Real-Time Water Quality Deployment Report

Iron Ore Company of Canada
Labrador West Network

September 6 to
October 19, 2023

Newfoundland Labrador

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

Contents

General

- The Water Resources Management Division, in partnership with the Iron Ore Company of Canada (IOC) and Environment and Climate Change Canada (ECCC), maintain two real-time water quality (RTWQ) and water quantity stations at Wabush Lake.
- The official name of each station is *Wabush Lake at Dolomite Road* and *Wabush Lake at Lake Outlet*, hereafter referred to as the Dolomite Road station and the Julienne Narrows station.
- These stations are situated upstream (Dolomite Road) and downstream (Julienne Narrows) of the IOC tailings disposal area in Wabush Lake.
- On June 8th, 2016, an additional station was commissioned under this agreement. This station is located at *Dumbell Stream above Dumbell Lake*, hereafter referred to as Dumbell Stream.
- On June 12th, 2017 a new station was commissioned under this agreement. This station is located at *Pumphouse Stream above Drum Lake*, hereafter referred to as Pumphouse Stream.
- Water Resources Management Division staff monitor the real-time graphs regularly. They will inform IOC of any significant water quality events by email notification and by monthly deployment reports.
- Between September 5th and 6th, clean and calibrated real-time water quality-monitoring instruments were deployed at the four IOC stations. The instruments were deployed for a period of 43 days at each station. The instruments were removed on October 18th and 19th. This was the final deployment for these stations.
- There is a large portion of data missing from Dolomite Road. During the last deployment period, the station stopped transmitting. Upon retrieval of the instrument, we attempted to download the internal data but it was discovered that there was an electrical malfunction with the CPU board and only a portion of the data could be recovered. All observations at Dolomite Road are based on the available limited data.

Figure 1: RTWQ Monitoring Stations in Labrador West

Quality Assurance and Quality Control

- 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 each deployment period. The procedure is based on the approach used by the United States Geological Survey.

  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 (Table 1).

Table 1: Ranking classifications for deployment and removal

	Rank				
Parameter	**Excellent**	**Good**	**Fair**	**Marginal**	**Poor**
Temperature (°C)	<=+/-0.2	>+/-0.2 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	<+/-1
pH (unit)	<=+/-0.2	>+/-0.2 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	>+/-1
Sp. Conductance (µS/cm)	<=+/-3	>+/-3 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20
Sp. Conductance > 35 µS/cm (%)	<=+/-3	>+/-3 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20
Dissolved Oxygen (mg/L) (% Sat)	<=+/-0.3	>+/-0.3 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	>+/-1
Turbidity <40 NTU (NTU)	<=+/-2	>+/-2 to 5	>+/-5 to 8	>+/-8 to 10	>+/-10
Turbidity > 40 NTU (%)	<=+/-5	>+/-5 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20

- It should be noted that the temperature sensor on any sonde is the most important. All other parameters can be broken down into three groups: temperature dependent, temperature compensated and temperature independent. Because the temperature sensor is not isolated from the rest of the sonde, the entire sonde must be at the same temperature before the 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.
- Deployment and removal comparison rankings for the IOC water quality stations deployed between September 5-6 and October 18-19, 2023 are summarized in Table 2.

Table 2: QA/QC comparison rankings for IOC stations between September 5-6 and October 18-19, 2023.

Station	Date	Action	Comparison Ranking				
			Temperature	pH	Conductivity	Dissolved Oxygen	Turbidity
Dolomite Road	Sept 6, 2023	Deployment	Excellent	Excellent	Excellent	Excellent	Excellent
	Oct 19, 2023	Removal	N/A	N/A	N/A	N/A	N/A
Julienne Narrows	Sept 6, 2023	Deployment	Good	Good	Good	Excellent	Fair
	Oct 19, 2023	Removal	Good	Excellent	Excellent	Excellent	Excellent
Dumbell Stream	Sept 5, 2023	Deployment	Excellent	Excellent	Good	Excellent	Excellent
	Oct 18, 2023	Removal	Excellent	Excellent	Good	Marginal	Excellent
Pumphouse Stream	Sept 6, 2023	Deployment	Good	Good	Excellent	Good	Excellent
	Oct 19, 2023	Removal	Good	Excellent	Poor	Excellent	Good

Deployment

- All parameters at Dolomite Road, Dumbell Stream and Pumphouse Stream ranked either 'excellent' or 'good'.
- At Julienne Narrows, turbidity ranked 'fair'. The field instrument read a value of 0.0 NTU, while the QA/QC instrument read a value of 6.1 NTU. However, when the field instrument is ranked against the QA/QC grab sample, the ranking is 'excellent'.

Removal

- QA/QC rankings could not be obtained for Dolomite Road due to instrument failure.
- At Julienne Narrows, all parameters ranked either 'excellent' or 'good'.
- At Dumbell Stream, all parameters except dissolved oxygen ranked either 'excellent' or 'good'. Dissolved oxygen ranked 'marginal'. The field instrument read a value of 11.98 mg/L, while the QA/QC instrument read a value of 12.79 mg/L.
- At Pumphouse Stream, all parameters except for conductivity ranked either 'excellent' or 'good'. Conductivity ranked 'poor'. The field instrument read a value of 304.0 µs/cm, while the QA/QC instrument read a value of 394.8 µs/cm.

Data Interpretation

- The following graphs and discussion illustrate water quality-related events from September 5-6 to October 18-19, 2023 at the IOC RTWQ monitoring stations in Labrador West.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion below adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

Wabush Lake Network

- Water temperature ranged from 12.91 to 17.20°C at Dolomite Road and 7.50 to 17.30°C at Julienne Narrows during this deployment period (Figure 2).
- Water temperature at both stations decreased slightly during this deployment period, as water temperature cooled into the fall. Water temperature corresponded to increases/decreases in ambient air temperature trends (Figure 2).

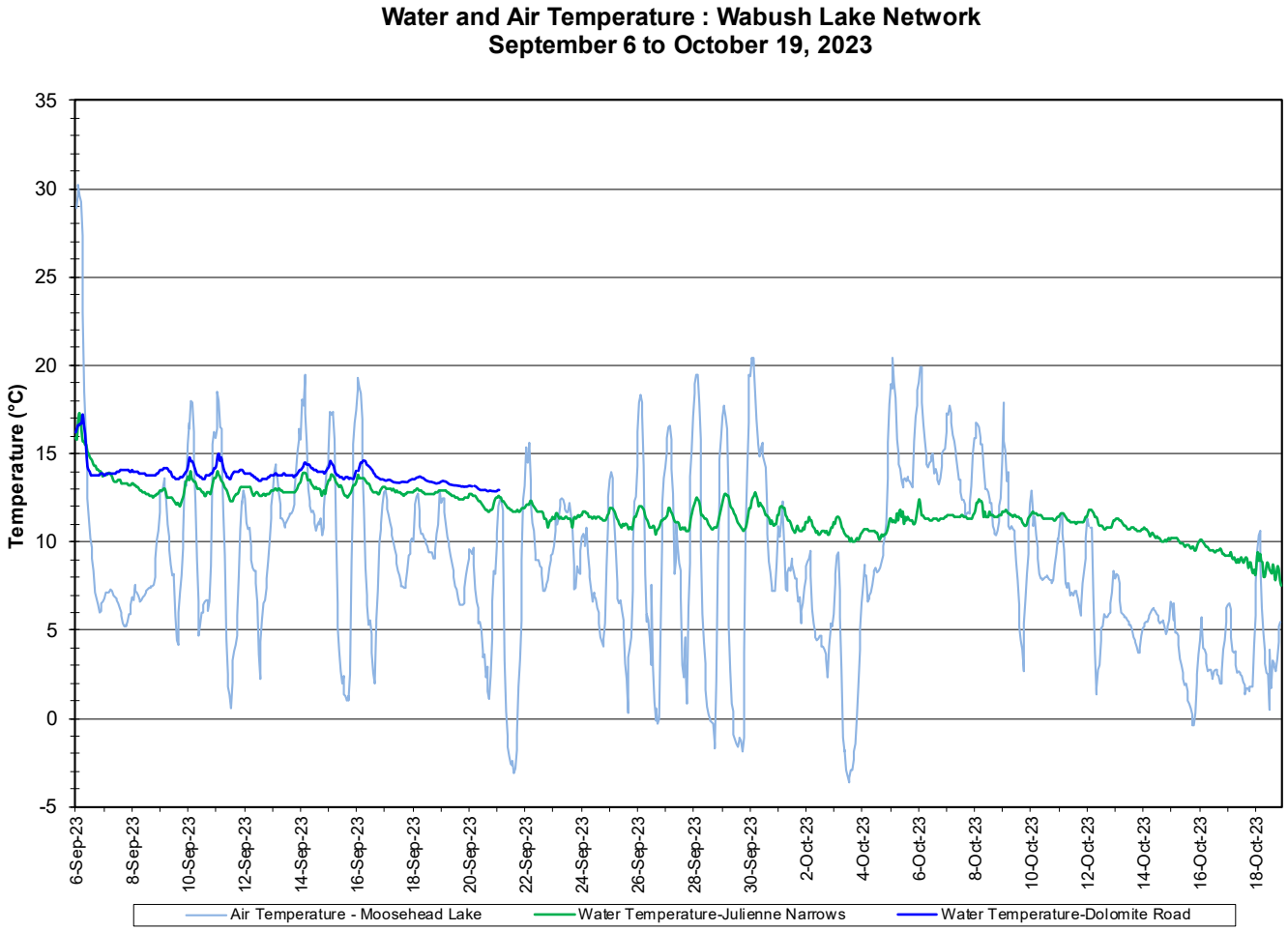


Figure 2: Water and Air Temperature - Wabush Lake network

(Weather data collected from climate station near Moosehead Lake)

- pH ranges from 7.17 to 7.89 pH units at Dolomite Road, and from 7.73 to 8.29 pH units at Julienne Narrows throughout the deployment period (Figure 3). The median pH is 7.52 and 7.99 units respectively.
- At Julienne Narrows and Dolomite Road, all values during the deployment are within the CCME Guidelines for the Protection of Aquatic Life (between 6.5 and 9 pH units). pH fluctuates slightly throughout the day and night.
- Overall, pH increases slightly at Julienne Narrows over the course of the deployment period.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

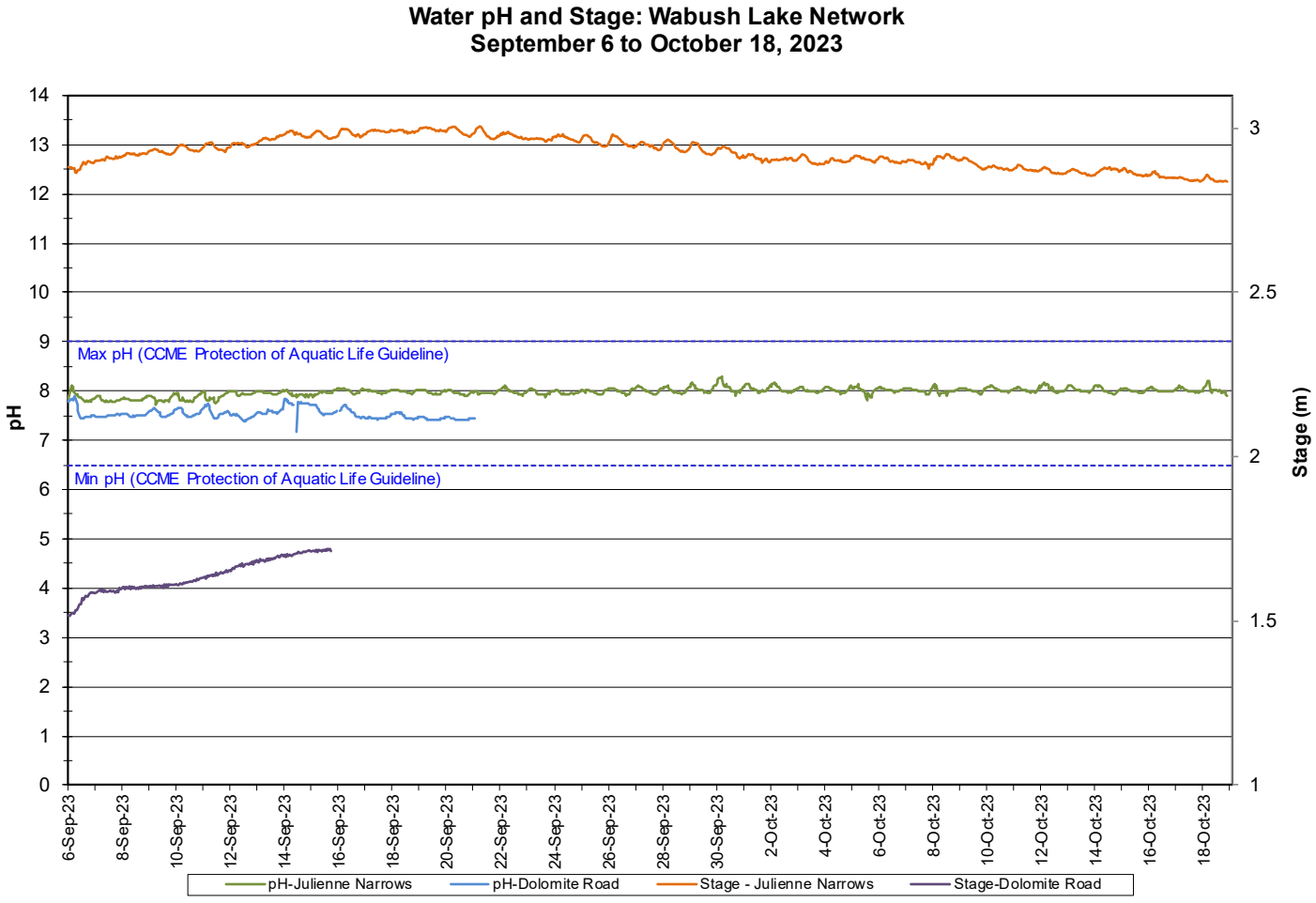


Figure 3: Water pH and Stage– Wabush Lake network

- Specific conductivity ranged from 56.0 to 66.5 µs/cm at Dolomite Road and from 87.5 to 123.2 µs/cm at Julienne Narrows throughout the deployment period (Figure 4).
- Daily fluctuations are evident at the Julienne Narrows station. This can be attributed to varying contributions of iron ore tailings deposited into Wabush Lake upstream of Julienne Narrows and downstream of Dolomite Road. This can also explain the difference in specific conductivity levels between the two stations, as conductance values are generally higher at Julienne Narrows.
- Specific conductivity values at Julienne Narrows trended slightly upwards, while values at Dolomite Road decreased slightly.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

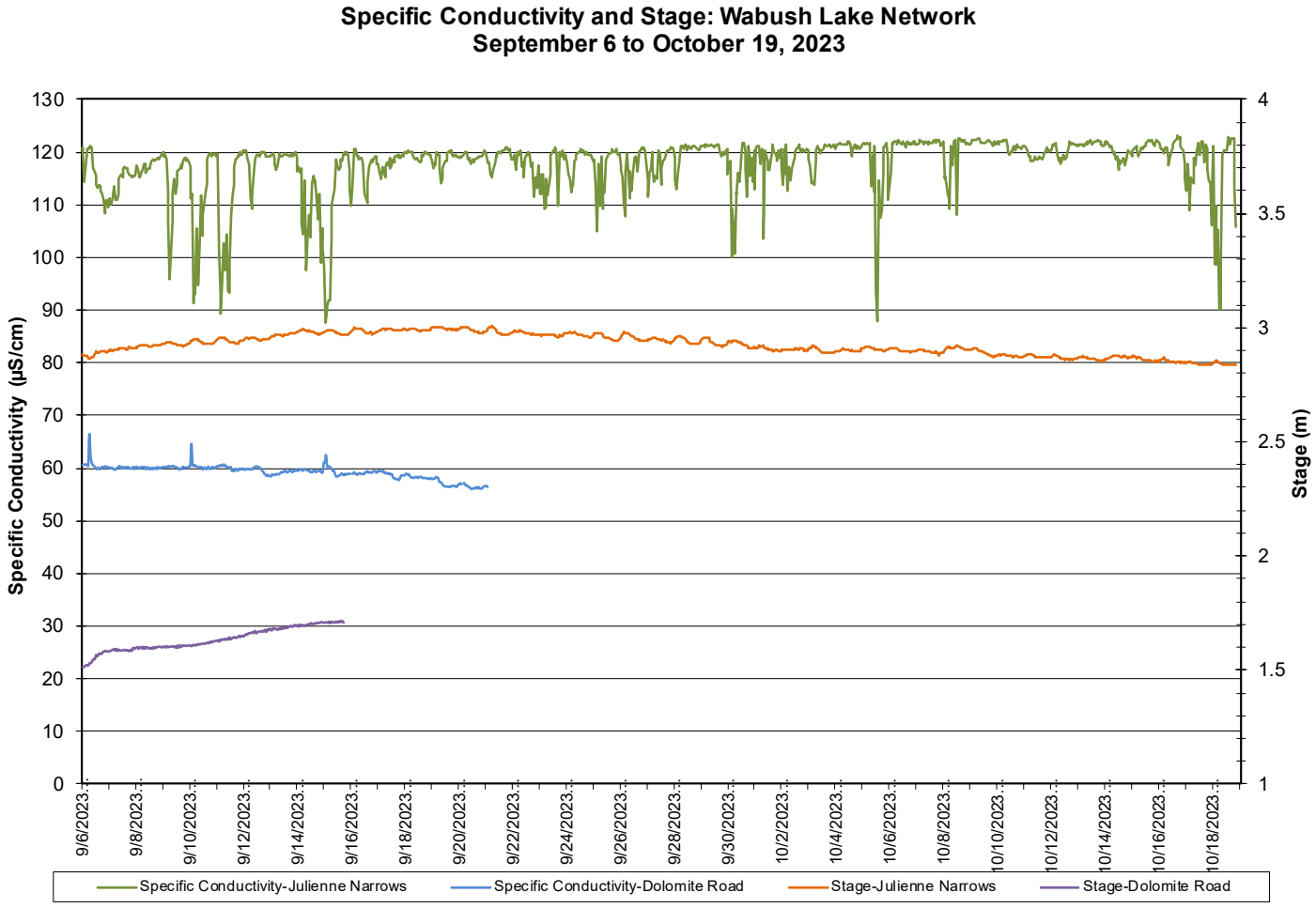


Figure 4: Specific Conductivity and Stage – Wabush Lake network

- At the Dolomite Road station, the saturation of dissolved oxygen ranged from 85.5 to 100.2% while the dissolved oxygen content ranged from 8.93 to 9.84 mg/l with a median value of 9.36 mg/l (Figure 5).
- At the Julienne Narrows station, the saturation of dissolved oxygen ranged from 90.8 to 107.6% while the dissolved oxygen content ranged from 9.56 to 11.94 mg/l with a median value of 10.43 mg/l (Figure 5).
- All values recorded at Julienne Narrows and Dolomite Road were above the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Other Life Stages of 6.5 mg/l. Most of the values were below the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Early Life Stages of 9.5 mg/l at Dolomite Road, while all the values at Julienne Narrows were above this guideline. The guidelines are indicated in blue on Figure 5.
- Dissolved oxygen increased gradually over this deployment period due to decreasing water temperatures. Dissolved oxygen fluctuated daily with decreases observed at night.

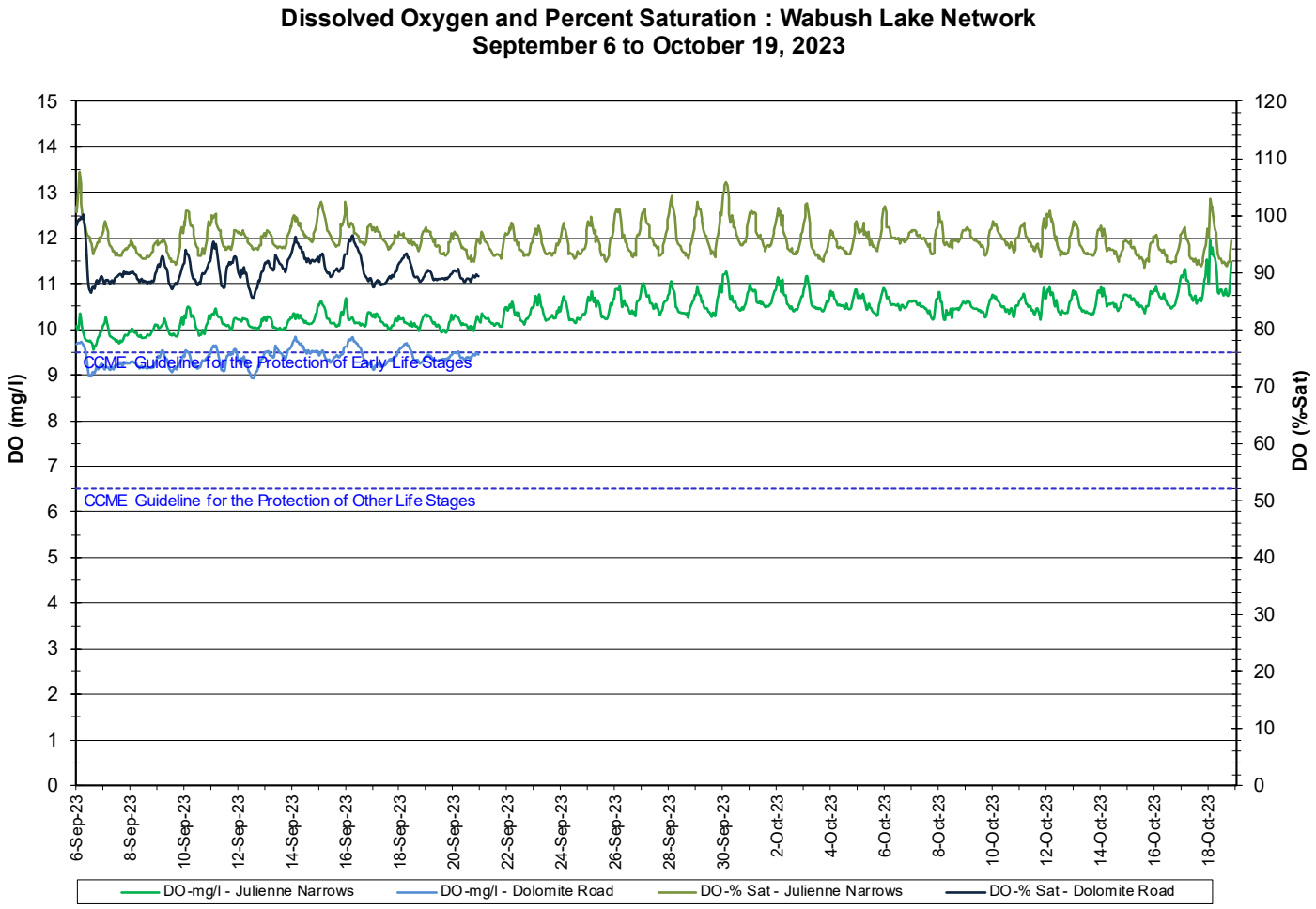


Figure 5: Dissolved Oxygen and Percent Saturation – Wabush Lake Network

- At the Julienne Narrows station, turbidity values range from 0.0 NTU to 14.8 NTU throughout the deployment period (Figure 6). The median value was 0.0 NTU, indicating low background turbidity levels.
- Turbidity spikes occur infrequently and for short periods of time.

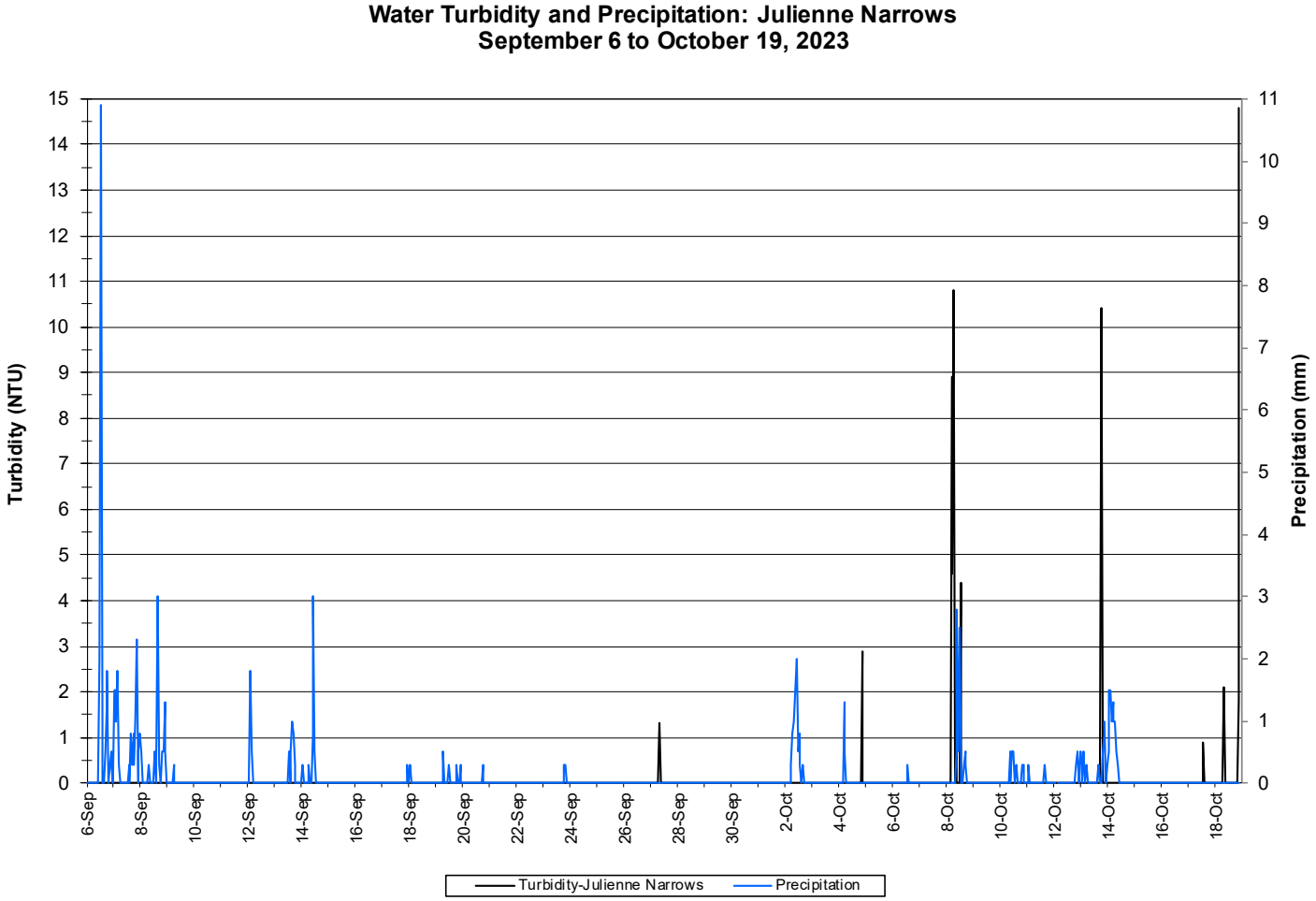


Figure 6: Turbidity and Precipitation – Julienne Narrows

(Weather data collected from climate station near Moosehead Lake)

- At the Dolomite Road station, turbidity values remained at 0.0 NTU Figure 7).

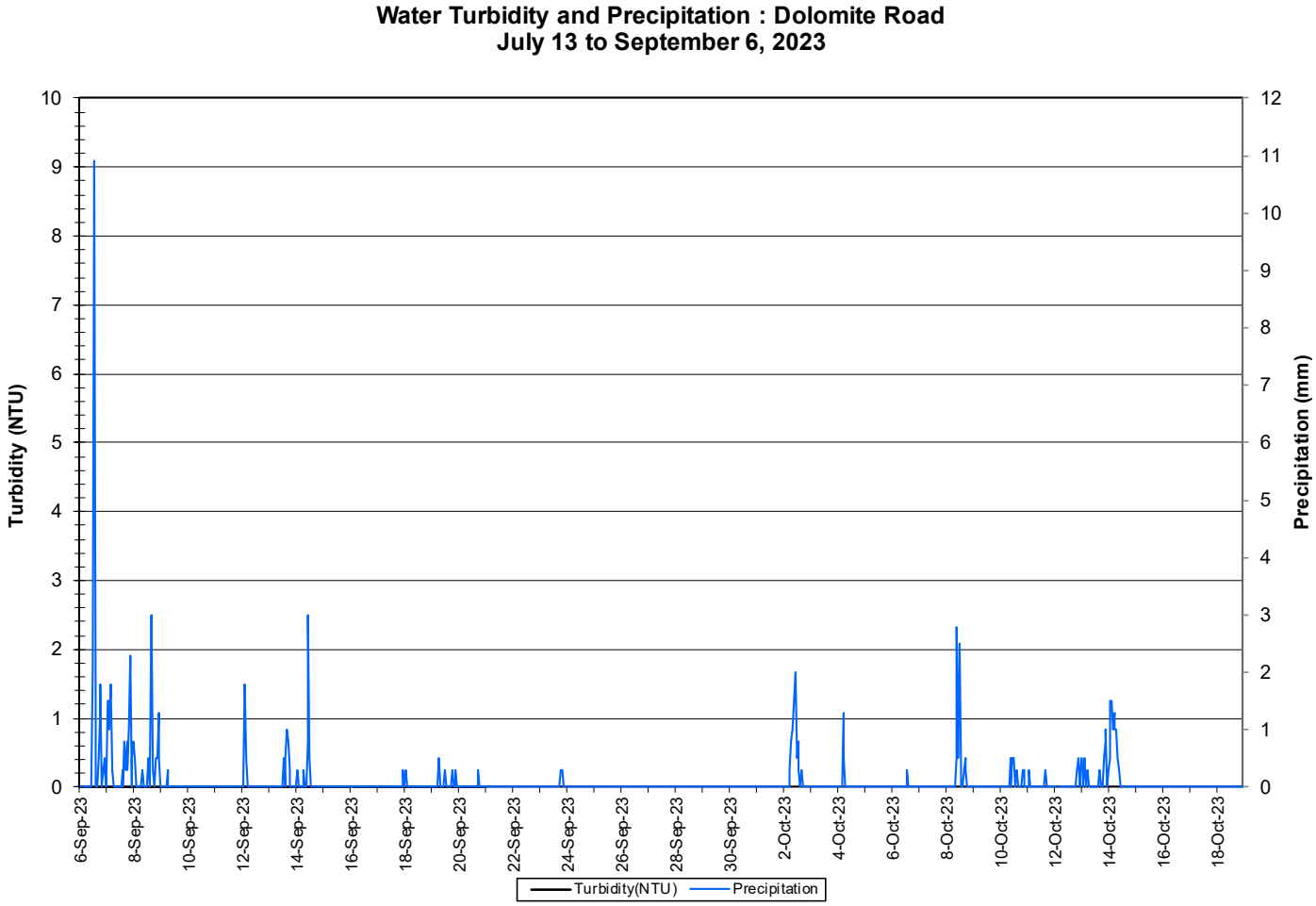


Figure 7: Turbidity and Precipitation – Dolomite Road

(Weather data collected from climate station near Moosehead Lake)

- Stage and precipitation are graphed below to show the relationship between rainfall and water level at Dolomite Road and Julienne Narrows (Figure 8).
- At Julienne Narrows, stage increased slightly until the middle of September, it then decreased gradually until the end of the deployment period. Based on the data available, stage at Dolomite Road increased.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

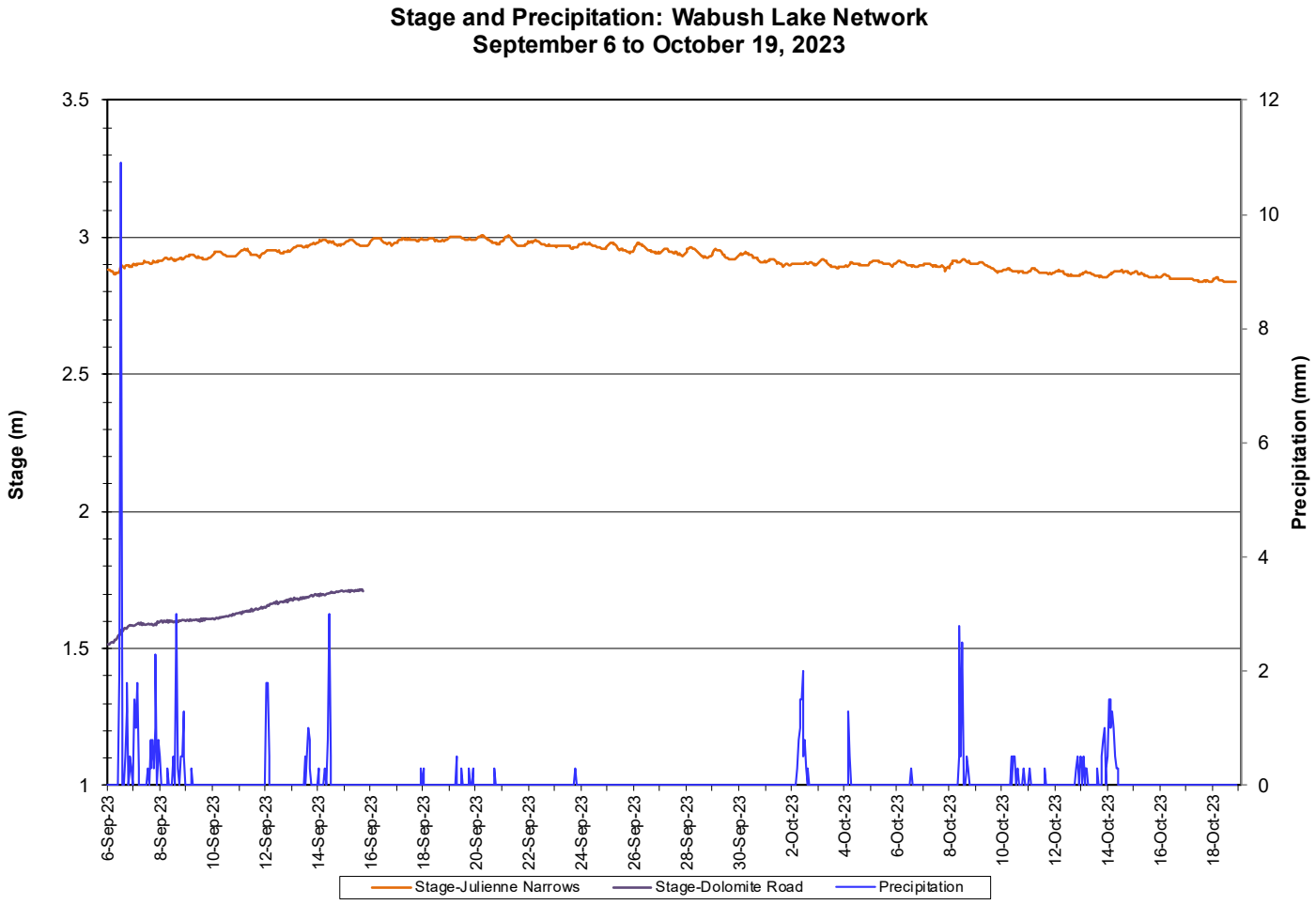


Figure 8: Stage and Precipitation – Wabush Lake Network

(Weather data collected at climate station located near Moosehead Lake)

Dumbell Stream

- Water temperature ranged from 2.73 to 9.15°C during this deployment period (Figure 9).
- Water temperature fluctuated within a small range during this deployment period, with a slight decreasing trend, overall. Water temperature at Dumbell Stream is typically much lower than other stations (Figure 9).

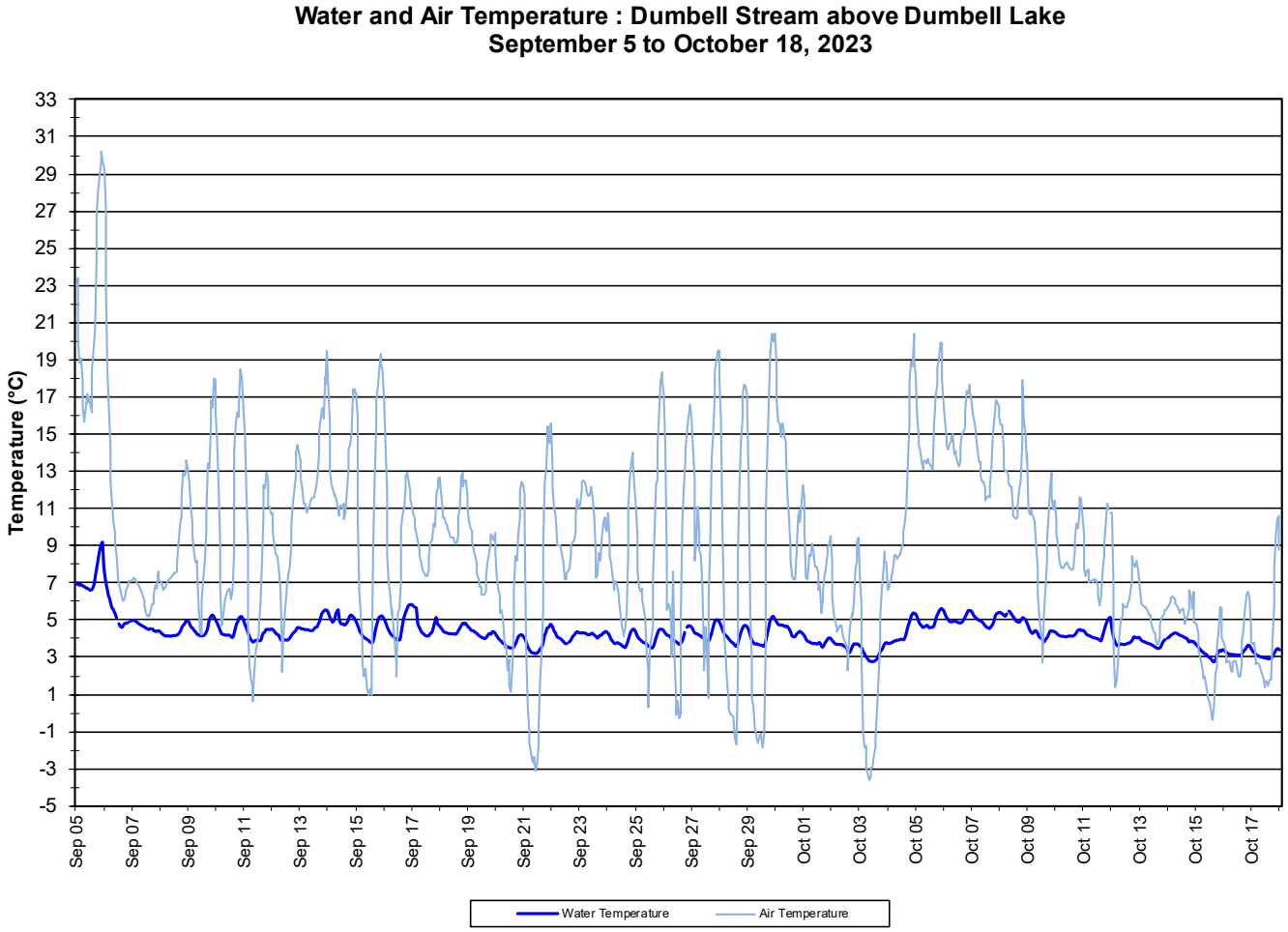


Figure 9: Water and Air Temperature – Dumbell Stream

(Weather data collected from climate station near Moosehead Lake)

- pH ranged from 7.30 to 7.67 pH units (Figure 10). The median pH was 7.61.
- All values are within the CCME Guidelines for the Protection of Aquatic Life (between 6.5 and 9 pH units). pH fluctuates slightly throughout the day and night.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

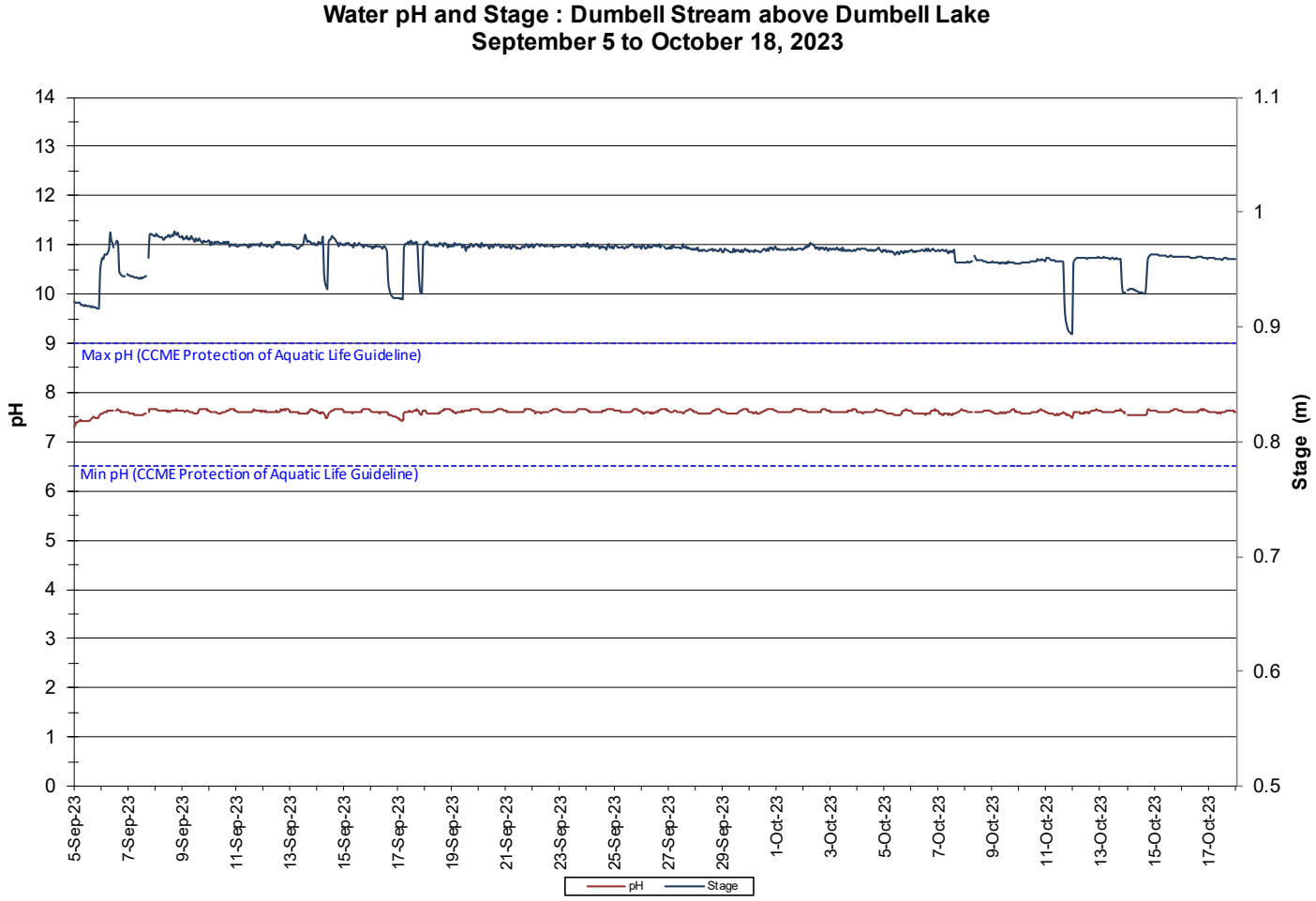


Figure 10: Water pH and Stage – Dumbell Stream

- Specific conductivity ranged from 145.2 to 370.0 µs/cm, throughout the deployment period (Figure 11).
- Specific conductivity increased after some precipitation events.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

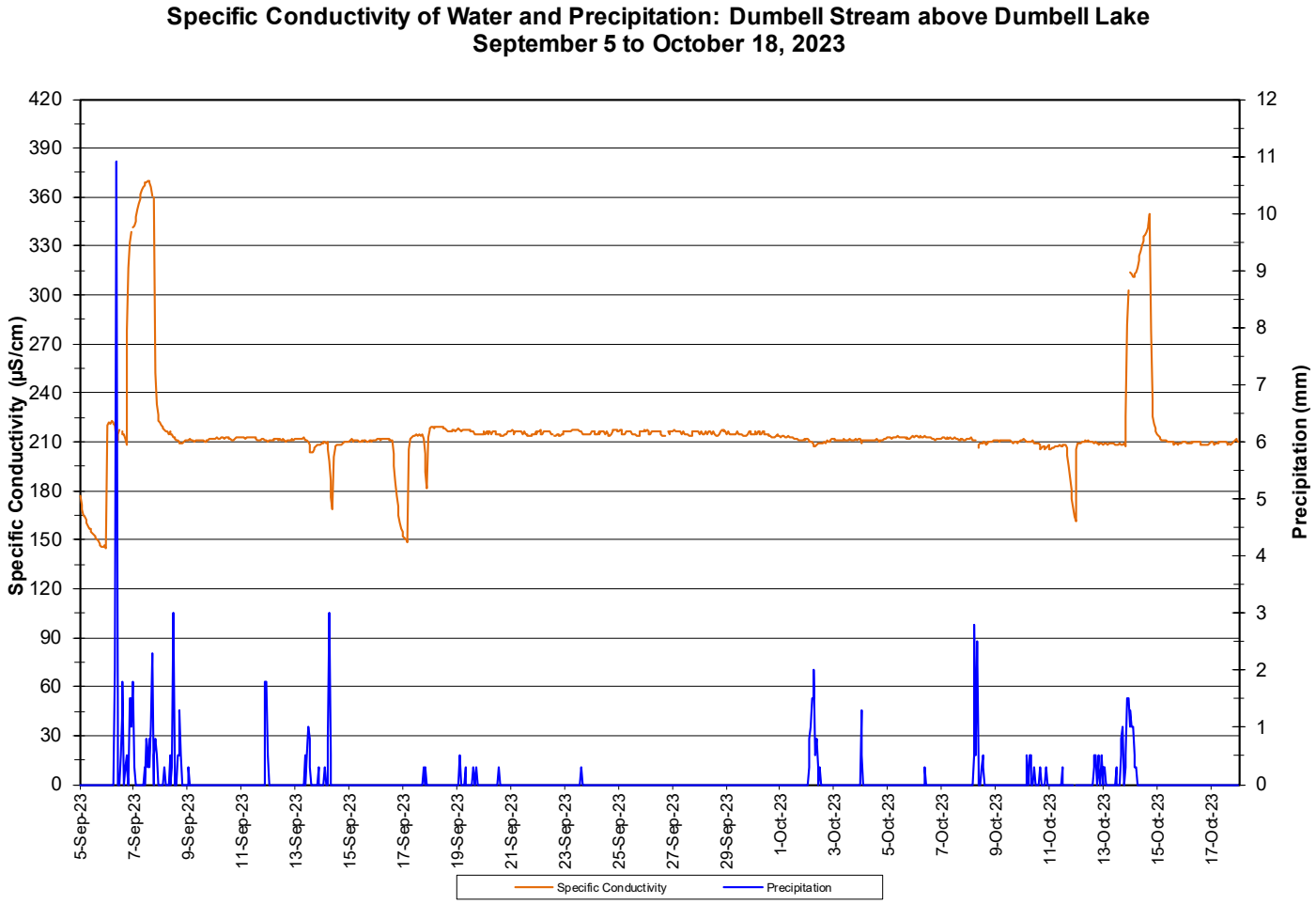


Figure 11: Specific conductivity and stage – Dumbell Stream

(Weather data collected from climate station near Moosehead Lake)

- The saturation of dissolved oxygen ranged from 87.7% to 92.9% while the dissolved oxygen content ranged from 10.34 to 12.33 mg/l with a median value of 11.81 mg/l (Figure 12).
- All values recorded at Dumbell Stream were above the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Other Life Stages of 6.5 mg/l, and the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Early Life Stages of 9.5 mg/. The guidelines are indicated in blue on Figure 12.
- Overall, dissolved oxygen increased slightly over this deployment period. Dissolved oxygen fluctuated daily with decreases observed at night.

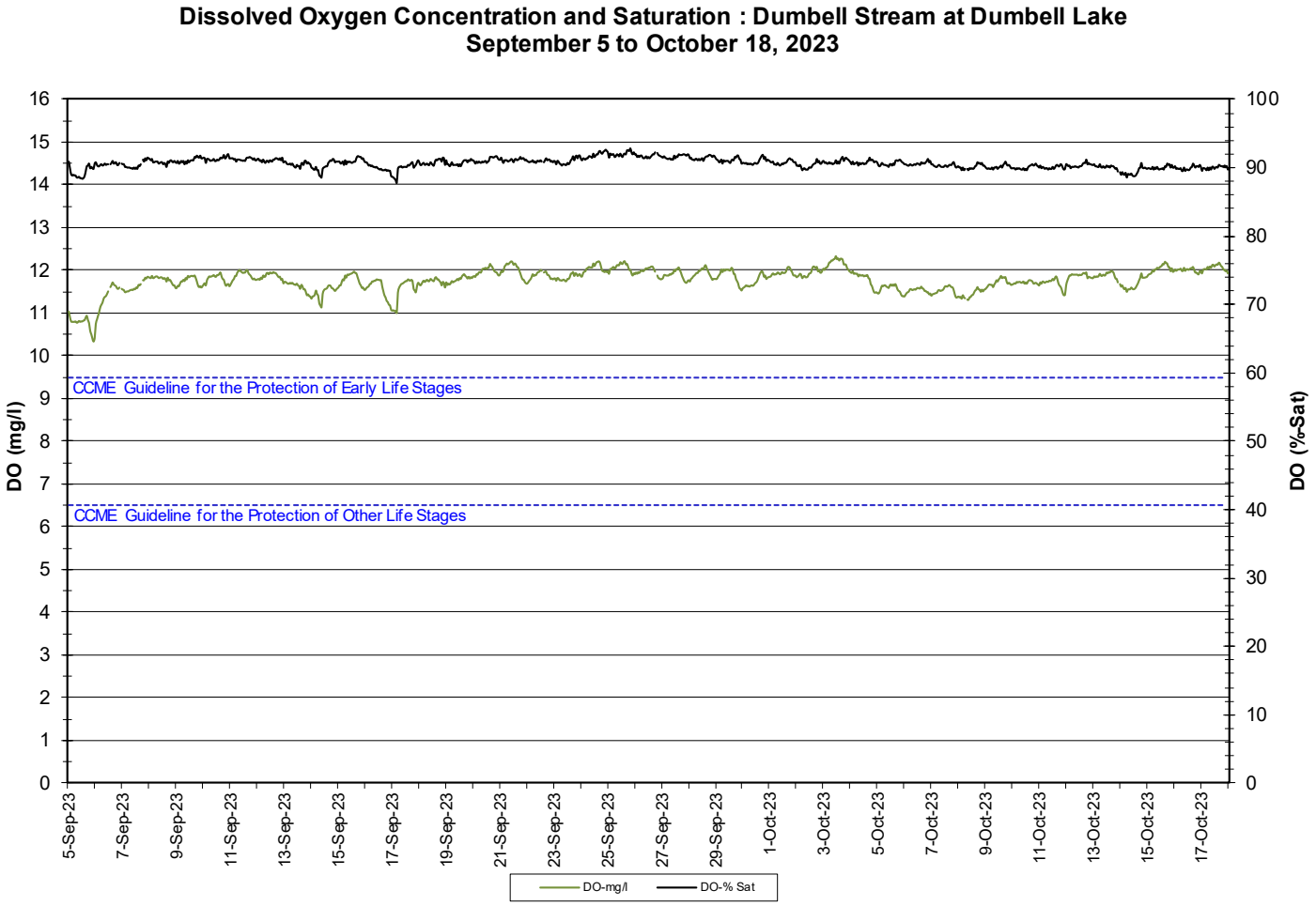


Figure 12: Dissolved oxygen – Dumbell Stream

- Turbidity values remained at 0.0 NTU throughout the deployment period (Figure 13).

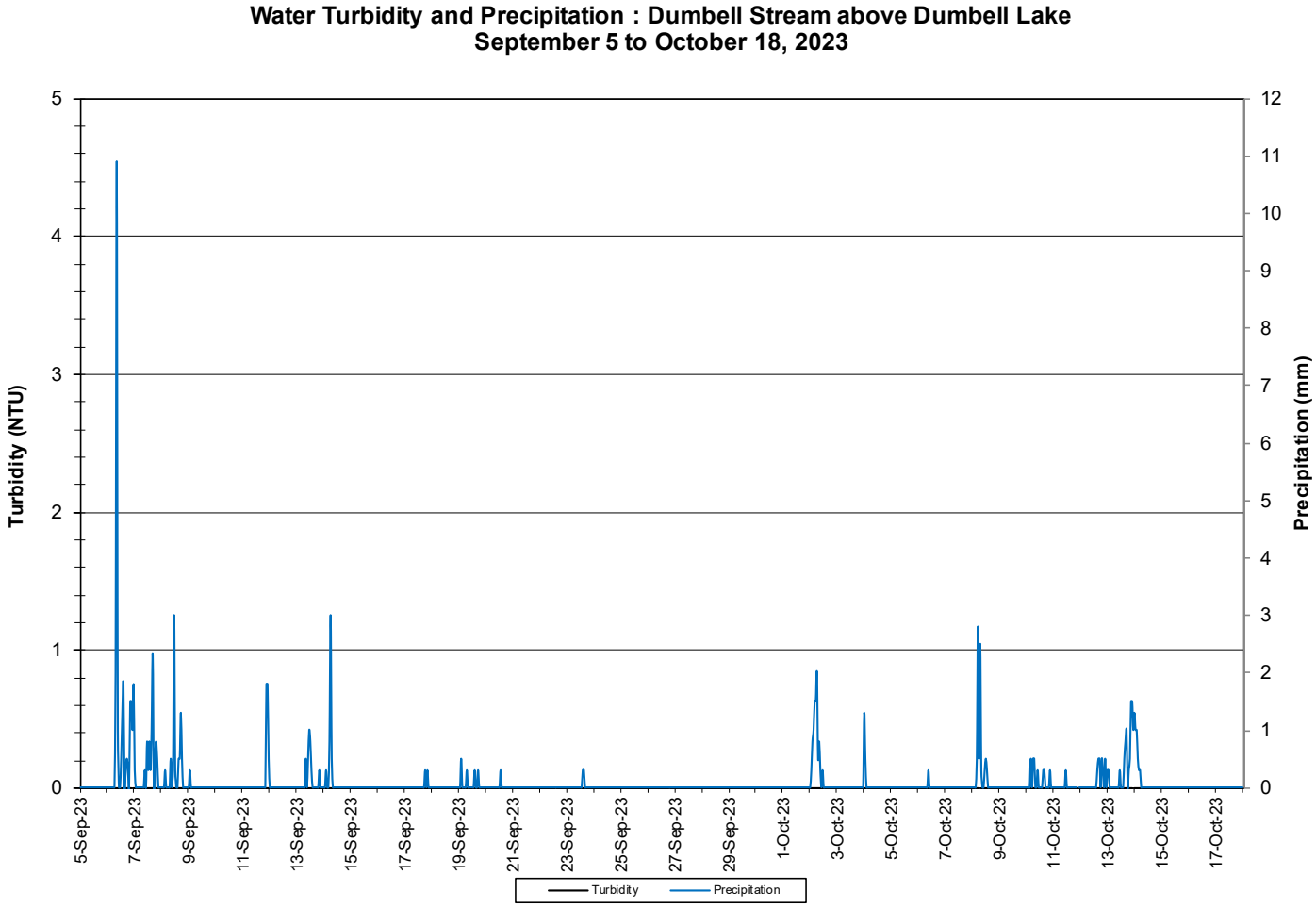


Figure 13: Turbidity and Precipitation – Dumbell Stream

(Weather data collected from climate station near Moosehead Lake)

- Stage and precipitation are graphed below to show the relationship between rainfall and water level at Dumbell Stream (Figure 14).
- Overall, stage decreased over the course of the deployment period.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

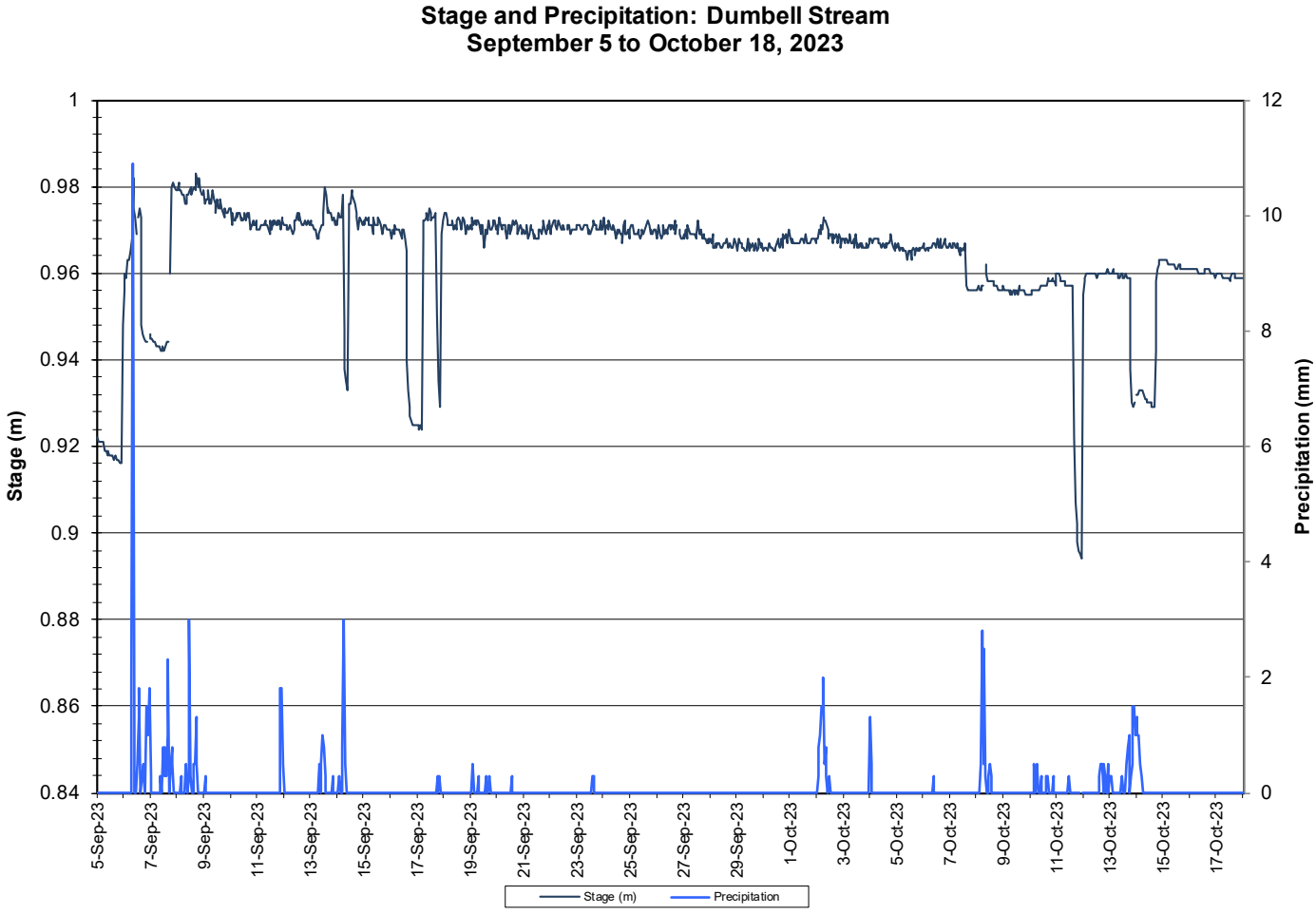


Figure 14: Stage and Precipitation – Dumbell Stream

(Weather data collected from climate station near Moosehead Lake)

Pumphouse Stream

- Water temperature ranged from 4.10 to 16.90ºC during this deployment period (Figure 15).
- Water temperature decreased during this deployment period, with some fluctuations. Fluctuations corresponded with increases and decreases in ambient air temperature. (Figure 15).

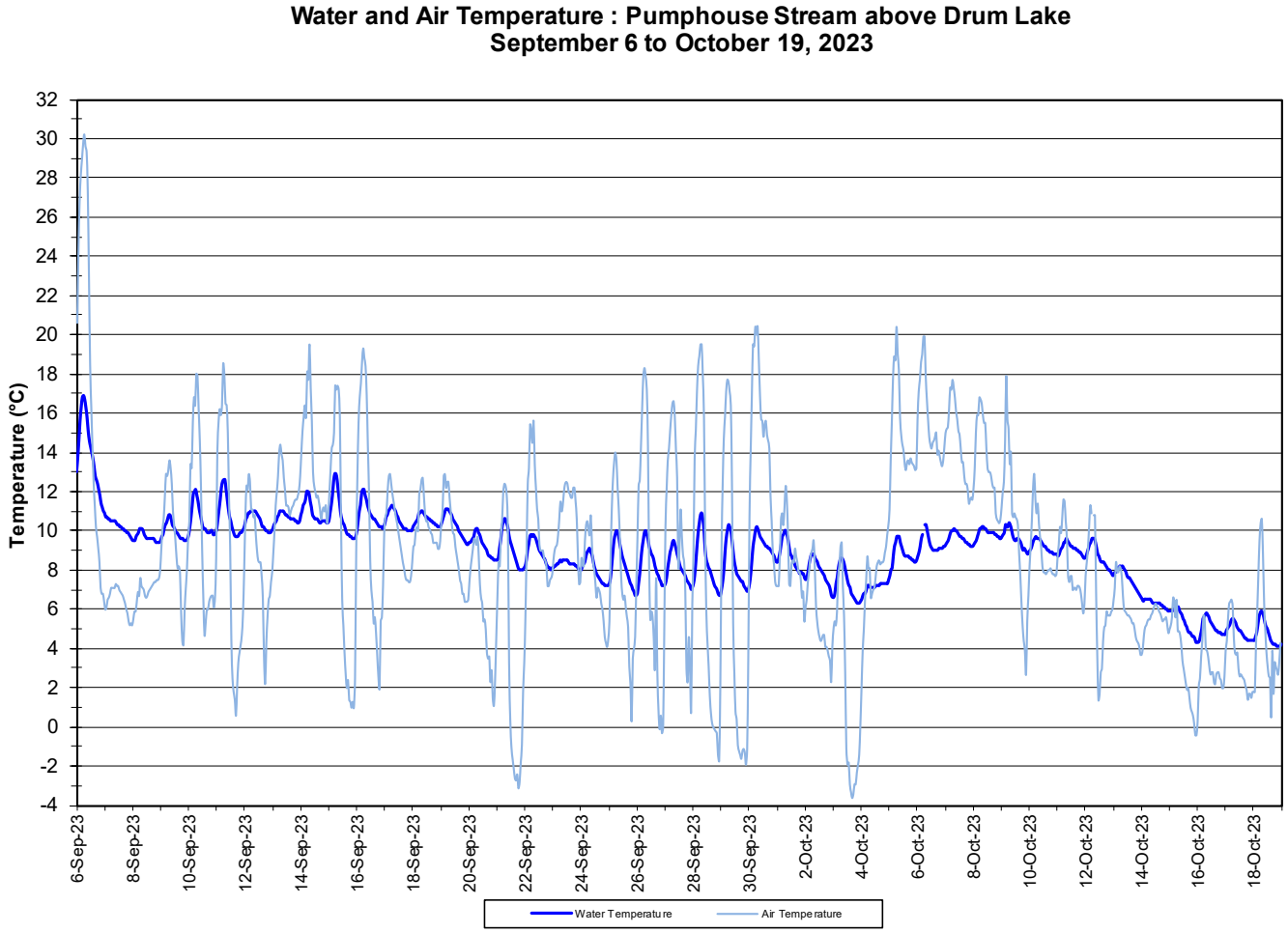


Figure 15: Water and Air Temperature – Pumphouse Stream

(Weather data collected from climate station near Moosehead Lake)

- pH ranged from 7.66 to 8.01 pH units (Figure 16). The median pH was 7.90.
- There are noticeable decreases in pH, corresponding with increases in stage. They are identified on the graph in red.
- All values during the deployment are within the CCME Guidelines for the Protection of Aquatic Life (between 6.5 and 9 pH units).
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

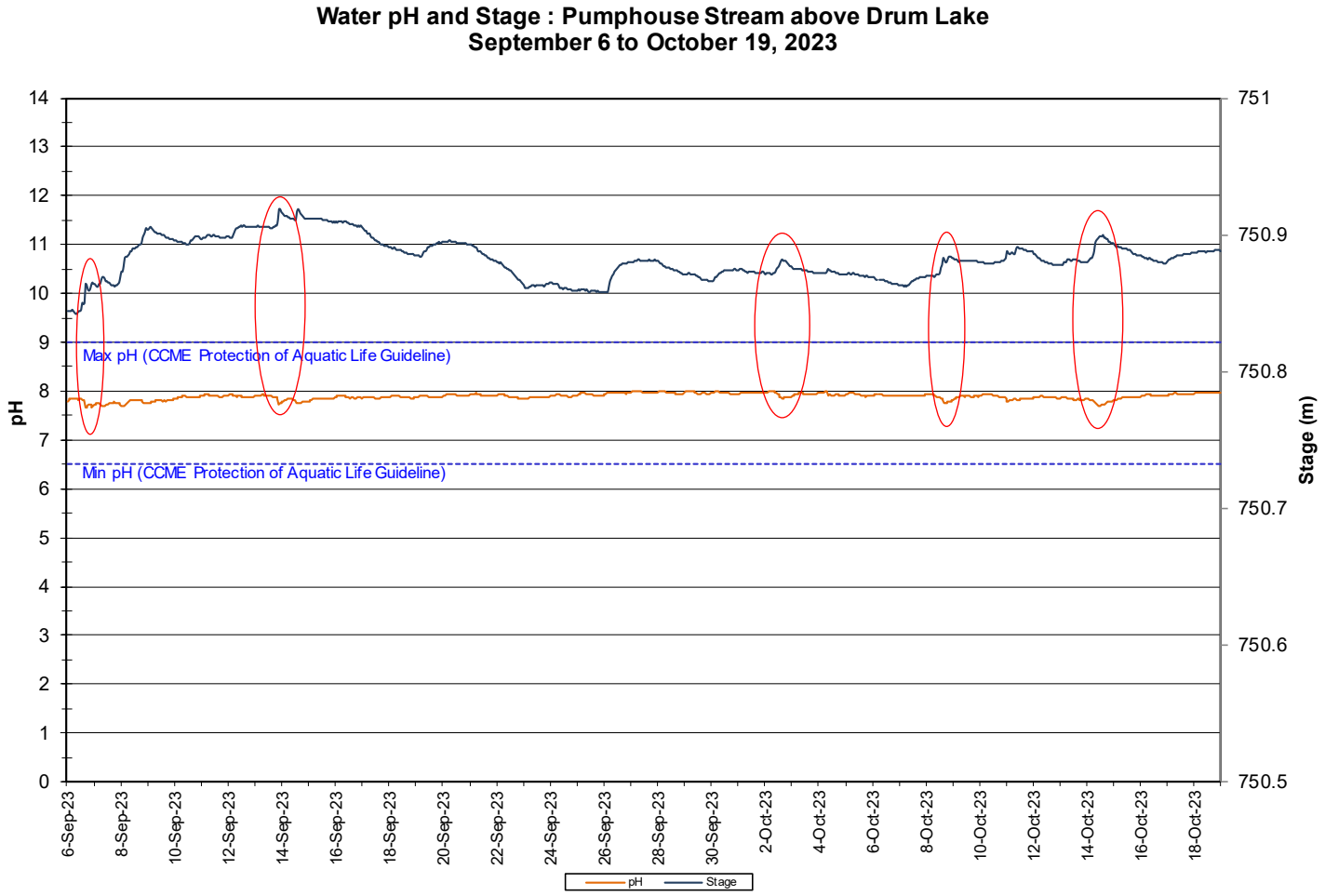


Figure 16: Water pH and Stage – Pumphouse Stream

- Specific conductivity ranged from 269.0 to 371.0 µs/cm, throughout the deployment period (Figure 17).
- The majority of decreases in specific conductivity correspond to increases in stage. As more water is added to the system from precipitation, the solids in the water are diluted, decreasing conductivity. Some correlations are identified on the graph in red.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

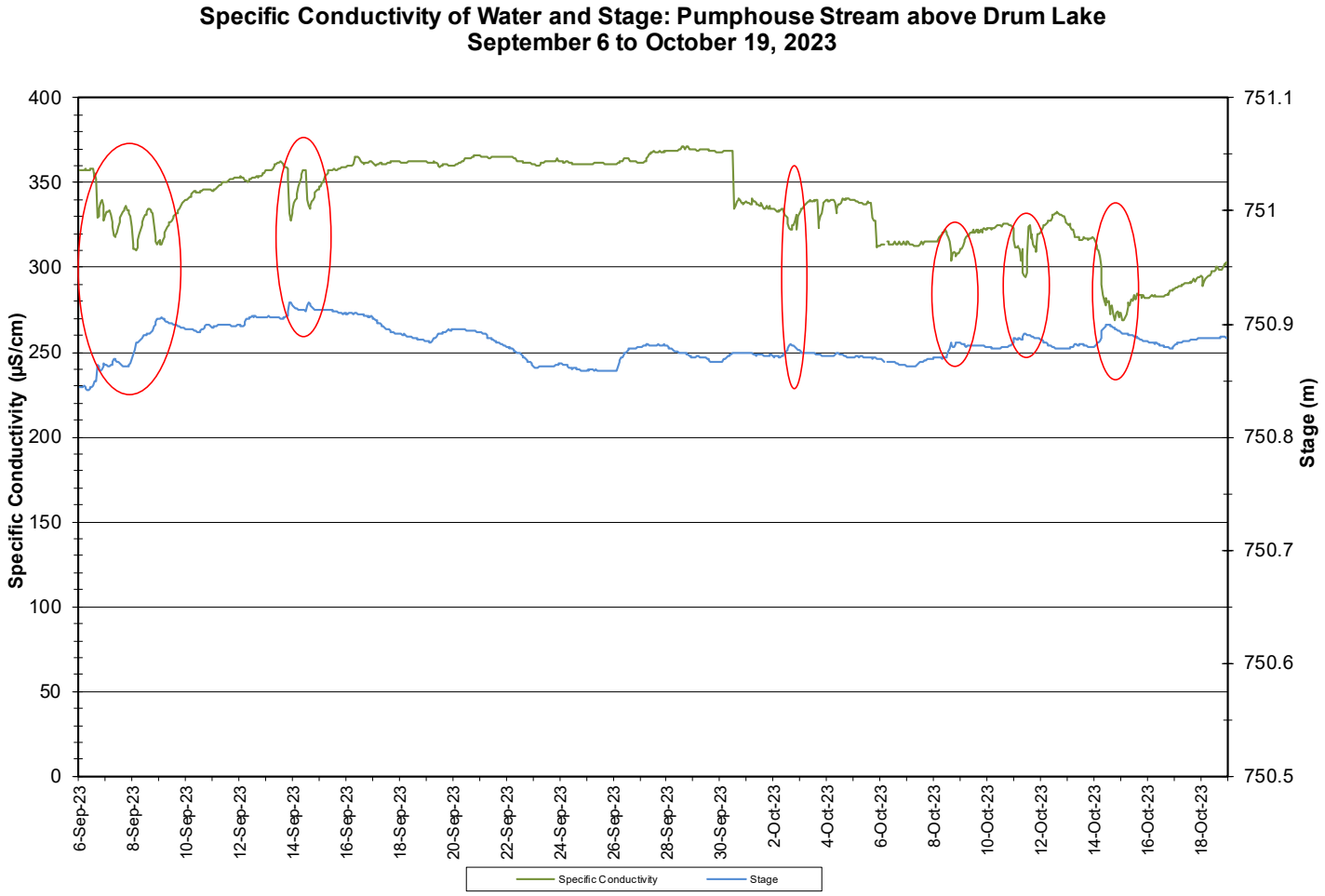


Figure 17: Specific Conductivity and Stage – Pumphouse Stream

(Weather data collected from climate station near Moosehead Lake)

- The saturation of dissolved oxygen ranged from 79.5 to 91.5% while the dissolved oxygen ranged from 8.36 to 11.37 mg/l with a median value of 9.99 mg/l (Figure 18).
- Dissolved oxygen increased during this deployment period, due to decreasing water temperatures.
- All values recorded at Pumphouse Stream were above the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Other Life Stages of 6.5 mg/l. Most of the values were above the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota of Early Life Stages of 9.5 mg/. The guidelines are indicated in blue on Figure 18.

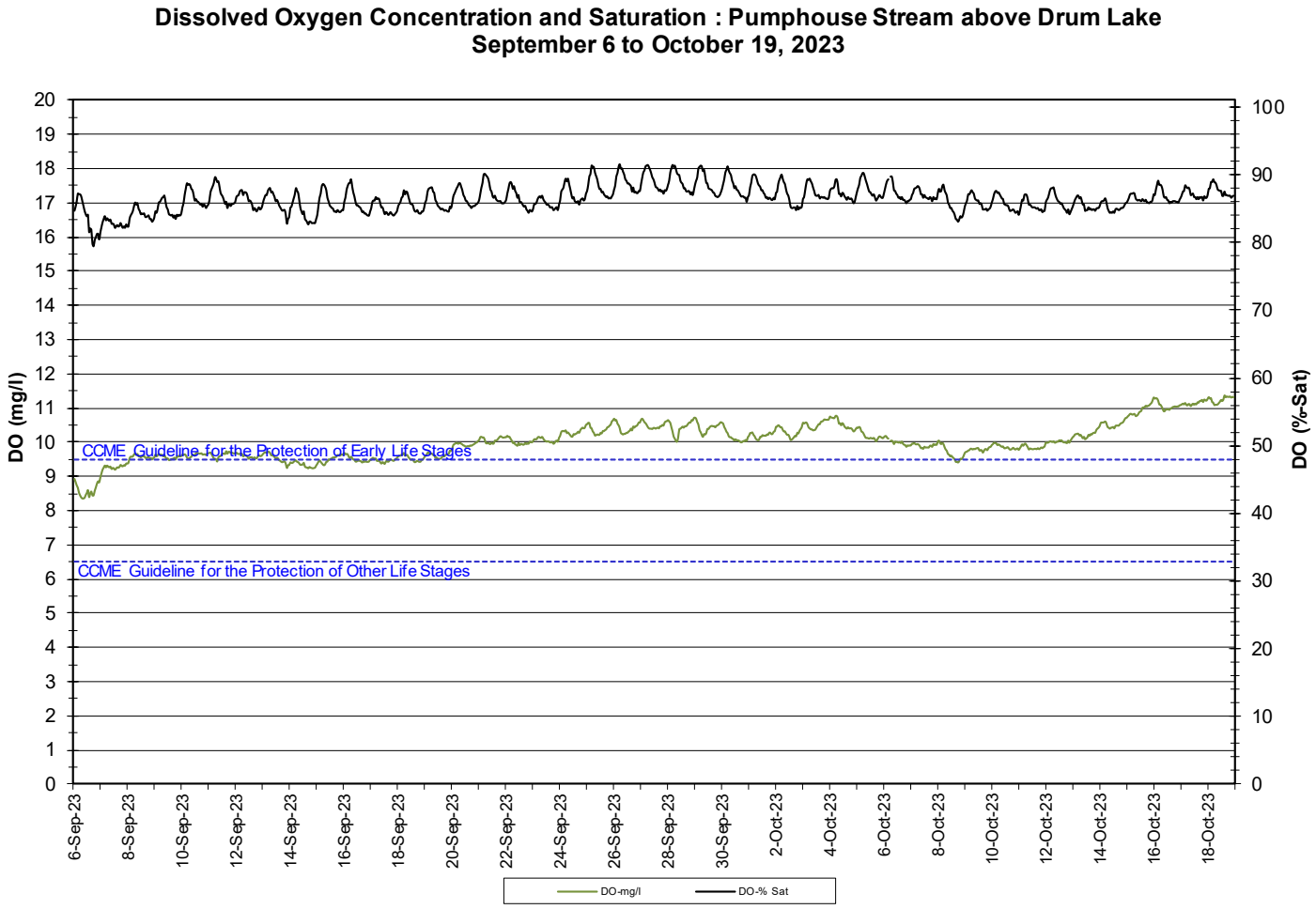


Figure 18: Dissolved Oxygen – Pumphouse Stream

- Turbidity values range from 0.0 NTU to 72.3 NTU throughout the deployment period (Figure 19). The median value was 0.0 NTU, indicating low background turbidity levels.
- Turbidity spikes occur infrequently and for short periods of time.

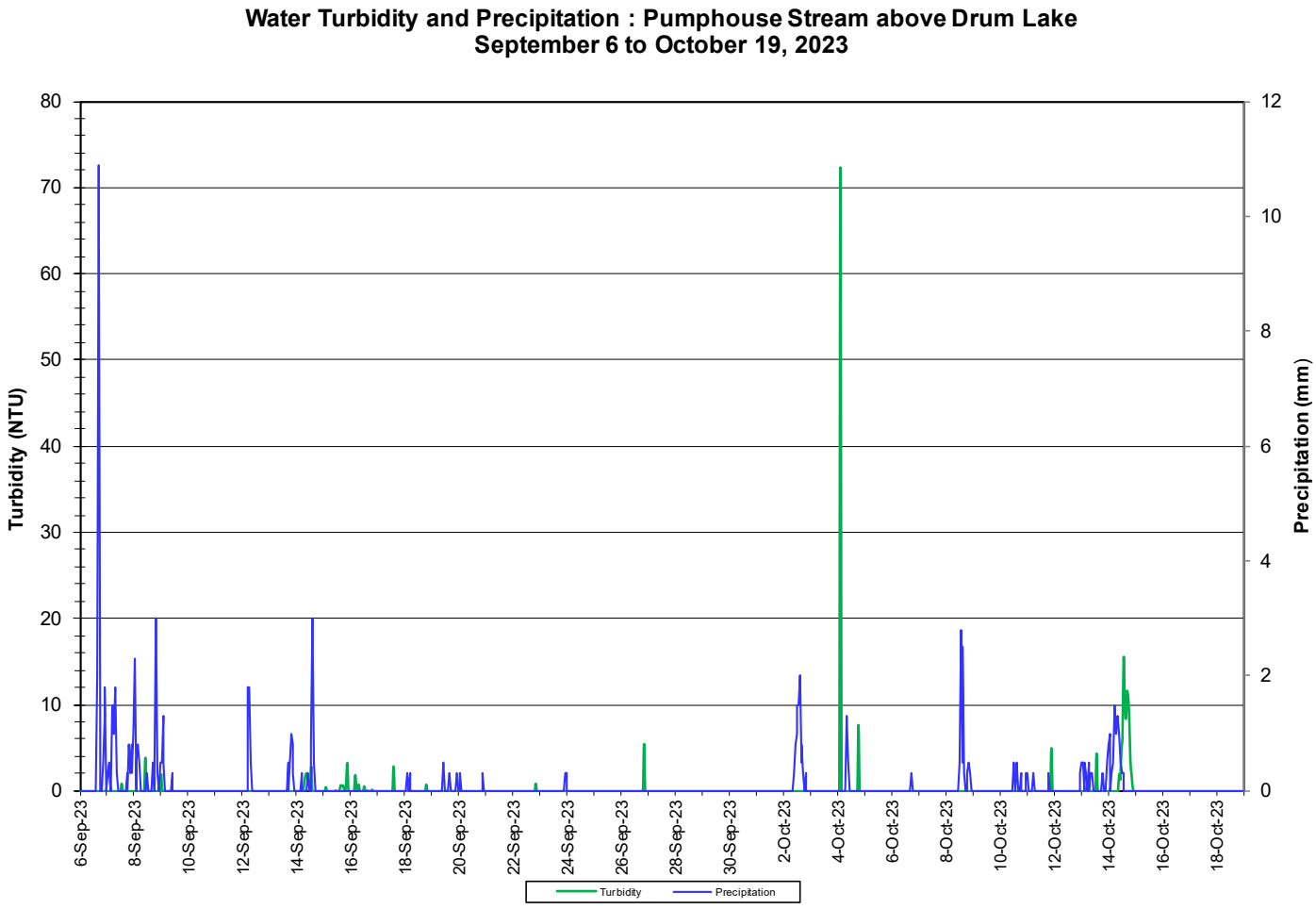


Figure 19: Turbidity and Precipitation – Pumphouse Stream

(Weather data collected from climate station near Moosehead Lake)

- Stage and precipitation are graphed below to show the relationship between rainfall and water level at Pumphouse Stream (Figure 20).
- Stage fluctuated at this station with spikes in level after precipitation events.
- With the exception of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

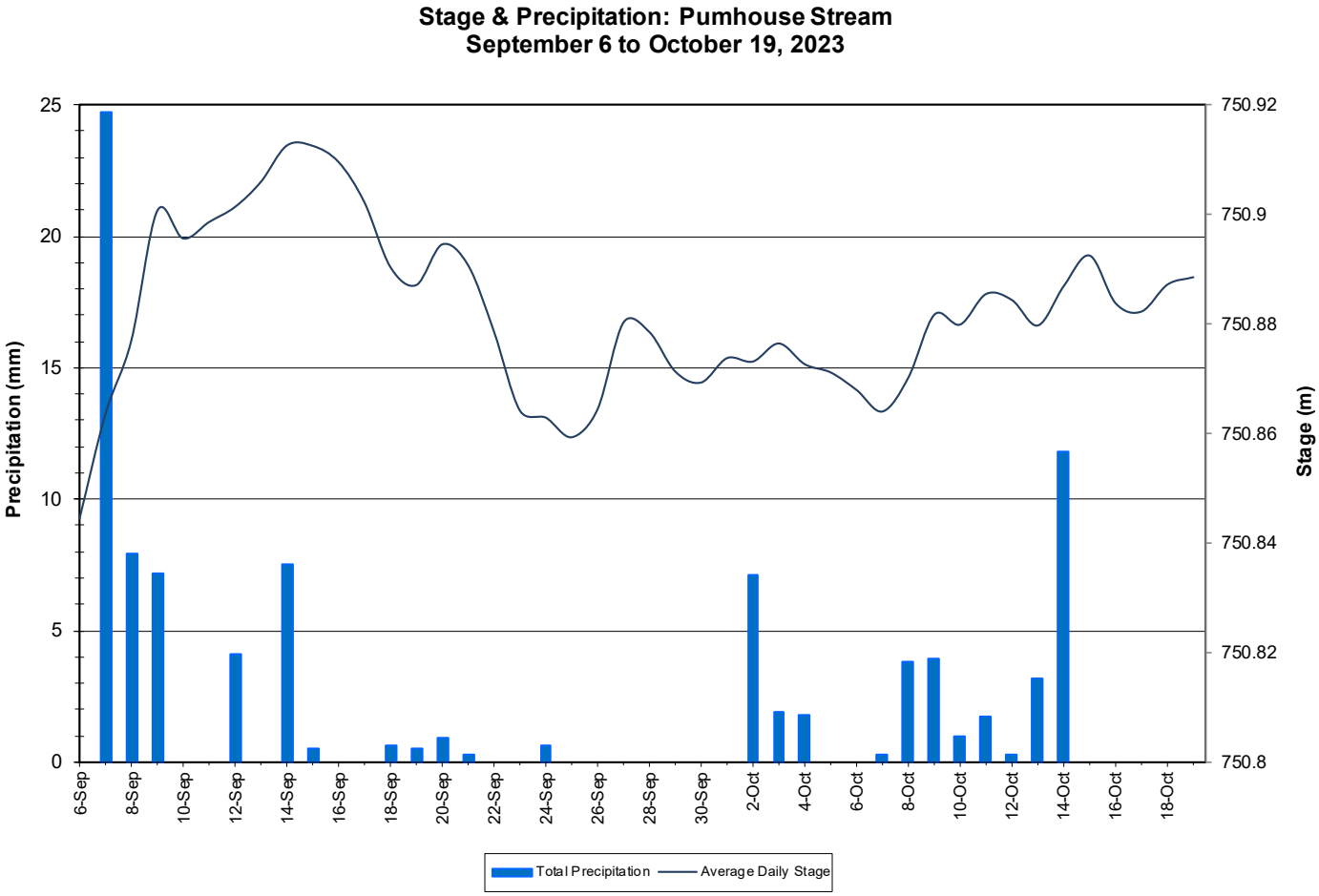


Figure 20: Stage and Precipitation – Pumphouse Stream

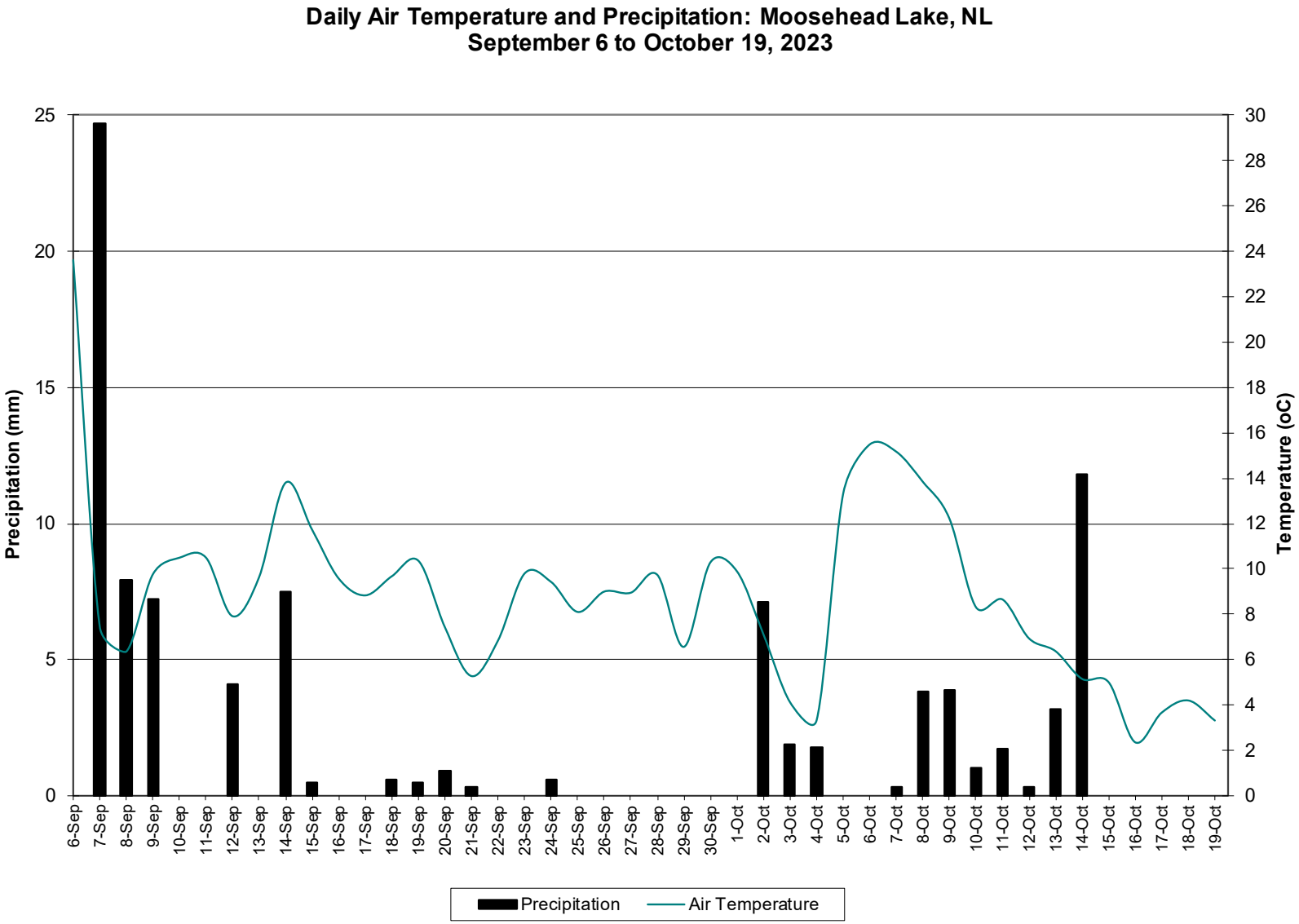
(Weather data collected from climate station near Moosehead Lake)

Conclusions

- Instruments were deployed on September 5-6th, 2023, and removed by October 19th, 2023. This was the final deployment for the 2023 season.
- In most cases, precipitation events or increases/decreases in water level could be used to explain the data fluctuations. Most values recorded were within ranges as suggested by the CCME Guidelines for the Protection of Aquatic Life for pH and dissolved oxygen.
- Water temperature corresponded with air temperature at all stations. Temperature ranged between 2.73 and 17.30°C at these stations during deployment.
- All pH values were within the recommended CCME Guidelines for the Protection of Aquatic Life. pH ranged between 7.17 and 8.29. Fluctuations were noted between day and night.
- Specific conductivity differed between the two Wabush Lake stations. This can be attributed to varying concentrations of iron ore tailings deposited between the stations. Specific conductivity ranged from 56.0 µs/cm to 123.20 µs/cm at the Wabush Lake stations, 145.2 to 370.0 µs/cm at Dumbell Stream and 269.0 to 371.0 µs/cm at Pumphouse Stream.
- At all four stations, all dissolved oxygen values were above the minimum CCME Guideline for the Protection of Aquatic Life for Cold Water Biota at Other Life Stages of 6.5 mg/L. When dissolved oxygen values are compared to the CCME Guideline for the Protection of Aquatic Life for Cold Water Biota at Early Life Stages of 9.5 mg/L, all the values at Julienne Narrows, Dumbell Stream and almost all the values at Pumphouse Stream were above the guideline, while most of the values at Dolomite Road were below this guideline.
- Turbidity at Dolomite Road and Julienne Narrows ranged from 0.0 to 14.8 NTU.
- Turbidity at Dumbell Stream remained at 0.0 NTU.
- Turbidity at Pumphouse Stream ranged from 0.0 NTU to 72.3 NTU.
- Stage at Julienne Narrows and Dolomite Road increased until the middle of September. It then decreased steadily at Julienne Narrows over the course of the deployment period.
- At Dumbell Stream, stage decreased over the course of the deployment period. There were occasional drops in the stage data; these decreases may not be accurate.
- At Pumphouse Stream, stage increased after precipitation events.
- With the exception of of water quantity data (Stage and Flow), all data used in the preparation of the graphs and subsequent discussion adhere to this stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

Prepared by:
Maria Murphy
Department of Environment and Climate Change
Water Resources Management Division
Phone:709.896.7981

Appendix 1


Daily Air Temperature and Precipitation: Moosehead Lake, NL
September 6 to October 19, 2023
Precipitation (mm)
Temperature (oC)
0
5
10
15
20
25
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
6-Sep
7-Sep
8-Sep
9-Sep
10-Sep
11-Sep
12-Sep
13-Sep
14-Sep
15-Sep
16-Sep
17-Sep
18-Sep
19-Sep
20-Sep
21-Sep
22-Sep
23-Sep
24-Sep
25-Sep
26-Sep
27-Sep
28-Sep
29-Sep
30-Sep
1-Oct
2-Oct
3-Oct
4-Oct
5-Oct
6-Oct
7-Oct
8-Oct
9-Oct
10-Oct
11-Oct
12-Oct
13-Oct
14-Oct
15-Oct
16-Oct
17-Oct
18-Oct
19-Oct
Precipitation
Air Temperature

Appendix 2
QA/QC Grab Sample Results

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN073 JULIENNE NARROWS Sampling Date 2023/09/06 13:45 Matrix W Sample # 2023-6326-00-SI-SP Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	59	1.0	mg/L	N/A	2023/09/14		8910068
Nitrate (N)	-	0.60	0.050	mg/L	N/A	2023/09/22		8910070
Total dissolved solids (calc., EC)	-	70	1.0	mg/L	N/A	2023/09/20		8910074
Inorganics								
Conductivity	-	130	1.0	uS/cm	N/A	2023/09/19	LJV	8925305
Chloride (Cl-)	-	1.6	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Sulphate (SO4)	-	3.8	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Total Alkalinity (Total as CaCO3)	-	53	2.0	mg/L	N/A	2023/09/19	LJV	8925306
Colour	-	9.9	5.0	TCU	N/A	2023/09/22	HGV	8931412
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/09/19	LJV	8925307
Total Kjeldahl Nitrogen (TKN)	-	0.11	0.10	mg/L	2023/09/15	2023/09/18	KJP	8921094
Nitrate + Nitrite (N)	-	0.61	0.050	mg/L	N/A	2023/09/22	MCN	8931448
Nitrite (N)	-	0.012	0.010	mg/L	N/A	2023/09/21	MCN	8931471
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/09/21	HGV	8929676
Dissolved Organic Carbon (C)	-	2.8	0.50	mg/L	N/A	2023/09/19	CPP	8925259
Total Organic Carbon (C)	-	2.7	0.50	mg/L	N/A	2023/09/19	CPP	8924064
pH	-	7.94		pH	N/A	2023/09/19	LJV	8925302
Total Phosphorus	-	ND	0.004	mg/L	2023/09/19	2023/09/20	SPC	8926617
Total Suspended Solids	-	ND	1.0	mg/L	2023/09/13	2023/09/14	RMK	8912849
Turbidity	-	0.73	0.10	NTU	N/A	2023/09/19	LJV	8925568
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/09/20	2023/09/22	SGK	8928182
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.031	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Barium (Ba)	-	0.0029	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Boron (B)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Calcium (Ca)	-	15	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Copper (Cu)	-	0.00056	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Iron (Fe)	-	0.089	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Magnesium (Mg)	-	5.6	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Manganese (Mn)	-	0.020	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN073 JULIENNE NARROWS Sampling Date 2023/09/06 13:45 Matrix W Sample # 2023-6326-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Potassium (K)	-	1.2	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Sodium (Na)	-	1.5	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Strontium (Sr)	-	0.019	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Uranium (U)	-	0.00014	0.00010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX196 JULIENNE NARROWS								
Sampling Date 2023/10/19 11:00								
Matrix W								
Sample # 2023-6333-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	45	1.0	mg/L	N/A	2023/11/08		9004582
Nitrate (N)	-	0.46	0.050	mg/L	N/A	2023/11/06		9004585
Total dissolved solids (calc., EC)	-	59	1.0	mg/L	N/A	2023/10/31		9004878
Inorganics								
Conductivity	-	110	1.0	uS/cm	N/A	2023/10/30	LJV	9011714
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Total Alkalinity (Total as CaCO3)	-	50	2.0	mg/L	N/A	2023/10/30	LJV	9011717
Colour	-	18	5.0	TCU	N/A	2023/11/03	MCN	9024056
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/10/30	LJV	9011720
Total Kjeldahl Nitrogen (TKN)	-	0.19	0.10	mg/L	2023/11/06	2023/11/07	RTY	9030713
Nitrate + Nitrite (N)	-	0.46	0.050	mg/L	N/A	2023/11/03	MCN	9024048
Nitrite (N)	-	ND	0.010	mg/L	N/A	2023/11/03	MCN	9024052
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/11/08	HGV	9035721
Dissolved Organic Carbon (C)	-	ND	0.50	mg/L	N/A	2023/10/30	ACK	9015231
Total Organic Carbon (C)	-	4.7	0.50	mg/L	N/A	2023/10/26	CPP	9005835
pH	-	7.83		pH	N/A	2023/10/30	LJV	9011694
Total Phosphorus	-	0.008	0.004	mg/L	2023/11/06	2023/11/07	MUM	9030737
Total Suspended Solids	-	24	2.0	mg/L	2023/10/25	2023/10/26	DME	9004845
Turbidity	-	9.0	0.10	NTU	N/A	2023/10/30	LJV	9011977
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/11/03	2023/11/06	SGK	9026346
Dup.Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/11/03	2023/11/06	SGK	9026346
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.14	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Barium (Ba)	-	0.0060	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Boron (B)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Calcium (Ca)	-	11	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Copper (Cu)	-	0.00068	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Iron (Fe)	-	0.48	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Magnesium (Mg)	-	4.2	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX196 JULIENNE NARROWS Sampling Date 2023/10/19 11:00 Matrix W Sample # 2023-6333-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Manganese (Mn)	-	0.11	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Potassium (K)	-	1.3	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Sodium (Na)	-	1.1	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Strontium (Sr)	-	0.018	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Uranium (U)	-	0.00014	0.00010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN072 DOLOMITE ROAD Sampling Date 2023/09/06 13:05 Matrix W Sample # 2023-6325-00-SI-SP Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	30	1.0	mg/L	N/A	2023/09/14		8910068
Nitrate (N)	-	ND	0.050	mg/L	N/A	2023/09/20		8910070
Total dissolved solids (calc., EC)	-	35	1.0	mg/L	N/A	2023/09/20		8910074
Inorganics								
Conductivity	-	63	1.0	uS/cm	N/A	2023/09/19	LJV	8925305
Dup.Conductivity	-	64	1.0	uS/cm	N/A	2023/09/19	LJV	8925305
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Sulphate (SO4)	-	2.6	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Total Alkalinity (Total as CaCO3)	-	27	2.0	mg/L	N/A	2023/09/19	LJV	8925306
Dup.Total Alkalinity (Total as CaCO3)	-	28	2.0	mg/L	N/A	2023/09/19	LJV	8925306
Colour	-	16	5.0	TCU	N/A	2023/09/20	HGV	8925402
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/09/19	LJV	8925307
Dup.Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/09/19	LJV	8925307
Total Kjeldahl Nitrogen (TKN)	-	0.17	0.10	mg/L	2023/09/15	2023/09/18	KJP	8921094
Nitrate + Nitrite (N)	-	ND	0.050	mg/L	N/A	2023/09/20	MCN	8925418
Nitrite (N)	-	ND	0.010	mg/L	N/A	2023/09/19	KMC	8925419
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/09/21	HGV	8929676
Dissolved Organic Carbon (C)	-	3.8	0.50	mg/L	N/A	2023/09/19	CPP	8925259
Total Organic Carbon (C)	-	3.8	0.50	mg/L	N/A	2023/09/19	CPP	8924064
pH	-	7.61		pH	N/A	2023/09/19	LJV	8925302
Dup.pH	-	7.63		pH	N/A	2023/09/19	LJV	8925302
Total Phosphorus	-	ND	0.004	mg/L	2023/09/19	2023/09/20	SPC	8926617
Total Suspended Solids	-	1.2	1.0	mg/L	2023/09/13	2023/09/14	RMK	8912849
Turbidity	-	1.2	0.10	NTU	N/A	2023/09/19	LJV	8925568
Dup.Turbidity	-	1.2	0.10	NTU	N/A	2023/09/19	LJV	8925568
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/09/20	2023/09/22	SGK	8928182
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.016	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Barium (Ba)	-	0.011	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Boron (B)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Calcium (Ca)	-	7.3	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN072 DOLOMITE ROAD Sampling Date 2023/09/06 13:05 Matrix W Sample # 2023-6325-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Copper (Cu)	-	0.00060	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Iron (Fe)	-	0.058	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Magnesium (Mg)	-	2.8	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Manganese (Mn)	-	0.056	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Potassium (K)	-	0.96	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Sodium (Na)	-	0.86	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Strontium (Sr)	-	0.015	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Uranium (U)	-	ND	0.00010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX197 DOLOMITE ROAD Sampling Date 2023/10/19 11:50 Matrix W Sample # 2023-6334-00-SI-SP Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	27	1.0	mg/L	N/A	2023/11/08		9004582
Nitrate (N)	-	0.14	0.050	mg/L	N/A	2023/11/06		9004585
Total dissolved solids (calc., EC)	-	35	1.0	mg/L	N/A	2023/10/31		9004878
Inorganics								
Conductivity	-	63	1.0	uS/cm	N/A	2023/10/30	LJV	9011771
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Total Alkalinity (Total as CaCO3)	-	27	2.0	mg/L	N/A	2023/10/30	LJV	9011774
Colour	-	22	5.0	TCU	N/A	2023/11/03	MCN	9024056
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/10/30	LJV	9011777
Total Kjeldahl Nitrogen (TKN)	-	0.18	0.10	mg/L	2023/11/06	2023/11/07	RTY	9030713
Nitrate + Nitrite (N)	-	0.14	0.050	mg/L	N/A	2023/11/03	MCN	9024048
Nitrite (N)	-	ND	0.010	mg/L	N/A	2023/11/03	MCN	9024052
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/11/08	HGV	9035721
Dissolved Organic Carbon (C)	-	4.2	0.50	mg/L	N/A	2023/10/27	CPP	9008602
Total Organic Carbon (C)	-	4.1	0.50	mg/L	N/A	2023/10/26	CPP	9005849
pH	-	7.64		pH	N/A	2023/10/30	LJV	9011758
Total Phosphorus	-	ND	0.004	mg/L	2023/11/06	2023/11/07	MUM	9030737
Total Suspended Solids	-	1.8	1.0	mg/L	2023/10/25	2023/10/26	DME	9004845
Turbidity	-	1.2	0.10	NTU	N/A	2023/10/31	LJV	9015856
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/11/03	2023/11/06	SGK	9026346
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.019	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Barium (Ba)	-	0.0084	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Boron (B)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Calcium (Ca)	-	6.4	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Copper (Cu)	-	0.00057	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Iron (Fe)	-	0.061	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Magnesium (Mg)	-	2.7	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Manganese (Mn)	-	0.041	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Bureau Veritas Job #: C3X2217
Report Date: 2023/11/09

NL Department of Environment, Climate Change and Municipalities
Site Location: LABRADOR
Your P.O. #: 220028978-9

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX197 DOLOMITE ROAD Sampling Date 2023/10/19 11:50 Matrix W Sample # 2023-6334-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Potassium (K)	-	0.88	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Sodium (Na)	-	0.85	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Strontium (Sr)	-	0.014	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Uranium (U)	-	ND	0.00010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN069 DUMBELL STREAM								
Sampling Date 2023/09/05 17:25								
Matrix W								
Sample # 2023-6322-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	81	1.0	mg/L	N/A	2023/09/14		8910068
Nitrate (N)	-	13	0.050	mg/L	N/A	2023/09/21		8910070
Total dissolved solids (calc., EC)	-	110	1.0	mg/L	N/A	2023/09/20		8910074
Inorganics								
Conductivity	-	190	1.0	uS/cm	N/A	2023/09/19	LJV	8925318
Chloride (Cl-)	-	1.9	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Sulphate (SO4)	-	8.2	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Total Alkalinity (Total as CaCO3)	-	31	2.0	mg/L	N/A	2023/09/19	LJV	8925319
Colour	-	ND	5.0	TCU	N/A	2023/09/20	HGV	8925402
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/09/19	LJV	8925320
Total Kjeldahl Nitrogen (TKN)	-	ND(1)	0.50	mg/L	2023/09/15	2023/09/18	KJP	8921094
Nitrate + Nitrite (N)	-	13	0.050	mg/L	N/A	2023/09/21	MCN	8929299
Nitrite (N)	-	ND	0.010	mg/L	N/A	2023/09/19	KMC	8925419
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/09/21	HGV	8929676
Dissolved Organic Carbon (C)	-	0.76	0.50	mg/L	N/A	2023/09/20	ACK	8925785
Total Organic Carbon (C)	-	0.52	0.50	mg/L	N/A	2023/09/19	CPP	8925846
pH	-	7.64		pH	N/A	2023/09/19	LJV	8925316
Total Phosphorus	-	ND	0.004	mg/L	2023/09/19	2023/09/20	SPC	8926617
Total Suspended Solids	-	ND	1.0	mg/L	2023/09/12	2023/09/19	RDM	8910356
Turbidity	-	ND	0.10	NTU	N/A	2023/09/19	LJV	8925568
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/09/20	2023/09/22	SGK	8928182
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.0066	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Aluminum (Al)	-	0.0085	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Arsenic (As)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Barium (Ba)	-	0.0054	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Barium (Ba)	-	0.0052	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Boron (B)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Boron (B)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/09/13	2023/09/14	MTZ	8913579

(1) Due to a high concentration of NOx, the sample required dilution. The detection limit was adjusted accordingly.

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN069 DUMBELL STREAM Sampling Date 2023/09/05 17:25 Matrix W Sample # 2023-6322-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Calcium (Ca)	-	20	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Calcium (Ca)	-	20	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Copper (Cu)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Copper (Cu)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Iron (Fe)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Iron (Fe)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Lead (Pb)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Magnesium (Mg)	-	7.8	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Magnesium (Mg)	-	7.7	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Manganese (Mn)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Manganese (Mn)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Phosphorus (P)	-	ND	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Potassium (K)	-	1.7	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Potassium (K)	-	1.7	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Selenium (Se)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Sodium (Na)	-	0.92	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Sodium (Na)	-	0.89	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Strontium (Sr)	-	0.025	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Strontium (Sr)	-	0.026	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Uranium (U)	-	ND	0.00010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Uranium (U)	-	ND	0.00010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Dup.Total Zinc (Zn)	-	0.0050	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Bureau Veritas Job #: C3X2217
Report Date: 2023/11/09

NL Department of Environment, Climate Change and Municipalities
Site Location: LABRADOR
Your P.O. #: 220028978-9

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX194 DUMBELL STREAM Sampling Date 2023/10/18 17:35 Matrix W Sample # 2023-6331-00-SI-SP Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	95	1.0	mg/L	N/A	2023/11/08		9004582
Nitrate (N)	-	13	0.50	mg/L	N/A	2023/11/07		9004585
Total dissolved solids (calc., EC)	-	130	1.0	mg/L	N/A	2023/10/31		9004878
Inorganics								
Conductivity	-	230	1.0	uS/cm	N/A	2023/10/30	LJV	9011771
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Total Alkalinity (Total as CaCO3)	-	34	2.0	mg/L	N/A	2023/10/30	LJV	9011774
Colour	-	ND	5.0	TCU	N/A	2023/11/06	HGV	9027690
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/10/30	LJV	9011777
Total Kjeldahl Nitrogen (TKN)	-	ND(1)	0.50	mg/L	2023/11/06	2023/11/08	RTY	9030713
Nitrate + Nitrite (N)	-	13	0.50	mg/L	N/A	2023/11/06	MCN	9027731
Nitrite (N)	-	0.010	0.010	mg/L	N/A	2023/11/06	MCN	9027743
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2023/11/08	HGV	9035721
Dissolved Organic Carbon (C)	-	ND	0.50	mg/L	N/A	2023/10/27	CPP	9008602
Total Organic Carbon (C)	-	0.51	0.50	mg/L	N/A	2023/10/27	CPP	9008184
pH	-	7.35		pH	N/A	2023/10/30	LJV	9011758
Total Phosphorus	-	ND	0.004	mg/L	2023/11/06	2023/11/07	MUM	9030737
Total Suspended Solids	-	ND	1.0	mg/L	2023/10/25	2023/10/26	DME	9004845
Turbidity	-	0.49	0.10	NTU	N/A	2023/10/31	LJV	9015840
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/11/03	2023/11/06	SGK	9026357
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.0064	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Aluminum (Al)	-	0.0060	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Arsenic (As)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Barium (Ba)	-	0.0044	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Barium (Ba)	-	0.0043	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Boron (B)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Boron (B)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/11/08	2023/11/08	MTZ	9035660

(1) Due to a high concentration of NOx, the sample required dilution. The detection limit was adjusted accordingly.

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX194 DUMBELL STREAM Sampling Date 2023/10/18 17:35 Matrix W Sample # 2023-6331-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Calcium (Ca)	-	22	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Calcium (Ca)	-	22	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Copper (Cu)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Copper (Cu)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Iron (Fe)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Iron (Fe)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Lead (Pb)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Magnesium (Mg)	-	9.7	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Magnesium (Mg)	-	9.5	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Manganese (Mn)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Manganese (Mn)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Phosphorus (P)	-	ND	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Potassium (K)	-	1.7	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Potassium (K)	-	1.7	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Selenium (Se)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Sodium (Na)	-	1.0	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Sodium (Na)	-	1.0	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Strontium (Sr)	-	0.027	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Strontium (Sr)	-	0.027	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Uranium (U)	-	ND	0.00010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Uranium (U)	-	ND	0.00010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Dup.Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN070 PUMPHOUSE STREAM Sampling Date 2023/09/06 09:30 Matrix W Sample # 2023-6323-00-SI-SP Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	160	1.0	mg/L	N/A	2023/09/14		8910068
Nitrate (N)	-	14	0.050	mg/L	N/A	2023/09/21		8910070
Total dissolved solids (calc., EC)	-	210	1.0	mg/L	N/A	2023/09/20		8910074
Inorganics								
Conductivity	-	370	1.0	uS/cm	N/A	2023/09/19	LJV	8925305
Chloride (Cl-)	-	3.3	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Sulphate (SO4)	-	27	1.0	mg/L	N/A	2023/09/15	LKH	8917225
Total Alkalinity (Total as CaCO3)	-	94	2.0	mg/L	N/A	2023/09/19	LJV	8925306
Colour	-	ND	5.0	TCU	N/A	2023/09/20	HGV	8925402
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/09/19	LJV	8925307
Total Kjeldahl Nitrogen (TKN)	-	3.8	0.50	mg/L	2023/09/15	2023/09/18	KJP	8921094
Nitrate + Nitrite (N)	-	14	0.050	mg/L	N/A	2023/09/21	MCN	8929299
Nitrite (N)	-	0.13	0.010	mg/L	N/A	2023/09/19	KMC	8925419
Nitrogen (Ammonia Nitrogen)	-	4.3	0.25	mg/L	N/A	2023/09/21	HGV	8929676
Dissolved Organic Carbon (C)	-	1.1	0.50	mg/L	N/A	2023/09/19	CPP	8925259
Total Organic Carbon (C)	-	1.5	0.50	mg/L	N/A	2023/09/19	CPP	8924064
pH	-	7.98		pH	N/A	2023/09/19	LJV	8925302
Total Phosphorus	-	0.015	0.004	mg/L	2023/09/19	2023/09/20	SPC	8926617
Total Suspended Solids	-	9.4	1.0	mg/L	2023/09/13	2023/09/14	RMK	8912849
Turbidity	-	0.74	0.10	NTU	N/A	2023/09/19	LJV	8925568
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/09/20	2023/09/22	SGK	8928182
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.27	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Barium (Ba)	-	0.015	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Boron (B)	-	ND	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Cadmium (Cd)	-	0.000021	0.000010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Calcium (Ca)	-	38	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Chromium (Cr)	-	0.0011	0.0010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Copper (Cu)	-	0.0013	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Iron (Fe)	-	0.86	0.050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Magnesium (Mg)	-	16	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Manganese (Mn)	-	0.17	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
WYN070 PUMPHOUSE STREAM Sampling Date 2023/09/06 09:30 Matrix W Sample # 2023-6323-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Potassium (K)	-	2.3	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Sodium (Na)	-	1.3	0.10	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Strontium (Sr)	-	0.051	0.0020	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Uranium (U)	-	0.00044	0.00010	mg/L	2023/09/13	2023/09/14	MTZ	8913579
Total Zinc (Zn)	-	0.0086	0.0050	mg/L	2023/09/13	2023/09/14	MTZ	8913579

Bureau Veritas 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX195 PUMPHOUSE STREAM								
Sampling Date 2023/10/19 09:00								
Matrix W								
Sample # 2023-6332-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	160	1.0	mg/L	N/A	2023/11/08		9004582
Nitrate (N)	-	15	0.50	mg/L	N/A	2023/11/06		9004585
Total dissolved solids (calc., EC)	-	210	1.0	mg/L	N/A	2023/10/31		9004878
Inorganics								
Conductivity	-	390	1.0	uS/cm	N/A	2023/10/30	LJV	9011744
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Sulphate (SO4)	-	2.7	1.0	mg/L	N/A	2023/11/02	LKH	9011511
Total Alkalinity (Total as CaCO3)	-	92	2.0	mg/L	N/A	2023/10/30	LJV	9011751
Colour	-	ND	5.0	TCU	N/A	2023/11/03	MCN	9024056
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2023/10/30	LJV	9011753
Total Kjeldahl Nitrogen (TKN)	-	5.0(2)	0.50	mg/L	2023/11/06	2023/11/08	RTY	9030713
Nitrate + Nitrite (N)	-	15	0.50	mg/L	N/A	2023/11/03	MCN	9024048
Nitrite (N)	-	0.075	0.010	mg/L	N/A	2023/11/03	MCN	9024052
Nitrogen (Ammonia Nitrogen)	-	5.3	0.25	mg/L	N/A	2023/11/08	HGV	9035721
Dissolved Organic Carbon (C)	-	1.3	0.50	mg/L	N/A	2023/11/09	CPP	9037018
Total Organic Carbon (C)	-	1.2	0.50	mg/L	N/A	2023/11/08	CPP	9035685
pH	-	7.76		pH	N/A	2023/10/30	LJV	9011729
Total Phosphorus	-	0.005	0.004	mg/L	2023/11/06	2023/11/07	MUM	9030737
Total Suspended Solids	-	2.8	2.0	mg/L	2023/10/25	2023/10/26	DME	9004845
Turbidity	-	1.9	0.10	NTU	N/A	2023/10/30	LJV	9012036
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2023/11/03	2023/11/06	SGK	9026357
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.026	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Antimony (Sb)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Arsenic (As)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Barium (Ba)	-	0.0097	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Boron (B)	-	ND	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Calcium (Ca)	-	38	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Chromium (Cr)	-	ND	0.0010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Copper (Cu)	-	0.00074	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Iron (Fe)	-	0.14	0.050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Lead (Pb)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Magnesium (Mg)	-	17	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660

(2) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
XJX195 PUMPHOUSE STREAM Sampling Date 2023/10/19 09:00 Matrix W Sample # 2023-6332-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Manganese (Mn)	-	0.075	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Nickel (Ni)	-	ND	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Phosphorus (P)	-	ND	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Potassium (K)	-	2.3	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Selenium (Se)	-	ND	0.00050	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Sodium (Na)	-	1.5	0.10	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Strontium (Sr)	-	0.055	0.0020	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Uranium (U)	-	0.00041	0.00010	mg/L	2023/11/08	2023/11/08	MTZ	9035660
Total Zinc (Zn)	-	ND	0.0050	mg/L	2023/11/08	2023/11/08	MTZ	9035660

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com