

November 30, 2021

Manager of Licensing
Nunavut Water Board
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Resource Management Officer, CIRNAC
Nunavut District, Nunavut Region
P.O. Box 100
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**RE: Water Licence 2AM-MRY1325 Monthly Surveillance Network Program (SNP) Report
October 2021**

The following is the monthly report for October 2021 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 October 2021, water samples were collected as part of the Surveillance Network Program (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 dates and laboratory identification numbers, as appropriate. Analytical water quality testing results are presented in Tables 2.1 through 2.17. Table 3.1 presents water volumes consumed for domestic and industrial water purposes and the volumes of effluent discharged and/or disposed at the Mary River Mine Site and Milne Port during October 2021.

Monitoring Program Results

Water Sampling and Analysis Results

Tables 2.1 through 2.17 provide the analytical results related to the SNP sampling requirements for October 2021. Observed exceedances of applicable water quality criteria for October 2021 are as follows:

- At the Milne Port surface water monitoring station MP-Q1-02, the monthly TSS average was observed to be 23.9 mg/L, exceeding the monitoring station's permitted monthly TSS average criteria of 15 mg/L.
- At the Mine Site surface water monitoring station MQ-C-B, the monthly TSS average was observed to be 18.5 mg/L, exceeding the monitoring station's permitted monthly TSS average criteria of 15 mg/L.

MP-Q1-02 is a monitoring station located within the drainage ditch that collects surface water runoff from the Q1 Quarry and is not located within a natural water body. Surface flows from the drainage ditch discharge north of the Q1 Quarry onto the tundra. Frozen conditions allowed for only one sample to be

collected in October 2021 at MP-Q1-02, contributing to the monitoring's station elevated monthly average TSS levels and limiting the implementation of effective sediment mitigation measures. Under the Licence, Milne Port surface water monitoring station MP-C-H is used to monitor water quality in the nearest receiving water body. TSS concentrations at MP-C-H were observed to be non-detect (<2.0 mg/L) during all sampling events in October, confirming there was no impact from the MP-Q1-02 surface water runoff.

MQ-C-B is a surface water monitoring station located south of the Mine Site QMR2 Quarry. Elevated TSS levels observed on October 4, 2021 were attributed to recent rainfall events. Frozen conditions allowed for only one sample to be collected in October 2021 at MQ-C-B, contributing to the monitoring station's elevated monthly average TSS levels and limiting the implementation of effective sediment mitigation measures.

In addition to the exceedances outlined above, monthly acute toxicity (Group 3) samples were not collected at surface water monitoring stations downstream of the Q1 and QMR2 Quarries in October 2021. The monthly acute toxicity samples were not collected at these monitoring stations during sampling conducted on October 4 and October 6 at the Mine Site and Milne Port, respectively, and then could not be collected during the remainder of the month due to frozen conditions.

Flow and Volume Measurements

Table 3.1 provides a breakdown of volume measurements for October 2021 as required by Part I, Item 9 of the Licence. There were no exceedances of the source specific daily volume withdrawal limits in October 2021.

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 – 2.17, Table 3.1

Attachments

Monthly Water Sampling Results

Table 1.1: Monitoring Program Water Sampling Summary for October 2021

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
Milne Port			
MP-01 (Sewage Treatment Facility)	2021-10-05	L2648435-1	Discharge volume recorded daily; October 1 – 31.
MP-01A (Polishing Waste Stabilization Pond)	N/A	-	No discharge.
MP-01B (Sewage Treatment Facility)	2021-10-05	L2648442-1	Discharge volume recorded daily; October 1 - 31.
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; October 1 – 31.
MP-02 (Milne Port Maintenance Shop)	N/A	N/A	No discharge.
MP-03 (Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MP-04 (Treated Oily Water from Milne Port Landfarm Facility to Tundra)	N/A	N/A	No discharge.
MP-04A (Treated Oily Water from Milne Port Snowdump Facility to Tundra)	N/A	N/A	No discharge.
MP-05 Ore Stockpile Sedimentation Pond (East)	N/A	N/A	No discharge.
MP-06 Ore Stockpile Sedimentation Pond (West)	2021-10-24	L2655270-1	Discharge volume recorded daily; October 24.
MP-C-A (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-B (Downstream of Construction Area)	2021-10-05 2021-10-11	L2648053-1 L2650270-1	-
MP-C-B01 (Field Duplicate of MP-C-B)	2021-10-11	L2650270-2	-
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.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
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-H (Downstream of Construction Area)	2021-10-05 2021-10-11	L2648053-5 L2650270-5	-
MP-C-J (Downstream of Construction Area)	2021-10-06	L2648053-2	-
MP-C-K (Downstream of Construction Area)	2021-10-05 2021-10-11	L2648053-3 L2650270-3	-
MP-C-K01 (Field Duplicate of MP-C-K)	2021-10-11	L2648053-4	-
MP-Q1-01 (Downstream of Q1 Quarry)	2021-10-06	L2648053-8	-
MP-Q1-02 (Downstream of Q1 Quarry)	2021-10-06	L2648053-6	-
Mary River Mine Site			
MS-01 (Sewage Treatment Facility)	2021-10-06	L2649043-1	Discharge volume recorded daily; October 1 - 31.
MS-01A (Mine Site Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-01B (Sewage Treatment Facility)	2021-10-06	L2649046-1	Discharge volume recorded daily; October 1 - 31.
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; October 1 - 31.
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.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-04 (Mine Site Fuel Unloading Station Stormwater)	N/A	N/A	No discharge.
MS-05 (Mine Site Landfarm Facility)	N/A	N/A	Facility not constructed.
MS-06 (Ore Stockpile Pond Stormwater)	N/A	N/A	No discharge.
MS-07 (Run of Mine Ore Stockpile Pond Stormwater)	N/A	N/A	No discharge.
MS-08 (Mine Waste Rock Stockpile Pond)	N/A	N/A	No discharge.
MS-09 (Waste Rock Stockpile East Pond)	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)	2021-10-04	L2647099-6	-
MS-C-B (Downstream of Construction and Borrow Areas)	2021-10-04	L2647099-7	-
MS-C-C (Downstream of Construction and Borrow Areas)	2021-10-04	L2647099-5	-
MS-C-D (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-C-E (Downstream of Construction and Borrow Areas)	2021-10-04	L2647099-4	-
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)	2021-10-04	L2647099-2	-
MQ-C-B01 (Field Duplicate of MQ-C-B)	2021-10-04	L2647099-3	-
MQ-C-D (Downstream of QMR2 Quarry)	2021-10-04	L2647099-1	-
Steensby Port			
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	MP-01
	ALS Laboratory Sample ID			L2648435-1	L2648435-3
	Sample Date & Time			2021-10-05 14:00	2021-10-05 14:00
	QA/QC Sample Type			N/A	Field Blank
	Units	LOR	Criteria ¹		
pH	pH units	0.10	6.0 - 9.5	7.69	5.74
Total Suspended Solids	mg/L	1.0	120	1.0	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.035	<0.010
Total Kjeldahl Nitrogen	mg/L	0.050	-	1.15	<0.050
Phosphorus, Total	mg/L	0.030/0.0030	-	6.57	<0.0030
Fecal Coliforms	CFU/100 mL	-	10,000	0	0
BOD	mg/L	2.0	100	<2.0	<2.0
Oil and Grease, Total	mg/L	2.0	-	<2.0	<2.0
	-	-	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.

¹ 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	MP-01B
	ALS Laboratory Sample ID			L2648442-1	L2648442-3
	Sample Date & Time			2021-10-05 14:00	2021-10-05 14:00
	QA/QC Sample Type			N/A	Travel Blank
	Units	LOR	Criteria ¹		
pH	pH units	0.10	6.0 - 9.5	8.01	5.99
Total Suspended Solids	mg/L	1.0	120	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.013	<0.010
Total Kjeldahl Nitrogen	mg/L	0.050	-	<0.050	<0.050
Phosphorus, Total	mg/L	0.030/0.0030	-	9.73	<0.0030
Fecal Coliforms	CFU/100 mL	-	10,000	1	0
BOD	mg/L	2.0	100	<2.0	<2.0
Oil and Grease, Total	mg/L	5.0/2.0	-	<2.0	<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.

¹ 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 - MP-06

Analyte	Sample ID			MP-06
	ALS Laboratory Sample ID			L2655270-1
	Sample Date & Time			2021-10-24 16:15
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Hardness (as CaCO ₃)	mg/L	0.50	-	311
pH	pH units	0.10	6.0 - 9.5	8.13
Total Suspended Solids	mg/L	2.0	15	5.3
Total Dissolved Solids	mg/L	10	-	503
Turbidity	NTU	0.10	-	20.6
Alkalinity, Total (as CaCO ₃)	mg/L	1	-	151
Ammonia, Total (as N)	mg/L	0.010	-	0.435
Chloride (Cl)	mg/L	0.5	-	77.8
Fluoride (F)	mg/L	0.02	-	0.165
Nitrate (as N)	mg/L	0.02	-	2.86
Total Kjeldahl Nitrogen	mg/L	0.05	-	1.46
Phosphorus, Total	mg/L	0.0030	-	0.0049
Sulfate (SO ₄)	mg/L	0.3	-	139
Dissolved Organic Carbon	mg/L	0.50	-	7.49
Total Organic Carbon	mg/L	0.50	-	6.86
Aluminum (Al)-Total	mg/L	0.0050	-	0.284
Arsenic (As)-Total	mg/L	0.00010	0.50	0.00025
Cadmium (Cd)-Total	mg/L	0.0000050	-	0.0000068
Calcium (Ca)-Total	mg/L	0.050	-	64.2
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00164
Iron (Fe)-Total	mg/L	0.010	-	0.413
Lead (Pb)-Total	mg/L	0.000050	0.20	0.000441
Magnesium (Mg)-Total	mg/L	0.0050	-	40.2
Manganese (Mn)-Total	mg/L	0.00050	-	0.138
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.00429
Nickel (Ni)-Total	mg/L	0.00050	0.50	0.00132
Potassium (K)-Total	mg/L	0.050	-	6.70
Selenium (Se)-Total	mg/L	0.000050	-	0.000431
Sodium (Na)-Total	mg/L	0.050	-	36.1
Thallium (Tl)-Total	mg/L	0.000010	-	0.000018
Uranium (U)-Total	mg/L	0.000010	-	0.109
Zinc (Zn)-Total	mg/L	0.0030	0.50	0.0098
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0175
Arsenic (As)-Dissolved	mg/L	0.00010	-	0.00020
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000075
Calcium (Ca)-Dissolved	mg/L	0.050	-	57.2
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00136
Iron (Fe)-Dissolved	mg/L	0.010	-	0.016
Lead (Pb)-Dissolved	mg/L	0.000050	-	0.000061
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	40.9
Manganese (Mn)-Dissolved	mg/L	0.00050	-	0.126
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.00403
Nickel (Ni)-Dissolved	mg/L	0.00050	-	0.00100
Potassium (K)-Dissolved	mg/L	0.050	-	6.91
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.000451
Sodium (Na)-Dissolved	mg/L	0.050	-	36.2
Thallium (Tl)-Dissolved	mg/L	0.000010	-	0.000015
Uranium (U)-Dissolved	mg/L	0.000010	-	0.109
Zinc (Zn)-Dissolved	mg/L	0.0010	-	0.0088
Oil and Grease, Total	mg/L	-	-	-
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 10: Effluent Quality Discharge Limits for Open Pit, Stockpiles, and Sedimentation Ponds.

Table 2.4: Water Quality Results for Water Licence Monitoring Location - MP-C-B

Analyte	Sample ID			MP-C-B	MP-C-B	MP-C-B
	ALS Laboratory Sample ID			L2648053-1	L2650270-1	L2650270-2
	Sample Date & Time			2021-10-05 14:15	2021-10-11 8:15	2021-10-11 8:15
	QA/QC Sample Type			N/A	N/A	Field Duplicate
	Units	LOR	Criteria ¹			
Conductivity	umhos/cm	1.0	-	537	-	-
pH	pH units	0.10	6.0 - 9.5	8.03	7.77	7.80
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	26.8	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	343	433	432
Turbidity	NTU	0.10	-	111	3.08	3.11
Ammonia, Total (as N)	mg/L	0.010	-	0.247	-	-
Nitrate (as N)	mg/L	0.020	-	1.95	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen	No Visible Sheen

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.5: Water Quality Results for Water Licence Monitoring Location - MP-C-H

Analyte	Sample ID			MP-C-H	MP-C-H
	ALS Laboratory Sample ID			L2648053-5	L2650270-5
	Sample Date & Time			2021-10-05 13:50	2021-10-11 8:00
	QA/QC Sample Type			N/A	N/A
	Units	LOR	Criteria ¹		
Conductivity	umhos/cm	1.0	-	291	-
pH	pH units	0.10	6.0 - 9.5	8.17	8.09
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	187	166
Turbidity	NTU	0.10	-	0.72	0.26
Ammonia, Total (as N)	mg/L	0.010	-	0.012	-
Nitrate (as N)	mg/L	0.020	-	0.185	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.6: Water Quality Results for Water Licence Monitoring Location - MP-C-J

Analyte	Sample ID			MP-C-J
	ALS Laboratory Sample ID			L2648053-2
	Sample Date & Time			2021-10-06 6:55
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	419
pH	pH units	0.10	6.0 - 9.5	7.81
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	2.9
Total Dissolved Solids	mg/L	10	-	246
Turbidity	NTU	0.10	-	0.69
Ammonia, Total (as N)	mg/L	0.010	-	0.018
Nitrate (as N)	mg/L	0.020	-	0.055
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.7: Water Quality Results for Water Licence Monitoring Location - MP-C-K

Analyte	Sample ID			MP-C-K	MP-C-K	MP-C-K
	ALS Laboratory Sample ID			L2648053-3	L2648053-4	L2650270-3
	Sample Date & Time			2021-10-05 14:30	2021-10-05 14:30	2021-10-11 9:00
	QA/QC Sample Type			N/A	Field Duplicate	N/A
	Units	LOR	Criteria ¹			
Conductivity	umhos/cm	1.0	-	704	701	-
pH	pH units	0.10	6.0 - 9.5	8.00	8.01	7.75
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	2.1	<2.0	2.1
Total Dissolved Solids	mg/L	10	-	447	426	467
Turbidity	NTU	0.10	-	3.49	3.42	0.74
Ammonia, Total (as N)	mg/L	0.010	-	0.056	0.053	-
Nitrate (as N)	mg/L	0.020	-	0.964	0.974	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	<5.0	-
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen	No Visible Sheen

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.8: Water Quality Results for Water Licence Monitoring Location - MP-Q1-01

Analyte	Sample ID			MP-Q1-01
	ALS Laboratory Sample ID			L2648053-8
	Sample Date & Time			2021-10-06 7:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	184
pH	pH units	0.10	6.0 - 9.5	7.92
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0
Total Dissolved Solids	mg/L	10	-	138
Turbidity	NTU	0.10	-	10.6
Ammonia, Total (as N)	mg/L	0.010	-	0.010
Nitrate (as N)	mg/L	0.020	-	1.09
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.9: Water Quality Results for Water Licence Monitoring Location - MP-Q1-02

Analyte	Sample ID			MP-Q1-02
	ALS Laboratory Sample ID			L2648053-6
	Sample Date & Time			2021-10-06 7:20
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	345
pH	pH units	0.10	6.0 - 9.5	8.01
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	23.9
Total Dissolved Solids	mg/L	10	-	235
Turbidity	NTU	0.10	-	42.0
Ammonia, Total (as N)	mg/L	0.010	-	0.162
Nitrate (as N)	mg/L	0.020	-	3.13
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.10: Water Quality Results for Water Licence Monitoring Location - MS-01

Analyte	Sample ID			MS-01
	ALS Laboratory Sample ID			L2649043-1
	Sample Date & Time			2021-10-06 14:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.68
Total Suspended Solids	mg/L	1.0	35	<1.0
Ammonia, Total (as N)	mg/L	0.010	4.0	0.053
Total Kjeldahl Nitrogen	mg/L	0.050	-	<0.050
Phosphorus, Total	mg/L	0.0030	4.0	0.728
Fecal Coliforms	CFU/100 mL	-	1,000	0
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.

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

Table 2.11: Water Quality Results for Water Licence Monitoring Location - MS-01B

Analyte	Sample ID			MS-01B
	ALS Laboratory Sample ID			L2649046-1
	Sample Date & Time			2021-10-06 14:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.88
Total Suspended Solids	mg/L	1.0	35	2.3
Ammonia, Total (as N)	mg/L	0.010	4.0	0.414
Total Kjeldahl Nitrogen	mg/L	0.050	-	1.15
Phosphorus, Total	mg/L	0.0060	4.0	1.05
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.

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

Table 2.12: Water Quality Results for Water Licence Monitoring Location - MS-C-A

Analyte	Sample ID			MS-C-A
	ALS Laboratory Sample ID			L2647099-6
	Sample Date & Time			2021-10-04 16:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	221
pH	pH units	0.10	6.0 - 9.5	7.79
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0
Total Dissolved Solids	mg/L	10	-	109
Turbidity	NTU	0.10	-	2.05
Ammonia, Total (as N)	mg/L	0.010	-	<0.010
Nitrate (as N)	mg/L	0.020	-	0.219
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.13: Water Quality Results for Water Licence Monitoring Location - MS-C-B

Analyte	Sample ID			MS-C-B
	ALS Laboratory Sample ID			L2647099-7
	Sample Date & Time			2021-10-04 16:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	201
pH	pH units	0.10	6.0 - 9.5	7.70
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0
Total Dissolved Solids	mg/L	10	-	99
Turbidity	NTU	0.10	-	4.24
Ammonia, Total (as N)	mg/L	0.010	-	<0.010
Nitrate (as N)	mg/L	0.020	-	0.235
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.14: Water Quality Results for Water Licence Monitoring Location - MS-C-C

Analyte	Sample ID			MS-C-C
	ALS Laboratory Sample ID			L2647099-5
	Sample Date & Time			2021-10-04 10:15
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	670
pH	pH units	0.10	6.0 - 9.5	7.97
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	8.0
Total Dissolved Solids	mg/L	10	-	405
Turbidity	NTU	0.10	-	57.6
Ammonia, Total (as N)	mg/L	0.010	-	0.058
Nitrate (as N)	mg/L	0.020	-	5.76
Oil and Grease, Total	mg/L	2.0	-	<2.0
	-	-	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.15: Water Quality Results for Water Licence Monitoring Location - MS-C-E

Analyte	Sample ID			MS-C-E
	ALS Laboratory Sample ID			L2647099-4
	Sample Date & Time			2021-10-04 9:50
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	667
pH	pH units	0.10	6.0 - 9.5	8.02
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	4.0
Total Dissolved Solids	mg/L	10	-	390
Turbidity	NTU	0.10	-	36.5
Ammonia, Total (as N)	mg/L	0.010	-	0.046
Nitrate (as N)	mg/L	0.020	-	4.15
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.16: Water Quality Results for Water Licence Monitoring Location - MQ-C-B

Analyte	Sample ID			MQ-C-B	MQ-C-B
	ALS Laboratory Sample ID			L2647099-2	L2647099-3
	Sample Date & Time			2021-10-04 9:10	2021-10-04 9:10
	QA/QC Sample Type			N/A	Field Duplicate
	Units	LOR	Criteria ¹		
Conductivity	umhos/cm	1.0	-	377	377
pH	pH units	0.10	6.0 - 9.5	7.92	7.92
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	18.5	16.5
Total Dissolved Solids	mg/L	10	-	178	220
Turbidity	NTU	0.10	-	71.1	69.5
Ammonia, Total (as N)	mg/L	0.010	-	0.043	0.043
Nitrate (as N)	mg/L	0.020	-	0.292	0.282
Oil and Grease, Total	mg/L	2.0	-	<2.0	<2.0
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	-	-

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 2.17: Water Quality Results for Water Licence Monitoring Location - MQ-C-D

Analyte	Sample ID			MQ-C-D
	ALS Laboratory Sample ID			L2647099-1
	Sample Date & Time			2021-10-04 8:35
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	263
pH	pH units	0.10	6.0 - 9.5	7.53
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0
Total Dissolved Solids	mg/L	10	-	129
Turbidity	NTU	0.10	-	5.79
Ammonia, Total (as N)	mg/L	0.010	-	0.210
Nitrate (as N)	mg/L	0.020	-	0.115
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicate results that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 11: Effluent Quality Discharge Limits for Contact Water during the Operations Phase and the Early Revenue Phase of the Project

Table 3.1: Flow and Volume Measurements - Part I Item 11 - October 2021

DATE	Camp Lake Freshwater for Domestic Use - Daily Water MS-MRY-1 (m ³)	Camp Lake Freshwater for Industrial Use - Daily Water MS-MRY-1 (m ³)	Treated Sewage Effluent from MS-01 to Discharge Location #1 (m ³)	Treated Sewage Effluent from MS-01B to Discharge Location #1 (m ³)	Sewage Sludge Removed from Mine Site WWTPs to Incinerator or Disposal Offsite by Backhaul (m ³)	Sewage Sludge Removed from Mine Site WWTPs to PWSP at Mine Site (m ³)	Sewage Sludge Removed from Lift Stations to PWSP at Mine Site (m ³)	Km 32 Lake Milne Port Camp Daily Water Use for Domestic Purposes MP- MRY-3 (m ³)	Km 32 Lake Milne Port Camp Daily Water Use for Industrial Purposes MP- MRY-3 (m ³)	Treated Sewage Effluent from MP-01 to Milne Inlet (m ³)	Treated Sewage Effluent from MP-01B to Milne Inlet (m ³)	Sewage Sludge Removed from Milne Port WWTPs to Incinerator or Disposal Offsite by Backhaul (m ³)	Sewage Sludge Removed from Lift Stations to PWSP at Milne Port (m ³)	Sludge Removed from Milne Port WTPs to PWSP at Milne Port (m ³)	Effluent Discharge from Milne Port Ore Stockpile Sedimentation Pond (West) to Milne Inlet (MP-06) (m ³)
1-Oct-21	147.0	0.0	34.0	112.2	2.0	0.0	0.0	108.2	0.0	31.0	34.0	1.4	0.0	0.0	0.0
2-Oct-21	141.1	12.9	34.0	122.6	0.6	0.0	0.0	88.2	6.0	26.0	31.6	0.6	0.0	0.0	0.0
3-Oct-21	159.8	10.3	33.0	77.0	1.2	0.0	0.0	75.9	0.0	26.0	37.1	0.4	0.0	0.0	0.0
4-Oct-21	158.6	9.5	35.0	80.8	2.0	0.0	0.0	124.5	0.0	22.0	31.7	0.4	8.5	0.0	0.0
5-Oct-21	163.1	7.7	38.0	83.7	1.1	0.0	0.0	85.2	0.0	51.0	32.8	0.0	0.0	0.0	0.0
6-Oct-21	146.2	0.0	38.0	67.2	1.1	0.0	0.0	156.7	0.0	54.0	33.4	1.0	0.0	0.0	0.0
7-Oct-21	131.0	8.6	35.0	67.2	0.9	0.0	0.0	55.4	0.0	38.0	32.3	0.3	0.0	0.0	0.0
8-Oct-21	142.9	10.3	40.0	73.9	0.9	0.0	0.0	124.2	0.0	28.0	28.6	1.4	0.0	0.0	0.0
9-Oct-21	123.7	0.0	43.0	91.5	1.2	0.0	0.0	103.7	0.0	29.0	24.0	0.3	0.0	0.0	0.0
10-Oct-21	151.3	0.0	30.0	92.7	0.6	0.0	0.0	90.2	1.5	29.0	24.7	0.3	8.5	0.0	0.0
11-Oct-21	128.1	12.9	29.0	103.0	0.8	0.0	0.0	127.1	0.0	25.0	24.5	0.3	0.0	0.0	0.0
12-Oct-21	105.5	0.0	37.0	98.6	1.1	0.0	0.0	86.6	0.0	25.0	38.1	0.3	0.0	0.0	0.0
13-Oct-21	126.5	0.0	37.0	104.2	1.1	0.0	0.0	84.8	0.0	27.0	24.7	0.3	0.0	0.0	0.0
14-Oct-21	108.5	0.0	37.0	98.6	1.1	0.0	0.0	79.1	0.0	28.0	34.5	0.0	0.0	2.0	0.0
15-Oct-21	132.7	2.2	36.0	86.4	1.1	0.0	0.0	93.2	0.0	25.0	31.0	0.3	0.0	0.0	0.0
16-Oct-21	117.9	14.6	34.0	83.7	0.9	0.0	0.0	81.6	1.5	28.0	32.0	0.3	0.0	0.0	0.0
17-Oct-21	125.3	3.4	30.0	91.9	1.1	0.0	0.0	106.8	0.0	26.0	25.3	0.4	0.0	0.0	0.0
18-Oct-21	133.9	0.0	36.0	101.1	0.9	0.0	12.0	93.7	0.0	31.0	33.6	1.4	0.0	0.0	0.0
19-Oct-21	150.6	8.6	36.0	96.7	0.8	0.0	0.0	83.8	6.0	26.0	36.6	1.3	0.0	0.0	0.0
20-Oct-21	147.1	0.0	35.0	115.2	0.9	0.0	0.0	62.4	0.0	27.0	34.7	1.3	0.0	0.0	0.0
21-Oct-21	168.1	3.4	36.0	123.4	0.9	0.0	0.0	98.0	0.0	37.0	24.2	1.5	0.0	0.0	0.0
22-Oct-21	137.1	0.0	34.0	112.2	0.9	0.0	0.0	93.1	6.0	33.0	32.3	0.0	0.0	0.0	0.0
23-Oct-21	111.5	6.5	47.0	108.7	0.9	0.0	0.0	99.7	0.0	25.0	34.1	0.3	0.0	1.0	0.0
24-Oct-21	117.6	5.2	34.0	101.3	0.9	0.0	0.0	61.0	0.0	24.0	35.0	0.3	0.0	0.0	769.7
25-Oct-21	131.3	7.7	31.0	105.0	0.8	0.0	0.0	88.2	0.0	29.0	37.9	0.3	0.0	0.0	0.0
26-Oct-21	146.8	10.3	36.0	110.2	0.8	0.0	0.0	108.7	0.0	29.0	24.2	0.3	0.0	0.0	0.0
27-Oct-21	143.5	0.0	20.0	110.6	0.3	0.0	0.0	114.3	0.0	34.0	30.5	1.0	0.0	0.0	0.0
28-Oct-21	135.5	4.3	35.0	96.0	1.1	0.0	0.0	99.0	0.0	36.0	48.0	0.3	8.5	0.0	0.0
29-Oct-21	139.4	4.3	37.0	94.4	1.1	0.0	0.0	70.0	0.0	38.0	43.0	1.5	0.0	0.0	0.0
30-Oct-21	137.9	4.7	32.0	123.7	0.0	0.0	0.0	46.3	0.0	30.0	20.1	1.5	0.0	0.0	0.0
31-Oct-21	133.4	6.0	21.0	111.0	1.7	0.0	0.0	130.3	0.0	23.0	31.2	0.0	0.0	0.0	0.0
Total	4,243.0	153.5	1,070.0	3,044.7	30.9	0.0	12.0	2,919.8	21.0	940.0	985.4	19.2	25.6	3.0	769.7

Notes:

WWTP - Waste Water Treatment Plant

PWSP - Polishing Waste Stabilization Pond