

# Groundwater Special Studies

## Woodward Mine and Knife River GW Split 2025

Survey: 2025

Sampling Event: 2512080

Date: Feb. 20, 2026



## Document information

This analytical report was prepared by Oregon Department of Environmental Quality  
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# Narrative

The document information page of the report bears the name of the primary document recipient. Questions as to the integrity of the data contained in this report should be

directed first to the report's primary recipient and second to the laboratory. The laboratory maintains all raw data and records from which this report has been generated for a period of no less than five years.

The DEQ Laboratory employs in its operations standard analytical methods that have been adopted by governing agencies for their specific application to sample matrices and regulatory programs of interest. In cases where standard analytical methods have not been promulgated, the laboratory has developed "in-house" methods which are consistent with best laboratory operating practices that will result in data of a quality appropriate for the intended use of information. Furthermore, all data has been scrutinized for adherence to established Quality Assurance/Quality Control (QA/QC) guidelines.

Unless otherwise noted, the information contained in this report meets all the aforementioned requirements as documented in the laboratory's Quality Assurance Manual and Standard Operating Procedures. Specific deviations from these requirements are noted, as appropriate, in this report. Questions or concerns regarding the contents of this report can be addressed by contacting the DEQ laboratory.

## General Considerations

The analytical data contained in this report was generated to satisfy specific data quality objectives for the programs and projects under which they were generated. Users of the data must be able to understand potential limitations of the information and its suitability for their intended use. In cases where a portion of the sample analyses were analyzed by organizations other than DEQ, the review of this data was limited to information supplied by the non-DEQ organization.

## Data Qualification

All laboratory batch quality control (QC) sample results associated with the samples are contained in this report. Any QC sample that does not meet the specified criteria will be flagged with a "QC" qualifier. Specific sample results associated with a QC parameter that did not meet criteria with a data quality level (DQL) other than "A" have been qualified in the laboratory report to assist in the evaluating the limitations of the data. Certain QC exceedances do not necessarily warrant a change to the DQL as the reported value is not adversely impacted. In these cases, the sample results associated with the QC receive no further qualification.

Some examples of this are:

- 1) Non-detected results with QC exceedances that indicate a high bias.
- 2) Blank results indicate slight contamination from field or laboratory activities however the target analyte in the sample is present in significantly high concentrations relative to the blank.

- 3) Blank results indicate slight contamination from field or laboratory activities however the target analyte is not detected in the sample.
- 4) Duplicate sample results where the sample concentrations are sufficiently low ( $< 5x$  the LOQ) to affect the applicability of the RPD limits.
- 5) Matrix spike results where the source sample concentration is sufficiently higher than the spike amount to affect the applicability of the spike recovery calculation.

### **Field Quality Control**

Where applicable, field quality control (blanks and duplicate) samples should be reviewed for their potential impact on the samples in a sampling event, or multiple sampling events, involved for a project. See DEQ09-LAB-0006-QAG for more information.

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sampling Event Summary

Client: Groundwater Special Studies

Project: Woodward Mine + Knife River GW Split 2025

Qtime #: 37224

Sampled by: DEQ

ID #	Type:	Station #:	Description:	Matrix:	Sample Date Time
2512080-01	FP	42163	Woodward Mine MW-2	Groundwater	08-Dec-2025 14:07
2512080-02	FD	42163	Woodward Mine MW-2	Groundwater	08-Dec-2025 14:08
2512080-03	EB	10000	Blank - Equipment	Reagent Water	08-Dec-2025 15:40
<u>Sample comments:</u> DEQ filters and tubing					
2512080-04	GS	42168	Woodward Mine MW-9	Groundwater	09-Dec-2025 15:00
2512080-05	GS	42169	Woodward Mine MW-10	Groundwater	09-Dec-2025 17:50
2512080-06	GS	42170	Woodward Land & Timber LLC WW-2A	Groundwater	09-Dec-2025 12:30
2512080-07	GS	42164	Woodward Mine MW-5	Groundwater	10-Dec-2025 14:05
2512080-08	GS	42165	Woodward Mine MW-6	Groundwater	10-Dec-2025 11:35
2512080-09	GS	42166	Woodward Mine MW-7	Groundwater	10-Dec-2025 16:00

#### Key to Sample Type

EB = Blank - Equipment

FD = Field Duplicate

FP = Field Primary

GS = Grab Sample

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-01** (Groundwater) Station: 42163

Description: Woodward Mine MW-2

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b>General Field Parameters</b>									
Conductivity at 25°C	758	1	µmhos/cm	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	SM 2510 B	
Depth to Bottom	36.00		Feet	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	MOMs	
Depth to Water	11.72		Feet	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	MOMs	
Dissolved Oxygen	4.7	0.2	mg/L	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	Hach 10360	
Oxidation Reduction Potential	254	-500	mV	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	SM 2580 B	
pH	7.7	0.1	pH Units	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	SM 4500-H+ B	
Temperature	12.9	-10.0	°C	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	EPA 170.1	
Turbidity	20	1	NTU	1	B25L117	08-Dec-25 14:07	08-Dec-25 14:07	SM 2130 B	
<b>General Chemistry</b>									
Alkalinity, Total as CaCO3	370	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	5.93	2.50	mg/L	5	B25L235	29-Dec-25 20:24	29-Dec-25 20:24	EPA 300.0	
Fluoride	0.25	0.05	mg/L	1	B26A006	05-Jan-26 19:00	05-Jan-26 19:00	EPA 300.0	
Total Dissolved Solids	481	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	21.2	1.00	mg/L	5	B25L235	29-Dec-25 20:24	29-Dec-25 20:24	EPA 300.0	
Total Organic Carbon	3.27	0.500	mg/L	1	B25L231	26-Dec-25 23:12	26-Dec-25 23:12	SM 5310 B	
<b>Nutrients</b>									
Nitrate/Nitrite as N	7.61	0.0050	mg/L	1	B25L109	15-Dec-25 12:26	15-Dec-25 12:26	SM 4500-NO3 <sup>-</sup> F	
<b>Microbiology</b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	08-Dec-25 20:33	09-Dec-25 20:33	SM 9223B	
<b>Total Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	241	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU3::B
Arsenic, Total recoverable	2.49	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	220	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	4.80	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	71.8	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	322	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	34.6	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	2.86	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	44.2	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	2.48	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	1.52	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	ND	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	71.2	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Dissolved	321	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	34.7	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Potassium, Dissolved	2.83	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	43.7	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-02** (Groundwater) Station: 42163

Description: Woodward Mine MW-2

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b>General Field Parameters</b>									
Conductivity at 25°C	759	1	µmhos/cm	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	SM 2510 B	
Dissolved Oxygen	4.7	0.2	mg/L	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	Hach 10360	
Oxidation Reduction Potential	256	-500	mV	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	SM 2580 B	
pH	7.7	0.1	pH Units	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	SM 4500-H+ B	
Temperature	12.9	-10.0	°C	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	EPA 170.1	
Turbidity	23	1	NTU	1	B25L117	08-Dec-25 14:08	08-Dec-25 14:08	SM 2130 B	
<b>General Chemistry</b>									
Alkalinity, Total as CaCO3	369	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	5.91	2.50	mg/L	5	B25L235	29-Dec-25 20:44	29-Dec-25 20:44	EPA 300.0	
Fluoride	0.25	0.05	mg/L	1	B26A006	05-Jan-26 19:21	05-Jan-26 19:21	EPA 300.0	
Total Dissolved Solids	485	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	21.3	1.00	mg/L	5	B25L235	29-Dec-25 20:44	29-Dec-25 20:44	EPA 300.0	
Total Organic Carbon	3.34	0.500	mg/L	1	B25L231	26-Dec-25 23:28	26-Dec-25 23:28	SM 5310 B	
<b>Nutrients</b>									
Nitrate/Nitrite as N	7.62	0.0050	mg/L	1	B25L109	15-Dec-25 12:27	15-Dec-25 12:27	SM 4500-NO3 <sup>-</sup> F	
<b>Microbiology</b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	08-Dec-25 20:33	09-Dec-25 20:33	SM 9223B	

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Qualifiers	
<b>Total Metals by Inductively Coupled Plasma Mass Spectrometry</b>							<b>EPA 200.8</b>		
Aluminum, Total recoverable	130	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25	FDU3::B	
Arsenic, Total recoverable	2.54	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	123	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	2.71	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	71.0	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	320	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	34.7	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	2.88	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	44.4	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</b>							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	2.45	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	ND	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	71.6	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25	SA4::A	
Hardness as CaCO3, Dissolved	316	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	33.4	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	2.77	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	42.3	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-03** (Reagent Water) Station: 10000

Description: Blank - Equipment::EB

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b>General Field Parameters</b>									
Conductivity at 25°C	1	1	µmhos/cm	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	SM 2510 B	
Dissolved Oxygen	9.4	0.2	mg/L	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	Hach 10360	
Oxidation Reduction Potential	263	-500	mV	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	SM 2580 B	
Dissolved Oxygen, Saturation	98	1	%	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	SM 4500-O G	
pH	5.9	0.1	pH Units	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	SM 4500-H+ B	
Temperature	12.9	-10.0	°C	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	EPA 170.1	
Turbidity	ND	1	NTU	1	B25L117	08-Dec-25 15:40	08-Dec-25 15:40	SM 2130 B	

<b>General Chemistry</b>									
Alkalinity, Total as CaCO3	ND	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	ND	0.50	mg/L	1	B25L235	29-Dec-25 21:04	29-Dec-25 21:04	EPA 300.0	
Fluoride	ND	0.05	mg/L	1	B26A006	05-Jan-26 19:41	05-Jan-26 19:41	EPA 300.0	
Total Dissolved Solids	ND	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	ND	0.20	mg/L	1	B25L235	29-Dec-25 21:04	29-Dec-25 21:04	EPA 300.0	
Total Organic Carbon	ND	0.500	mg/L	1	B25L231	26-Dec-25 23:43	26-Dec-25 23:43	SM 5310 B	

<b>Nutrients</b>									
Nitrate/Nitrite as N	ND	0.0050	mg/L	1	B25L109	15-Dec-25 14:40	15-Dec-25 14:40	SM 4500-NO3 <sup>-</sup> F	

<b>Microbiology</b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	08-Dec-25 20:33	09-Dec-25 20:33	SM 9223B	

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Qualifiers
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<b>Total Metals by Inductively Coupled Plasma Mass Spectrometry</b>							<b>EPA 200.8</b>		
Aluminum, Total recoverable	ND	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Arsenic, Total recoverable	ND	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	ND	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	ND	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	ND	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	ND	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	ND	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	ND	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	ND	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		

<b>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</b>							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	ND	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	ND	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	ND	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Dissolved	ND	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	ND	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	ND	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	ND	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-04** (Groundwater) Station: 42168

Description: Woodward Mine MW-9

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b><u>General Field Parameters</u></b>									
Conductivity at 25°C	688	1	µmhos/cm	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	SM 2510 B	
Depth to Bottom	40.00		Feet	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	MOMs	
Depth to Water	24.74		Feet	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	MOMs	
Dissolved Oxygen	4.7	0.2	mg/L	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	Hach 10360	
Oxidation Reduction Potential	317	-500	mV	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	SM 2580 B	
pH	7.5	0.1	pH Units	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	SM 4500-H+ B	
Temperature	12.8	-10.0	°C	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	EPA 170.1	
Turbidity	2	1	NTU	1	B25L117	09-Dec-25 15:00	09-Dec-25 15:00	SM 2130 B	
<b><u>General Chemistry</u></b>									
Alkalinity, Total as CaCO3	331	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	5.96	2.50	mg/L	5	B25L235	29-Dec-25 21:24	29-Dec-25 21:24	EPA 300.0	
Fluoride	0.31	0.05	mg/L	1	B26A006	05-Jan-26 20:01	05-Jan-26 20:01	EPA 300.0	
Total Dissolved Solids	444	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	16.4	1.00	mg/L	5	B25L235	29-Dec-25 21:24	29-Dec-25 21:24	EPA 300.0	
Total Organic Carbon	2.22	0.500	mg/L	1	B25L231	26-Dec-25 23:58	26-Dec-25 23:58	SM 5310 B	
<b><u>Nutrients</u></b>									
Nitrate/Nitrite as N	6.84	0.0050	mg/L	1	B25L109	15-Dec-25 12:28	15-Dec-25 12:28	SM 4500-NO3 <sup>-</sup> F	
<b><u>Microbiology</u></b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	09-Dec-25 20:17	10-Dec-25 20:39	SM 9223B	
<b><u>Total Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	36.6	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	3.37	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	ND	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	4.76	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	65.4	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	283	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	29.0	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	3.21	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	41.6	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b><u>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	3.30	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	4.54	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	65.5	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Hardness as CaCO3, Dissolved	278	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	27.8	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	3.13	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	40.4	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-05** (Groundwater) Station: 42169

Description: Woodward Mine MW-10

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b><u>General Field Parameters</u></b>									
Conductivity at 25°C	479	1	µmhos/cm	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	SM 2510 B	
Depth to Bottom	30.00		Feet	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	MOMs	
Depth to Water	22.45		Feet	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	MOMs	
Dissolved Oxygen	2.3	0.2	mg/L	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	Hach 10360	
Oxidation Reduction Potential	294	-500	mV	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	SM 2580 B	
pH	7.4	0.1	pH Units	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	SM 4500-H+ B	
Temperature	15.7	-10.0	°C	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	EPA 170.1	
Turbidity	3	1	NTU	1	B25L117	09-Dec-25 17:50	09-Dec-25 17:50	SM 2130 B	
<b><u>General Chemistry</u></b>									
Alkalinity, Total as CaCO3	225	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	6.95	2.50	mg/L	5	B25L235	29-Dec-25 22:04	29-Dec-25 22:04	EPA 300.0	
Fluoride	0.49	0.05	mg/L	1	B26A006	05-Jan-26 20:21	05-Jan-26 20:21	EPA 300.0	
Total Dissolved Solids	356	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	17.8	1.00	mg/L	5	B25L235	29-Dec-25 22:04	29-Dec-25 22:04	EPA 300.0	
Total Organic Carbon	2.84	0.500	mg/L	1	B25L231	27-Dec-25 00:13	27-Dec-25 00:13	SM 5310 B	
<b><u>Nutrients</u></b>									
Nitrate/Nitrite as N	1.04	0.0050	mg/L	1	B25L109	15-Dec-25 12:30	15-Dec-25 12:30	SM 4500-NO3 <sup>-</sup> F	
<b><u>Microbiology</u></b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	09-Dec-25 20:17	10-Dec-25 20:39	SM 9223B	
<b><u>Total Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	86.5	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	4.62	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	87.5	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	21.5	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	34.0	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	148	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	15.3	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	2.56	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	49.5	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b><u>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	4.52	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	20.2	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	34.5	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Hardness as CaCO3, Dissolved	149	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Magnesium, Dissolved	15.3	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	2.57	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Sodium, Dissolved	48.5	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-06** (Groundwater) Station: 42170

Description: Woodward Land & Timber LLC WW-2A

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b>General Field Parameters</b>									
Conductivity at 25°C	675	1	µmhos/cm	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	SM 2510 B	
Depth to Bottom	25.00		Feet	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	MOMs	
Depth to Water	20.96		Feet	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	MOMs	
Dissolved Oxygen	7.6	0.2	mg/L	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	Hach 10360	
Oxidation Reduction Potential	330	-500	mV	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	SM 2580 B	
pH	7.4	0.1	pH Units	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	SM 4500-H+ B	
Temperature	12.4	-10.0	°C	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	EPA 170.1	
Turbidity	6	1	NTU	1	B25L117	09-Dec-25 12:30	09-Dec-25 12:30	SM 2130 B	
<b>General Chemistry</b>									
Alkalinity, Total as CaCO3	308	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	6.90	2.50	mg/L	5	B25L235	29-Dec-25 22:45	29-Dec-25 22:45	EPA 300.0	
Fluoride	0.40	0.05	mg/L	1	B26A006	05-Jan-26 21:02	05-Jan-26 21:02	EPA 300.0	
Total Dissolved Solids	447	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	22.5	1.00	mg/L	5	B25L235	29-Dec-25 22:45	29-Dec-25 22:45	EPA 300.0	
Total Organic Carbon	3.26	0.500	mg/L	1	B25L231	27-Dec-25 00:29	27-Dec-25 00:29	SM 5310 B	
<b>Nutrients</b>									
Nitrate/Nitrite as N	8.52	0.0100	mg/L	2	B25L109	15-Dec-25 12:42	15-Dec-25 12:42	SM 4500-NO3 <sup>-</sup> F	
<b>Microbiology</b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	09-Dec-25 20:17	10-Dec-25 20:39	SM 9223B	
<b>Total Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	711	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	2.94	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	695	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	48.2	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	54.0	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	289	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	37.4	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	1.86	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	34.2	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	2.94	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	8.39	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	54.4	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Hardness as CaCO3, Dissolved	292	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Magnesium, Dissolved	37.9	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Potassium, Dissolved	1.76	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	33.1	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-07** (Groundwater) Station: 42164

Description: Woodward Mine MW-5

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b><u>General Field Parameters</u></b>									
Conductivity at 25°C	734	1	µmhos/cm	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	SM 2510 B	
Depth to Bottom	71.00		Feet	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	MOMs	
Depth to Water	20.11		Feet	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	MOMs	
Dissolved Oxygen	0.6	0.2	mg/L	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	Hach 10360	
Oxidation Reduction Potential	-64.0	-500	mV	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	SM 2580 B	
pH	7.6	0.1	pH Units	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	SM 4500-H+ B	
Temperature	13.8	-10.0	°C	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	EPA 170.1	
Turbidity	4	1	NTU	1	B25L117	10-Dec-25 14:05	10-Dec-25 14:05	SM 2130 B	
<b><u>General Chemistry</u></b>									
Alkalinity, Total as CaCO3	381	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	7.03	2.50	mg/L	5	B25L235	29-Dec-25 23:05	29-Dec-25 23:05	EPA 300.0	
Fluoride	0.32	0.05	mg/L	1	B26A006	05-Jan-26 21:22	05-Jan-26 21:22	EPA 300.0	
Total Dissolved Solids	463	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	23.6	1.00	mg/L	5	B25L235	29-Dec-25 23:05	29-Dec-25 23:05	EPA 300.0	
Total Organic Carbon	2.23	0.500	mg/L	1	B25L231	27-Dec-25 00:44	27-Dec-25 00:44	SM 5310 B	
<b><u>Nutrients</u></b>									
Nitrate/Nitrite as N	0.286	0.0050	mg/L	1	B25L109	15-Dec-25 14:41	15-Dec-25 14:41	SM 4500-NO3 <sup>-</sup> F	
<b><u>Microbiology</u></b>									
Coliform, Total	7	1	MPN/100 mL	1	B26B046	10-Dec-25 20:39	11-Dec-25 20:40	SM 9223B	
<b><u>Total Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	89.4	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	3.84	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	384	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	313	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	58.1	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	271	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	30.6	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	4.16	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	60.1	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b><u>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	3.64	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	96.6	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	302	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	56.3	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Dissolved	266	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	30.5	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	4.13	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	59.3	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-08** (Groundwater) Station: 42165

Description: Woodward Mine MW-6

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b><u>General Field Parameters</u></b>									
Conductivity at 25°C	816	1	µmhos/cm	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	SM 2510 B	
Depth to Bottom	62.00		Feet	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	MOMs	
Depth to Water	32.60		Feet	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	MOMs	
Dissolved Oxygen	5.3	0.2	mg/L	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	Hach 10360	
Oxidation Reduction Potential	365	-500	mV	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	SM 2580 B	
pH	7.2	0.1	pH Units	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	SM 4500-H+ B	
Temperature	14.5	-10.0	°C	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	EPA 170.1	
Turbidity	13	1	NTU	1	B25L117	10-Dec-25 11:35	10-Dec-25 11:35	SM 2130 B	
<b><u>General Chemistry</u></b>									
Alkalinity, Total as CaCO3	404	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	7.88	2.50	mg/L	5	B25L235	29-Dec-25 23:25	29-Dec-25 23:25	EPA 300.0	
Fluoride	0.31	0.05	mg/L	1	B26A006	05-Jan-26 21:42	05-Jan-26 21:42	EPA 300.0	
Total Dissolved Solids	529	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	25.3	1.00	mg/L	5	B25L235	29-Dec-25 23:25	29-Dec-25 23:25	EPA 300.0	
Total Organic Carbon	3.67	0.500	mg/L	1	B25L231	27-Dec-25 01:00	27-Dec-25 01:00	SM 5310 B	
<b><u>Nutrients</u></b>									
Nitrate/Nitrite as N	4.99	0.0050	mg/L	1	B25L109	15-Dec-25 12:35	15-Dec-25 12:35	SM 4500-NO3 <sup>-</sup> F	
<b><u>Microbiology</u></b>									
Coliform, Total	ND	1	MPN/100 mL	1	B26B046	10-Dec-25 20:39	11-Dec-25 20:40	SM 9223B	
<b><u>Total Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	920	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	4.40	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	2.21	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	998	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	22.1	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	72.7	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	321	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	33.8	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	3.70	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	58.0	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b><u>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</u></b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	4.44	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	ND	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	72.6	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Dissolved	320	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	33.6	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	3.64	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	58.5	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080 Woodward Mine + Knife River GW Split 2025

### Sample Data

**2512080-09** (Groundwater) Station: 42166

Description: Woodward Mine MW-7

Analyte	Result	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifiers
<b>General Field Parameters</b>									
Conductivity at 25°C	726	1	µmhos/cm	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	SM 2510 B	
Depth to Bottom	55.00		Feet	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	MOMs	
Depth to Water	21.85		Feet	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	MOMs	
Dissolved Oxygen	1.7	0.2	mg/L	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	Hach 10360	
Oxidation Reduction Potential	235	-500	mV	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	SM 2580 B	
pH	7.4	0.1	pH Units	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	SM 4500-H+ B	
Temperature	12.5	-10.0	°C	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	EPA 170.1	
Turbidity	2	1	NTU	1	B25L117	10-Dec-25 16:00	10-Dec-25 16:00	SM 2130 B	
<b>General Chemistry</b>									
Alkalinity, Total as CaCO3	360	1	mg/L	1	B25L119	15-Dec-25 16:45	15-Dec-25 16:45	SM 2320 B	
Chloride	6.60	2.50	mg/L	5	B25L235	29-Dec-25 23:45	29-Dec-25 23:45	EPA 300.0	
Fluoride	0.42	0.05	mg/L	1	B26A006	05-Jan-26 22:22	05-Jan-26 22:22	EPA 300.0	
Total Dissolved Solids	467	20.0	mg/L	1	B25L105	12-Dec-25 11:28	12-Dec-25 11:28	SM 2540 C	
Sulfate	21.9	1.00	mg/L	5	B25L235	29-Dec-25 23:45	29-Dec-25 23:45	EPA 300.0	
Total Organic Carbon	2.07	0.500	mg/L	1	B25L231	26-Dec-25 18:22	26-Dec-25 18:22	SM 5310 B	
<b>Nutrients</b>									
Nitrate/Nitrite as N	4.90	0.0050	mg/L	1	B25L109	15-Dec-25 12:40	15-Dec-25 12:40	SM 4500-NO3 <sup>-</sup> F	
<b>Microbiology</b>									
Coliform, Total	8	1	MPN/100 mL	1	B26B046	10-Dec-25 20:39	11-Dec-25 20:40	SM 9223B	
<b>Total Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Total recoverable	99.5	20.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		FDU1::B
Arsenic, Total recoverable	4.69	0.25	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Copper, Total recoverable	ND	1.50	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Iron, Total recoverable	101	50.0	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Manganese, Total recoverable	2.50	2.00	µg/L	1	B25L159	18-Dec-25	30-Dec-25		
Calcium, Total recoverable	61.0	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Hardness as CaCO3, Total recoverable	273	0.75	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Magnesium, Total recoverable	29.4	0.05	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Potassium, Total recoverable	2.69	0.20	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
Sodium, Total recoverable	58.2	0.15	mg/L	1	B25L159	18-Dec-25	30-Dec-25		
<b>Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry</b>									
							<b>EPA 200.8</b>		
Aluminum, Dissolved	ND	20.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Arsenic, Dissolved	4.75	0.25	µg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Copper, Dissolved	ND	1.50	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Iron, Dissolved	ND	50.0	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Manganese, Dissolved	ND	2.00	µg/L	1	B25L158	18-Dec-25	30-Dec-25		
Calcium, Dissolved	61.3	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		SA4::A
Hardness as CaCO3, Dissolved	273	0.75	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Magnesium, Dissolved	29.1	0.05	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Potassium, Dissolved	2.68	0.20	mg/L	1	B25L158	18-Dec-25	30-Dec-25		
Sodium, Dissolved	57.5	0.15	mg/L	1	B25L158	18-Dec-25	30-Dec-25		

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080

### Laboratory Quality Control Data

#### General Chemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L119 - No Prep-Inorganic Wet Chemistry</b>									
<b>Blank (B25L119-BLK1)</b>				Prepared & Analyzed: 15-Dec-25					
Alkalinity, Total as CaCO3	ND	1	mg/L						
<b>LCS (B25L119-BS1)</b>				Prepared & Analyzed: 15-Dec-25					
Alkalinity, Total as CaCO3	50		mg/L	50.0		99	80-120		
<b>Duplicate (B25L119-DUP1)</b>				Source: 2512080-05		Prepared & Analyzed: 15-Dec-25			
Alkalinity, Total as CaCO3	226	1	mg/L		225		0.4	10	
<b>Batch B25L235 - No Prep-Non-Metals</b>									
<b>Blank (B25L235-BLK1)</b>				Prepared & Analyzed: 29-Dec-25					
Chloride	ND	0.50	mg/L						
<b>LCS (B25L235-BS1)</b>				Prepared & Analyzed: 29-Dec-25					
Chloride	10.2	0.52	mg/L	10.0		102	90-110		
<b>Duplicate (B25L235-DUP1)</b>				Source: 2512080-04		Prepared & Analyzed: 29-Dec-25			
Chloride	5.95	2.50	mg/L		5.96		0.2	20	
<b>Matrix Spike (B25L235-MS1)</b>				Source: 2512080-05		Prepared & Analyzed: 29-Dec-25			
Chloride	109	5.15	mg/L	100	6.95	102	80-120		
<b>Batch B26A006 - No Prep-Non-Metals</b>									
<b>Blank (B26A006-BLK1)</b>				Prepared & Analyzed: 05-Jan-26					
Fluoride	ND	0.05	mg/L						
<b>LCS (B26A006-BS1)</b>				Prepared & Analyzed: 05-Jan-26					
Fluoride	1.02	0.05	mg/L	1.00		102	90-110		
<b>Duplicate (B26A006-DUP1)</b>				Source: 2512080-05		Prepared & Analyzed: 05-Jan-26			
Fluoride	0.49	0.05	mg/L		0.49		0.6	10	
<b>Matrix Spike (B26A006-MS1)</b>				Source: 2512080-08		Prepared & Analyzed: 05-Jan-26			
Fluoride	1.34	0.05	mg/L	1.00	0.31	102	80-120		
<b>Batch B25L105 - Solids Prep</b>									
<b>Blank (B25L105-BLK1)</b>				Prepared & Analyzed: 12-Dec-25					
Total Dissolved Solids	ND	20.0	mg/L						
<b>Duplicate (B25L105-DUP1)</b>				Source: 2512080-04		Prepared & Analyzed: 12-Dec-25			
Total Dissolved Solids	444	20.0	mg/L		444		0	10	
<b>Reference (B25L105-SRM1)</b>				Prepared & Analyzed: 12-Dec-25					
Total Dissolved Solids	101		mg/L	100		101	80-120		

DEQ Laboratory and Environmental Assessment Division

Analytical Report

Sampling Event: 2512080

**Laboratory Quality Control Data**

General Chemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L235 - No Prep-Non-Metals</b>										
<b>Blank (B25L235-BLK1)</b>				Prepared & Analyzed: 29-Dec-25						
Sulfate	ND	0.20	mg/L							
<b>LCS (B25L235-BS1)</b>				Prepared & Analyzed: 29-Dec-25						
Sulfate	20.8	0.21	mg/L	20.0		104	90-110			
<b>Duplicate (B25L235-DUP1)</b>				Source: 2512080-04		Prepared & Analyzed: 29-Dec-25				
Sulfate	16.4	1.00	mg/L		16.4			0.09	20	
<b>Matrix Spike (B25L235-MS1)</b>				Source: 2512080-05		Prepared & Analyzed: 29-Dec-25				
Sulfate	225	2.06	mg/L	200	17.8	104	80-120			
<b>Batch B25L231 - No Prep-Wet Chemistry</b>										
<b>Blank (B25L231-BLK1)</b>				Prepared & Analyzed: 26-Dec-25						
Total Organic Carbon	ND	0.500	mg/L							
<b>LCS (B25L231-BS1)</b>				Prepared & Analyzed: 26-Dec-25						
Total Organic Carbon	24.4	0.500	mg/L	24.9		98	90-110			
<b>Duplicate (B25L231-DUP1)</b>				Source: 2512031-02		Prepared & Analyzed: 26-Dec-25				
Total Organic Carbon	1.78	0.500	mg/L		1.76			1	15	
<b>Matrix Spike (B25L231-MS1)</b>				Source: 2512080-09		Prepared & Analyzed: 26-Dec-25				
Total Organic Carbon	12.4	0.500	mg/L	10.0	2.07	104	85-115			
<b>Matrix Spike Dup (B25L231-MSD1)</b>				Source: 2512080-09		Prepared & Analyzed: 26-Dec-25				
Total Organic Carbon	12.6	0.500	mg/L	10.0	2.07	105	85-115	0.9	15	

DEQ Laboratory and Environmental Assessment Division

Analytical Report

Sampling Event: 2512080

**Laboratory Quality Control Data**

Nutrients

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L109 - No Prep-Non-Metals</b>										
<b>Blank (B25L109-BLK1)</b>	Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	ND	0.0050	mg/L							
<b>LCS (B25L109-BS1)</b>	Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	4.02		mg/L	4.00		101	90-110			
<b>LCS (B25L109-BS2)</b>	Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	0.198		mg/L	0.200		99	90-110			
<b>Duplicate (B25L109-DUP1)</b>	Source: 2512080-05 Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	1.03	0.0050	mg/L		1.04			0.9	10	
<b>Duplicate (B25L109-DUP2)</b>	Source: 2512085-01 Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	2.46	0.0050	mg/L		2.47			0.3	10	
<b>Matrix Spike (B25L109-MS1)</b>	Source: 2512080-04 Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	6.19		mg/L	2.91	3.32	99	80-120			
<b>Matrix Spike (B25L109-MS2)</b>	Source: 2512081-01 Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	4.33		mg/L	1.96	2.37	100	80-120			
<b>Matrix Spike (B25L109-MS3)</b>	Source: 2512078-05 Prepared & Analyzed: 15-Dec-25									
Nitrate/Nitrite as N	0.160		mg/L	0.0792	0.0797	101	80-120			

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080

### Laboratory Quality Control Data

Total Metals by Inductively Coupled Plasma Mass Spectrometry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Aluminum, Total recoverable	ND	20.0	µg/L							
<b>LCS (B25L159-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Aluminum, Total recoverable	935	20.0	µg/L	1000		93	85-115			
<b>Matrix Spike (B25L159-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Aluminum, Total recoverable	1020	20.0	µg/L	1000	86.5	93	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Aluminum, Total recoverable	1010	20.0	µg/L	1000	86.5	93	70-130	0.2	20	
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Arsenic, Total recoverable	ND	0.25	µg/L							
<b>LCS (B25L159-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Arsenic, Total recoverable	96.0	0.25	µg/L	100		96	85-115			
<b>Matrix Spike (B25L159-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Arsenic, Total recoverable	101	0.25	µg/L	100	4.62	97	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Arsenic, Total recoverable	102	0.25	µg/L	100	4.62	97	70-130	0.5	20	
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Copper, Total recoverable	ND	1.50	µg/L							
<b>LCS (B25L159-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Copper, Total recoverable	37.1	1.50	µg/L	40.0		93	85-115			
<b>Matrix Spike (B25L159-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Copper, Total recoverable	37.6	1.50	µg/L	40.0	ND	94	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Copper, Total recoverable	37.9	1.50	µg/L	40.0	ND	95	70-130	0.9	20	
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Iron, Total recoverable	ND	50.0	µg/L							
<b>LCS (B25L159-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Iron, Total recoverable	4960	50.0	µg/L	5000		99	85-115			

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080

### Laboratory Quality Control Data

Total Metals by Inductively Coupled Plasma Mass Spectrometry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Matrix Spike (B25L159-MS1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Iron, Total recoverable	5060	50.0	µg/L	5000	87.5	99	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Iron, Total recoverable	4990	50.0	µg/L	5000	87.5	98	70-130	1	20	
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>					<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Manganese, Total recoverable	ND	2.00	µg/L							
<b>LCS (B25L159-BS1)</b>					<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Manganese, Total recoverable	99.4	2.00	µg/L	100		99	85-115			
<b>Matrix Spike (B25L159-MS1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Manganese, Total recoverable	119	2.00	µg/L	100	21.5	98	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Manganese, Total recoverable	120	2.00	µg/L	100	21.5	98	70-130	0.4	20	
<b>Batch B25L159 - Digestion by 200.8</b>										
<b>Blank (B25L159-BLK1)</b>					<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Calcium, Total recoverable	ND	0.20	mg/L							
Hardness as CaCO3, Total recoverable	ND	0.75	mg/L							
Magnesium, Total recoverable	ND	0.05	mg/L							
Potassium, Total recoverable	ND	0.20	mg/L							
Sodium, Total recoverable	ND	0.15	mg/L							
<b>LCS (B25L159-BS1)</b>					<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Calcium, Total recoverable	4.82	0.20	mg/L	5.00		96	85-115			
Magnesium, Total recoverable	4.84	0.05	mg/L	5.00		97	85-115			
Potassium, Total recoverable	4.54	0.20	mg/L	5.00		91	85-115			
Sodium, Total recoverable	4.98	0.15	mg/L	5.00		100	85-115			
<b>Matrix Spike (B25L159-MS1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Calcium, Total recoverable	38.5	0.20	mg/L	5.00	34.0	90	70-130			
Magnesium, Total recoverable	20.0	0.05	mg/L	5.00	15.3	93	70-130			
Potassium, Total recoverable	7.50	0.20	mg/L	5.00	2.56	99	70-130			
Sodium, Total recoverable	54.0	0.15	mg/L	5.00	49.5	91	70-130			
<b>Matrix Spike Dup (B25L159-MSD1)</b>		<b>Source: 2512080-05</b>			<b>Prepared: 18-Dec-25 Analyzed: 30-Dec-25</b>					
Calcium, Total recoverable	38.8	0.20	mg/L	5.00	34.0	96	70-130	0.8	20	
Magnesium, Total recoverable	19.7	0.05	mg/L	5.00	15.3	88	70-130	1	20	
Potassium, Total recoverable	7.50	0.20	mg/L	5.00	2.56	99	70-130	0.07	20	
Sodium, Total recoverable	53.7	0.15	mg/L	5.00	49.5	84	70-130	0.6	20	

# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080

### Laboratory Quality Control Data

Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B25L158 - Digestion by 200.8</b>										
<b>Blank (B25L158-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Aluminum, Dissolved	ND	20.0	µg/L							
<b>LCS (B25L158-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Aluminum, Dissolved	946	20.0	µg/L	1000		95	85-115			
<b>Matrix Spike (B25L158-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Aluminum, Dissolved	935	20.0	µg/L	1000	3.32	93	70-130			
<b>Matrix Spike Dup (B25L158-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Aluminum, Dissolved	931	20.0	µg/L	1000	3.32	93	70-130	0.4	20	
<b>Batch B25L158 - Digestion by 200.8</b>										
<b>Blank (B25L158-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Arsenic, Dissolved	ND	0.25	µg/L							
<b>LCS (B25L158-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Arsenic, Dissolved	97.6	0.25	µg/L	100		98	85-115			
<b>Matrix Spike (B25L158-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Arsenic, Dissolved	101	0.25	µg/L	100	4.52	97	70-130			
<b>Matrix Spike Dup (B25L158-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Arsenic, Dissolved	101	0.25	µg/L	100	4.52	96	70-130	0.5	20	
<b>Batch B25L158 - Digestion by 200.8</b>										
<b>Blank (B25L158-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Copper, Dissolved	ND	1.50	µg/L							
<b>LCS (B25L158-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Copper, Dissolved	37.8	1.50	µg/L	40.0		94	85-115			
<b>Matrix Spike (B25L158-MS1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Copper, Dissolved	37.3	1.50	µg/L	40.0	ND	93	70-130			
<b>Matrix Spike Dup (B25L158-MSD1)</b>				Source: 2512080-05		Prepared: 18-Dec-25 Analyzed: 30-Dec-25				
Copper, Dissolved	37.1	1.50	µg/L	40.0	ND	93	70-130	0.5	20	
<b>Batch B25L158 - Digestion by 200.8</b>										
<b>Blank (B25L158-BLK1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Iron, Dissolved	ND	50.0	µg/L							
<b>LCS (B25L158-BS1)</b>				Prepared: 18-Dec-25 Analyzed: 30-Dec-25						
Iron, Dissolved	4910	50.0	µg/L	5000		98	85-115			



# DEQ Laboratory and Environmental Assessment Division

## Analytical Report

Sampling Event: 2512080

### Qualifiers and Definitions

<b>FDU1::B</b>	Field primary and field duplicate exceeds control limits.
<b>FDU3::B</b>	Field primary and field duplicate exceeds control limits and confirmed by reanalysis.
<b>SA4::A</b>	Dissolved analyte greater than "total" analyte. Results acceptable. The difference is within the limitations of the analytical method.
<b>DET</b>	Analyte DETECTED
<b>ND</b>	Analyte NOT DETECTED at or above the reporting limit
<b>NR</b>	Not Reported
<b>dry</b>	Sample results reported on a dry weight basis
<b>RPD</b>	Relative Percent Difference
<b>LOD</b>	Limit of Detection
<b>LOQ</b>	Limit of Quantitation
<b>ND*</b>	In order to provide a consistent report format, numeric results provided by outside laboratories that are below the listed LOQ have been changed to "ND" at the LOQ provided by the outside laboratory.

Oregon Department of Environmental Quality Chain of Custody Record <sup>1</sup>



Client<sup>2</sup>: **Groundwater Special Studies**

Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025**

QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025**

Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett**

Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QCat Code<sup>9</sup>: **26370 46844**

LEAD Coordinator and Contact #<sup>11</sup>: **Shane Bennett 971-337-4512**

Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days 37224**

Sample Information						Bottle Types <sup>20</sup>									
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : <b>12.8.25</b>				Poly 1000mL	Poly 250mL; HNO3	Poly 250mL; HNO3; Filtered	IDEXX 120 ml	Poly 250mL; Filtered	Poly 500mL; H2SO4	AG, 125mL; H2SO4			
		Station Name <sup>16</sup>	Time <sup>17</sup>	Sample Type <sup>18</sup>	Report Matrix <sup>19</sup>										
1	42163	Woodward Mine MW-2	1407	FP	GW	1	1	1	1	2	1	1			
	<del>42164</del>	<del>Woodward Mine MW-5</del> (2)			GW										
	<del>42165</del>	<del>Woodward Mine MW-6</del> (2)			GW										
	<del>42166</del>	<del>Woodward Mine MW-7</del> (2)			GW										
	<del>42168</del>	<del>Woodward Mine MW-9</del> (2)			GW										
	<del>42169</del>	<del>Woodward Mine MW-10</del> (2)			GW										
	<del>42170</del>	<del>Woodward Land &amp; Timber LLC WW-2A</del> (2)			GW										
2	42163	MW-2	1408	FD	GW	1	1	1	1	2	1	1			
3	10000	Equipment Blank	1540	EB	RW	1	1	1	1	2	1	1			

Event Comments:	Preservation Type <sup>22</sup>	Lot#	Exp Date	
	(2) SDB 12.8.25 - will be sampled later in the week	A) H2SO4	24F0210	Feb 2027
		B) HNO3	25F0015	10.3.26

Chain of Custody <sup>21</sup>					
Relinquished By:	Agency/Company	Date/Time	Received by:	Agency/Company	Date/Time
Shane Bennett	ODEQ/LEAD	12.11.25/1430	[Signature]	ORMET	12/11/25/1430

Oregon Department of Environmental Quality Chain of Custody Record <sup>1</sup>

2512080

Client<sup>2</sup>: **Groundwater Special Studies**

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Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025**

QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025**

Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett**

Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QCat Code<sup>9</sup>: **26370** 46844

LEAD Coordinator and Contact #<sup>11</sup>: **Shane Bennett 971-337-4512**

Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days** 12/23/25 37221

Sample Information					Bottle Types <sup>20</sup>											
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : 12.9.25			Sample Type <sup>18</sup>	Report Matrix <sup>19</sup>	Poly 1000mL	Poly 250mL; HNO3	Poly 250mL; HNO3; Filtered	IDEXX 120 ml	Poly 250mL; Filtered	Poly 500mL; H2SO4	AG, 125mL; H2SO4			
		Station Name <sup>16</sup>	Time <sup>17</sup>													
<del>42163</del>	<del>Woodward Mine MW-2</del>	<del>(1)</del>			<del>GW</del>	<del>1</del>	<del>1</del>	<del>1</del>	<del>1</del>	<del>2</del>	<del>1</del>	<del>1</del>				
<del>42164</del>	<del>Woodward Mine MW-5</del>	<del>(1)</del>			GW											
<del>42165</del>	<del>Woodward Mine MW-6</del>	<del>(1)</del>			GW											
<del>42166</del>	<del>Woodward Mine MW-7</del>	<del>(1)</del>			GW											
4	42168	Woodward Mine MW-9	1500	GS	GW	1	1	1	1	2	1	1				
5	42169	Woodward Mine MW-10	1750	GS	GW	1	1	1	1	2	1	1				
6	42170	Woodward Land & Timber LLC WW-2A	1230	GS	GW	1	1	1	1	2	1	1				
					FD											
<del>10000</del>	<del>Equipment Blank</del>	<del>(1)</del>			<del>EB</del>	<del>RW</del>										

Event Comments: <b>(1) SDB 12/10/25 - Either collected on 12/8 or will be collected on 12/10</b>	Preservation Type <sup>22</sup>	Lot#	Exp Date
	A) H2SO4	24 F0218	Feb 2027
	B) HNO3	25 F0015	10.3.26

Chain of Custody <sup>21</sup>					
Relinquished By:	Agency/Company	Date/Time	Received by:	Agency/Company	Date/Time
Shane Bennett	ODEQ/LEAD	12.11.25/1430	(Signature)	ODEQ	12/11/25 1430

Oregon Department of Environmental Quality Chain of Custody Record <sup>1</sup>

2512080

Client<sup>2</sup>: **Groundwater Special Studies**

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Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025** QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025** Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett** Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QCat Code<sup>9</sup>: **26370** 46844

LEAD Coordinator and Contact #<sup>11</sup>: **Shane Bennett 971-337-4512** Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days** 37224  
80 01/06/26

Sample Information						Bottle Types <sup>20</sup>										
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : <b>12.10.25</b>				Sample Type <sup>18</sup>	Report Matrix <sup>19</sup>	Poly 1000mL	Poly 250mL; HNO3	Poly 250mL; HNO3; Filtered	IDEXX 120 ml	Poly 250mL; Filtered	Poly 500mL; H2SO4	AG, 125mL; H2SO4		
		Station Name <sup>16</sup>	Time <sup>17</sup>													
	<del>42163</del>	<del>Woodward Mine MW-2</del>				GW	<del>1</del>	<del>1</del>	<del>1</del>	<del>1</del>	<del>2</del>	<del>1</del>	<del>1</del>			
7	42164	Woodward Mine MW-5	1405	GS	GS	GW	1	1	1	1	2	1	1			
8	42165	Woodward Mine MW-6	1135	GS	GS	GW	1	1	1	1	2	1	1			
9	42166	Woodward Mine MW-7	1600	GS	GS	GW	1	1	1	1	2	1	1			
	<del>42168</del>	<del>Woodward Mine MW-9</del>			<del>GS</del>	<del>GW</del>										
	<del>42169</del>	<del>Woodward Mine MW-10</del>				GW										
	<del>42170</del>	<del>Woodward Land &amp; Timber LLC WW-2A</del>				GW										
					FD	GW										
	<del>10000</del>	<del>Equipment Blank</del>			<del>EB</del>	<del>RW</del>										

Event Comments: <b>① SOB 12.11.25 - Collected on 12/8 or 12/9</b>	Preservation Type <sup>22</sup>	Lot#	Exp Date
	A) <b>H2SO4</b>	<b>24F0210</b>	<b>Feb 2027</b>
	B) <b>HNO3</b>	<b>25F0075</b>	<b>10.3.26</b>
	C)		

Chain of Custody <sup>21</sup>					
Relinquished By:	Agency/Company	Date/Time	Received by:	Agency/Company	Date/Time
<b>Shane Bennett</b>	<b>ODEQ/LEAD</b>	<b>12.11.25/1430</b>	<b>[Signature]</b>	<b>ORPED</b>	<b>12/11/25 1430</b>

Oregon Department of Environmental Quality Field Data Sheet

2512080

Client<sup>2</sup>: *Groundwater Special Studies*

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Project<sup>3</sup>: *Woodward Mine + Knife River GW Split 2025* QAPP or SAP#<sup>4</sup>: *DEQ25-LAB-0043-SAP*

Survey<sup>5</sup>: *2025* Survey Batch<sup>6</sup>: *Dec-2025*

Sample Collector (s)<sup>7</sup>: *Shane Bennett* Sampling Agency<sup>8</sup>: *DEQ Laboratory*

QCat Code<sup>9</sup>: *26370*

LEAD Coordinator and Contact#<sup>11</sup>: *Shane Bennett 971-337-451* Report Recipients<sup>12</sup>: *Shane Bennett*

TAT or Due Date<sup>10</sup>: *90 days*

Sample Information				Field Data <sup>19, 20, 21, 24</sup>										Item Comment: <sup>22, 23, 24</sup>
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : Station Name <sup>16</sup>	Time <sup>17</sup> Sample Type <sup>18</sup>	DTW ft (X.XX)	DTB ft (X.XX)	Temp °C (X.X)	Sp Cond umhos/cm (X)	pH SU (X.X)	DO (Lum) mg/L (X.X)	DO Sat (Lum) % (X)	ORP mV (X)	Turb NTU (X)		
1	42163	Woodward Mine MW-2	1407 FP	11.72 36.0	36.0	12.9	758	7.66	4.70	NR	254.1	19.9		
	<del>42164</del>	<del>Woodward Mine MW-5</del> (2)												
	<del>42165</del>	<del>Woodward Mine MW-6</del> (2)												
	<del>42166</del>	<del>Woodward Mine MW-7</del> (2)												
	<del>42168</del>	<del>Woodward Mine MW-9</del> (2)												
	<del>42169</del>	<del>Woodward Mine MW-10</del> (2)												
	<del>42170</del>	<del>Woodward Land &amp; Timber LLC WW-2A</del> (2)												
2	42163	Woodward Mine MW-2	1408 FD	NA	NA	12.9	759	7.66	4.71	NR	255.7	22.7		
3	10000	Equipment Blank	1540 EB	NA	NA	12.9	91.4	5.94	9.35	97.7	262.7	0.64		

Event Comments: (1) SDB 12.8.25  
(2) Will be sampled later in the week, SDB 12.8.25

Oregon Department of Environmental Quality Field Data Sheet

2512080

Client<sup>2</sup>: *Groundwater Special Studies*

\* Office Use Only \*  
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Project<sup>3</sup>: *Woodward Mine + Knife River GW Split 2025*

QAPP or SAP#<sup>4</sup>: *DEQ25-LAB-0043-SAP*

Survey<sup>5</sup>: *2025*

Survey Batch<sup>6</sup>: *Dec-2025*

Sample Collector (s)<sup>7</sup>: *Shane Bennett*

Sampling Agency<sup>8</sup>: *DEQ Laboratory*

QCat Code<sup>9</sup>: *26370*

LEAD Coordinator and Contact#<sup>11</sup>: *Shane Bennett 971-337-451*

Report Recipients<sup>12</sup>: *Shane Bennett*

TAT or Due Date<sup>10</sup>: *90 days*

Sample Information				Field Data <sup>19, 20, 21, 24</sup>										Item Comment: <sup>22, 23, 24</sup>
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : <i>12.9.25</i>	Sample Type <sup>18</sup>	DTW ft (X.XX)	DTB ft (X.XX)	Temp °C (X.X)	Sp Cond umhos/cm (X)	pH SU (X.X)	DO (Lum) mg/L (X.X)	DO Sat (Lum) % (X)	ORP mV (X)	Turb NTU (X)		
	<del>42163</del>	<del>Woodward Mine MW-2</del>	①											
	<del>42164</del>	<del>Woodward Mine MW-5</del>	①											
	<del>42165</del>	<del>Woodward Mine MW-6</del>	①											
	<del>42166</del>	<del>Woodward Mine MW-7</del>	①											
4	42168	Woodward Mine MW-9	GS	24.74	40.0	12.8	688	7.49	4.74	NR	317.3	1.77		
5	42169	Woodward Mine MW-10	GS	22.45	30.0	15.7	478.6	7.38	2.32	NR	294.3	2.65		
6	42170	Woodward Land & Timber LLC WW-2A	GS	20.96	25.0	12.4	675	7.36	7.55	NR	330.1	6.0		
			FD											
	<del>10000</del>	<del>Equipment Blank</del>	①	<del>EB</del>	<del>NA</del>	<del>NA</del>								

Event Comments: ① SDB 12.10.25 - Either collected on 12/8 or will be collected on 12/10

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Oregon Department of Environmental Quality Field Data Sheet

2512080

Client<sup>2</sup>: **Groundwater Special Studies**

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Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025** QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025** Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett** Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QC Cat Code<sup>9</sup>: **26370** <sup>(S) 4/28/24</sup>  
<sup>(S) 12/23/25</sup>

LEAD Coordinator and Contact#<sup>11</sup>: **Shane Bennett 971-337-451** Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days** <sup>(S) 3/7/24</sup>

Sample Information				Field Data <sup>19, 20, 21, 24</sup>											Item Comment: <sup>22, 23, 24</sup>
Item <sup>13</sup>	STATION ID # <sup>14</sup>	Collection Date <sup>15</sup> : <b>12.10.25</b>		DTW	DTB	Temp	Sp Cond	pH	DO (Lum)	DO Sat (Lum)	ORP	Turb			
		Station Name <sup>16</sup>	Time <sup>17</sup>	Sample Type <sup>18</sup>	ft (X.XX)	ft (X.XX)	°C (X.X)	umhos /cm (X)	SU (X.X)	mg/L (X.X)	% (X)	mV (X)	NTU (X)		
	<del>42163</del>	<del>Woodward Mine MW-2</del>													
7	42164	Woodward Mine MW-5	1405	GS	20.11	71.0	13.8	734	7.59	0.59	NR	64.0	3.83		
8	42165	Woodward Mine MW-6	1135	GS	<sup>(1)</sup> 62 32.6	62.0	14.5	816	7.22	5.28	NR	365.0	12.7		
9	42166	Woodward Mine MW-7	1600	GS	21.85	55.0	12.5	726	7.39	1.73	NR	235.4	1.99		
	<del>42168</del>	<del>Woodward Mine MW-9</del>													
	<del>42169</del>	<del>Woodward Mine MW-10</del>													
	<del>42170</del>	<del>Woodward Land &amp; Timber LLC WW-2A</del>													
				FD											
	<del>10000</del>	<del>Equipment Blank</del>		EB	NA	NA									

Event Comments: <sup>(1)</sup> SDB 12.11.25  
<sup>(2)</sup> Collected on 12/8 or 12/9 - SDB 12.11.25

Client<sup>2</sup>: *Groundwater Special Studies*

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Project<sup>3</sup>: *Woodward Mine + Knife River GW Split 2025*

QAPP or SAP#<sup>4</sup>: *DEQ25-LAB-0043-SAP*

Survey<sup>5</sup>: *2025*

Survey Batch<sup>6</sup>: *Dec-25*

Sample Collector (s)<sup>7</sup>: *Shane Bennett*

Sampling Agency<sup>8</sup>: *DEQ Laboratory*

QCat Code<sup>9</sup>: *26378*

LEAD Coordinator and Contact#<sup>11</sup>: *Shane Bennett 971-337-451*

Report Recipients<sup>12</sup>: *Shane Bennett*

TAT or Due Date<sup>10</sup>: *90 days*

Sample Information					Check Equip. <sup>22</sup> & Method <sup>23</sup> :									Comments <sup>21</sup>		
Item <sup>13</sup>	Station ID # <sup>14</sup>	Collection Date <sup>15</sup> : <i>12.8.25</i>	Station Name <sup>16</sup>	Time <sup>17</sup>	Sample Type <sup>18</sup>	E.Coli			Total Coliforms			Enterococcus				
						Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls		
1	42163		Woodward Mine MW-2			0	0	<1	0	0	<1					
	42164		Woodward Mine MW-5													
	42165		Woodward Mine MW-6													
	42166		Woodward Mine MW-7													
	42168		Woodward Mine MW-9													
	42169		Woodward Mine MW-10													
	42170		Woodward Land & Timber LLC WW-2A													
2	42163		Woodward Mine MW-2		FD				0	0	<1					
3	10000		Equipment Blank		EB				0	0	<1					

Event Comments<sup>23</sup>: *① SDB 12.9.25*

Client<sup>2</sup>: Groundwater Special Studies

\* Office Use Only \*  
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Project<sup>3</sup>: Woodward Mine + Knife River GW Split 2025

QAPP or SAP#<sup>4</sup>: DEQ25-LAB-0043-SAP

Survey<sup>5</sup>: 2025

Survey Batch<sup>6</sup>: Dec-25

2512080

Sample Collector (s)<sup>7</sup>: Shane Bennett

Sampling Agency<sup>8</sup>: DEQ Laboratory

QCat Code<sup>9</sup>: 26370

LEAD Coordinator and Contact#<sup>11</sup>: Shane Bennett 971-337-451

Report Recipients<sup>12</sup>: Shane Bennett

TAT or Due Date<sup>10</sup>: 90 days

46899  
@12/21/25  
3722  
@01/06/26

Sample Information				Check Equip. <sup>22</sup> & Method <sup>23</sup> :									Comments <sup>21</sup>		
				<input type="checkbox"/> Quanti-Tray 2000®			<input type="checkbox"/> Quanti-Tray®								
				<input type="checkbox"/> Colilert-24 (freshwater)			<input type="checkbox"/> Enterolert - 24 (saltwater)			<input type="checkbox"/> Colilert - 18					
Item <sup>13</sup>	Station ID # <sup>14</sup>	Collection Date <sup>15</sup> : <u>12.10.25</u>		E.Coli			Total Coliforms			Enterococcus					
		Station Name <sup>16</sup>	Time <sup>17</sup>	Sample Type <sup>18</sup>	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls		
	<del>42163</del>	<del>Woodward Mine MW-2</del>													
7	42164	Woodward Mine MW-5	1405				0	6	7.4						
8	42165	Woodward Mine MW-6	1135				0	6	2.1						
9	42166	Woodward Mine MW-7	1600				2	6	8.4						
	<del>42168</del>	<del>Woodward Mine MW-9</del>													
	<del>42169</del>	<del>Woodward Mine MW-10</del>													
	<del>42170</del>	<del>Woodward Land &amp; Timber LLC WW-2A</del>													
				FD											
	<del>10000</del>	<del>Equipment Blank</del>		EB											

Event Comments<sup>23</sup>:  
 ① Collected either 12/8 or 12/9 - SDB 12.11.25  
 ② SDB 12.11.25

Client<sup>2</sup>: *Groundwater Special Studies*

\* Office Use Only \*  
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Project<sup>3</sup>: *Woodward Mine + Knife River GW Split 2025*

QAPP or SAP#<sup>4</sup>: *DEQ25-LAB-0043-SAP*

Survey<sup>5</sup>: *2025*

Survey Batch<sup>6</sup>: *Dec-25*

Sample Collector (s)<sup>7</sup>: *Shane Bennett*

Sampling Agency<sup>8</sup>: *DEQ Laboratory*

QCat Code<sup>9</sup>: *26370*

LEAD Coordinator and Contact#<sup>11</sup>: *Shane Bennett 971-337-451*

Report Recipients<sup>12</sup>: *Shane Bennett*

TAT or Due Date<sup>10</sup>: *90 days*

Sample Information				Check Equip. <sup>22</sup> & Method <sup>23</sup> :									Enterococcus			Comments <sup>21</sup>
Item <sup>13</sup>	Station ID # <sup>14</sup>	Collection Date <sup>15</sup> : <i>12.9.25</i>	Station Name <sup>16</sup>	Time <sup>17</sup>	Sample Type <sup>18</sup>	E.Coli			Total Coliforms			Enterococcus				
						Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls	Small Well Count <sup>20</sup>	Large Well Count <sup>20</sup>	MPN <sup>19</sup> /100 mls		
	<del>42163</del>		<del>Woodward Mine MW-2</del>													
	<del>42164</del>		<del>Woodward Mine MW-5</del>													
	<del>42165</del>		<del>Woodward Mine MW-6</del>													
	<del>42166</del>		<del>Woodward Mine MW-7</del>													
4	42168		Woodward Mine MW-9	1500	GS				0	0	<1					
5	42169		Woodward Mine MW-10	1750	GS				0	0	<1					
6	42170		Woodward Land & Timber LLC WW-2A	1230	GS				0	0	<1					
					FD											
	<del>10000</del>		<del>Equipment Blank</del>		FB											

Event Comments:<sup>23</sup> *① SOB 12.11.25 - Collected on 12/8 or 12/10*

Oregon Department of Environmental Quality Bacteria Field Form

2512080

Client<sup>2</sup>: **Groundwater Special Studies**

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Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025**

QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025**

Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett**

Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QCat Code<sup>9</sup>: **26370** 46844

LEAD Coordinator and Contact#<sup>11</sup>: **Shane Bennett 971-337-4512**

Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days** (w) 1/13/25  
37224  
(A) 01/06/25

Incubator Information

Quality Control Measures	Incubator ID: <b>Boekell (Ambient)</b>			Incubator ID:	
	Date	Time	Temperature	Time	Temperature
Sample Setup <sup>13</sup>	12.8.25	2033			
Sample Read <sup>14</sup>	12.9.25	2033			
1st Incubator Temperature <sup>15</sup>	12.8.25	2033	35.0°C		
2nd Incubator Temperature <sup>16</sup>	12.9.25	2033	35.1°C		
1st NIST Temperature <sup>17</sup>	12.8.25	2033	34.8°C		
2nd NIST Temperature <sup>18</sup>	<del>12.8.25</del> 12.9.25	2033	35.1°C		
If Applicable: 1st Cooler Temp (am) <sup>19</sup>	12.8.25	NR	NR		
If Applicable: 2nd Cooler Temp (pm) <sup>20</sup>	12.8.25	2015	0.7°C		

Event Comments:<sup>21</sup> **① SOB 12.9.25**

3311

Oregon Department of Environmental Quality Bacteria Field Form

Page 9 of 16 (8) 12/11/25

2512080

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Client<sup>2</sup>: **Groundwater Special Studies**  
 Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025** QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**  
 Survey<sup>5</sup>: **2025** Survey Batch<sup>6</sup>: **Dec-2025**

Sample Collector (s)<sup>7</sup>: **Shane Bennett** Sampling Agency<sup>8</sup>: **DEQ Laboratory** QCat Code<sup>9</sup>: **26370** 44844  
 LEAD Coordinator and Contact#<sup>11</sup>: **Shane Bennett 971-337-4512** Report Recipients<sup>12</sup>: **Shane Bennett** TAT or Due Date<sup>10</sup>: **90 days** (12/23/25) 37724  
 (a) 01/06/26

**Incubator Information**

Quality Control Measures	Incubator ID: Doetel (Ambient)			Incubator ID:	
	Date	Time	Temperature	Time	Temperature
Sample Setup <sup>13</sup>	12.9.25	20:17			
Sample Read <sup>14</sup>	12.10.25	20:39			
1st Incubator Temperature <sup>15</sup>	12.9.25	20:17	35.1		
2nd Incubator Temperature <sup>16</sup>	12.10.25	20:39	35.0		
1st NIST Temperature <sup>17</sup>	12.9.25	20:17	35.1		
2nd NIST Temperature <sup>18</sup>	12.10.25	20:39	34.9		
If Applicable: 1st Cooler Temp (am) <sup>19</sup> #4011926	1248 12.9.25	1248	1.76		
If Applicable: 2nd Cooler Temp (pm) <sup>20</sup>	Thermometer is broken				

Event Comments:<sup>21</sup>

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Oregon Department of Environmental Quality Bacteria Field Form

Client<sup>2</sup>: **Groundwater Special Studies**

Project<sup>3</sup>: **Woodward Mine + Knife River GW Split 2025**

QAPP or SAP#<sup>4</sup>: **DEQ25-LAB-0043-SAP**

Survey<sup>5</sup>: **2025**

Survey Batch<sup>6</sup>: **Dec-2025**

\* Office Use Only \*  
Affix Work Order Barcode Here

2512080

Sample Collector (s)<sup>7</sup>: **Shane Bennett**

Sampling Agency<sup>8</sup>: **DEQ Laboratory**

QCat Code<sup>9</sup>: **26370-44844**

LEAD Coordinator and Contact#<sup>11</sup>: **Shane Bennett 971-337-4512**

Report Recipients<sup>12</sup>: **Shane Bennett**

TAT or Due Date<sup>10</sup>: **90 days 12/23/25**  
**3/17/24**  
**01/08/26**

**Incubator Information**

Quality Control Measures	Incubator ID: <b>Boetel (Ambient)</b>			Incubator ID:	
	Date	Time	Temperature	Time	Temperature
Sample Setup <sup>13</sup>	12.10.25	2039			
Sample Read <sup>14</sup>	12.11.25	2040			
1st Incubator Temperature <sup>15</sup>	12.10.25	2039	35.0		
2nd Incubator Temperature <sup>16</sup>	12.11.25	2040	35.0		
1st NIST Temperature <sup>17</sup>	12.10.25	2039	34.9		
2nd NIST Temperature <sup>18</sup>	12.11.25	2040	35.0		
If Applicable: 1st Cooler Temp (am) <sup>19</sup>	/ (1)	/	/		
If Applicable: 2nd Cooler Temp (pm) <sup>20</sup>	/	/	/		

Event Comments:<sup>21</sup> (1) Thermometer was broken, could not record cooler temps.

Client<sup>1</sup>: Groundwater Special Studies

Sample Collector(s)<sup>3</sup>: Shane Bennett

Date: 12.8.25

Conductivity		Meter ID <sup>6</sup> : <u>Columbo Shaft</u>		Accuracy Criterion: +/- 7%				
Pre time <sup>7</sup> : <u>1022</u>				Post time <sup>8</sup> : <u>1620</u>				
Std	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)
100	11.4	100.5	.5	Y	12.2	100.5	0.5	Y
1000	11.5	995	1.5	Y	12.4	992	0.8	Y

Dissolved O <sub>2</sub>		Meter ID <sup>6</sup> : <u>Shaft Columbo</u>		Sat Air Accuracy Criterion: +/- 0.3 mg/L Sat Water Accuracy Criterion: -0.3 to 0.4 mg/L					
Pre time <sup>7</sup> : <u>1022</u>		Recalibrating? <sup>10</sup> <input type="checkbox"/>		Post time <sup>8</sup> : <u>8 20:20</u>					
Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading	Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading
<u>Air</u>	12.9 14.2	689.4 690.0	98.9 99.2	9.47 9.24	<u>Air</u>	20.7	684.8	101.9	8.22
Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)		Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)	
	9.59 9.30	-0.12 -0.06	Y			8.06	0.16	Y	

Standards QA information <sup>12</sup>						
	pH			Conductivity (µS/cm)		(Other) ORP
Std Value	7	10	4	100	1000	220mV
Lot #	243529	242043	243557	2503M22	1408G05	CU1
Exp. Date	8/26	9/26	8/26	3/27	7/26	6/26

Meter Comments (include errors, damage/flaws, repair needs, or other observations): \_\_\_\_\_

Project<sup>2</sup>: Woodward Mine + Knife River GW Split 2025

Survey<sup>4</sup>: 2025

Survey Batch<sup>5</sup>: Dec-2025

Sampling Agency: DEQ Laboratory

pH		Meter ID <sup>6</sup> : <u>Columbo Shaft</u>		Accuracy Criterion: +/- 0.2 SU Recalibration Criterion: +/- 0.1 SU						
Pre time <sup>7</sup> : <u>1022</u>				Recalibrating? <sup>10</sup> <input type="checkbox"/>		Post time <sup>8</sup> : <u>1620</u>				
Std	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)
4	11.6	4.00	3.96	-0.04	Y	12.2	4.00	4.04	.04	Y
7	11.5	7.05	7.08	.03	Y	12.1	7.05	7.14	.09	Y
10	11.5	10.17	10.25	.08	Y	12.5	10.155	10.29	.14	Y

ORP		Meter ID <sup>6</sup> : <u>Columbo Shaft</u>		Accuracy Criterion: +/- 20mV				
Pre time <sup>7</sup> : <del>1022</del> <u>1045</u>				Post time <sup>8</sup> : <u>1620</u>				
Std	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)
<del>220</del>	<del>12.9</del>	<del>213.3</del>	<del>-6.7</del>	<del>Y</del>				
220	12.8	212.4	-7.6	Y	13.1	212.1	-7.8	Y

Turbidity		Meter ID <sup>6</sup> : <u>50822</u>		Accuracy Criterion: +/- 10%		
Pre time <sup>7</sup> : <u>1022</u>				Post time <sup>8</sup> : <u>1620</u>		
Std	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)
4.04	3.69	9.5	Y	3.75	7.2	Y
506	522	3.2	Y	534	5.5	Y
52.8	50.8	3.8	Y	52.5	<1	Y

Temperature
Date of last 2-Point Check <sup>14</sup>
<u>12.5.25</u>

PASS

Oregon Department of Environmental Quality Field Meter Continuing Calibration Verification (CCV)

Client<sup>1</sup>: Groundwater Special Studies

Sample Collector(s)<sup>3</sup>: Shane Bennett

Date: 12.9.25

Conductivity		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 7%				
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1814</u>				
Std	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)
<u>100</u>	<u>10.8</u>	<u>101.1</u>	<u>1.1</u>	<u>Y</u>	<u>11.2</u>	<u>101.9</u>	<u>1.1%</u>	<u>Y</u>
<u>1000</u>	<u>10.9</u>	<u>995</u>	<u>0.5</u>	<u>Y</u>	<u>11.3</u>	<u>993</u>	<u>0.7</u>	<u>Y</u>

Dissolved O <sub>2</sub>		Meter ID <sup>6</sup> : <u>Shaft</u>		Sat Air Accuracy Criterion: +/- 0.3 mg/L				Sat Water Accuracy Criterion: -0.3 to 0.4 mg/L			
Pre time <sup>7</sup> : <u>741</u>				Recalibrating <sup>10</sup> <input type="checkbox"/>				Post time <sup>8</sup> : <u>1814</u>			
Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading	Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading		
<u>Air</u>	<u>19.8</u>	<u>684.4</u>	<u>100.9</u>	<u>8.29</u>	<u>Air</u>	<u>11.4</u>	<u>688.6</u>	<u>100.6</u>	<u>9.96</u>		
Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)		Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)			
	<u>8.20</u>	<u>.09</u>	<u>Y</u>			<u>9.89</u>	<u>-.07</u>	<u>Y</u>			

Standards QA information <sup>12</sup>									
pH			Conductivity (µS/cm)			LIS		(Other) ORP	
Std Value	<u>7</u>	<u>10</u>	<u>4</u>	<u>100</u>	<u>1000</u>			<u>200 mV</u>	
Lot #	<u>243529</u>	<u>242013</u>	<u>243557</u>	<u>2503M22</u>	<u>M08605</u>			<u>CU1</u>	
Exp. Date	<u>8/26</u>	<u>6/26</u>	<u>8/24</u>	<u>3/27</u>	<u>7/26</u>			<u>6/26</u>	

Meter Comments (include errors, damage/flaws, repair needs, or other observations): \_\_\_\_\_

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Project<sup>2</sup>: Woodward Mine + Knife River GW Split 2025

Survey<sup>4</sup>: 2025

Survey Batch<sup>5</sup>: Dec-2025

Sampling Agency: DEQ Laboratory

pH		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 0.2 SU							Recalibration Criterion: +/- 0.1 SU		
Pre time <sup>7</sup> : <u>840</u>				Recalibrating <sup>10</sup> <input type="checkbox"/>				Post time <sup>8</sup> : <u>1840</u>					
Std	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)			
<u>4</u>	<u>11.5</u>	<u>4.00</u>	<u>3.92</u>	<u>-.08</u>	<u>Y</u>	<u>11.3</u>	<u>4.00</u>	<u>3.98</u>	<u>-.02</u>	<u>Y</u>			
<u>7</u>	<u>10.9</u>	<u>7.06</u>	<u>7.04</u>	<u>-.02</u>	<u>Y</u>	<u>11.2</u>	<u>7.05</u>	<u>7.07</u>	<u>.02</u>	<u>Y</u>			
<u>10</u>	<u>10.9</u>	<u>10.18</u>	<u>10.19</u>	<u>.01</u>	<u>Y</u>	<u>11.3</u>	<u>10.18</u>	<u>10.28</u>	<u>.10</u>	<u>Y</u>			

ORP		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 20mV					
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1840</u>					
Std	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)	
<u>220</u>	<u>13.3</u>	<u>213.1</u>	<u>-6.9</u>	<u>Y</u>	<u>11.4</u>	<u>211.7</u>	<u>-8.3</u>	<u>Y</u>	

Turbidity		Meter ID <sup>6</sup> : <u>50822 51386</u>		Accuracy Criterion: +/- 10%			
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1840</u>			
Std	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)	
<u>4.04</u>	<u>5.32</u>	<u>1.3</u>	<u>Y</u>	<u>5.96</u>	<u>&lt;1</u>	<u>Y</u>	
<u>40.6</u>	<u>40.2</u>	<u>1.0</u>	<u>Y</u>	<u>40.3</u>	<u>&lt;1</u>	<u>Y</u>	
<u>475</u>	<u>47.6</u>	<u>2.1%</u>	<u>Y</u>	<u>47.7</u>	<u>&lt;1</u>	<u>Y</u>	

Temperature  
Date of last 2-Point Check<sup>14</sup>  
12/5/25

Oregon Department of Environmental Quality Field Meter Continuing Calibration Verification (CCV)

Client<sup>1</sup>: Groundwater Special Studies

Sample Collector(s)<sup>3</sup>: Shane Bennett

Date: 12/10/25

Conductivity		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 7%				
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1720</u>				
Std	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (µS/cm)	Diff (%)	Pass <sup>9</sup> (Y/N)
<u>100</u>	<u>10.0</u>	<u>100.4</u>	<u>.4</u>	<u>Y</u>	<u>11.4</u>	<u>100.1</u>	<u>0.1</u>	<u>Y</u>
<u>1000</u>	<u>9.9</u>	<u>996</u>	<u>-.4</u>	<u>Y</u>	<u>11.4</u>	<u>995</u>	<u>0.5</u>	<u>Y</u>

Dissolved O <sub>2</sub>		Meter ID <sup>6</sup> : <u>Shaft</u>		Sat Air Accuracy Criterion: +/- 0.3 mg/L Sat Water Accuracy Criterion: -0.3 to 0.4 mg/L					
Pre time <sup>7</sup> : <u>750</u>		Recalibrating <sup>10</sup> <input type="checkbox"/>		Post time <sup>8</sup> : <u>1635</u>					
Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading	Standard Type	Temp (°C)	mmHg	% Sat Reading	mg/L Reading
<u>Air</u>	<u>8.2</u>	<u>686.3</u>	<u>101.4</u>	<u>10.80</u>	<u>Air</u>	<u>12.0</u>	<u>689.0</u>	<u>100.8</u>	<u>9.85</u>
Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)		Water	Std (mg/L)	Diff (mg/L)	Pass <sup>9</sup> (Y/N)	
	<u>10.63</u>	<u>-.17</u>	<u>Y</u>			<u>9.76</u>	<u>.09</u>	<u>Y</u>	

Standards QA information <sup>12</sup>						
	pH			Conductivity (µS/cm)		LIS
Std Value	<u>7</u>	<u>10</u>	<u>4</u>	<u>100</u>	<u>1000</u>	<u>20mV</u>
Lot #	<u>243529</u>	<u>242043</u>	<u>243557</u>	<u>2503M22</u>	<u>1408GDS</u>	<u>6CU1</u>
Exp. Date	<u>8/26</u>	<u>6/26</u>	<u>5/26</u>	<u>3/27</u>	<u>7/26</u>	<u>6/26</u>

Meter Comments (include errors, damage/flaws, repair needs, or other observations): \_\_\_\_\_

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Work Order #: 2512080

Project<sup>2</sup>: Woodward Mine + Knife River GW Split 2025

Survey<sup>4</sup>: 2025

Survey Batch<sup>5</sup>: Dec-2025

Sampling Agency: DEQ Laboratory

pH		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 0.2 SU Recalibration Criterion: +/- 0.1 SU						
Pre time <sup>7</sup> : <u>840</u>				Recalibrating <sup>10</sup> <input type="checkbox"/>		Post time <sup>8</sup> : <u>1635</u>				
Std	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Theo (SU)	Read (SU)	Diff (SU)	Pass <sup>9</sup> (Y/N)
<u>4</u>	<u>9.4</u>	<u>3.40</u>	<u>3.94</u>	<u>-.06</u>	<u>Y</u>	<u>11.8</u>	<u>4.00</u>	<u>3.93</u>	<u>-.07</u>	<u>Y</u>
<u>7</u>	<u>9.3</u>	<u>7.06</u>	<u>7.06</u>	<u>0</u>	<u>Y</u>	<u>11.9</u>	<u>7.05</u>	<u>7.02</u>	<u>-.03</u>	<u>Y</u>
<u>10</u>	<u>9.3</u>	<u>10.19</u>	<u>10.28</u>	<u>.09</u>	<u>Y</u>	<u>12.0</u>	<u>10.17</u>	<u>10.12</u>	<u>-.05</u>	<u>Y</u>

ORP		Meter ID <sup>6</sup> : <u>Shaft</u>		Accuracy Criterion: +/- 20mV					
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1635</u>					
Std	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)	Temp (°C)	Read (mV)	Diff (mV)	Pass <sup>9</sup> (Y/N)	
<u>220</u>	<u>10.0</u>	<u>213.3</u>	<u>-6.7</u>	<u>Y</u>	<u>12.3</u>	<u>214.2</u>	<u>-5.8</u>	<u>Y</u>	

Turbidity		Meter ID <sup>6</sup> : <u>51386</u>		Accuracy Criterion: +/- 10%			
Pre time <sup>7</sup> : <u>840</u>				Post time <sup>8</sup> : <u>1635</u>			
Std	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)	Read (NTU)	Diff (%)	Pass <sup>9</sup> (Y/N)	
<u>6.0</u>	<u>5.92</u>	<u>1.3</u>	<u>Y</u>	<u>6.02</u>	<u>21</u>	<u>Y</u>	
<u>40.6</u>	<u>40.3</u>	<u>&lt;1</u>	<u>Y</u>	<u>40.2</u>	<u>&lt;1</u>	<u>Y</u>	
<u>475</u>	<u>476</u>	<u>&lt;1</u>	<u>Y</u>	<u>478</u>	<u>&lt;1</u>	<u>Y</u>	

Temperature
Date of last 2-Point Check <sup>14</sup>
<u>12.5.25</u>

# Sample Receipt Checklist



Work Order Number: 151208D Date & Time Received: 12/11/25 1430

Project Name: GW Special Studies - Woodward Mine + Eagle River Split

### Shipping Containers

Number of shipping containers: 02 Samples require thermal preservation:  Y  N  
Cooler(s) contained ice:  Y  N

Container / Cooler: 1 2

### Corrective Actions

*If the samples require thermal preservation and do not meet program/method specific criteria, document non-conformance in Element and notify project manager.*

Temperature Check: 3.2 °C 1.2 °C \_\_\_\_\_ °C

Thermometer ID: IR1/IR2/THERM2 IR1/IR2/THERM2

### Sample Condition

Yes No

- Were samples collected in the appropriate containers?
- Were sample labels recorded clearly and do they match COC?
- Were samples received intact and without damage?
- Were sample volumes sufficient for the requested analyses?
- Were all samples received within their holding times?

### Corrective Actions

*If the response is "No" document nonconformances and contact the sample collector and/or project manager to determine if analysis will proceed. All decisions to proceed, cancel, or resample must be documented in Element.*

### Sample Preservation

Yes No

- Were samples taken same day as temperature recorded?
- Was sample preservation checked at the time of sample receipt?
- Were all samples properly preserved (where appropriate)?

### Corrective Actions

*If the response is "No" follow procedure outlined in DEQ06-LAB-0054-SOP section 7.2. Document the corrective action on the "Sample Preservation Form" and in Element in the Container and Analysis comment section.*

### Chain of Custody

Yes No

- Was a custody seal present?  On Cooler  On Container
- Was the custody seal intact?  On Cooler  On Container
- Was the Chain of Custody form present and properly signed?  Not Present  Not Signed

Comments: \_\_\_\_\_

Received By/Date: \_\_\_\_\_

Shawford 12/11/25