

# Real Time Water Quality Deployment Report

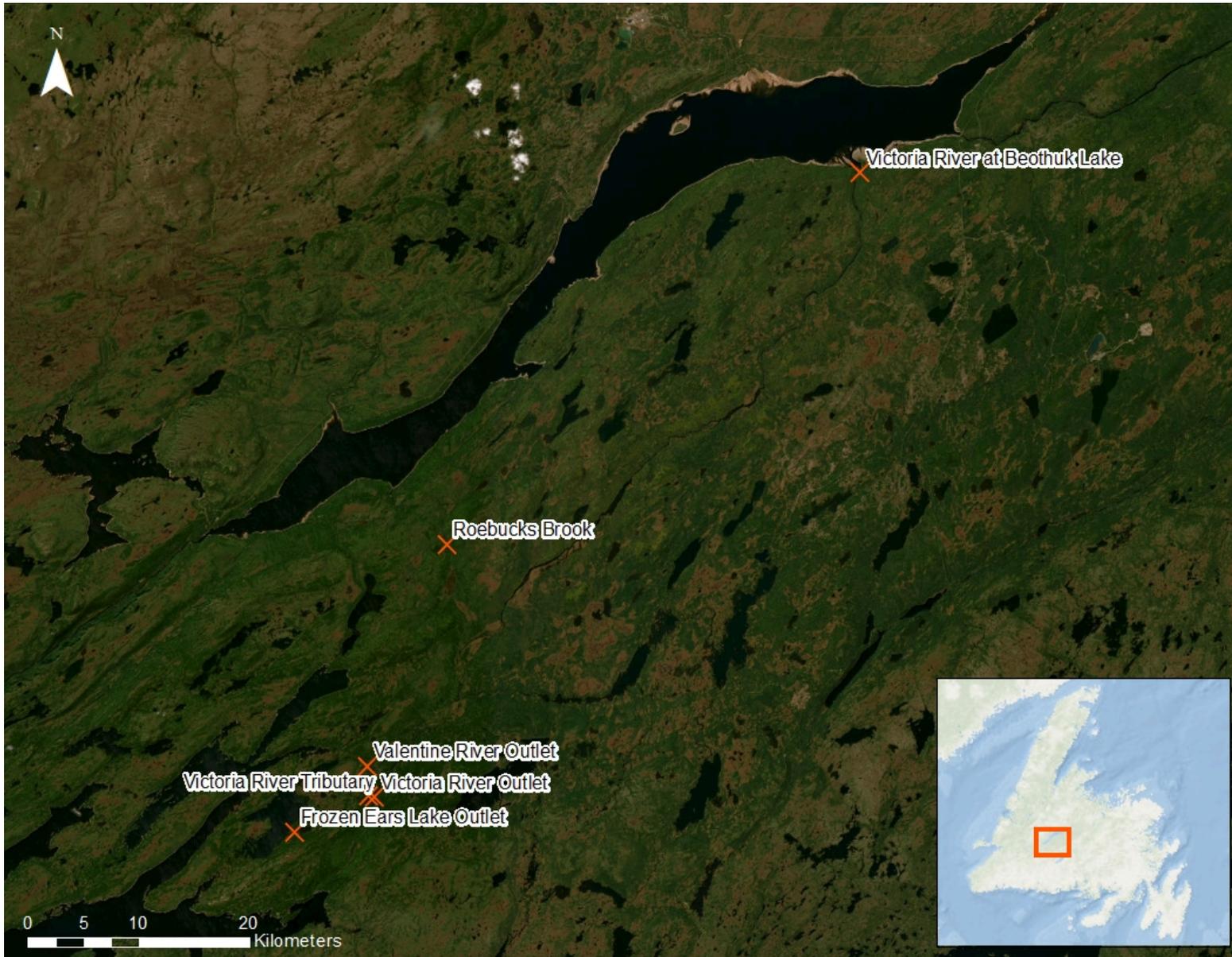
## Equinox Gold: Valentine Gold Mine Network

2025-11-19 to 2025-12-31



Government of Newfoundland & Labrador  
Department of Environment, Conservation & Climate Change  
Water Resources Management Division

# Valentine Gold Mine Network



The Water Resources Management Division (WRMD), in collaboration with Equinox Gold (formerly Calibre/Marathon Gold) maintain fourteen real-time water quality (RTWQ) and water quantity monitoring stations. These stations are part of a provincial real-time network designed to monitor, process, and share water quality and quantity data with both WRMD and Equinox Gold, supporting the evaluation and management of water resources. The network also provides early detection of potential or emerging water issues, allowing for prompt response and implementation of mitigation measures.

Six of these stations focus on surface water and will be addressed in this report. The remaining eight stations are groundwater monitoring wells which are reported annually. The six surface water stations are located at Victoria River at Beothuk Lake, Roebucks Brook at Access Road, Valentine River Outlet, Victoria River Tributary, Victoria River Outlet, and Frozen Ears Lake Outlet.

This report covers the monitoring period from 2025-11-19 to 2025-12-10 for all stations, except for Frozen Ears station where the deployment period ended on 2025-12-31. The water quality instruments were removed for the winter season at the end of this deployment to avoid damage from ice and will be redeployed in the spring when conditions improve.

Station Name	Station Number	Latitude	Longitude
Frozen Ear Lake Outlet	NF02YN0052	48.39	-57.14
Roebucks Brook	NF02YN0049	48.54	-57.01
Valentine River Outlet	NF02YN0048	48.42	-57.08
Victoria River at Beothuk Lake	NF02YN0051	48.74	-56.68
Victoria River Outlet	NF02YN0047	48.41	-57.07
Victoria River Tributary	NF02YN0050	48.41	-57.08

# Quality Assurance and Quality Control Procedures

As part of the Quality Assurance and Quality Control protocol (QA/QC), an assessment of the reliability of data recorded by an instrument is made at the beginning and end of the deployment period. The procedure is based on the approach used by the United States Geological Survey. With the exception of water quantity data (stage), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Corrected data can be obtained upon request.

Parameter	Excellent	Good	Fair	Marginal	Poor
pH	$\leq \pm 0.2$ units	$\leq \pm 0.21 - 0.5$ units	$\leq \pm 0.51 - 0.8$ units	$\leq \pm 0.81 - 1$ units	$> \pm 1$ units
Water Temperature	$\leq \pm 0.2^\circ\text{C}$	$\leq \pm 0.21 - 0.5^\circ\text{C}$	$\leq \pm 0.51 - 0.8^\circ\text{C}$	$\leq \pm 0.81 - 1^\circ\text{C}$	$> \pm 1^\circ\text{C}$
Dissolved oxygen	$\leq \pm 0.3$ mg/L	$\leq \pm 0.31 - 0.5$ mg/L	$\leq \pm 0.51 - 0.8$ mg/L	$\leq \pm 0.81 - 1$ mg/L	$> \pm 1$ mg/L
Turbidity	$\leq \pm 2$ turbidity units or $\leq \pm 5\%$ , whichever is greater	$\leq \pm 2.1-5$ turbidity units or $\leq \pm 5.1-10\%$ , whichever is greater	$\leq \pm 5.1-8$ turbidity units or $\leq \pm 10.1-15\%$ , whichever is greater	$\leq \pm 8.1-10$ turbidity units or $\leq \pm 15.1-20\%$ , whichever is greater	$> \pm 10$ turbidity units or $> \pm 20\%$ , whichever is greater
Specific Conductance	$\leq \pm 3$ $\mu\text{S}/\text{cm}$ or $\leq \pm 3\%$ , whichever is greater	$\leq \pm 3.1-10$ $\mu\text{S}/\text{cm}$ or $\leq \pm 3.1-10\%$ , whichever is greater	$\leq \pm 10 - 15$ $\mu\text{S}/\text{cm}$ or $\leq \pm 10.1-15\%$ , whichever is greater	$\leq \pm 15.1 - 20$ $\mu\text{S}/\text{cm}$ or $\leq \pm 15.1-20\%$ , whichever is greater	$> \pm 20$ $\mu\text{S}/\text{cm}$ or $> \pm 20\%$ , whichever is greater

At deployment and removal, a QA/QC Sonde is temporarily deployed adjacent to the Field Sonde. Values for temperature, pH, conductivity, dissolved oxygen and turbidity are compared between the two instruments. Based on the degree of difference between parameters recorded by the Field Sonde and QA/QC Sonde at deployment and at removal, a qualitative statement is made on the data quality. There are a few circumstances which may cause QA/QC rankings below excellent, including the placement of the QA/QC sonde in relation to the field sonde, the amount of time each sonde was given to stabilize before readings were recorded, and deteriorating performance of one of the sensors.

The temperature sensor on any sonde is the most important. All other parameters can be divided into subgroups of: temperature dependent, temperature compensated, and temperature independent. Due to the temperature sensor's location on the sonde, the entire sonde must be at a constant temperature before the temperature sensor will stabilize. The values may take some time to climb to the appropriate reading; if a reading is taken too soon it may not accurately portray the water body.

Additionally, grab samples are collected during deployment to compare pH, specific conductivity and turbidity values between the field instrument and grab samples. Variability in results may be attributed to differences in the sampling location or depth relative to the sonde's deployment site or insufficient equilibration time for the sonde when initial field data was collected.

## Deployment Notes

- The Frozen Ears Lake Outlet Station is situated on-site and requires site personnel to escort WRMD staff to access the station. As a result, it often follows a different deployment schedule than the other five stations, which are easily accessible along the mine access road. Instruments at the other stations were removed on Dec. 10, however the instrument at Frozen Ears Lake Outlet was not removed until Dec. 31, 2025. Frozen Ears data from Dec 10-31 is included on separate pages throughout the report.
- There are brief periods of missing data towards the end of the deployment period at Victoria River at Beothuk Lake station. The ice along the edge of the river periodically pushed the sonde out of the water causing erroneous values that were removed from the dataset.

## Hydrometric Data

Water Resources Management Division hydrometric (stage and flow) data is quality controlled on a less frequent basis than water quality data due to differences in protocols. The hydrometric data shown in this report is provisional and has not undergone quality control checks.

# QAQC Deployment Rankings



During deployment, most parameters at all stations ranked good or excellent, indicating minimal differences between field and QA/QC sonde measurements. Dissolved oxygen (DO) ranked fair to poor at several stations, likely due to QA/QC sonde sensor deterioration given the consistent pattern observed. pH ranked fair at Victoria River Outlet and Victoria River at Beothuk Lake, likely because the sensor did not have sufficient time to equilibrate before initial readings. Specific conductivity ranked fair at Victoria River Tributary and Victoria River at Beothuk Lake, as well as turbidity at Victoria River Tributary, likely due to differences in placement between the field and QA/QC sondes.

Grab samples collected during deployment ranked good or excellent overall, showing strong agreement with initial field sonde measurements. However, pH ranked fair to poor at several stations, again likely due to insufficient equilibration time of the field sonde pH sensor before initial measurements.

Upon removal, most parameters continued to rank good or excellent, suggesting stable sensor performance throughout deployment. DO ranked marginal to poor at several stations, consistent with suspected QA/QC sonde deterioration. pH ranked fair at Roebucks Brook, Valentine River Outlet and Frozen Ears, likely due to limited equilibration time, while turbidity ranked Victoria River Outlet, likely reflecting sonde placement differences.

Additional grab samples collected during removal showed turbidity at Frozen Ears and specific conductivity at Victoria River Tributary ranked fair, likely due to differences between sonde placement and grab sample collection or insufficient time for the water column to settle before recording measurement/collecting sample.

There is no removal QAQC data or grab sample data for Victoria River at Beothuk Lake due to unsafe ice conditions along the edge of the river.

## QAQC Rankings

Station	Parameter	Deployment Rank	Grab Sample Deployment	Removal Rank	Grab Sample Removal
Frozen Ears Lake Outlet	Dissolved Oxygen (mg/l)	Fair	-	Poor	-
Frozen Ears Lake Outlet	pH	Excellent	Good	Fair	Excellent
Frozen Ears Lake Outlet	Specific Conductivity (µS/cm)	Excellent	Excellent	Good	Good
Frozen Ears Lake Outlet	Temperature (°C)	Good	-	Excellent	-
Frozen Ears Lake Outlet	Turbidity (NTU)	Good	Excellent	Good	Fair
Roebucks Brook	Dissolved Oxygen (mg/l)	Marginal	-	Marginal	-
Roebucks Brook	pH	Good	Poor	Fair	Good
Roebucks Brook	Specific Conductivity (µS/cm)	Excellent	Excellent	Excellent	Good
Roebucks Brook	Temperature (°C)	Excellent	-	Excellent	-
Roebucks Brook	Turbidity (NTU)	Good	Excellent	Excellent	Excellent
Valentine River Outlet	Dissolved Oxygen (mg/l)	Good	-	Good	-
Valentine River Outlet	pH	Excellent	Marginal	Fair	Excellent
Valentine River Outlet	Specific Conductivity (µS/cm)	Excellent	Excellent	Excellent	Excellent
Valentine River Outlet	Temperature (°C)	Excellent	-	Excellent	-
Valentine River Outlet	Turbidity (NTU)	Good	Excellent	Excellent	Excellent
Victoria River at Beothuk Lake	Dissolved Oxygen (mg/l)	Poor	-	-	-
Victoria River at Beothuk Lake	pH	Fair	Poor	-	-
Victoria River at Beothuk Lake	Specific Conductivity (µS/cm)	Fair	Good	-	-
Victoria River at Beothuk Lake	Temperature (°C)	Excellent	-	-	-
Victoria River at Beothuk Lake	Turbidity (NTU)	Good	Excellent	-	-
Victoria River Outlet	Dissolved Oxygen (mg/l)	Marginal	-	Marginal	-
Victoria River Outlet	pH	Fair	Poor	Excellent	Good
Victoria River Outlet	Specific Conductivity (µS/cm)	Excellent	Excellent	Excellent	Excellent
Victoria River Outlet	Temperature (°C)	Excellent	-	Excellent	-
Victoria River Outlet	Turbidity (NTU)	Good	Excellent	Fair	Excellent
Victoria River Tributary	Dissolved Oxygen (mg/l)	Poor	-	Poor	-
Victoria River Tributary	pH	Good	Fair	Good	Good
Victoria River Tributary	Specific Conductivity (µS/cm)	Fair	Marginal	Excellent	Fair
Victoria River Tributary	Temperature (°C)	Excellent	-	Excellent	-
Victoria River Tributary	Turbidity (NTU)	Fair	Excellent	Excellent	Excellent

# Water Temperature

<b>Deployment Period Statistics (°C)</b>				
<b>STAT_NAME</b>	<b>Average</b>	<b>Median</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Frozen Ears Lake Outlet</b>	<b>0.95</b>	<b>0.68</b>	<b>0.12</b>	<b>3.03</b>
<b>Roebucks Brook</b>	<b>0.96</b>	<b>0.71</b>	<b>-0.09</b>	<b>3.64</b>
<b>Valentine River Outlet</b>	<b>1.01</b>	<b>0.82</b>	<b>-0.10</b>	<b>3.71</b>
<b>Victoria River at Beothuk Lake</b>	<b>1.41</b>	<b>1.62</b>	<b>-0.05</b>	<b>3.41</b>
<b>Victoria River Outlet</b>	<b>1.62</b>	<b>1.69</b>	<b>-0.08</b>	<b>4.32</b>
<b>Victoria River Tributary</b>	<b>0.98</b>	<b>0.90</b>	<b>-0.14</b>	<b>3.99</b>

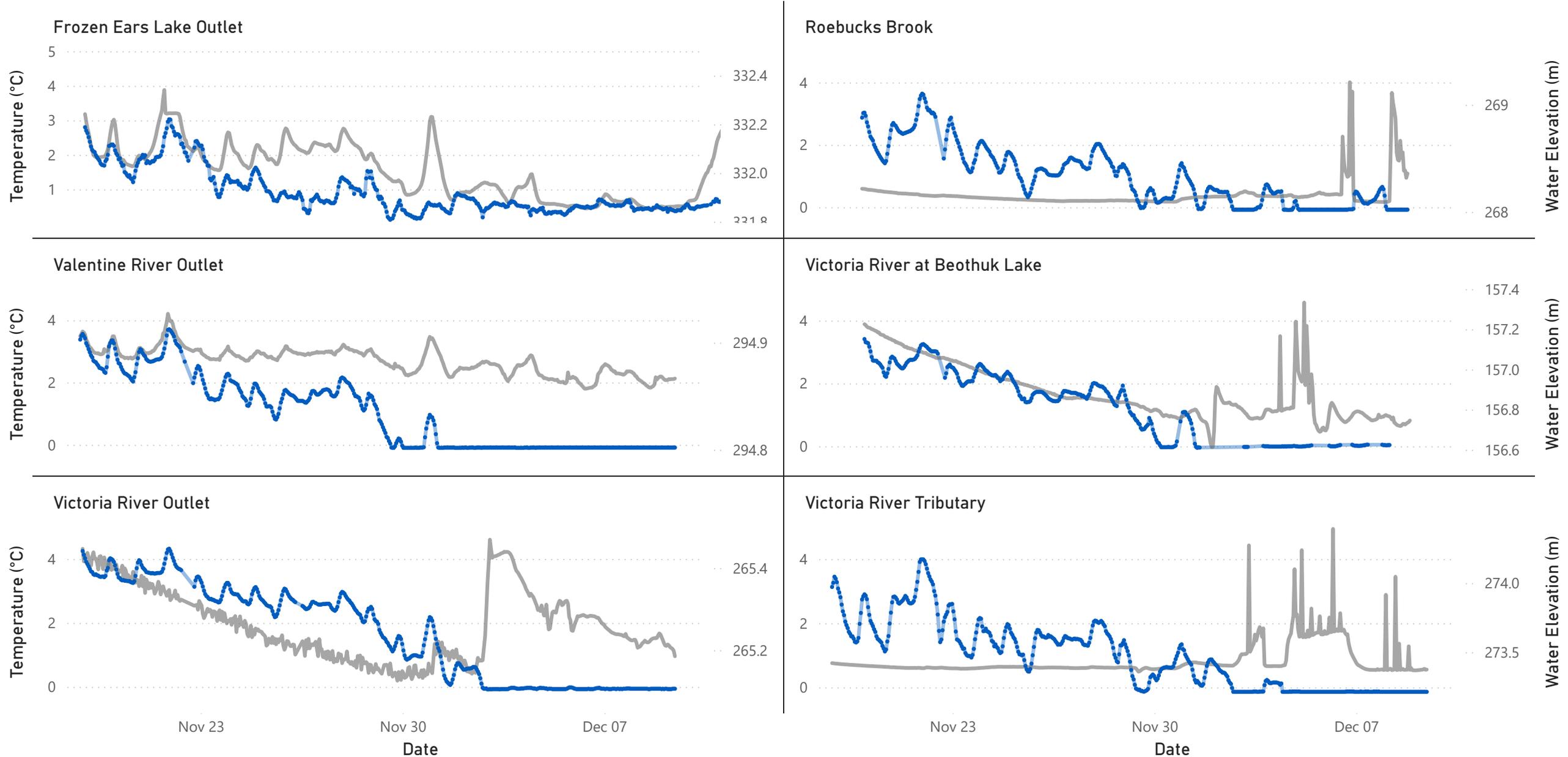
Water temperature is a critical parameter for wildlife, as many organisms cannot regulate their own body temperatures and instead depend on surrounding air and water conditions. Water temperature can be influenced by industrial inputs or alterations to natural environments, such as the removal of trees and vegetation, which eliminates the protective canopy they provide. Additionally, water temperature impacts other monitored parameters, including dissolved oxygen and specific conductivity.

Water temperatures across the network displayed a decreasing trend throughout the deployment period, which would be expected as air temperature cools during the seasonal transition to winter. A natural daily cycle was also observed, with higher temperatures during the day and lower temperatures at night. Water temperature stabilized at several stations towards the end of the deployment, including Victoria River Outlet and Valentine River Outlet. This is likely a result of ice cover on the rivers over the sondes reducing the daily temperature fluctuation caused by solar radiation during the daytime.

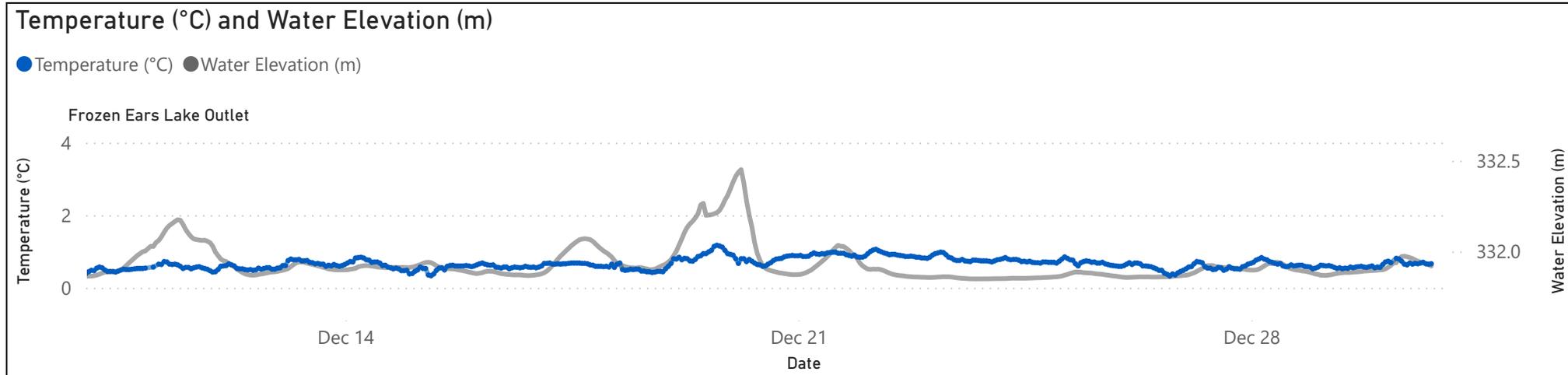
# Water Temperature Station Graphs

Temperature (°C) and Water Elevation (m)

● Temperature (°C) ● Water Elevation (m)



# Water Temperature



**Deployment Period Statistics (°C)**

Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	0.66	0.65	0.32	1.17

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

Water temperature remained low and steady for the remainder of the deployment at Frozen Ears station.

# pH

## Deployment Period Statistics (pH Units)

Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	7.59	7.60	7.44	7.70
Roebucks Brook	6.38	6.39	6.10	6.62
Valentine River Outlet	6.82	6.82	6.66	6.87
Victoria River at Beothuk Lake	6.51	6.51	6.29	6.57
Victoria River Outlet	6.38	6.37	6.16	6.55
Victoria River Tributary	7.19	7.25	6.58	7.44

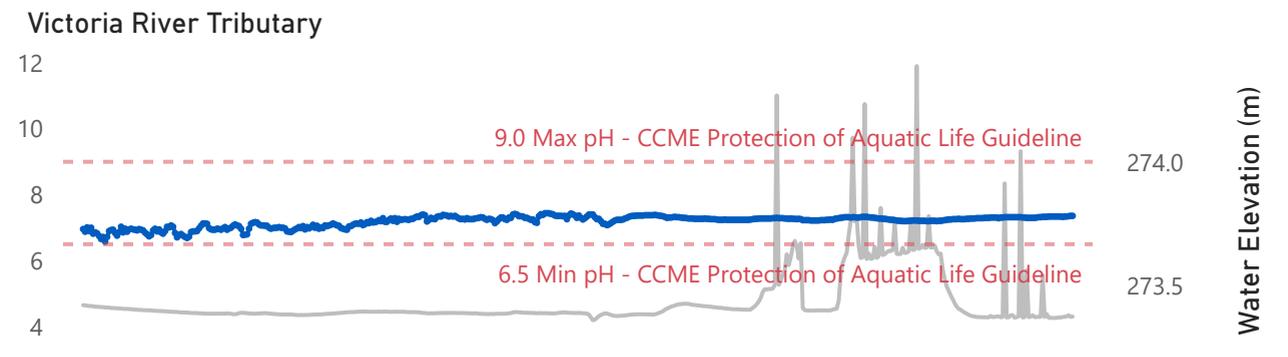
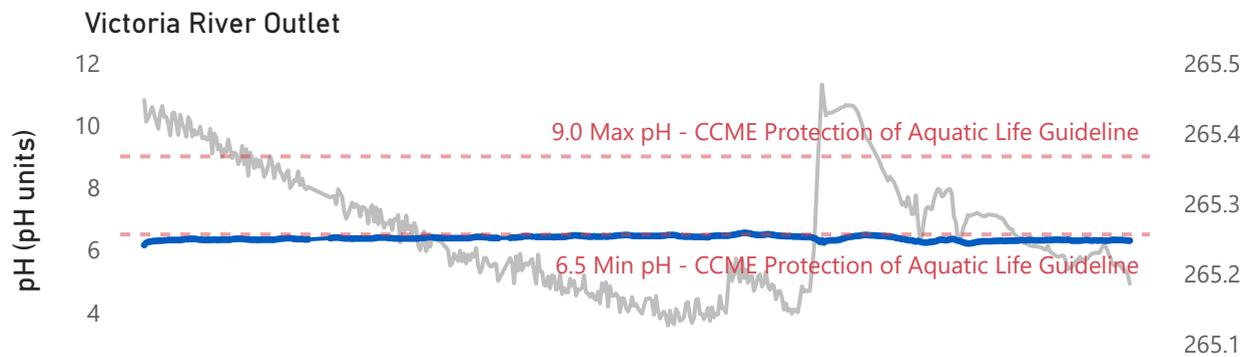
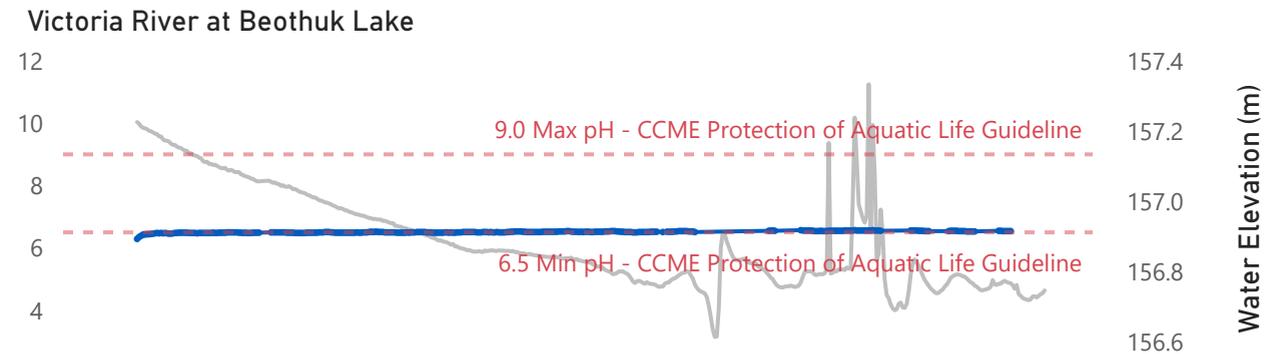
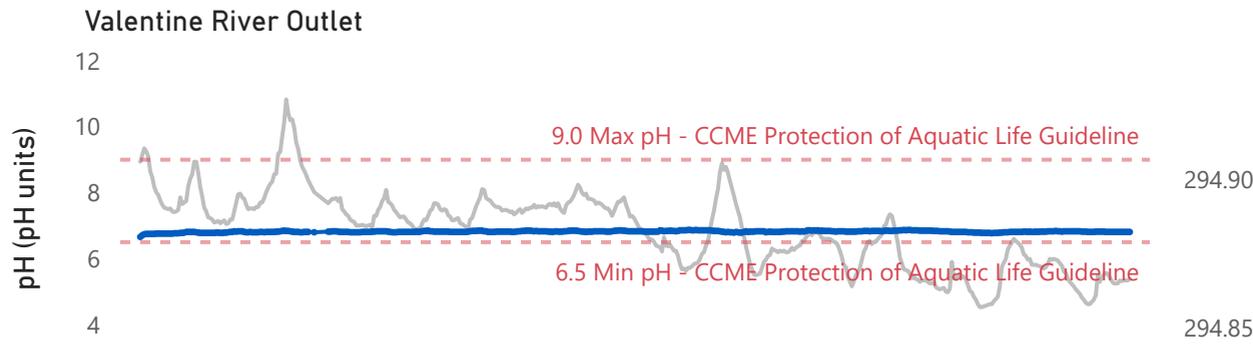
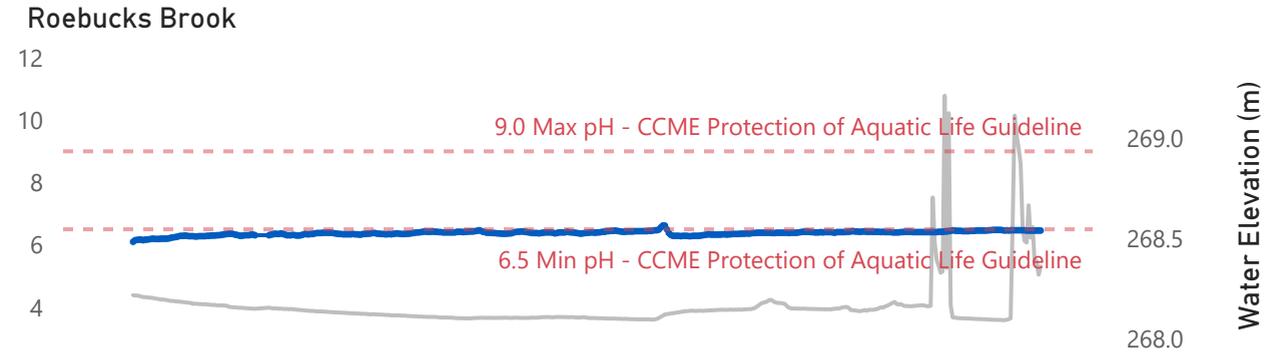
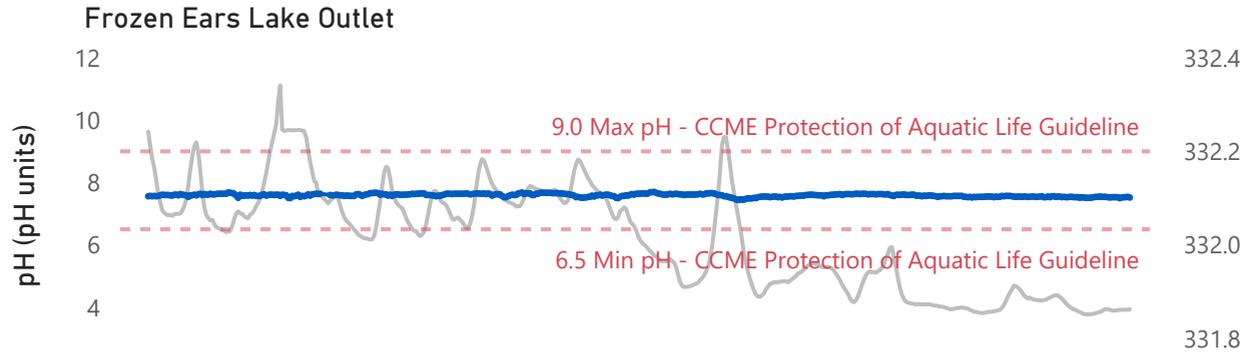
pH relates to the free hydrogen ions in water, and it is a measure of acidity in water. pH is a critical parameter because it influences the solubility of minerals and chemicals, the availability of nutrients, and the biological processes that occur in aquatic ecosystems. The Canadian Council of Ministers of the Environment (CCME) Freshwater Aquatic Life guideline provides a basis by which to judge the overall health of the brook. Their freshwater guidelines recommend a minimum pH of 6.5 and a maximum pH of 9.0; however, many rivers in Newfoundland and Labrador are naturally more acidic due to the local geology.

Throughout the deployment period, pH remained stable and consistent at all stations, with small fluctuations likely resulting from precipitation events. Rainwater, with its naturally lower pH, temporarily dilutes the water column, causing a short-term decrease in pH. However, pH levels typically return to baseline within a few days to weeks. Medians are relatively comparable at all stations, except for slightly higher at Frozen Ears and Victoria River Tributary.

pH remained within the CCME Guidelines for the Protection of Aquatic Life for the entirety of the deployment period at Frozen Ears, Victoria River Tributary and Valentine River Outlet. Values hovered around or just under the minimum guideline value of 6.5 pH units at Victoria River Outlet, Roebucks Brook and Victoria River at Beothuk Lake.

# pH Station Graphs

● pH (pH units) ● Water Elevation (m)



Nov 23

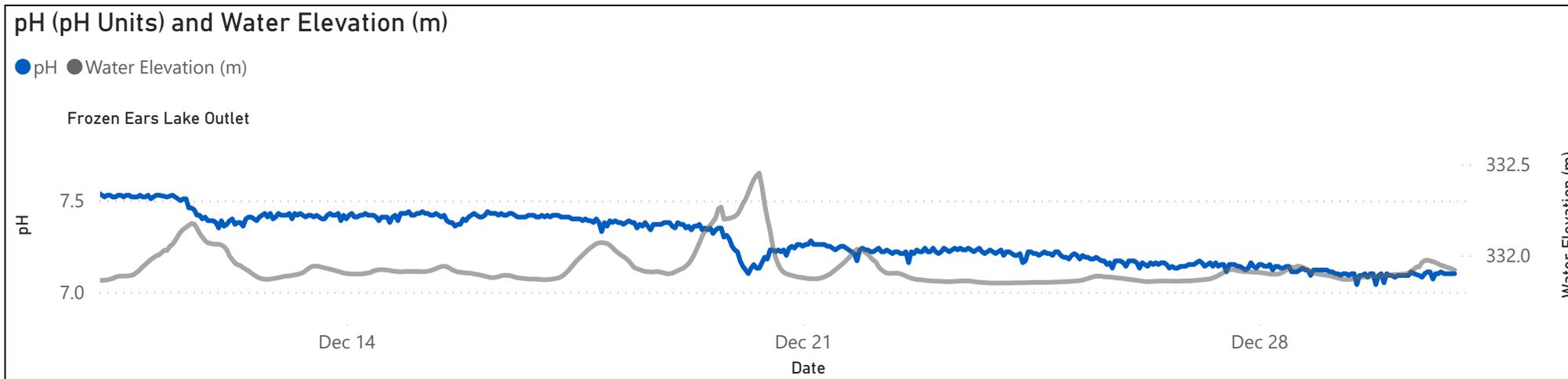
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Nov 23

Nov 30

Dec 07



Deployment Period Statistics (pH Units)				
Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	7.29	7.25	7.04	7.54

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

pH was stable with a slightly decreasing trend throughout the remainder of the deployment period. The decreasing trend can be attributed to dilution of the water column from precipitation and snow, or sensor drift. There is a noticeable decrease in pH during periods of increased water elevation, however, values returned to background levels shortly after.

# Specific Conductivity

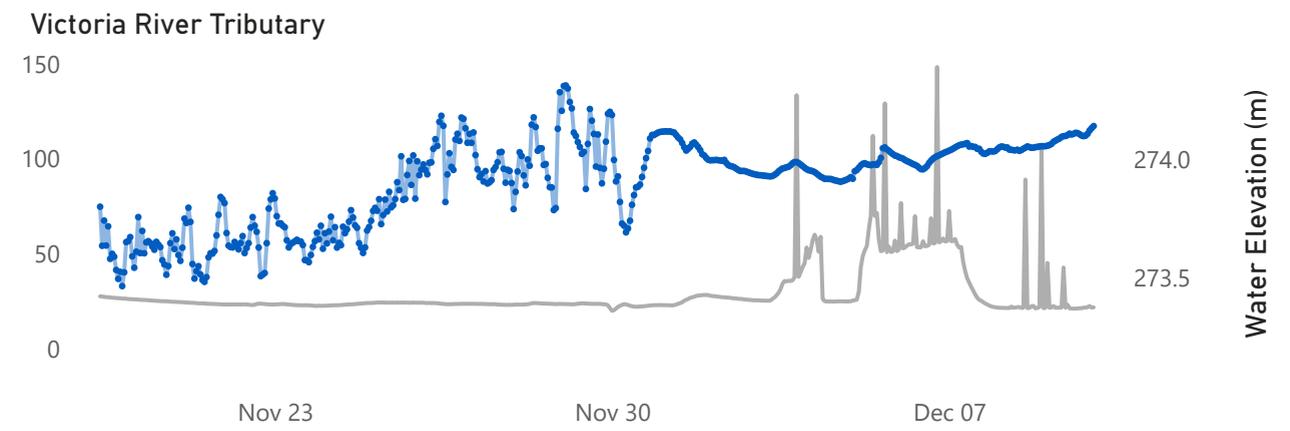
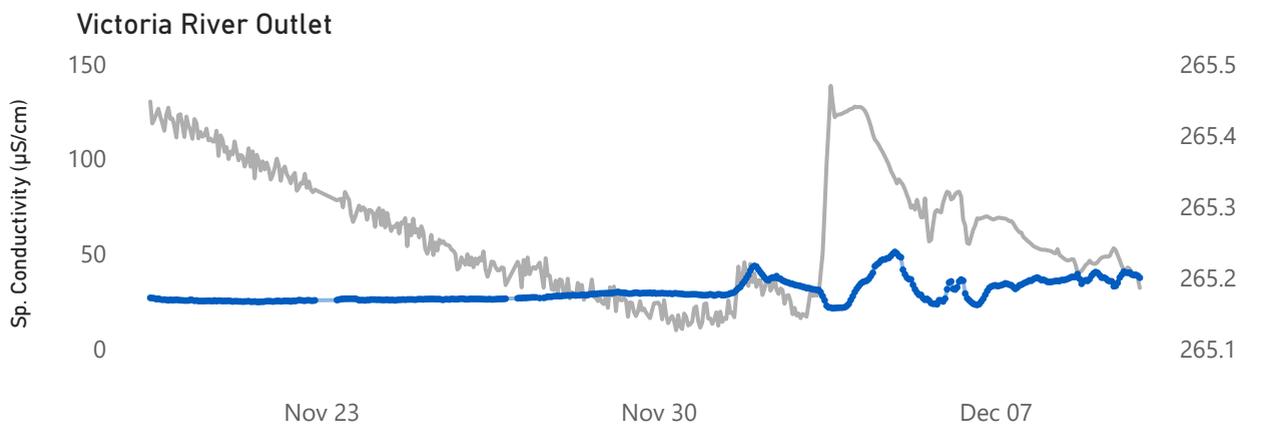
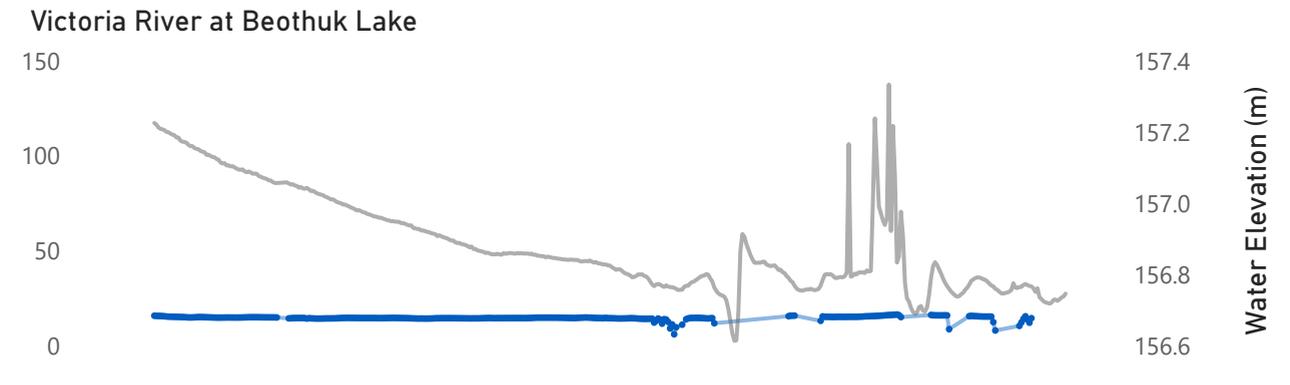
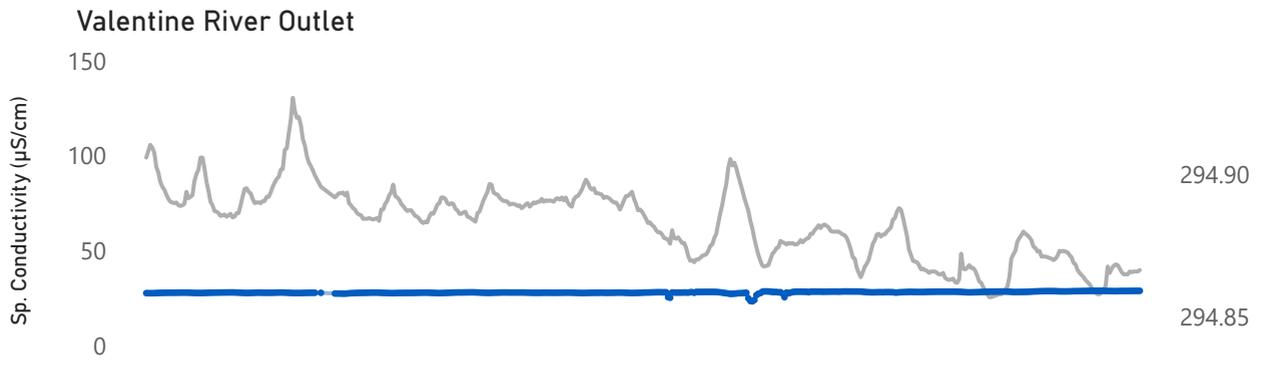
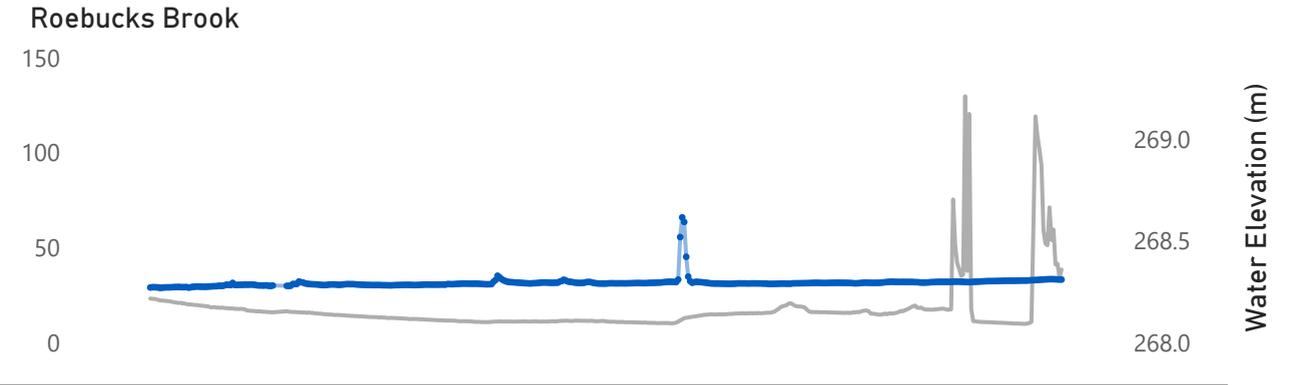
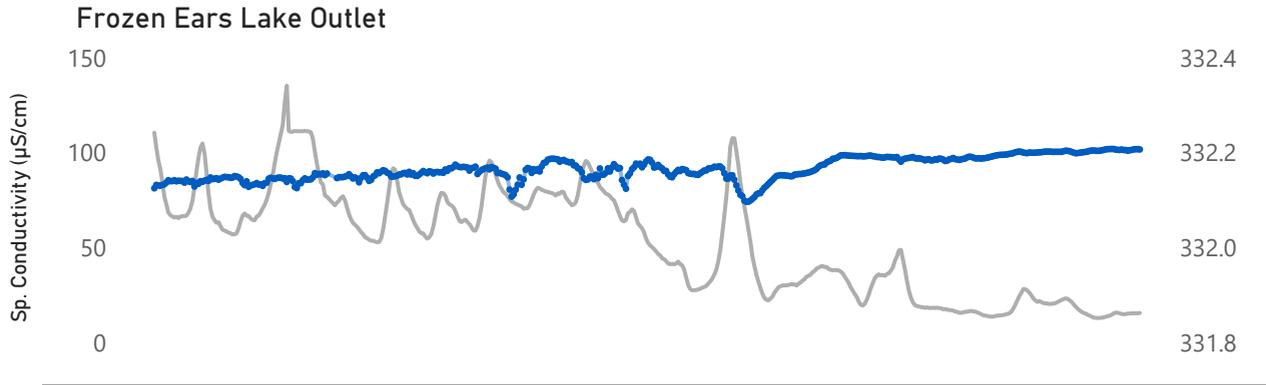
Deployment Period Statistics ( $\mu\text{S}/\text{cm}$ )				
Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	91.51	90.75	74.10	101.93
Roebucks Brook	31.39	31.18	28.73	65.89
Valentine River Outlet	27.98	27.93	23.29	28.84
Victoria River at Beothuk Lake	14.54	14.53	5.93	16.35
Victoria River Outlet	29.86	28.16	21.26	50.95
Victoria River Tributary	87.78	94.46	32.92	138.63

Specific conductivity is a common indicator of the concentration of dissolved ions in water, such as salts, acids, and bases. Higher concentrations of dissolved ions result in higher specific conductivity, while pure water exhibits low conductivity. Specific conductivity is often affected by precipitation. During precipitation events, rainwater can temporarily dilute the water column, resulting in a short-term decrease in conductivity. However, high precipitation events can also cause a temporary increase in conductivity if sediment from the bottom of the waterbody is disturbed around the sensor or if runoff carrying dissolved ions enters the water column.

Conductivity remained relatively stable across most stations; however, some variability was observed at Frozen Ears, Victoria River Outlet and Victoria River Tributary. Medians are comparable at all stations, except slightly higher at Frozen Ears Lake Outlet and Victoria River Tributary. The higher values at these two stations may be a result of environmental factors or localized effects from nearby industrial activities at the mine site.

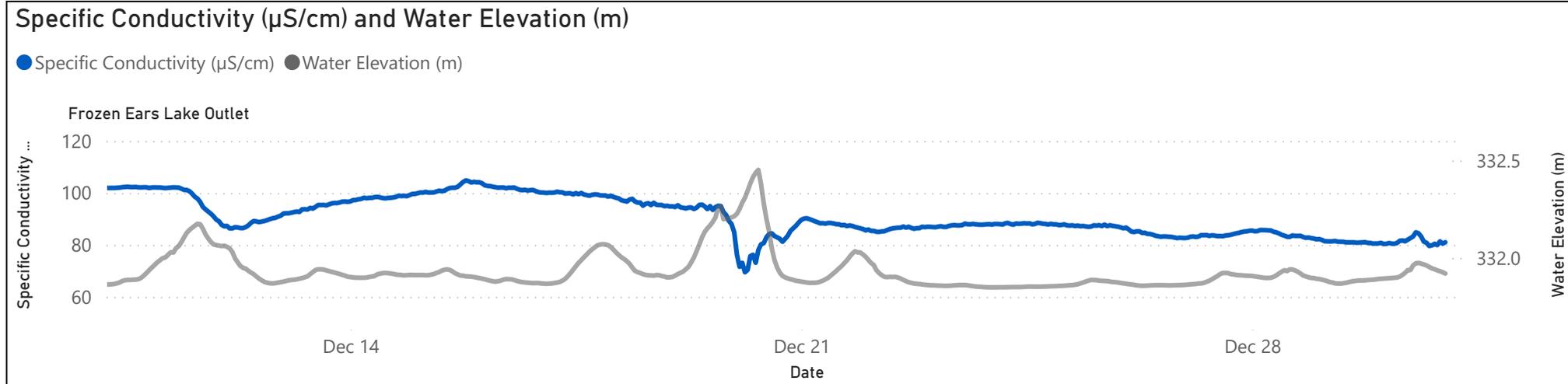
# Specific Conductivity Station Graphs

● Specific Conductivity ( $\mu\text{S}/\text{cm}$ ) ● Water Elevation (m)



# Specific Conductivity

Frozen Ears Lake Outlet Station: Dec 10-Dec 31, 2026



### Deployment Period Statistics ( $\mu\text{S}/\text{cm}$ )

Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	90.71	88.09	69.45	104.80

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

Specific conductivity was stable with a slightly decreasing trend throughout the remainder of the deployment. There was a noticeable decrease in conductivity around Dec. 20, which coincides with an increase in water elevation which is attributed to precipitation.

# Dissolved Oxygen

Station Name	Deployment Period Statistics							
	Average (mg/L)	Average (% Sat.)	Median (mg/L)	Median (% Sat.)	Minimum (mg/L)	Minimum (% Sat.)	Maximum (mg/L)	Maximum (% Sat.)
<b>Frozen Ears Lake Outlet</b>	<b>14.32</b>	<b>100.48</b>	<b>14.29</b>	<b>99.80</b>	<b>13.50</b>	<b>96.50</b>	<b>15.11</b>	<b>105.10</b>
<b>Roebucks Brook</b>	<b>14.35</b>	<b>100.75</b>	<b>14.44</b>	<b>100.70</b>	<b>13.41</b>	<b>98.60</b>	<b>14.94</b>	<b>103.10</b>
<b>Valentine River Outlet</b>	<b>14.20</b>	<b>99.81</b>	<b>14.30</b>	<b>99.80</b>	<b>13.15</b>	<b>98.00</b>	<b>14.97</b>	<b>102.10</b>
<b>Victoria River at Beothuk Lake</b>	<b>15.45</b>	<b>109.90</b>	<b>15.38</b>	<b>110.20</b>	<b>14.75</b>	<b>106.30</b>	<b>16.35</b>	<b>112.20</b>
<b>Victoria River Outlet</b>	<b>14.21</b>	<b>101.60</b>	<b>14.15</b>	<b>102.40</b>	<b>13.40</b>	<b>94.40</b>	<b>15.06</b>	<b>105.40</b>
<b>Victoria River Tributary</b>	<b>15.32</b>	<b>107.69</b>	<b>15.40</b>	<b>107.70</b>	<b>13.98</b>	<b>105.70</b>	<b>16.11</b>	<b>110.00</b>

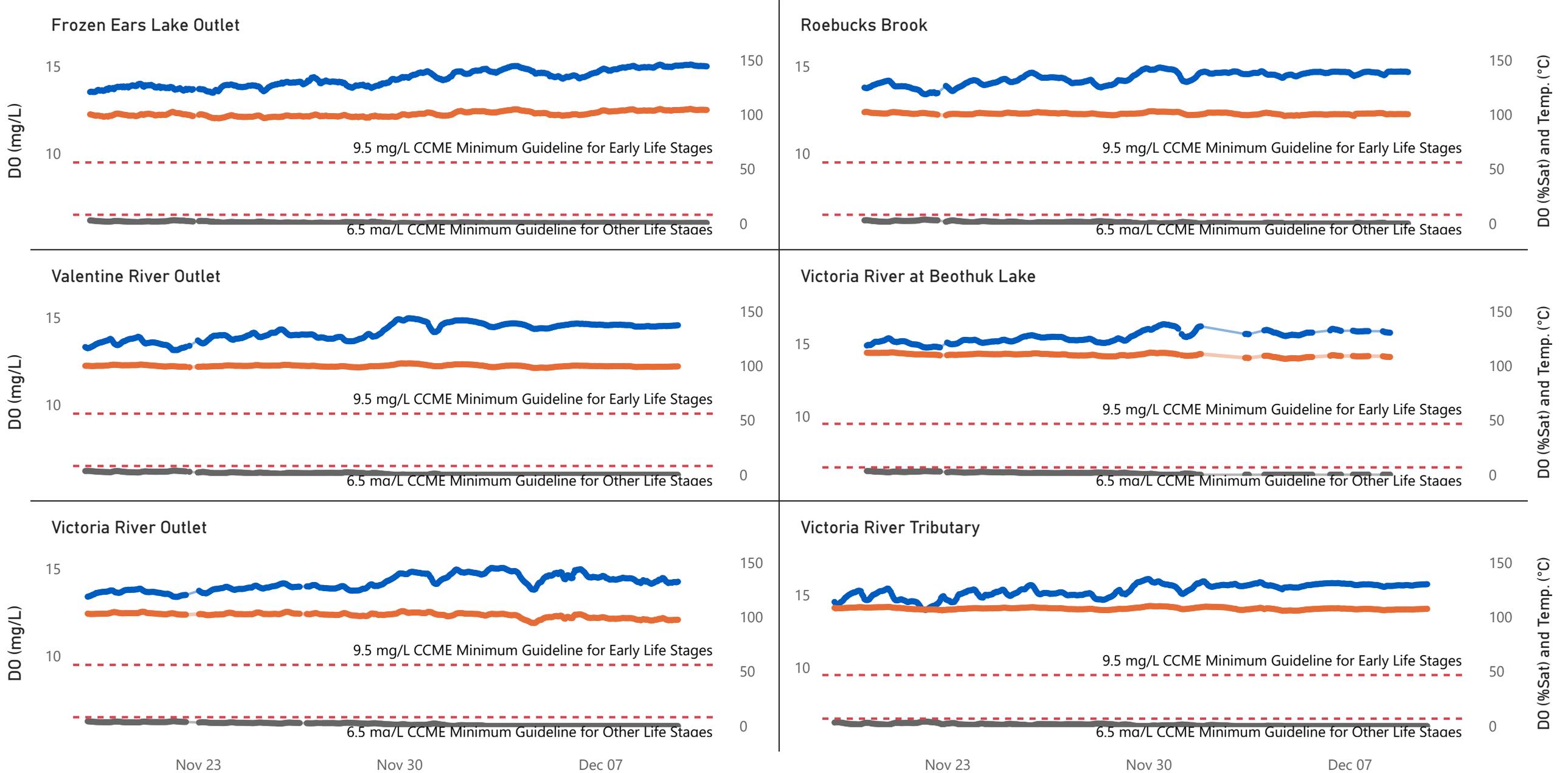
Dissolved oxygen (DO) is crucial for supporting aquatic life, and the CCME (Canadian Council of Ministers of the Environment) Freshwater Aquatic Life guidelines establish reference values to evaluate waterway health. The minimum DO guideline is 9.5 mg/L for early life stages in cold water species and 6.5 mg/L for other life stages. DO concentrations can fluctuate due to factors such as water temperature, atmospheric pressure, and the presence of other dissolved substances. Warmer water typically holds less dissolved oxygen than cooler water.

Daily fluctuations in DO concentrations were observed at all stations throughout the deployment period and were primarily driven by temperature variability and the photosynthetic and respiratory activity of aquatic plants. DO concentrations remained relatively stable and consistent at all stations.

Throughout the monitoring period, DO concentrations across the network remained above the CCME guidelines for the protection of other life stages and early life stages.

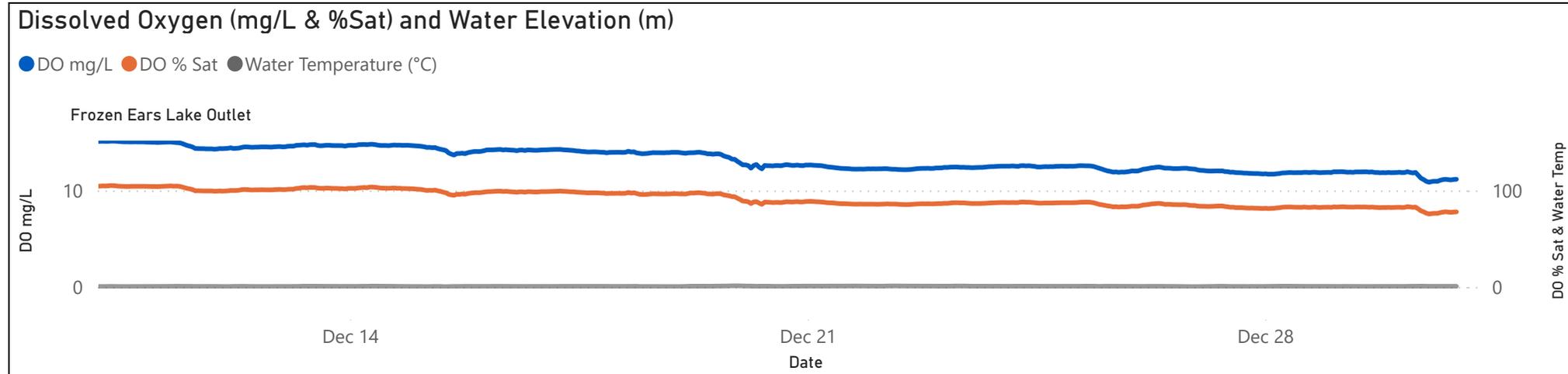
# Dissolved Oxygen Station Graphs

● DO (mg/L) ● Water Temperature (°C) ● Percent Saturation



# Dissolved Oxygen

Frozen Ears Lake Outlet Station: Dec 10-Dec 31, 2026



## Deployment Period Statistics

Station Name	Average (mg/L)	Average (% Sat.)	Median (mg/L)	Median (% Sat.)	Minimum (mg/L)	Minimum (% Sat.)	Maximum (mg/L)	Maximum (% Sat.)
Frozen Ears Lake Outlet	13.11	91.37	12.57	87.90	10.85	75.60	15.02	104.70

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

Dissolved oxygen remained stable and consistent throughout the remainder of the deployment. There was a slight decreasing trend in DO concentrations. This can be attributed to abnormally cold temperatures at the beginning of December which increased slightly throughout the month.

# Turbidity

<b>Deployment Period Statistics (NTU)</b>				
<b>Station Name</b>	<b>Average</b>	<b>Median</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Frozen Ears Lake Outlet</b>	<b>28.84</b>	<b>26.61</b>	<b>17.84</b>	<b>69.59</b>
<b>Roebucks Brook</b>	<b>3.86</b>	<b>2.73</b>	<b>2.08</b>	<b>100.97</b>
<b>Valentine River Outlet</b>	<b>1.49</b>	<b>0.05</b>	<b>0.00</b>	<b>61.68</b>
<b>Victoria River at Beothuk Lake</b>	<b>0.32</b>	<b>0.31</b>	<b>0.10</b>	<b>6.33</b>
<b>Victoria River Outlet</b>	<b>0.44</b>	<b>0.28</b>	<b>0.08</b>	<b>1.92</b>
<b>Victoria River Tributary</b>	<b>10.98</b>	<b>10.40</b>	<b>3.60</b>	<b>36.09</b>

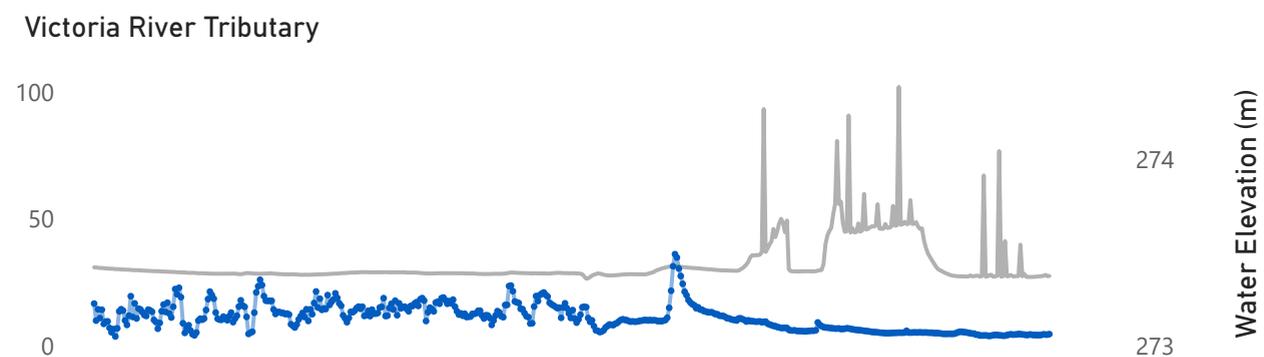
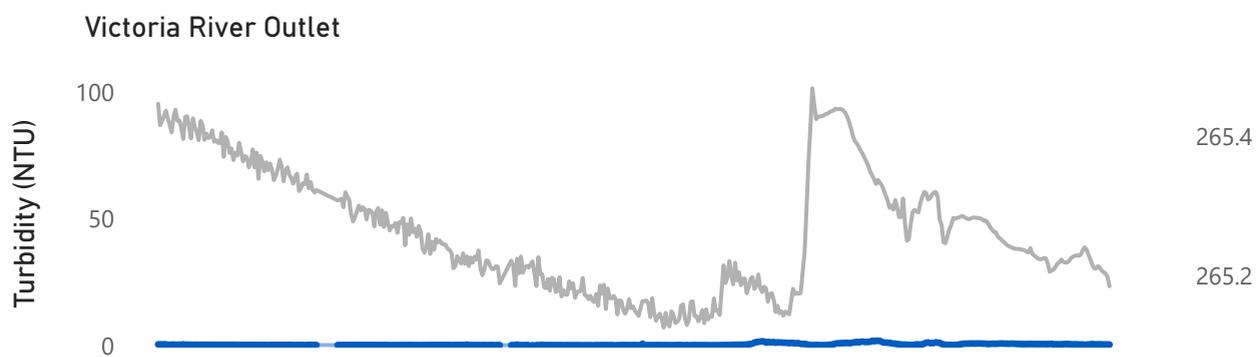
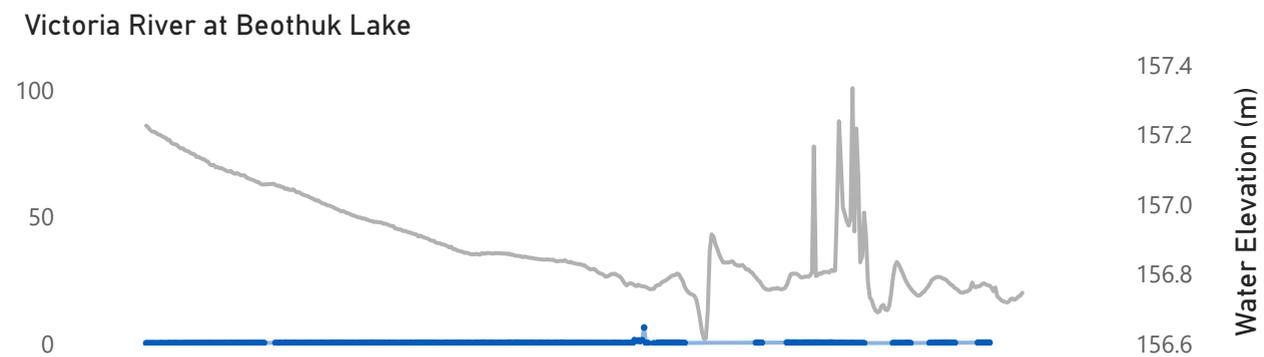
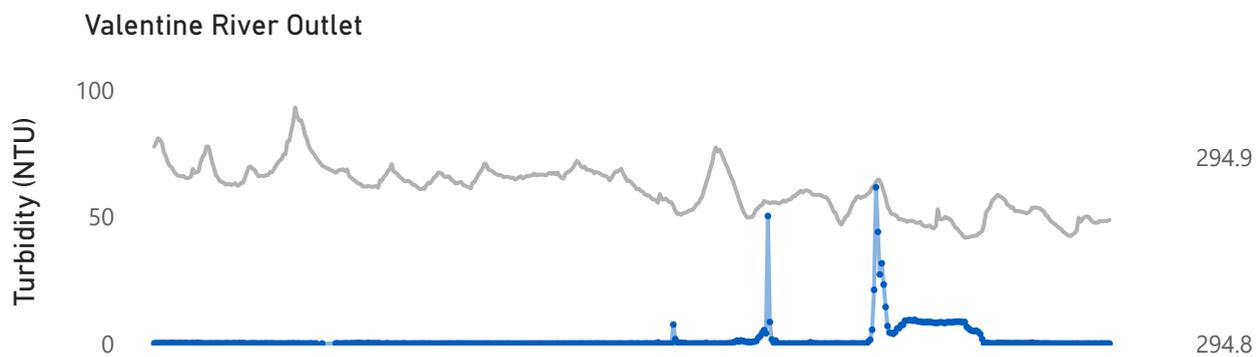
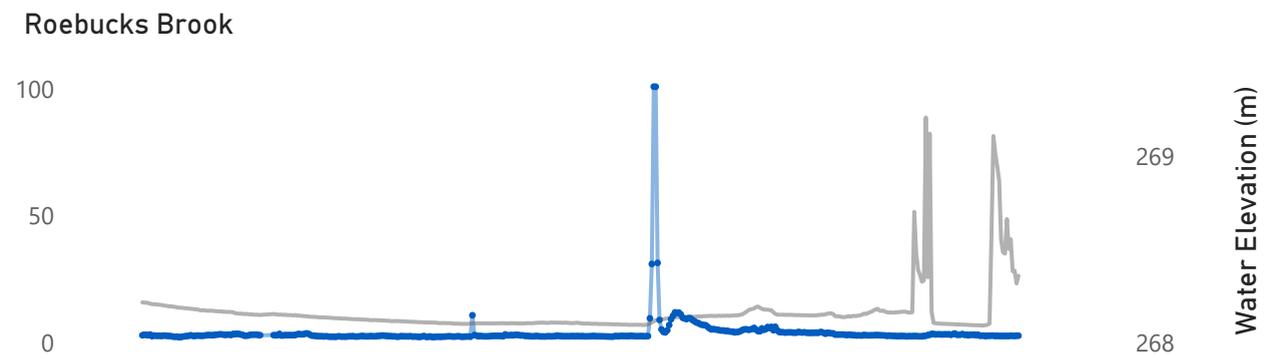
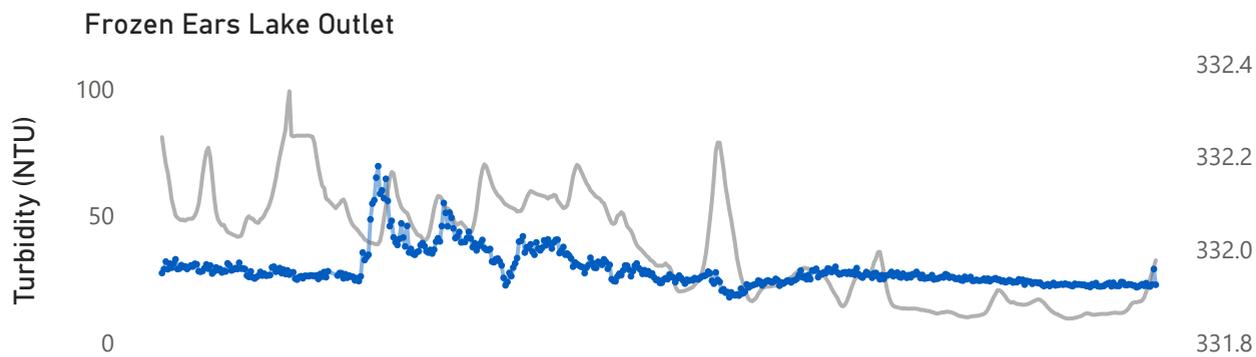
Turbidity, a measure of water cloudiness, often increases during precipitation events as runoff carries silt and debris into the waterbody. High turbidity values can reduce light penetration for aquatic plants, disrupt benthic habitats and potentially harm fish gills or damage monitoring equipment.

Throughout the deployment period, turbidity levels remained generally low at most stations, indicating clear, pristine water conditions. Turbidity was slightly higher at Frozen Ears and Victoria River Tributary. Precipitation events caused increases in water levels and resulted in short-term turbidity spikes; however, values typically returned to baseline within a few days for most stations.

Turbidity was consistently low at Roebucks Brook other than a brief spike that occurred on Dec. 1 and coincided with a significant precipitation event. Turbidity values were slightly elevated at Frozen Ears throughout this deployment, which can be attributed to upstream mining operations.

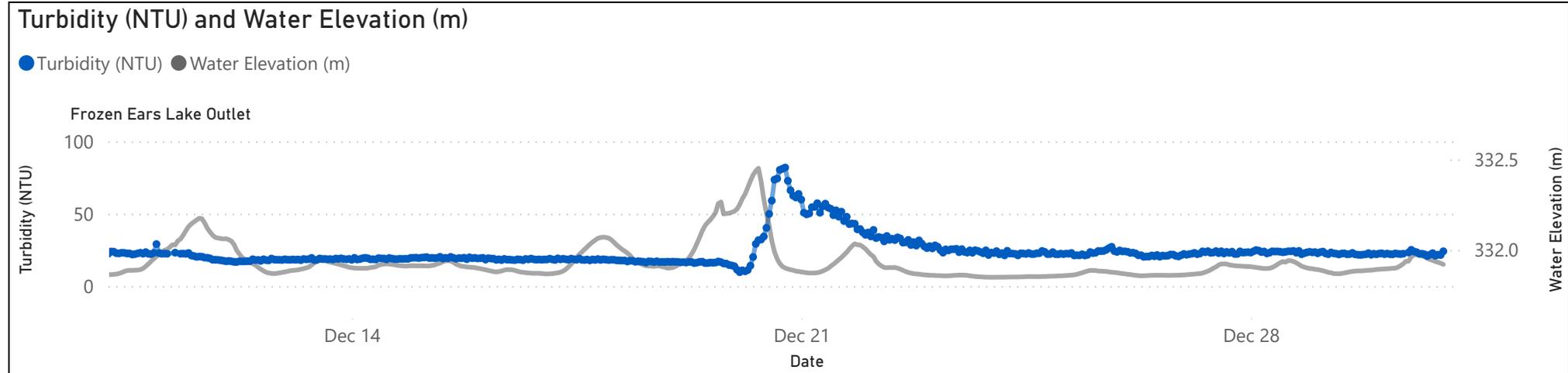
# Turbidity Station Graphs

● Turbidity (NTU) ● Water Elevation (m)



# Turbidity

Frozen Ears Lake Outlet Station: Dec 10-Dec 31, 2026



Deployment Period Statistics (NTU)				
Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	23.74	21.90	9.58	81.93

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

Turbidity remained slightly elevated but steady throughout the rest of the deployment period. An increase in turbidity can be observed around Dec. 20 which coincides with water elevation increases and precipitation events.

# Water Elevation

<b>Deployment Period Statistics (m)</b>					
<b>Station Name</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Range</b>	<b>Average</b>	<b>Median</b>
<b>Frozen Ears Lake Outlet</b>	<b>331.85</b>	<b>332.45</b>	<b>0.60</b>	<b>331.97</b>	<b>331.92</b>
<b>Roebucks Brook</b>	<b>268.09</b>	<b>269.21</b>	<b>1.12</b>	<b>268.16</b>	<b>268.14</b>
<b>Valentine River Outlet</b>	<b>294.86</b>	<b>294.93</b>	<b>0.07</b>	<b>294.88</b>	<b>294.88</b>
<b>Victoria River at Beothuk Lake</b>	<b>156.61</b>	<b>157.33</b>	<b>0.72</b>	<b>156.88</b>	<b>156.84</b>
<b>Victoria River Outlet</b>	<b>265.13</b>	<b>265.47</b>	<b>0.34</b>	<b>265.26</b>	<b>265.24</b>
<b>Victoria River Tributary</b>	<b>273.36</b>	<b>274.39</b>	<b>1.03</b>	<b>273.44</b>	<b>273.39</b>

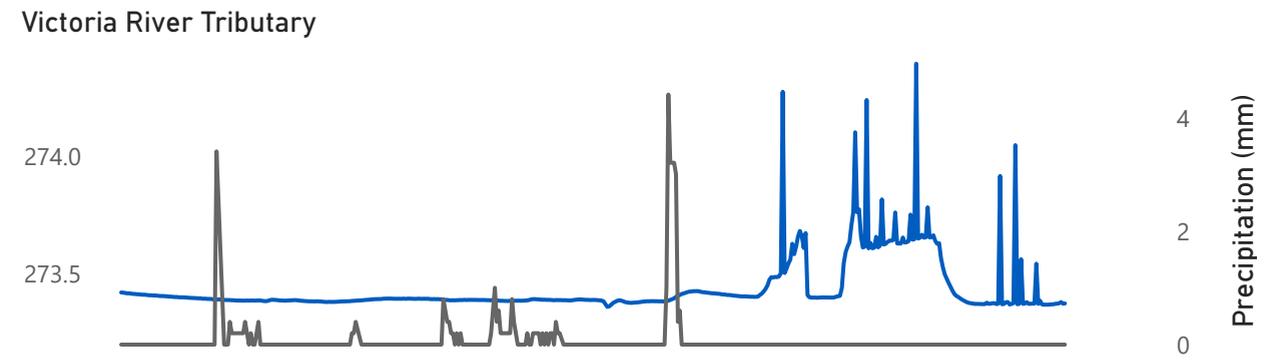
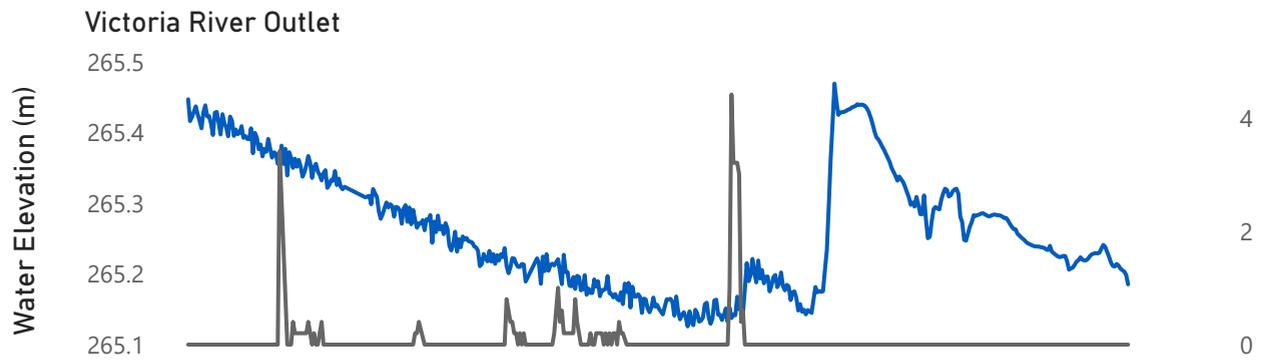
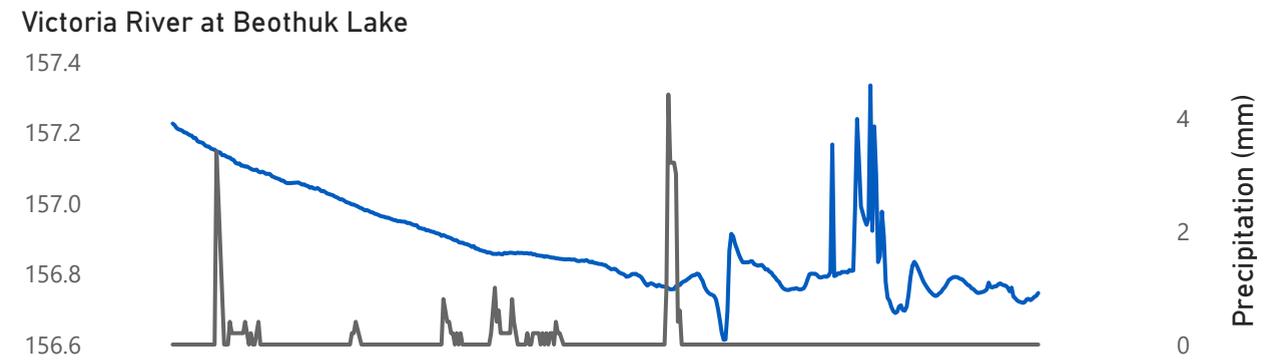
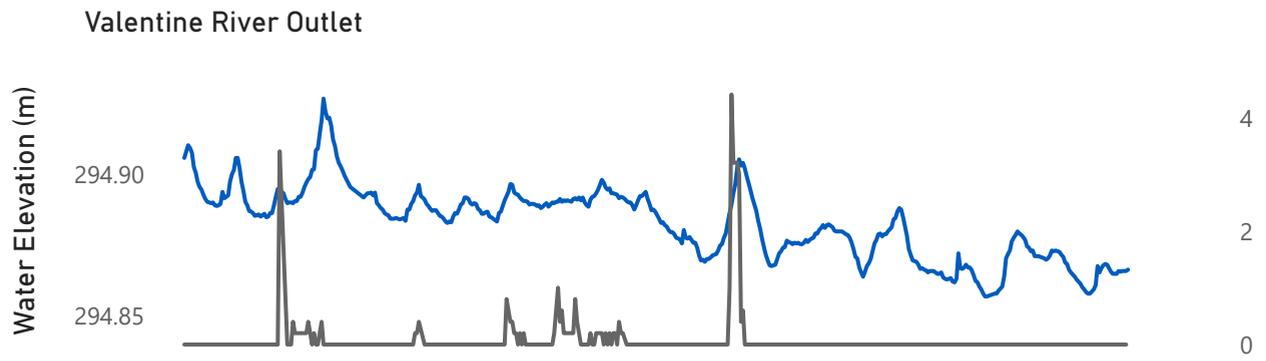
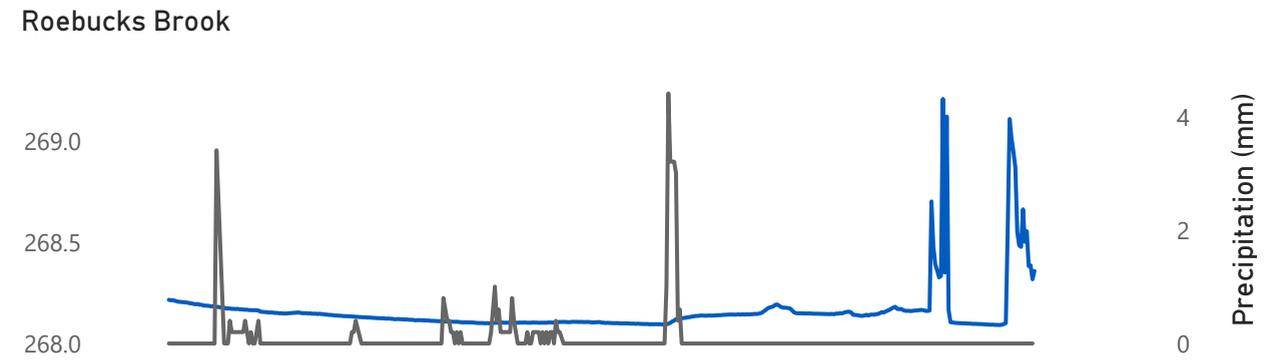
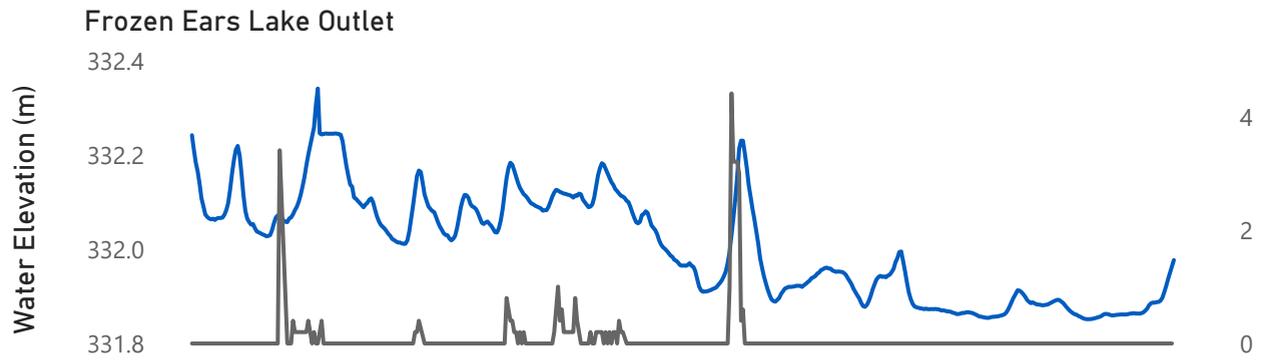
Water elevation provides an estimate of the water level at a monitoring station and plays a vital role in analyzing trends in water quality data, particularly for parameters such as specific conductivity, pH, and turbidity. Water elevation generally rises during precipitation events as rainwater and runoff enter the water column. By monitoring water elevation alongside precipitation events, we can better interpret our data, distinguish whether an elevation increase is caused by rainfall or potential industrial activities, and assess its impact on water quality. Precipitation data was obtained from the Valentine Gold Project meteorological (MET) station, which is located on-site and maintained collaboratively by WRMD and Equinox Gold.

Water elevation was variable across the network throughout the deployment period. There was slight fluctuation throughout the entire deployment at Frozen Ears and Victoria River Outlet. Water elevation was steady at several stations throughout the first half of the deployment, followed by more fluctuation in the second half. Steep spikes can be observed towards the end of the deployment at several stations as well, which can be attributed to ice forming around the hydrometric plate in the river and causing inaccurate values.

The station graphs on the following page demonstrates the effect of precipitation events on water elevation, showing distinct elevation spikes occurring during or shortly after rainfall.

# Water Elevation Station Graphs

● Water Elevation (m) ● Precipitation (mm)



Nov 23

Nov 30

Dec 07

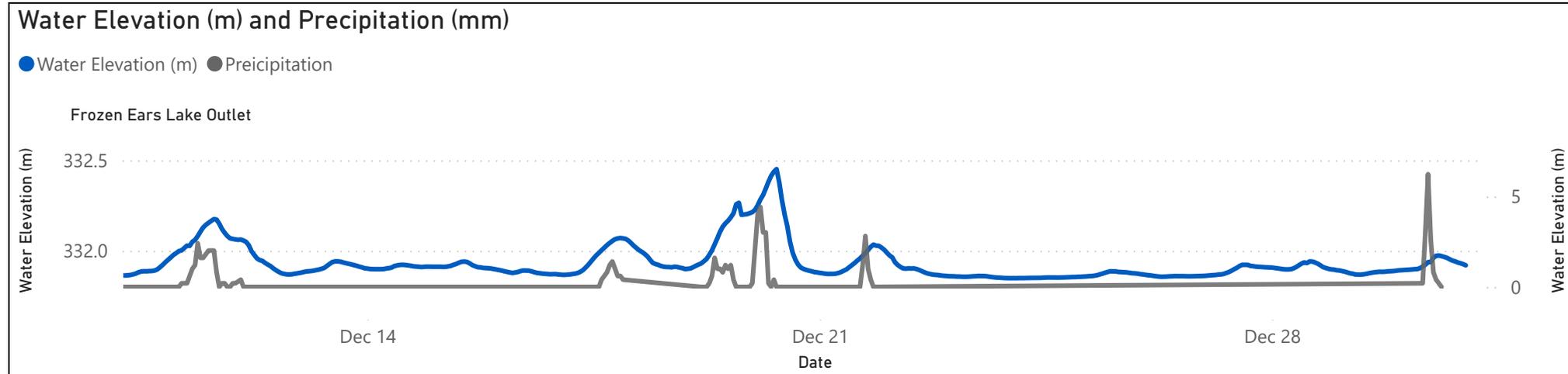
Nov 23

Nov 30

Dec 07

# Water Elevation

Frozen Ears Lake Outlet Station: Dec 10-Dec 31, 2026



### Deployment Period Statistics (m)

Station Name	Average	Median	Minimum	Maximum
Frozen Ears Lake Outlet	331.93	331.90	331.85	332.45

The water quality sonde deployed at Frozen Ears Lake Outlet was removed at a slightly later date than the rest of the surface water stations. The graph and statistics above reflect the remainder of the Frozen Ears deployment, from December 10 to December 31, 2025.

Water elevation remained relatively stable, with increases coinciding with precipitation events.

# Precipitation Data

Retrieved from the Valentine Gold Project MET Station



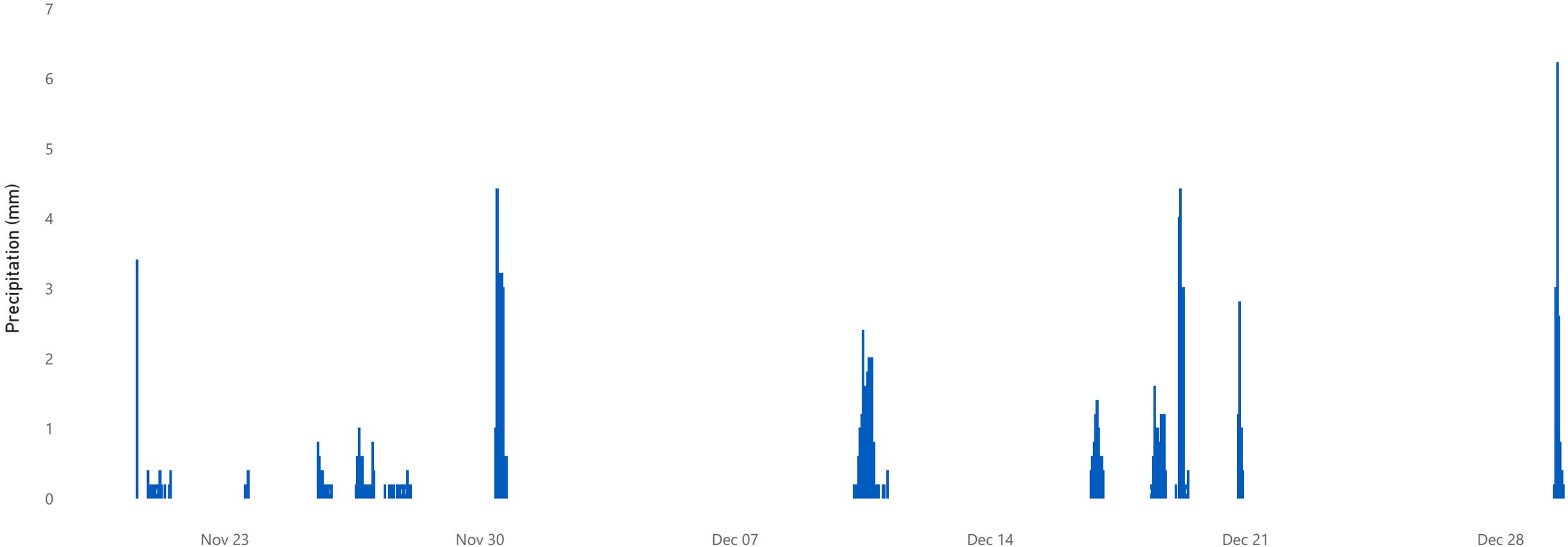
0.15  
Average (mm)

0.00  
Median (mm)

0.00  
Minimum (mm)

6.23  
Maximum (mm)

292.25  
Total (mm)

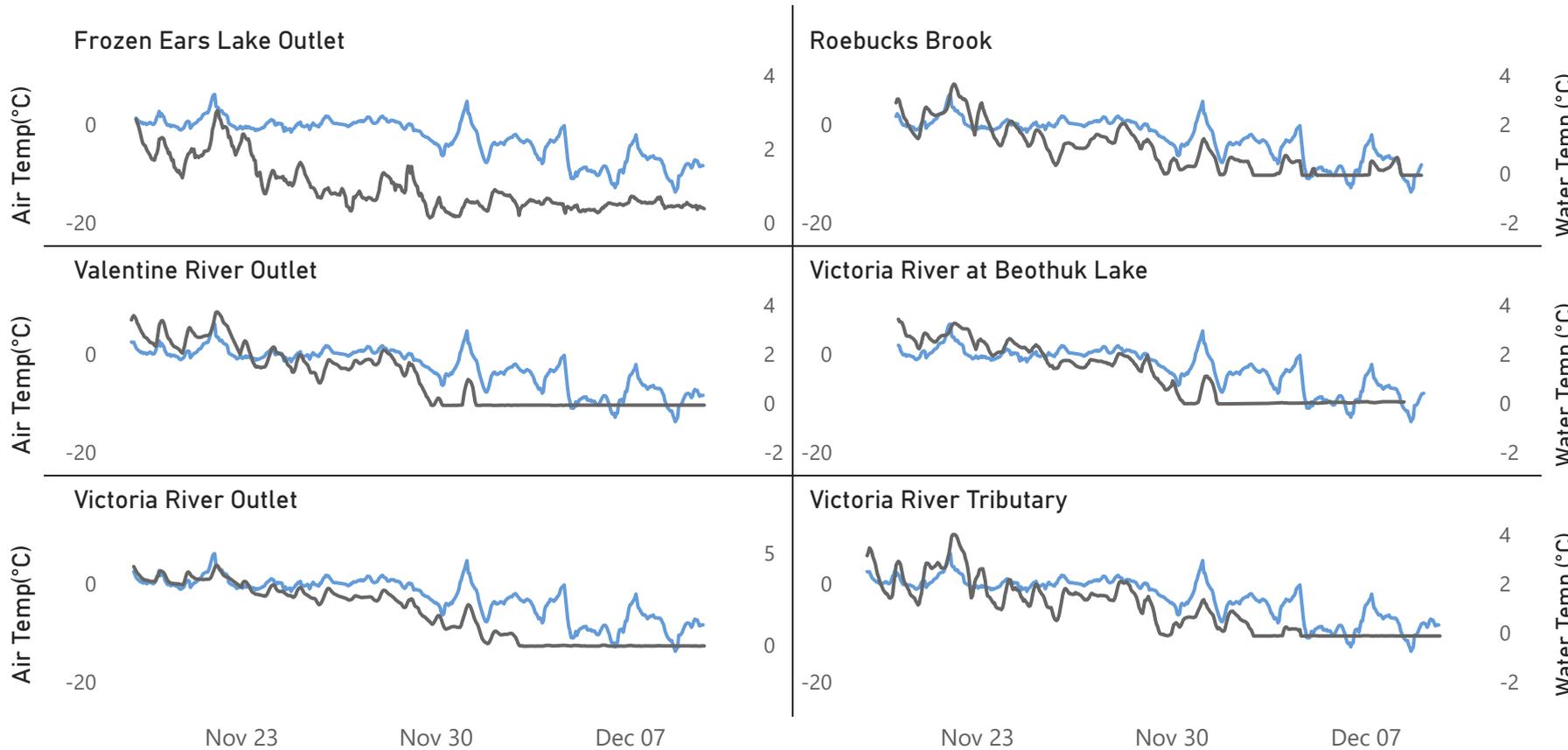


# Air Temperature Data

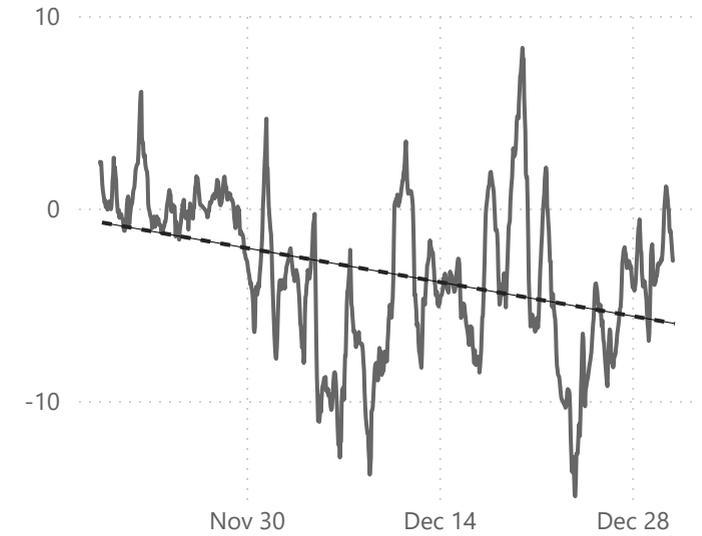
Retrieved from the Valentine Gold Project MET Station



● Air Temperature (°C) ● Water Temperature (°C)



## Air Temperature Trendline



**-2.94**  
Average (°C)

**-1.60**  
Median (°C)

**-14.96**  
Minimum (°C)

**8.34**  
Maximum (°C)

