

January 30, 2022

Manager of Licensing  
Nunavut Water Board  
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Resource Management Officer, CIRNAC  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0

**RE: Water Licence 2AM-MRY1325 Monthly Surveillance Network Program (SNP) Report  
December 2022**

The following is the monthly report for December 2022 as required under Part I, Item 21 of the Type 'A' Water Licence 2AM-MRY1325 (the Licence) which states:

*"The Licensee shall submit to the Board, within thirty (30) days following the month being reported, a Monthly Monitoring Report. The Report shall include:*

- a) All data and information required by this Part and generated by the Monitoring Program in the tables of Schedule I*
- b) An assessment of data to identify areas of non-compliance with regulated discharge parameters referred to in Part F"*

**Monitoring Program**

Table 1.1 presents a list of samples/monitoring required under the Licence and the details concerning which water quality samples were collected along with sample dates and laboratory identification numbers, as appropriate. Analytical water quality testing results are presented in Tables 2.1 through 2.4. Table 3.1 presents water volumes consumed for domestic and industrial water purposes as well as select volumes of effluent and waste discharged and/or disposed at the Mary River Mine Site and Milne Port during December 2022.

**Monitoring Program Results**

*Water Sampling and Analysis Results*

Tables 2.1 through 2.4 provide the analytical results related to the Sewage Treatment Facilities. In December 2022, at Mary River, there were five (5) exceedances of the site specific grab sample limits as set out in the water license. Three (3) of the exceedances were above the site specific grab sample limit of 4.0 mg/L for Total Ammonia (as N) and two (2) of the exceedances were above the site specific grab sample limit of 4.0 mg/L for Total Phosphorus, as follows:

- Effluent at monitoring station MS-01 was 10.3 mg/L for Total Ammonia and 5.22 mg/L for Total Phosphorus on December 6;
- Effluent at monitoring station MS-01B was 9.0 mg/L for Total Ammonia and 5.26 mg/L for Total Phosphorus on December 6; and
- Effluent monitoring station MS-01B was 21.9 mg/L for Total Ammonia On December 20.

Sample results were received on December 20, 2022 at which time MS-01 was no longer discharging. A re-sample of MS-01B was collected on the same day and sent off site for rush analysis. Results confirmed

the initial exceedance at effluent monitoring station MS-01B with a concentration of 21.9 mg/L for Total Ammonia. Following receipt of sample results received on December 23, discharge from MS-01B was immediately diverted to the Polishing Water Stabilization Ponds (PWSPs) for the remainder of December while a full investigation was initiated. Internal analysis continued throughout December, and a compliant discharge sample was obtained in January 2023 and analyzed by a third party lab.

#### *Flow and Volume Measurements*

Table 3.1 provides a breakdown of volume measurements for December 2022 as required by Part I, Item 9 of the Licence. There were no exceedances of the source-specifically volume withdrawal limits in December 2022.

We trust that the information provided in this monthly report is acceptable and should you have any questions regarding this report please contact the undersigned.

Prepared by:

A handwritten signature in dark ink, appearing to read "Allison Parker".

Allison Parker

Environmental Coordinator

Reviewed by:

A handwritten signature in dark ink, appearing to read "K Babin".

Katie Babin

Environmental Superintendent

cc: Jeremy Fraser, Omer Pasalic (CIRNAC)  
Chris Spencer (QIA)  
Tim Sewell, Megan Lord-Hoyle, Lou Kamermans, Francois Gaudreau, Martin Beausejour, Connor Devereaux, Todd Swenson, Allison Parker (Baffinland)

#### **Attachments**

Attachments – Monthly Water Sampling Results: Table 1.1, Tables 2.1 – 2.4, Table 3.1

## **Attachments**

### **Monthly Water Sampling Results**

**Table 1.1: Monitoring Program Water Sampling Summary for December 2022**

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
<b>Milne Port</b>			
MP-01 (Sewage Treatment Facility)	2022-12-06	L2742716-1	Discharge volume recorded daily.
MP-01A (Polishing Waste Stabilization Pond)	NA	NA	No discharge.
MP-01B (Sewage Treatment Facility)	2022-12-06	L2742713-1	Discharge volume recorded daily.
MP-MRY-2 (Freshwater Intake at Phillips Creek)	NA	NA	No water withdrawal.
MP-MRY-3 (Freshwater Intake from Km 32 Lake)	NA	NA	Withdrawal volume recorded daily.
MP-02 (Milne Port Maintenance Shop)	NA	NA	No discharge.
MP-03 (Bulk Fuel Storage Facility Stormwater)	NA	NA	No discharge.
MP-04 (Treated Oily Water from Milne Port Landfarm Facility to Tundra)	NA	NA	No discharge.
MP-04A (Treated Oily Water from Milne Port Snow dump Facility to Tundra)	NA	NA	No discharge.
MP-05 Ore Stockpile Sedimentation Pond (East)	NA	NA	No discharge.
MP-06 Ore Stockpile Sedimentation Pond (West)	NA	NA	No discharge.
MP-C-A (Downstream of Construction Area)	NA	NA	No flow.
MP-C-B (Downstream of Construction Area)	NA	NA	No flow.
MP-C-D (Downstream of Construction Area)	NA	NA	No flow.
MP-C-E (Downstream of Construction Area)	NA	NA	No flow.
MP-C-F (Downstream of Construction Area)	NA	NA	No flow.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MP-C-H (Downstream of Construction Area)	NA	NA	No flow.
MP-C-J (Downstream of Construction Area)	NA	NA	No flow.
MP-C-K (Downstream of Construction Area)	NA	NA	No flow.
MP-Q1-01 (Downstream of Q1 Quarry)	NA	NA	No flow.
MP-Q1-02 (Downstream of Q1 Quarry)	NA	NA	No flow.
<b>Mary River Mine Site</b>			
MS-01 (Sewage Treatment Facility)	2022-12-06	L2742711-1	Discharge volume recorded daily.
MS-01A (Mine Site Polishing Waste Stabilization Pond)	N/A	N/A	Facility not constructed.
MS-01B (Sewage Treatment Facility)	2022-12-06 2022-12-20	L2742712-1 L2743737-1	Discharge volume recorded daily.
MS-02 (Mine Site Maintenance Shop)	N/A	N/A	No discharge.
MS-MRY-1 (Freshwater Intake Camp Lake)	N/A	N/A	Withdrawal volume recorded daily.
MS-MRY-04A (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-MRY-04B (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-MRY-04C (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-03 (Mine Site Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MS-03B (Mine Site Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MS-04 (Mine Site Fuel Unloading Station Stormwater)	N/A	N/A	No discharge.
MS-05 (Mine Site Landfarm Facility)	N/A	N/A	No discharge.
MS-06 (Ore Stockpile Pond Stormwater)	N/A	N/A	No discharge.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-07 (Run of Mine Ore Stockpile Pond Stormwater)	NA	NA	No discharge.
MS-08 (Mine Waste Rock Stockpile Pond)	NA	NA	No discharge
MS-09 (Waste Rock Stockpile East Pond)	N/A	N/A	No discharge.
MS-10 (SDLT-1 Pond Ore Stockpile Stormwater)	N/A	N/A	No discharge.
MS-11 (KM105 Pond Stormwater)	N/A	N/A	No discharge.
MS-12 (Weatherhaven Camp Stormwater)	N/A	N/A	Facility not constructed.
MS-13 (Explosives Magazine Pond)	N/A	N/A	Facility not constructed.
MS-14 (Quarry QMR2 Pond/Sump)	N/A	N/A	Facility not constructed.
MS-MRY-6 (Exploration Camp Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MS-MRY-09 (Deposit 1 Surface Water Drainage)	N/A	N/A	No flow.
MS-MRY-10 (Deposit 1 Surface Water Drainage)	N/A	N/A	No flow.
MS-MRY-13A (Downstream Non-Hazardous Landfill)	N/A	N/A	No flow.
MS-MRY-13B (Downstream Non-Hazardous Landfill)	N/A	N/A	No flow.
MS-C-A (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-B (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-C (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-C-D (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-E (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-F (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-G (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-H (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MQ-C-A (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
MQ-C-B (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
MQ-C-D (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
<b>Steensby Port</b>			
Steensby Exploration Camp is presently inactive.	N/A	N/A	N/A

**Table 2.1: Water Quality Results for Water Licence Monitoring Location - MP-01**

Analyte	Sample ID			MP-01
	ALS Laboratory Sample ID			L2742716-1
	Sample Date & Time			2022-12-06 13:10
	QA/QC Sample Type			N/A
	Units	LOR	Criteria <sup>1</sup>	
pH	pH units	0.10	6.0 - 9.5	7.82
Total Suspended Solids	mg/L	1.0	120	1.2
Ammonia, Total (as N)	mg/L	0.010	-	0.126
Total Kjeldahl Nitrogen	mg/L	0.50	-	4.98
Phosphorus, Total	mg/L	0.15	-	10.7
Fecal Coliforms	CFU/100 mL	-	10,000	0
BOD	mg/L	2.0	100	2.9
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

**Notes:**

Bold highlight indicates result that exceeded the applicable water quality criteria.

<sup>1</sup> Type A Water Licence (2AM-MRY1325 - Amend. 1) -Table 5: Effluent Quality Discharge Limits for Sewage Treatment Facilities to the Ocean



**Table 2.2: Water Quality Results for Water Licence Monitoring Location - MP-01B**

Analyte	Sample ID			MP-01B
	ALS Laboratory Sample ID			L2742713-1
	Sample Date & Time			2022-12-06 13:40
	QA/QC Sample Type			N/A
	Units	LOR	Criteria <sup>1</sup>	
pH	pH units	0.10	6.0 - 9.5	7.89
Total Suspended Solids	mg/L	1.0	120	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.054
Total Kjeldahl Nitrogen	mg/L	0.050	-	1.59
Phosphorus, Total	mg/L	0.030	-	11.3
Fecal Coliforms	CFU/100 mL	-	10,000	0
BOD	mg/L	2.0	100	2.2
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

**Notes:**

Bold highlight indicates result that exceeded the applicable water quality criteria.

<sup>1</sup> Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 5: Effluent Quality Discharge Limits for Sewage Treatment Facilities to the Ocean

**Table 2.3: Water Quality Results for Water Licence Monitoring Location - MS-01**

Analyte	Sample ID			MS-01
	ALS Laboratory Sample ID			L2742711-1
	Sample Date & Time			2022-12-06 14:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria <sup>1</sup>	
pH	pH units	0.10	6.0 - 9.5	7.87
Total Suspended Solids	mg/L	1.0	35	<1.0
Ammonia, Total (as N)	mg/L	1.0	4.0	<b>10.3</b>
Total Kjeldahl Nitrogen	mg/L	0.25	-	9.64
Phosphorus, Total	mg/L	0.030	4.0	<b>5.22</b>
Fecal Coliforms	CFU/100 mL	-	1,000	3
BOD	mg/L	2.0	30	<2.0
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

**Notes:**

Bold highlight indicates result that exceeded the applicable water quality criteria.

<sup>1</sup> Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 4: Effluent Quality Discharge Limits for Sewage Treatment Facilities to Freshwater Receiving Environment

**Table 2.4: Water Quality Results for Water Licence Monitoring Location - MS-01B**

Analyte	Sample ID			MS-01B	MS-01B
	ALS Laboratory Sample ID			L2742712-1	L2743737-1
	Sample Date & Time			2022-12-06 15:10	2022-12-20 12:00
	QA/QC Sample Type			N/A	N/A
	Units	LOR	Criteria <sup>1</sup>		
pH	pH units	0.10	6.0 - 9.5	8.06	8.37
Total Suspended Solids	mg/L	1.0	35	<1.0	<1.0
Ammonia, Total (as N)	mg/L	1.0	4.0	<b>9.0</b>	<b>21.9</b>
Total Kjeldahl Nitrogen	mg/L	0.25/0.50	-	9.25	21.8
Phosphorus, Total	mg/L	0.030	4.0	<b>5.26</b>	2.24
Fecal Coliforms	CFU/100 mL	-	1,000	4	-
BOD	mg/L	2.0	30	2.1	<2.0
Oil and Grease, Total	mg/L	5.0	-	<5.0	<5.0
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-	-

**Notes:**

Bold highlight indicates result that exceeded the applicable water quality criteria.

<sup>1</sup> Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 4: Effluent Quality Discharge Limits for Sewage Treatment Facilities to Freshwater Receiving Environment

Table 3.1: Flow and Volume Measurements - Part I Item 11 - December 2022

DATE	Camp Lake Freshwater for Domestic Use - Daily Water MS-MRY-1 (m³)	Camp Lake Freshwater for Industrial Use - Daily Water MS-MRY-1 (m³)	Treated Sewage Effluent from MS- 01 to Discharge Location #1 (m³)	Treated Sewage Effluent from MS- 01B to Discharge Location #1 (m³)	Sewage Sludge Removed from Mine Site WWTPs to Incinerator or Disposal Offsite by Backhaul (m³)	Sewage Sludge/Off-Spec Effluent Removed from Mine Site WWTPs to PWSP at Mine Site (m³)	Sewage Sludge Removed from Lift Stations to PWSP at Mine Site (m³)	Km 32 Lake Milne Port Camp Daily Water Use for Domestic Purposes MP- MRY-3 (m³)	Km 32 Lake Milne Port Camp Daily Water Use for Industrial Purposes MP- MRY-3 (m³)	Treated Sewage Effluent from MP- 01 to Milne Inlet (m³)	Treated Sewage Effluent from MP- 01B to Milne Inlet (m³)	Sewage Sludge Removed from Milne Port WWTPs to Incinerator or Disposal Offsite by Backhaul (m³)	Sewage Sludge Removed from Lift Stations to PWSP at Milne Port (m³)	Sludge Removed from Milne Port WWTPs/WTPs to PWSP at Milne Port (m³)
1-Dec-22	111.2	18.1	16.0	93.7	1.1	0.0	0.0	42.9	0.0	11.0	23.5	1.0	0.0	4.3
2-Dec-22	134.7	5.1	14.0	85.3	1.5	0.0	0.0	39.9	0.0	25.0	20.1	1.0	0.0	0.0
3-Dec-22	93.9	9.7	13.0	90.7	1.1	0.0	0.0	54.3	0.0	27.0	22.4	1.0	0.0	0.0
4-Dec-22	89.6	10.3	7.0	95.4	0.9	0.0	0.0	70.2	0.0	17.0	21.8	1.0	0.0	0.0
5-Dec-22	116.9	0.0	12.0	89.2	0.9	0.0	0.0	34.7	0.0	16.0	17.6	0.0	0.0	0.0
6-Dec-22	90.6	16.5	17.0	94.9	0.9	0.0	0.0	42.5	0.0	18.0	24.0	1.0	0.0	0.0
7-Dec-22	105.7	5.2	19.0	99.3	0.9	0.0	0.0	27.4	0.0	20.0	28.1	0.0	0.0	0.0
8-Dec-22	123.4	2.1	11.0	82.8	1.7	0.0	0.0	59.2	0.0	21.0	15.5	1.0	0.0	0.0
9-Dec-22	99.7	1.0	20.0	88.4	1.5	0.0	0.0	40.2	0.0	19.0	23.7	1.0	0.0	0.0
10-Dec-22	78.9	2.1	19.0	87.7	1.5	0.0	0.0	49.3	0.0	20.0	17.5	1.0	0.0	0.0
11-Dec-22	62.3	1.0	23.0	71.9	0.9	15.0	0.0	44.6	0.0	19.0	25.1	1.0	0.0	0.0
12-Dec-22	149.4	1.0	23.0	90.1	1.3	0.0	0.0	37.9	2.0	21.0	17.9	1.0	0.0	0.0
13-Dec-22	170.9	4.1	19.0	89.8	1.3	0.0	0.0	43.8	0.0	21.0	24.6	1.0	0.0	0.0
14-Dec-22	112.6	0.0	12.0	93.9	1.3	0.0	0.0	37.6	0.0	22.0	24.2	1.0	0.0	0.0
15-Dec-22	106.8	13.4	16.0	100.8	1.3	0.0	0.0	42.7	0.0	25.0	21.3	1.0	0.0	0.0
16-Dec-22	106.7	6.2	0.0	110.8	1.3	0.0	0.0	45.1	0.0	22.0	20.5	1.0	0.0	0.0
17-Dec-22	100.9	0.0	0.0	79.3	0.9	0.0	0.0	58.0	0.0	20.0	23.8	1.0	0.0	0.0
18-Dec-22	105.4	21.6	0.0	71.2	0.9	0.0	0.0	39.3	0.0	19.0	23.4	1.0	0.0	0.0
19-Dec-22	93.2	5.8	0.0	95.8	0.9	0.0	0.0	34.7	0.0	24.0	29.4	1.0	0.0	0.0
20-Dec-22	92.3	8.3	0.0	94.1	0.6	0.0	0.0	52.9	0.0	20.0	26.2	1.0	0.0	0.0
21-Dec-22	103.6	1.7	0.0	99.2	0.9	0.0	0.0	54.6	0.0	25.0	22.1	1.0	0.0	0.0
22-Dec-22	121.2	1.0	0.0	96.9	0.9	0.0	0.0	42.1	0.0	20.0	22.5	1.0	0.0	0.0
23-Dec-22	103.2	3.0	0.0	35.1	0.6	64.0	0.0	36.6	0.0	20.0	29.2	1.0	0.0	0.0
24-Dec-22	128.3	2.6	0.0	0.0	0.0	60.6	0.0	26.1	0.0	19.0	26.4	0.0	0.0	0.0
25-Dec-22	37.5	5.6	0.0	0.0	0.6	66.3	0.0	36.0	0.0	23.0	12.8	0.0	0.0	0.0
26-Dec-22	98.2	3.9	0.0	0.0	0.6	75.9	0.0	39.4	0.0	26.0	0.0	0.0	0.0	0.0
27-Dec-22	20.8	6.9	0.0	0.0	0.0	91.4	0.0	53.4	0.0	21.0	0.0	0.0	0.0	0.0
28-Dec-22	179.6	3.4	0.0	0.0	0.0	73.2	0.0	46.0	0.0	20.0	18.7	0.0	0.0	0.0
29-Dec-22	148.1	0.0	0.0	0.0	0.0	104.3	0.0	39.5	0.0	24.0	14.4	0.0	0.0	0.0
30-Dec-22	90.4	3.4	0.0	0.0	0.0	104.8	0.0	44.6	0.0	19.0	16.4	0.0	0.0	0.0
31-Dec-22	133.1	4.7	0.0	0.0	0.0	113.9	0.0	25.2	0.0	19.0	17.9	0.0	0.0	0.0
Total	3,309.1	167.7	241.0	2,036.3	25.8	769.4	0.0	1,340.9	2.0	643.0	630.9	22.1	0.0	4.3

**Notes:**  
WWTP - Waste Water Treatment Plant  
PWSP - Polishing Waste Stabilization Pond