbon	EPA 9060A

Notes

EPA = U.S. Environmental Protection Agency.

SM = Standard Methods for the Examination of Water and Wastewater.

^(a)Hardness is calculated by Pace-N from calcium and magnesium concentrations and reported in units of micrograms per liter of CaCO₃.

^(b)Silica is calculated by Pace-N from the silicon result using the atomic and molecular weights of silicon.

Samples Analyzed (Pace-N)				
Report L1852995	Report L1853025	Report L1853501	Report L1853506	Report L1854040
20250428-1	20250428-3	20250429-2	20250429-1	20250430-2
20250428-2	20250428-FB	20250429-4	20250429-3	20250430-3
20250428-4	20250428-5	20250429-6	20250429-1-DUP	20250430-3-DUP
20250428-7	20250428-6	20250429-8	20250429-5	20250430-6
20250428-8	--	20250429-FB	20250429-7	20250430-8
20250428-1-DUP	--	20250429-9	--	20250430-FB
Report L1854043	Report L1854490	Report L1854524	Report L1854814	Report L1854815
20250430-1	20250501-2	20250501-1	20250502-1	20250502-2
20250430-4	20250501-4	20250501-3	20250502-4	20250502-3

Samples Analyzed (Pace-N)				
20250430-5	20250501-5	20250501-3-DUP	20250502-4-DUP	20250502-5
20250430-7	20250501-7	20250501-6	20250502-6	20250502-7
20250430-9	20250501-9	20250501-8	20250502-8	20250502-9
--	--	20250501-FB	20250502-FB	--
Report L1855623	Report L1855625	Report L1856254	Report L1856255	--
20250505-2	20250505-1	20250506-1	20250506-3	--
20250505-4	20250505-1-DUP	20250506-1-DUP	20250506-4	--
20250505-5	20250505-3	20250506-2	20250506-6	--
20250505-7	20250505-6	20250506-5	--	--
20250505-FB	--	20250506-FB	--	--
20250505-8	--	--	--	--
Samples Analyzed (EAL-BD)				
Report 25-12445	Report 25-12576	Report 25-12756	Report 25-12933	Report 25-13116
20250428-1	20250429-1	20250430-1	20250501-1	20250502-1
20250428-1-Dup	20250429-2	20250430-4	20250501-2	20250502-2
20250428-2	20250429-3	20250430-5	20250501-3	20250502-3
20250428-3	20250429-4	20250430-7	20250501-3-dup	20250502-4
20250428-4	20250429-5	20250430-2	20250501-4	20250502-5
20250428-5	20250429-6	20250430-3	20250501-5	20250502-6
20250428-6	20250429-7	20250430-6	20250501-6	20250502-7
20250428-7	20250429-8	20250430-8	20250501-7	20250502-8
20250428-8	20250429-9	20250420-9	20250501-8	20250502-9
--	20250429-1-Dup	20250430-3-Dup	20250501-9	20250502-4-DUP
Report 25-13267		Report 25-13413		--
20250505-1	20250505-5	20250506-3	20250506-2	--
20250505-1-DUP	20250505-6	20250506-4	20250506-5	--
20250505-2	20250505-7	20250506-6	--	--
20250505-3	20250505-8	20250506-1	--	--
20250505-4		20250506-1-Dup	--	--

Data Validation Procedures

Analytical results were evaluated according to applicable sections of U.S. Environmental Protection Agency (EPA) guidelines for data review (EPA 2020) and appropriate laboratory- and method-specific guidelines (EAL-BD 2023, EPA 1986, Pace 2024).

Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods that EPA data review guidelines do not specifically address (e.g., Standard Methods for the Examination of Water and Wastewater [SM]).

Based on the data quality assurance/quality control review described herein, the data, with the appropriate final data qualifiers assigned, are considered acceptable for their intended use. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, and data qualifiers assigned by the reviewer during validation.

Final data qualifiers:

- J = result is estimated.
- J+ = result is estimated, but the result may be biased high.
- J- = result is estimated, but the result may be biased low.
- U = result is non-detect at the method detection limit (MDL)/method reporting limit (MRL).
- UJ = result is non-detect with an estimated MDL/MRL.

General Qualifications

All SM 2320B-2011 total and bicarbonate alkalinity results, with the exception of report L1853501 samples 20250429-6 and 20250429-9, were noted by Pace-N as samples having headspace. The reviewer qualified all associated sample results with J, as shown in the following table. Pace also noted pH endpoint of 4.5 which the review confirmed is acceptable for the method; no qualification was required based on the pH endpoint.

Report	Sample	Analysis	Original Results	Qualification
All reports ^(a)	All samples ^(b)	SM2320B-2011 (Total alkalinity, bicarbonate alkalinity)	Detected	J

Notes

J = result is estimated.

SM = Standard Methods for the Examination of Water and Wastewater.

^(a)L1852995, L1853025, L1853501, L1853506, L1854040, L1854043, L1854490, L1854524, L1854814, L1854815, L1855623, L1855625, L1856254, and L1856255

^(b)With the exception of samples 20250429-6 and 20250429-9 in report L1853501.

According to the case narrative provided with report 25-12933, the SM4500-NO3 F nitrate as nitrogen result for sample 20250501-4 was detected at a concentration greater than the upper limit of instrument calibration. There was insufficient holding time remaining to allow reanalysis at a dilution. EAL-BD appropriately flagged the result with J as estimated. The reviewer accepted the qualification, as shown in the following table.

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
25-12933	20250501-4	Nitrate as nitrogen	6.31 J	6.31 J

Notes

J = result is estimated.

ug/L = micrograms per liter.

Total and Dissolved Compounds

The reviewer compared total and dissolved EPA Method 6020B aluminum, iron, and manganese results for project samples in all reports. MFA uses acceptance criterion of 20 percent RPD where dissolved metals results were greater than their associated total metals results. RPD was not evaluated when both total and dissolved results for a sample were non-detect or below MRLs. The associated sample results that exceeded the acceptance criterion were qualified by the reviewer, as shown in the following table. Pace-N confirmed these total and dissolved metals results by reanalysis and confirmed that the containers used were properly identified and labeled at the laboratory. The reviewer qualified total metals results as estimated with a potential low bias and qualified the associated dissolved metals results as estimated, as shown in the following table.

Report	Sample	Analyte	RPD (%)	Original Result (ug/L)	Qualified Result (ug/L)
L1854814	20250502-4-DUP	Total iron	66.0	99.2 J	99.2 J-*
		Dissolved iron		187	187 J*
	20250502-4-DUP	Total manganese	64.4	203	203 J-*(a)
		Dissolved manganese		396	396 J*

Notes

J = result is estimated

J-* = result is estimated, but the result may be biased low. Primary and field duplicate analytical results were confirmed by laboratory reanalysis.

RPD = relative percent difference.

ug/L = micrograms per liter.

(a)Result also qualified based on field duplicate sample relative percent difference. Final qualification is shown.

Historical Data Comparison

Based on comparison with groundwater results collected by MFA in November 2024 from the same sampling locations, the reviewer identified potential inconsistencies in EPA Method 6020B total metals concentrations for samples 20250502-4-DUP and 20250502-5. The reviewer confirmed with the field sampling team that these two samples were collected on the same day, but were collected and packaged by separate personnel, and shipped to Pace-N in separate sample coolers. Pace-N stated that EPA Method 6020B confirmation reanalysis was performed on sample 20250502-4-DUP due to a total iron result that was lower than the associated dissolved iron result, and that the reanalysis results confirmed the original results, which were reported. Pace-N also provided photographs of the sample 20250502-4-DUP and 20250502-5 labeled sample containers used for EPA Method 6020B analysis, and the reviewer confirmed that these appeared to be labeled correctly. Based on dissimilarities between EPA 6020B total metals historical results, parent sample results, and the reported results, the reviewer qualified all associated EPA 6020B total metals results for 20250502-4-DUP and 20250502-5 with J, as shown in the following table. Results already qualified by the laboratory due to detection below the MRL did not require additional qualification.

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1854814	20250502-4-DUP	Aluminum	16 U	16 UJ
		Arsenic	19.8	19.8 J
		Cadmium	0.12 U	0.12 UJ
		Calcium	17,600 J	17,600 J
		Chromium	0.9 U	0.9 UJ
		Copper	0.1 U	0.1 UJ
		Cobalt	0.7 UJ	0.7 UJ
		Iron	99.2 J	99.2 J-*
		Lead	0.5 U	0.5 UJ
		Magnesium	6,270	6,270 J
		Manganese	203 J	203 J-*
		Nickel	0.5 U	0.5 UJ
		Potassium	2,140	2,140 J
		Selenium	0.25 U	0.25 UJ

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1854814 (continued)	20250502-4-DUP (continued)	Sodium	37,800	37,800 J
		Vanadium	0.52 U	0.52 UJ
		Zinc	21.1 J	21.1 J
L1854814	20250502-5	Aluminum	16 U	16 UJ
		Arsenic	22.2	22.2 J
		Cadmium	0.12 U	0.12 UJ
		Calcium	30,800	30,800 J
		Chromium	0.9 U	0.9 UJ
		Copper	0.1 U	0.1 UJ
		Cobalt	18.9	18.9 J
		Iron	217	217 J
		Lead	1.49 J	1.49 J
		Magnesium	14,300	14,300 J
		Manganese	392	392 J
		Nickel	0.5 U	0.5 UJ
		Potassium	3,110	3,110 J
		Selenium	0.25 U	0.25 UJ
		Sodium	25,100	25,100 J
		Vanadium	0.52 U	0.52 UJ
		Zinc	16.9 J	16.9 J

Notes

J = result is estimated.

J-* = result is estimated, but the result may be biased low. Primary and field duplicate analytical results were confirmed by laboratory reanalysis.

U = result is non-detect at the method detection limit.

ug/L = micrograms per liter.

UJ = result is non-detect with an estimated method detection limit.

Sample Conditions

Sample Custody

Sample custody was appropriately documented on the chain-of-custody (COC) form accompanying the report(s).

The reviewer confirmed that the gap in custody on the COC forms accompanying all Pace-N reports is due to shipment via a third-party service.

The Pace-N company name was not recorded on the COC form provided with report L1853506; the sample recipient name, signature, receipt date, and receipt time were recorded. No action was required.

The sample relinquishment date and time, and sampler company name were not recorded on the COC form provided with Pace-N report L1856255.

Holding Times

Extractions and analyses were performed within the recommended holding times.

Preservation and Sample Storage

The reviewer confirmed that the sample temperature recorded by EAL-BD on the COC-form provided with report 25-12445 was 3.0 degrees Celsius (°C) and not 30°C. No additional action was required.

According to the COC-form provided with report 25-12445, the sample containers provided for 20250428-4, 20250428-5, 20250428-6, 20250428-7, and 20250428-8 were not sourced from EAL-BD. No qualification was required.

According to the COC form provided with EAL-BD report 24-25-13413, samples were received by the laboratory at 11.9°C, which was above the recommended storage temperature range of 0 to 6°C. The reviewer confirmed that because evidence of cooling by wet ice was present, and because samples were submitted on the same day of collection, no qualification was required.

The remaining samples were preserved and stored appropriately.

Reporting Limits

Pace-N evaluated results to MDLs. EAL-BD evaluated SM 4500-NO3 F results to MRLs. SM 9223B total coliform and E. coli results were reported as presence/absence or detect/non-detect. Pace-N labeled method reporting limits (MRLs) as reported detection limits. Samples that required dilutions because of high analyte concentrations, matrix interferences, and/or dilutions necessary for preparation and/or analysis were reported with raised MDLs and MRLs.

Pace-N qualified results between the MDL and the MRL with J, as estimated.

Blank Results

Field quality sample results may be qualified as a result of laboratory instrument or batch information, but original or unvalidated laboratory results associated with field quality control samples are used to assess impact on field samples.

Method Blanks

Laboratory method blanks are used to evaluate whether laboratory contamination was introduced during sample preparation and analysis. Laboratory method blank analyses were performed at the required frequencies, in accordance with laboratory- and method-specific requirements.

Where an analyte was detected below the MRL in a sample and detected below or above the MRL in its associated blank, the sample detection limit was raised to the MRL, and sample results were qualified with U as not detected at the MRL. Where an analyte was detected above the MRL in a sample and below the MRL in the associated blank, the reviewer qualified the sample result with J+ when the sample result was less than ten times the laboratory method blank concentration.

EAL-BN provided laboratory reagent blank results with SM 4500-NO3 F batch quality control sample results. The reviewer applied laboratory method blank criteria to these results.

According to report L1852995, the EPA Method 6010D batch WG2507713 laboratory method blank had a detection of sulfur below the MRL, at 163 micrograms per liter (ug/L). The associated sample results had concentrations above the MRL and greater than ten times the laboratory method blank concentration; thus, qualification was not required.

According to reports L1852995 and L1853025, the EPA Method 6020B batch WG2507701 laboratory method blank had a detection of dissolved iron below the MRL, at 32.6 ug/L. The reviewer

qualified the associated detected results as shown in the following table. Associated non-detect sample results or results greater than ten times the laboratory method blank concentration did not require qualification.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1852995	20250428-4	Dissolved iron	32.6 J	172	176 J+
	20250428-7			60.7 J	100 U
L1853025	20250428-3			68.7 J	100 U
	20250428-6			81.2 J	100 U

Notes

J = result is estimated.

J+ = result is estimated, but the result may be biased high.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter.

According to reports L1852995, and L1853025 the EPA Method 6020B batch WG2507719 laboratory method blank had a detection of total sodium below the MRL, at 191 ug/L. All associated sample results were greater than ten times the laboratory method blank concentration; thus, qualification was not required.

According to report L1852995, the EPA Method 6020B batch WG2507729 laboratory method blank had a detection of total copper below the MRL, at 1.09 ug/L. The reviewer qualified the associated sample result with U at the MRL as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1852995	20250428-1	Total copper	1.09 J	4.59 J	5.00 U

Notes

J = result is estimated.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter.

According to report L1853056, the EPA Method 6020B batch WG2508250 laboratory method blank had a detection of total nickel below the MRL, at 0.599 ug/L. The reviewer qualified associated results as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1853056	20250429-1	Total nickel	0.599 J	0.638 J	2.00 U
	20250429-1-DUP			0.535 J	2.00 U
	20250429-5			0.965 J	2.00 U

Notes

J = result is estimated.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter.

According to report L1854040, the EPA Method 6020B batch WG2509336 laboratory method blank had a detection of total cadmium and total cobalt below the MRL, at 0.212 ug/L and 0.202 ug/L, respectively. The reviewer qualified associated results as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1854040	20250430-3-DUP	Total cobalt	0.202 J	0.101 J	2.00 U
	20250430-6	Total cadmium	0.212 J	0.150 J	1.00 U
		Total cobalt	0.202 J	0.148 J	2.00 U

Notes

J = result is estimated.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter.

According to reports L1854814 and L1854815, the EPA Method 6020B batch WG2511436 laboratory method blank had a detection of total sodium below the MRL, at 1,080 ug/L. According to report L1855623, the batch WG2511466 laboratory method blank had a detection of total sodium below the MRL, at 457 ug/L. All associated sample results were greater than ten times the laboratory method blank concentration; thus, qualification was not required.

According to report L1854815, the EPA Method 6010D batch WG2510393 laboratory method blank had a detection of sulfur below the MRL, 402 ug/L. The reviewer qualified associated results, as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1854815	20250502-2	Sulfur	402 J	1,400	1,400 J+
	20250502-3			1,080	1,080 J+
	20250502-5			1,080	1,080 J+
	20250502-9			1,140	1,140 J+

Notes

J = result is estimated.

J+ result is estimated, but the result may be biased high.

ug/L = micrograms per liter.

According to reports L1855623 and L1855625, the EPA Method 6010D batch WG2511424 laboratory method blank had a detection of sulfur below the MRL, at 594 ug/L. The reviewer qualified associated results with concentrations less than ten times the laboratory method blank concentration, as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1855623	20250505-2	Sulfur	594 J	2,750	2,750 J+
	20250505-5			1,920	1,920 J+
	20250505-7			185 J	1,000 U
	20250505-8			743 J	1,000 U

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)

Notes

J = result is estimated.

J+ result is estimated, but the result may be biased high.

ug/L = micrograms per liter.

U = result is non-detect at the method reporting limit.

According to report L1855625, the EPA Method 6010D batch WG2511427 laboratory method blank had a detection of total lithium below the MRL, at 7.57 ug/L. The reviewer qualified the associated result as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1855625	20250505-6	Total lithium	7.57 J	5.43 J	15.0 U

Notes

J = result is estimated.

ug/L = micrograms per liter.

U = result is non-detect at the method reporting limit.

All remaining laboratory method blank results were non-detect to MDLs or MRLs.

Equipment Rinsate Blanks

Equipment rinsate blanks are used to evaluate the adequacy of the field equipment decontamination process when decontaminated sampling equipment is used to collect samples.

No equipment rinsate blanks were submitted for analysis. These blanks were not required for this sampling event, as all samples were collected using dedicated or single-use equipment.

Field Filter Blanks

Field filter blanks are used to evaluate whether contamination was introduced during field filtering procedures.

Field filter blanks (20250428-FB, 20250429-FB) were submitted with sample delivery groups L1853025, L1853501, L1854040, L1854524, and L1854814, respectively, for EPA Method 6020B dissolved metals analysis.

Filter blanks were associated with samples provided in the following reports. The reviewer confirmed that all aqueous samples provided to Pace-N for dissolved metals analysis were collected using consistent sampling protocols.

Filter Blank Sample	Report	Filter Blank Sample	Report
20250428-FB	L1852995 L1853025	20250502-FB	L1854814 L1854815
20250429-FB	L1853501 L1853506	20250505-FB	L1855623 L1855625
20250430-FB	L1854040 L1854043	20250506-FB	L1856254 L1856255

Filter Blank Sample	Report	Filter Blank Sample	Report
20250501-FB	L1854490 L1854524	--	--

According to report L1855623, the EPA Method 6020B field filter blank 20250505-FB had detections of dissolved aluminum, dissolved iron, and dissolved manganese below the MRL, at 61.0 ug/L, 43.3 ug/L, and 1.14 ug/L, respectively. The reviewer qualified associated sample results with detections less than ten times the field filter blank concentrations as shown in the following table.

Report	Sample	Analyte	Method Blank Results (ug/L)	Original Result (ug/L)	Qualified Result (ug/L)
L1855623	20250505-2	Dissolved iron	43.3 J	156	156 J+
	20250505-5			55.3 J	100 U
	20250505-7			373	373 J+
	20250505-8			197	197 J+
	20250505-4	Dissolved manganese	1.14 J	1.99 J	5.00 U

Notes

J = result is estimated.

J+ result is estimated, but the result may be biased high.

ug/L = micrograms per liter.

U = result is non-detect at the method reporting limit.

The remaining field filter blanks were non-detect to MDLs for all target analytes.

Laboratory Control Sample and Laboratory Control Sample Duplicate Results

Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) results are used to evaluate laboratory precision and accuracy. All LCSs and LCSDs were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

The reviewer confirmed that the EAL-BD SM 4500-NO3 F nitrate as nitrogen Quality Control Sample results provided with independent quality control reports were LCS results.

All LCS and LCSD results were within acceptance limits for percent recovery and relative percent difference (RPD).

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision and sample homogeneity. All laboratory duplicate samples were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

Laboratory duplicate results greater than five times the MRL were evaluated using laboratory RPD control limits. A secondary criterion was used when laboratory duplicate results were non-detect or less than five times the MRL. Results meet the secondary criterion if the absolute difference of the laboratory duplicate sample result and the parent sample result, or the MRL for non-detects, is equal to or less than the MRL value of the parent sample.

According to reports L1854814 and L1854815, the EPA Method 9056A batch WG2506495 laboratory duplicate (R4212428-6) prepared with sample 20250502-1 exceeded the sulfate RPD

control limit of 15 percent, at 30.7 percent. The reviewer qualified the associated sample result with J, as shown in the following table.

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1854814	20250502-1	Sulfate	22,400	22,400 J

Notes

J = result is estimated.

ug/L = micrograms per liter.

All remaining laboratory duplicate results met the acceptance criteria.

Matrix Spike and Matrix Spike Duplicate Results

Matrix spike (MS) and matrix spike duplicate (MSD) results are used to evaluate laboratory precision, accuracy, and the effect of the sample matrix on sample preparation and target analyte recovery. All MS and MSD samples were prepared and analyzed at the required frequency, in accordance with laboratory- and method-specific requirements.

The reviewer confirmed that the EAL-BD SM 4500-NO3 F nitrate as nitrogen Laboratory Fortified Matrix results provided with dependent quality control reports were MS results.

When MS and MSD were prepared from samples with high concentrations of target analytes, associated MS and/or MSD percent recovery and/or RPD control limit exceedances did not require qualification because spike concentrations could not be accurately quantified. High concentrations of target analytes are defined as four times the spike amount for all analyses.

When MS and MSD were prepared with samples from unrelated projects, the MS and/or MSD percent recovery and/or RPD control limit exceedances did not require qualification because these sample matrices were not representative of project sample matrices.

According to reports L1853501 and L1853506, the EPA Method 7470A batch WG2504401 MS (R4209795-4) and MSD (R4209795-5) prepared with sample 20250429-4 had results for total mercury that were below the lower percent recovery acceptance limit of 75.0 percent, at 62.1 percent and 69.4 percent, respectively. Pace-N noted that the low recoveries were caused by matrix interference. The reviewer qualified the associated sample result with UJ as shown in the following table:

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1853501	20250429-4	Total mercury	0.0700 U	0.0700 UJ

Notes

ug/L = micrograms per liter.

UJ = result is non-detect with an estimated method detection limit.

According to report 25-13413, the SM4500-NO3 F batch 250507 MS and MSD prepared with sample 20250506-4 (laboratory ID 25_27323) had results for nitrate as nitrogen that were below the lower percent recovery acceptance limit of 80 percent, at 78 percent and 72 percent, respectively. The reviewer qualified the associated sample with J- as shown in the following table:

Report	Sample	Analyte	Original Result (mg/L)	Qualified Result (mg/L)
25-13413	20250506-4	Nitrate as nitrogen	1.85	1.85 J-

Notes

J- = result is estimated, but the result may be biased low.

ug/L = micrograms per liter.

According to reports L1854814 and L1854815, the EPA Method 9056A batch WG2506495 MS (R4212428-7) prepared with sample 20250502-1 had a result for sulfate below the lower percent recovery acceptance limit of 80 percent, at 79.4 percent. The reviewer qualified the associated sample result based on laboratory duplicate RPD in the Laboratory Duplicate Results section above. Additional qualification was not required.

According to reports L1856254 and L1856255, the SM 4500S2-D-2011 batch WG2510493 MS (R4211857-4) and MSD (R4211857-5) prepared with sample 20250506-1 had results for sulfide that were below the lower percent recovery acceptance limit of 80 percent, at 56.4 percent and 61.4 percent, respectively. Pace-N noted that the low recoveries were caused by matrix interference. The reviewer raised the detection limit to the MRL and qualified the associated sample result and the associated field duplicate sample result with UJ as shown in the following table:

Report	Sample	Analyte	Original Result (ug/L)	Qualified Result (ug/L)
L1856254	20250506-1	Sulfide	25.5 U	50.0 UJ
	20250506-1-DUP		25.5 U	50.0 UJ

Notes

U = result is non-detect at the method detection limit.

ug/L = micrograms per liter.

UJ = result is non-detect with an estimated method reporting limit.

According to report L1856255, the EPA Method 6020B batch WG2513223 MS (R4214873-4) and MSD (R4214873-5) prepared with an unrelated project sample reported only a partial list of analytes. The reviewer confirmed with Pace-N that the parent sample required only a partial list of metals and due to Pace-N reporting system limitations, a complete list of metals could not be reported. The reviewer could not evaluate batch precision for total cobalt, total magnesium, total manganese, total nickel, total potassium, total selenium, and total vanadium associated with samples 20250506-4 and 20250506-6.

All remaining MS and MSD results were within acceptance limits for percent recovery and RPD.

Field Duplicate Results

Field duplicate results are used to evaluate field precision and sample homogeneity. The following field duplicate and parent sample pairs were submitted for analysis:

Report	Parent Sample	Field Duplicate Sample
L1852995, 25-12445	20250428-1	20250428-1-DUP
L1853506, 25-12576	20250429-1	20250429-1-DUP
L1854040, 25-12756	20250430-3	20250430-3-DUP
L1854524, 25-12933	20250501-3	20250501-3-DUP
L1854814, 25-13116	20250502-4	20250502-4-DUP
L1855625, 25-13267	20250505-1	20250505-1-DUP

Report	Parent Sample	Field Duplicate Sample
L1856254, 25-13413	20250506-1	20250506-1-DUP

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL or 50 percent RPD for results that are greater than five times the MRL. RPD was not evaluated when both results in the sample pair were non-detect. When only one result in the sample pair was non-detect, RPD was evaluated using the MDL of the non-detect result.

Field duplicate results that exceeded the acceptance criteria were qualified by the reviewer, as shown in the following table. Results already qualified as estimated by Pace-N due to detection below the MRL did not require additional qualification.

Report	Sample	Analyte	RPD (%)	Units	Original Result	Qualified Result
L1854040	20250430-3	Total lead	51.1		37.6	37.6 J
	20250430-3-DUP				22.3	22.3 J
25-12933	20250501-3	Nitrate as Nitrogen	106	mg/L	0.04	0.04 J
	20250501-3-dup				0.13	0.13 J
L1854814	20250502-4	Hardness as CaCO ₃	64.9	ug/L	137,000	137,000 J
	20250502-4-DUP				69,900	69,900 J
	20250502-4	Fluoride	52.4		301	301 J
	20250502-4-DUP				176	176 J
	20250502-4	Total calcium	55.7		312,000	312,000 J
	20250502-4-DUP				176,000	176,000 J
	20250502-4	Total copper	183		15.7	15.7 J
	20250502-4-DUP				0.700 U	0.700 UJ
	20250502-4	Total magnesium	78.1		143,000	143,000 J
	20250502-4-DUP				6,270	6,270 J
	20250502-4	Total manganese	64.2		395	395 J
	20250502-4-DUP				203	203 J ^(a)
L1856254	20250506-1	Total nickel	108	0.500 U	0.500 UJ	
	20250506-1-DUP			1.68 J	1.68 J	

Notes

J = result is estimated.

RPD = relative percent difference

U = result is non-detect at the method detection limit.

UJ = result is non-detect with an estimated method detection limit.

ug/L = micrograms per liter.

^(a)Result also qualified based on total and dissolved metals comparison. Final qualification is shown.

All remaining field duplicate results met the RPD acceptance criteria.

Continuing Calibration Verification Results

Continuing calibration verification (CCV) results are used to evaluate instrument sensitivity, precision, and accuracy throughout the analytical sequence.

CCV results are not required for Stage 2A validation, however, the reviewer evaluated CCV results when provided by the laboratory. The reviewer confirmed that SM 4500-NO3 F nitrate as nitrogen Calibration Check results provided by EAL-BD were CCV results. All CCV results were within percent recovery acceptance limits.

Data Package

The data package was reviewed for transcription errors, omissions, and anomalies.

EAL-BD provided each laboratory report as five separate files: a cover sheet, inorganic compound reports, independent quality control reports (i.e. laboratory method blank, laboratory reagent blank, and LCS results), dependent quality control reports (i.e. laboratory duplicate and MS results), and COC forms. Case narratives and qualifier definitions were also provided with reports 25-12933. The reviewer confirmed that each laboratory report was complete and that the files were appropriately labeled with the laboratory report number.

The reviewer confirmed that EAL-BD reported SM 9223B total coliform results as A or P, indicating absence or presence, respectively. EAL-BD also reported *E. coli* results as N, indicating not detected. There were no detected *E. coli* results.

Pace-N reported all field duplicate sample names with “-DUP” and EAL-BD reported the same field duplicate sample names with “-DUP,” “-Dup,” or “-dup.” The reviewer deferred to the capitalized format (-DUP) for final reporting.

According to COC forms provide with Pace-N reports L1853501 and L1853506, all sample collection dates were changed from April 28, 2025 to April 29, 2025 after samples were received by Pace-N, at the request of MFA. The reviewer confirmed that sample collection dates were revised correctly.

Report L1852995 was revised by Pace-N on June 10, 2025 to correct a case narrative note for sample 20250428-1. No action was required by the reviewer.

Report L1853506 was revised by Pace-N on June 10, 2025 to update sample names 20250429-1-DUP and 20250429-3. After the original report was issued by the laboratory, final sample results were compared to historical sample results, and the MFA project manager determined that 20250429-1-DUP and 20250429-3 sample labels were mistakenly swapped, likely during field collection and prior to shipment to the laboratory. Sample names were corrected as shown by the following table. The reviewer evaluated field duplicate RPD with the revised sample pair.

Report	Original Sample Name	Revised Sample Name
L1853506	20250429-1-DUP	20250429-3
	20250429-3	20250429-1-DUP

No additional issues were found.

References

- EAL-BD. 2023. *Edge Analytical Quality Manual*. Rev. 2.0. Edge Analytical, Inc.: Bend, OR. December 6.
- EPA. 1986. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. EPA publication SW-846. 3rd ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), VI phase III (2019), VII phase I (2019), and VII phase II (2020).
- EPA. 2020. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. EPA 542-R-20-006. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation: Washington, DC. November.

Pace-N. 2024. *Quality Manual*. Version 04. Pace Analytical Services, LLC: Mt. Juliet, TN. March 7.