May 30, 2020

Manager of Licensing
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Water Resources Officer, CIRNAC
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RE: Water Licence 2AM-MRY1325 Monthly Surveillance Network Program (SNP) Report April 2020

The following is the monthly report for April 2020 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

During the month of April 2020, water samples were collected as part of the Water Licence SNP.

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 date/laboratory identification number as appropriate. Analytical water quality testing results received are presented in Tables 2.1 – 2.3. Water volumes consumed for domestic and industrial water purposes and the volumes of effluent discharged at the Mary River Mine Site and Milne Port are presented in Table 3.1.

Monitoring Program Results

Water Sampling and Analysis Results

Tables 2.1 – 2.3 provide the analytical results related to the SNP sampling requirements for April 2020. There was one (1) exceedance of a site specific grab sample. Feacal coliforms were measured at 2,600 CFU/100 mL in the Mine Site Sewage Treatment Plant (STP) sample (MS-01B) collected on April 7, 2020; exceeding the permitted discharge limit for faecal coliforms of 1,000 CFU/100 mL.

The exceedance was caused by a breakthrough on one of the membranes on Train 2 which occurred on the day of the sampling event. On observing the breakthrough, the STP Operator immediately stopped the effluent discharge and isolated the affected line from the system. Measurements taken following the isolation for Total Suspended Solids (TSS), turbidity, phosphorus and ammonia were all within acceptable parameters, suggesting that the effluent was on-spec, and the effluent discharge was resumed. Subsequent to the discharge resuming, sampling was conducted. The results, which were received on April 14, 2020, showed an exceedance of faecal coliforms (2,600 CFU/100 mL). It is believed that the presence of faecal material was residual in nature from the breakthrough in the system, and is anticipated

to have been short lived. Sampling completed in May 2020 confirmed that faecal coliforms in effluent from MS-01B had returned to levels below criteria, and will be presented in the May 2020 monthly report.

To prevent a similar incident from occurring in the future, a clean-in-place (disinfection procedure) will be conducted after any visual indication of a breakthrough. The Standard Operating Procedure (SOP) will be revised and implemented to support this maintenance change. There were no other exceedances of the site specific daily grab or monthly average samples.

Flow and Volume Measurements

Table 3.1 provides a breakdown of volume measurements for April 2020 as required by Part I, Item 9 of the Licence. There were no exceedances of the source specific daily volume withdrawal limits in April.

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.

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Attachments

Attachments – Monthly Water Sampling Results: Table 1.1, Tables 2.1 – 2.3, Table 3.1

Attachments

Monthly Water Sampling Results

Baffinland

Table 1.1: Monitoring Program Water Sampling Summary for April 2020

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
Milne Port			
MP-01 (Sewage Treatment Facility)	2020-04-07	L2435599-1	Volume reported daily during discharge
MP-01A (Polishing Waste Stabilization Pond)	N/A	N/A	No flow
MP-01B (Sewage Treatment Facility)	N/A	N/A	No flow
MP-MRY-2 (Freshwater Intake at Phillips Creek)	N/A	N/A	No water withdrawal
MP-MRY-3 (Freshwater Intake from Km 32 Lake)	N/A	N/A	Withdrawal volume recorded daily
MP-02 (Milne Port Maintenance Shop)	N/A	N/A	No flow
MP-03 (Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No flow
MP-04 (Landfarm Facility & Snow Containment Facility)	N/A	N/A	No flow
MP-05 Ore Stockpile Sedimentation Pond (East)	N/A	N/A	No flow
MP-06 Ore Stockpile Sedimentation Pond (West)	N/A	N/A	No flow
MP-C-A (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-B (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-B01 (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-C (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-D (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-E (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-F (Downstream of Construction Area)	N/A	N/A	No flow
MP-C-G (Downstream of Construction Area)	N/A	N/A	No flow

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MP-C-H (Downstream of Construction Area)	N/A	N/A	No flow
MP-Q1-01 (Downstream of Q1 Quarry)	N/A	N/A	No flow
MP-Q1-02 (Downstream of Q1 Quarry)	N/A	N/A	No flow
Mary River Mine Site			
MS-01 (Sewage Treatment Facility)	2020-04-07	L2435755-1	Discharge volume reported daily
MS-01A (Mine Site Polishing Waste Stabilization Pond)	N/A	N/A	No flow
MS-01B (Sewage Treatment Facility)	2020-04-07	L2435598-1	Discharge volume reported daily
MS-02 (Mine Site Maintenance Shop)	N/A	N/A	No flow
MS-MRY-1 (Freshwater Intake Camp Lake)	N/A	N/A	Withdrawal volume recorded daily
MS-MRY-04A	N/A	N/A	No flow
MS-MRY-04B	N/A	N/A	No flow
MS-MRY-04C	N/A	N/A	No flow
MS-03 (Milne Site Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No flow
MS-04 (Mine Site Fuel Unloading Station Stormwater)	N/A	N/A	No flow
MS-05 (Mine Site Landfarm Facility)	N/A	N/A	Not constructed
MS-06 (Ore Stockpile Pond Stormwater)	N/A	N/A	No flow
MS-07 (Run of Mine Ore Stockpile Pond Stormwater)	N/A	N/A	Not constructed
MS-08 (Mine Waste Rock Stockpile Pond)	N/A	N/A	No flow
MS-09 (Waste Rock Stockpile East Pond)	N/A	N/A	No flow

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-MRY-6 (Exploration Camp Bladder Farm Stormwater)	N/A	N/A	No flow
MS-MRY-9 (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
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

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
Steensby Port			
Steensby Exploration Camp is presently inactive.	N/A	N/A	N/A

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

Analyte	Sample ID			MP-01
	ALS Laboratory Sample ID			L2435599-1
	Sample Date & Time			07/04/2020 13:15
	QA/QC Sample Type			N/A
	Units	LOR	Criteria[1]	
pH	pH units	0.10	6.0 - 9.5	7.78
Total Suspended Solids	mg/L	2.0	120	4.1
Ammonia, Total (as N)	mg/L	0.010	-	0.090
Total Kjeldahl Nitrogen	mg/L	0.15	-	<0.15
Phosphorus, Total	mg/L	0.045	-	11.6
Fecal Coliforms	CFU/100 mL	0	10,000	0
BOD	mg/L	2.0	100	<2.0
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	-	-

Notes:

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

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

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Table 2.2: Water Quality Results for Water Licence Monitoring Location - MS-01

Analyte	Sample ID			MS-01
	ALS Laboratory Sample ID			L2435755-1
	Sample Date & Time			07/04/2020 15:00
	QA/QC Sample Type			N/A
	Units	LOR	Criteria[1]	
pH	pH units	0.10	6.0 - 9.5	8.11
Total Suspended Solids	mg/L	2.0	35	3.2
Ammonia, Total (as N)	mg/L	0.010	4.0	0.340
Total Kjeldahl Nitrogen	mg/L	0.15	-	0.98
Phosphorus, Total	mg/L	0.0060	4.0	1.54
Fecal Coliforms	CFU/100 mL	0	1000	0
BOD	mg/L	2.0	30	2.6
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	-	-

Notes:

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

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

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

Analyte	Sample ID			MS-01B
	ALS Laboratory Sample ID			L2435598-1
	Sample Date & Time			07/04/2020 14:15
	QA/QC Sample Type			N/A
	Units	LOR	Criteria[1]	
pH	pH units	0.10	6.0 - 9.5	8.72
Total Suspended Solids	mg/L	2.0	35	17.7
Ammonia, Total (as N)	mg/L	0.010	4.0	0.099
Total Kjeldahl Nitrogen	mg/L	0.15	-	1.53
Phosphorus, Total	mg/L	0.015	4.0	3.00
Fecal Coliforms	CFU/100 mL	100	1000	**2600**
BOD	mg/L	2.0	30	2.6
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	-	-

Notes:

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

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

Baffinland

Table 3.1: Flow and Volume Measurements-Part I Item 11 - April 2020

DATE	Camp Lake Freshwater for Domestic Use - Daily Water (m^3) MS-MRY-1	Camp Lake Freshwater for Industrial Use - Daily Water (m^3) MS-MRY-1	Treated Sewage Effluent (m^3) from MS-01 to Discharge Location #1	Treated Sewage Effluent (m^3) from MS-01B to Discharge Location #1	Sewage Sludge Removed (m^3) from Mine Site WWTPs to Incinerator for Disposal Offsite (Backhaul)	Sewage Sludge Removed (m^3) from Mine Site WWTP to PWSP at Mine Site	Sewage Sludge Removed (m^3) from Lift Stations to PWSP at Mine Site	Km 32 Lake Milne Port Camp Daily Water (m^3) MP-MRY-3	Km 32 Lake Milne Port Camp Fresh Water Use for Industrial Purposes (m^3) MP-MRY-3	Treated Sewage Effluent (m^3) from MP-01 to Milne Port	Treated Sewage Effluent (m^3) from MP-01B to Milne Port	Sewage Sludge Removed (m^3) from Milne Port WWTP to Mine Site WWTP	Sewage Sludge Removed (m^3) from Milne Port WWTP to PWSP at Mine Site	Sewage Sludge Removed (m^3) from Milne Port WWTP to Incinerator for Disposal Offiste (Backhaul)	Sewage Sludge Removed (m^3) from Lift Stations to PWSP at Milne Port	Sewage Sludge Removed (m^3) from Milne Port WWTP to PWSP at Milne Port
1-Apr-20	150.7	6.0	34.0	126.0	0.6	0.0	0.0	35.9	5.4	65.0	0.0	0.0	0.0	0.0	0.0	0.0
2-Apr-20	136.7	4.7	32.0	103.7	0.5	0.0	0.0	49.2	0.0	69.0	0.0	0.0	0.0	0.5	0.0	0.0
3-Apr-20	101.5	1.5	35.0	89.4	0.5	0.0	0.0	49.6	0.0	69.0	0.0	0.0	0.0	0.3	0.0	1.0
4-Apr-20	112.3	0.0	30.0	69.0	0.3	0.0	0.0	42.9	0.0	64.0	0.0	0.0	0.0	0.5	0.0	0.0
5-Apr-20	107.5	24.7	38.0	75.8	0.5	0.0	0.0	48.4	0.0	56.0	0.0	0.0	0.0	0.5	0.0	0.0
6-Apr-20	94.5	0.0	39.0	62.8	0.3	0.0	0.0	30.4	0.0	53.0	0.0	0.0	0.0	0.3	0.0	0.0
7-Apr-20	122.1	9.4	39.0	59.1	0.7	0.0	0.0	47.1	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Apr-20	124.7	0.0	39.0	54.6	0.8	0.0	0.0	17.6	0.0	50.0	0.0	0.0	0.0	0.5	0.0	25.3
9-Apr-20	96.9	6.0	39.0	58.8	0.8	0.0	0.0	29.0	0.0	47.0	0.0	0.0	0.0	0.5	0.0	0.0
10-Apr-20	129.4	0.0	37.0	58.3	0.8	0.0	0.0	35.2	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Apr-20	120.9	0.0	39.0	58.3	0.8	0.0	0.0	25.7	0.0	50.0	0.0	0.0	0.0	0.3	0.0	0.0
12-Apr-20	70.6	30.9	39.0	64.4	0.6	0.0	0.0	20.2	0.0	58.0	0.0	0.0	0.0	0.5	0.0	0.5
13-Apr-20	81.0	9.5	39.0	60.9	0.6	0.0	0.0	39.2	0.0	53.0	0.0	0.0	0.0	0.5	0.0	0.0
14-Apr-20	98.0	9.5	38.0	60.9	0.6	0.0	0.0	34.1	0.0	64.0	0.0	0.0	0.0	0.3	0.0	0.0
15-Apr-20	82.2	5.2	37.0	55.2	0.6	0.0	0.0	26.7	0.0	60.0	0.0	0.0	0.0	0.3	0.0	0.0
16-Apr-20	116.8	3.4	35.0	80.6	0.3	0.0	0.0	27.2	0.0	51.0	0.0	0.0	0.0	0.3	0.0	0.0
17-Apr-20	137.2	3.4	39.0	83.6	0.6	0.0	0.0	35.4	0.0	58.0	0.0	0.0	0.0	0.0	5.7	0.0
18-Apr-20	131.7	2.2	39.0	103.7	0.6	0.0	0.0	34.6	0.0	63.0	0.0	0.0	0.0	0.5	0.0	0.0
19-Apr-20	123.6	3.4	38.0	88.4	0.6	0.0	0.0	44.0	0.0	62.0	0.0	0.0	0.0	0.5	0.0	0.0
20-Apr-20	131.4	9.6	37.0	77.6	0.6	0.0	0.0	25.0	0.0	69.0	0.0	0.0	0.0	0.0	0.0	1.0
21-Apr-20	102.0	13.6	36.0	66.8	0.6	0.0	0.0	38.7	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Apr-20	125.4	1.7	36.0	94.9	0.6	0.0	0.0	38.5	0.0	59.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Apr-20	119.9	0.0	36.0	94.3	0.6	0.0	0.0	29.9	0.0	70.0	0.0	0.0	0.0	0.3	0.0	0.0
24-Apr-20	64.8	18.8	36.0	77.0	0.6	0.0	0.0	29.7	0.0	69.0	0.0	0.0	0.0	0.5	0.0	1.0
25-Apr-20	123.9	5.2	36.0	77.0	0.6	0.0	0.0	26.9	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0
26-Apr-20	107.7	30.6	35.0	72.1	0.6	0.0	0.0	24.6	0.0	63.0	0.0	0.0	0.0	0.0	0.0	0.0
27-Apr-20	112.2	4.3	34.0	79.1	0.6	0.0	0.0	33.5	0.0	58.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Apr-20	68.8	17.2	35.0	77.6	0.6	0.0	0.0	28.6	0.0	61.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-20	89.2	5.2	31.0	69.2	0.6	0.0	0.0	38.1	0.0	65.0	0.0	0.0	0.0	0.5	0.0	0.0
30-Apr-20	112.1	7.1	24.0	67.2	0.6	0.0	0.0	16.3	0.0	58.0	0.0	0.0	0.0	0.3	0.0	0.0
Total	**3,295.9**	**233.2**	**1,081.0**	**2,266.3**	**17.8**	**0.0**	**0.0**	**1,002.0**	**5.4**	**1,812.0**	**0.0**	**0.0**	**0.0**	**7.7**	**5.7**	**28.8**

Notes:

WWTP - Waste Water Treatment Plant

PWSP - Polishing Waste Stabilization Pond