

August 30, 2021

Manager of Licensing
Nunavut Water Board
P.O. Box 119
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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
July 2021**

The following is the monthly report for July 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 July 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 2.33. 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 July 2021.

Monitoring Program Results

Water Sampling and Analysis Results

Tables 2.1 through 2.33 provide the analytical results related to the SNP sampling requirements for July 2021. Observed exceedances for July 2021 are as follows:

- At the Milne Port surface water monitoring station MP-Q1-02, total suspended solids (TSS) was observed to be 327 mg/L on July 13, 2021, exceeding the monitoring station's TSS grab sample criteria of 30 mg/L. As a result of elevated TSS levels observed on July 13 at MP-Q1-02, the permitted monthly average TSS criteria of 15 mg/L was also exceeded at MP-Q1-02 for July 2021, with a monthly average TSS value of 90.7 mg/L.
- At the Milne Port effluent monitoring station MP-03, total lead was observed to be 0.00656 mg/L on July 9, 2021, exceeding the monitoring station's total lead grab sample criteria of 0.001 mg/L.

- At the Milne Port effluent monitoring station MP-04, TSS was observed to be 17.3 mg/L on July 12, 2021, exceeding the monitoring station's TSS grab sample 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. In response to elevated TSS levels within the drainage ditch, mitigative actions were implemented including the installation of sandbags and spring berms within the ditch system to reduce the amount of sediment available for mobilization and settle sediment from the runoff. 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 during July 2021 were observed to be non-detect (<1.0 mg/L; <2.0 mg/L) during all sampling events in July, confirming minimal impact from MP-Q1-02 surface water runoff. TSS levels observed in subsequent samples taken at MP-Q1-02 on July 22 and July 27 were 8.9 mg/L and 5.1 mg/L, respectively, indicating that the elevated TSS levels observed on July 13 were transitory and that mitigative measures were effective at reducing TSS levels below the applicable criteria.

Upon receiving the lab results indicating elevated levels of total lead observed on July 9 at MP-03, the discharge of effluent from the Milne Port Bulk Fuel Storage Facility was complete. Subsequent samples taken in August at the Milne Port Bulk Fuel Storage Facility confirmed total lead levels are below the applicable total lead criteria. Potential causes for the elevated total lead observed in the July 9 sample include sampling error and/or analytical error.

Upon receiving the lab results of the elevated TSS level observed on July 12 at MP-04, discharge from the Milne Port Landfarm Facility was halted. Baffinland continues to make the necessary adjustments to the Oily Water Treatment System (OWTS) at the Milne Port Landfarm Facility to ensure effluent discharged from the Milne Port Landfarm Facility is compliant with all applicable criteria.

In addition to the exceedances outlined above, results for total petroleum hydrocarbons were not provided by the external laboratory for effluent samples collected at MP-03 and MS-MRY-6 on July 9 and July 23, respectively. Baffinland has reviewed this issue with the external laboratory and has implemented the necessary measures to ensure samples collected during future sampling events are analyzed for the required full suite of parameters.

Flow and Volume Measurements

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

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 black ink, appearing to read "Andrew Vermeer".

Andrew Vermeer
Environmental Specialist

Reviewed by:

A handwritten signature in black ink, appearing to read "Kendra Button".

Kendra Button
Environmental Superintendent

cc: Justin Hack (CIRNAC)
Chris Spencer, Hugh Karpik (QIA)
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Sylvain Proulx, Christopher Murray, Connor Devereaux, Allison Parker, Andrew Vermeer (Baffinland)

Attachments

Attachments – Monthly Water Sampling Results: Table 1.1, Tables 2.1 – 2.33, Table 3.1

Attachments

Monthly Water Sampling Results

Table 1.1: Monitoring Program Water Sampling Summary for July 2021

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
Milne Port			
MP-01 (Sewage Treatment Facility)	2021-07-06	L2611143-1	Discharge volume recorded daily.
MP-01A (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MP-01B (Sewage Treatment Facility)	2021-07-06	L2611174-1	Discharge volume recorded daily.
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 discharge.
MP-03 (Bulk Fuel Storage Facility Stormwater)	2021-07-09	L2612302-1	Discharge volume recorded daily; July 9 – 13.
MP-04 (Treated Oily Water from Milne Port Landfarm Facility to Tundra)	2021-07-12	L2612836-1	Discharge volume recorded daily; July 12 – 21.
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)	2021-07-05	L2611194-1	Discharge volume recorded daily; July 2 – 21.
MP-06 Ore Stockpile Sedimentation Pond (West)	2021-07-05	L2611198-1	Discharge volume recorded daily; July 5 – 21.
MP-C-A (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-B (Downstream of Construction Area)	2021-07-06 2021-07-13 2021-07-20 2021-07-27	L2611804-3 L2614208-3 L2617707-3 L2620706-3	
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.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MP-C-F (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-H (Downstream of Construction Area)	2021-07-06 2021-07-13 2021-07-20 2021-07-28	L2611804-1 L2614208-7 L2617707-2 L2620706-6	
MP-C-H01 (Field Duplicate of MP-C-H)	2021-07-06	L2611804-2	
MP-C-J (Downstream of Construction Area)	2021-07-06 2021-07-13 2021-07-20 2021-07-28	L2611804-5 L2614208-5 L2617707-5 L2620706-5	
MP-C-K (Downstream of Construction Area)	2021-07-06 2021-07-13 2021-07-20 2021-07-27	L2611804-4 L2614208-4 L2617707-4 L2620706-4	
MP-Q1-01 (Downstream of Q1 Quarry)	2021-07-06 2021-07-13 2021-07-20 2021-07-27	L2611804-7 L2614208-1 L2617707-1 L2620706-1	
MP-Q1-02 (Downstream of Q1 Quarry)	2021-07-06 2021-07-13 2021-07-22 2021-07-27	L2611804-6 L2614208-6 L2617707-6 L2620706-2	
Mary River Mine Site			
MS-01 (Sewage Treatment Facility)	2021-07-14	L2614654-1	Discharge volume recorded daily.
MS-01A (Mine Site Polishing Waste Stabilization Pond)	N/A	N/A	Facility not constructed.
MS-01B (Sewage Treatment Facility)	2021-07-14	L2614658-1	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.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
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	Facility not constructed.
MS-06 (Ore Stockpile Pond Stormwater)	2021-07-08	L2611695-1	Discharge volume recorded daily; July 8.
MS-07 (Run of Mine Ore Stockpile Pond Stormwater)	2021-07-08	L2611689-1	Discharge volume recorded daily; July 8-9.
MS-0701 (Field Duplicate of MS-07)	2021-07-08	L2611689-2	
MS-08 (Mine Waste Rock Stockpile Pond)	2021-07-08	L2611670-1	Discharge volume recorded daily; July 1 - 30.
MS-09 (Waste Rock Stockpile East Pond)	N/A	N/A	Facility not constructed.
MS-MRY-6 (Exploration Camp Bulk Fuel Storage Facility Stormwater)	2021-07-23	L2618137-2	Discharge volume recorded daily; July 22 - 29.
MS-MRY-09 (Deposit 1 Surface Water Drainage)	2021-07-04 2021-07-13 2021-07-21 2021-07-30	L2609333-1 L2614342-1 L2618103-1 L2621268-10	
MS-MRY-10 (Deposit 1 Surface Water Drainage)	2021-07-05 2021-07-12 2021-07-22 2021-07-31	L2609728-7 L2612809-16 L2618103-2 L2621358-7	
MS-MRY-13A (Downstream Non-Hazardous Landfill)	2021-07-04 2021-07-12 2021-07-19 2021-07-29	L2609333-5 L2612809-9 L2615981-2 L2621268-6	
MS-MRY-13A01 (Field Duplicate of MS-MRY-13A)	2021-07-12	L2612809-10	

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-MRY-13B (Downstream Non-Hazardous Landfill)	2021-07-04	L2609333-4	
	2021-07-12	L2612809-8	
	2021-07-19	L2615981-1	
	2021-07-29	L2621268-5	
MS-C-A (Downstream of Construction and Borrow Areas)	2021-07-05	L2609728-4	
	2021-07-12	L2612809-1	
	2021-07-19	L2615981-9	
	2021-07-31	L2621358-2	
MS-C-A01 (Field Duplicate of MS-C-A)	2021-07-31	L2621358-3	
MS-C-B (Downstream of Construction and Borrow Areas)	2021-07-05	L2609728-5	
	2021-07-12	L2612809-3	
	2021-07-19	L2615981-12	
	2021-07-31	L2621358-4	
MS-C-B01 (Field Duplicate of MS-C-B)	2021-07-19	L2615981-14	
MS-C-C (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-9	
	2021-07-12	L2612809-7	
	2021-07-19	L2615981-13	
	2021-07-29	L2621268-9	
MS-C-D (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-7	
	2021-07-12	L2612809-6	
	2021-07-19	L2615981-11	
	2021-07-29	L2621268-8	
MS-C-D01 (Field Duplicate of MS-C-D)	2021-07-04	L2609333-8	
MS-C-E (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-6	
	2021-07-12	L2612809-5	
	2021-07-19	L2615981-10	
	2021-07-29	L2621268-7	
MS-C-F (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-10	
	2021-07-12	L2612809-4	
	2021-07-21	L2616345-1	
	2021-07-31	L2621358-1	
MS-C-G (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-2	
	2021-07-12	L2612809-11	
	2021-07-21	L2615981-7	
	2021-07-31	L2621358-5	

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-C-H (Downstream of Construction and Borrow Areas)	2021-07-04	L2609333-3	
	2021-07-12	L2612809-12	
	2021-07-21	L2615981-8	
	2021-07-31	L2621358-6	
MQ-C-A (Downstream of QMR2 Quarry)	2021-07-05	L2609728-1	
	2021-07-12	L2612809-15	
	2021-07-19	L2615981-5	
	2021-07-29	L2621268-1	
MQ-C-A01 (Field Duplicate of MQ-C-A)	2021-07-29	L2621268-2	
MQ-C-B (Downstream of QMR2 Quarry)	2021-07-05	L2609728-3	
	2021-07-12	L2612809-13	
	2021-07-19	L2615981-6	
	2021-07-29	L2621268-4	
MQ-C-D (Downstream of QMR2 Quarry)	2021-07-05	L2609728-6	
	2021-07-12	L2612809-14	
	2021-07-19	L2615981-4	
	2021-07-29	L2621268-3	
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
	ALS Laboratory Sample ID			L2611143-1
	Sample Date & Time			2021-07-06 11:00
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.96
Total Suspended Solids	mg/L	1.0	120	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.049
Total Kjeldahl Nitrogen	mg/L	0.50	-	3.60
Phosphorus, Total	mg/L	0.060	-	11.1
Fecal Coliforms	CFU/100 mL	-	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	-	-	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
	ALS Laboratory Sample ID			L2611174-1
	Sample Date & Time			2021-07-06 12:00
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.94
Total Suspended Solids	mg/L	1.0	120	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.023
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.850
Phosphorus, Total	mg/L	0.060	-	11.4
Fecal Coliforms	CFU/100 mL	-	10,000	2
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	-	-	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-03

Analyte	Sample ID			MP-03
	ALS Laboratory Sample ID			L2612302-1
	Sample Date & Time			2021-07-09 13:20
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	-	8.07
Total Suspended Solids	mg/L	2.0	-	174
Total Dissolved Solids	mg/L	10	-	535
Turbidity	NTU	0.10	-	185
Ammonia, Total (as N)	mg/L	0.0050	-	0.0369
Phosphorus, Total	mg/L	0.020	-	0.072
Lead (Pb)-Total	mg/L	0.000050	0.001	0.00656
Arsenic (As)-Total	mg/L	0.00010	-	0.00101
Copper (Cu)-Total	mg/L	0.00050	-	0.00560
Nickel (Ni)-Total	mg/L	0.00050	-	0.00279
Zinc (Zn)-Total	mg/L	0.0030	-	0.02550
Oil and Grease, Total	mg/L	5.0	15.0	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Benzene	mg/L	0.00050	0.370	<0.00050
Ethylbenzene	mg/L	0.00050	0.090	<0.00050
Toluene	mg/L	0.00045	0.002	<0.00045
F1 (C6-C10)	mg/L	0.10	-	<0.10
F2 (C10-C16)	mg/L	0.10	-	3.62
F3 (C16-C34)	mg/L	0.25	-	1.29
F4 (C34-C50)	mg/L	0.25	-	<0.25
Total Petroleum Hydrocarbons (TPH)	mg/L	-	-	-

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 8: Effluent Quality Discharge Limits for the Bulk Fuel Storage Facilities

Table 2.4: Water Quality Results for Water Licence Monitoring Location - MP-04

Analyte	Sample ID			MP-04
	ALS Laboratory Sample ID			L2612836-1
	Sample Date & Time			2021-07-12 14:20
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.0	7.97
Total Suspended Solids	mg/L	2.0	15	17.3
Lead (Pb)-Total	mg/L	0.000050	0.001	0.000124
Benzene	mg/L	0.00050	0.370	<0.00050
Ethylbenzene	mg/L	0.00050	0.090	<0.00050
Toluene	mg/L	0.00050	0.002	<0.00050
Total Petroleum Hydrocarbons (TPH)	mg/L	0.370	-	<0.370
Oil and Grease, Total	mg/L	5.0	15	<5.0
	-	-	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 9: Effluent Quality Discharge Limits for the Landfarm Facilities

Table 2.5: Water Quality Results for Water Licence Monitoring Location - MP-05

Analyte	Sample ID			MP-05
	ALS Laboratory Sample ID			L2611194-1
	Sample Date & Time			2021-07-05 15:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Hardness (as CaCO ₃)	mg/L	1.3	-	508
pH	pH units	0.10	6.0 - 9.5	8.32
Total Suspended Solids	mg/L	1.0	15	<1.0
Total Dissolved Solids	mg/L	20	-	833
Turbidity	NTU	0.10	-	6.81
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	137
Ammonia, Total (as N)	mg/L	0.010	-	0.096
Chloride (Cl)	mg/L	2.5	-	139
Fluoride (F)	mg/L	0.10	-	0.20
Nitrate (as N)	mg/L	0.10	-	4.28
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.730
Phosphorus, Total	mg/L	0.0030	-	0.0067
Sulfate (SO ₄)	mg/L	1.5	-	306
Dissolved Organic Carbon	mg/L	0.50	-	3.93
Total Organic Carbon	mg/L	0.50	-	4.50
Aluminum (Al)-Total	mg/L	0.050	-	0.115
Arsenic (As)-Total	mg/L	0.0010	0.50	<0.0010
Cadmium (Cd)-Total	mg/L	0.000050	-	<0.000050
Calcium (Ca)-Total	mg/L	0.50	-	86.6
Copper (Cu)-Total	mg/L	0.0050	0.30	<0.0050
Iron (Fe)-Total	mg/L	0.10	-	0.14
Lead (Pb)-Total	mg/L	0.00050	0.20	<0.00050
Magnesium (Mg)-Total	mg/L	0.050	-	69.7
Manganese (Mn)-Total	mg/L	0.0050	-	0.363
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00050	-	0.00492
Nickel (Ni)-Total	mg/L	0.0050	0.50	<0.0050
Potassium (K)-Total	mg/L	0.50	-	9.00
Selenium (Se)-Total	mg/L	0.00050	-	0.00055
Sodium (Na)-Total	mg/L	0.50	-	53.3
Thallium (Tl)-Total	mg/L	0.00010	-	<0.00010
Uranium (U)-Total	mg/L	0.00010	-	0.141
Zinc (Zn)-Total	mg/L	0.030	0.50	<0.030
Aluminum (Al)-Dissolved	mg/L	0.050	-	<0.050
Arsenic (As)-Dissolved	mg/L	0.0010	-	<0.0010
Cadmium (Cd)-Dissolved	mg/L	0.000050	-	<0.000050
Calcium (Ca)-Dissolved	mg/L	0.50	-	85.6
Copper (Cu)-Dissolved	mg/L	0.0020	-	<0.0020
Iron (Fe)-Dissolved	mg/L	0.10	-	<0.10
Lead (Pb)-Dissolved	mg/L	0.00050	-	<0.00050
Magnesium (Mg)-Dissolved	mg/L	0.050	-	71.4
Manganese (Mn)-Dissolved	mg/L	0.0050	-	0.330
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.00050	-	0.00471
Nickel (Ni)-Dissolved	mg/L	0.0050	-	<0.0050
Potassium (K)-Dissolved	mg/L	0.50	-	9.24
Selenium (Se)-Dissolved	mg/L	0.00050	-	0.00058
Sodium (Na)-Dissolved	mg/L	0.50	-	54.5
Thallium (Tl)-Dissolved	mg/L	0.00010	-	<0.00010
Uranium (U)-Dissolved	mg/L	0.00010	-	0.137
Zinc (Zn)-Dissolved	mg/L	0.010	-	<0.010
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 2.6: Water Quality Results for Water Licence Monitoring Location - MP-06

Analyte	Sample ID			MP-06
	ALS Laboratory Sample ID			L2611198-1
	Sample Date & Time			2021-07-05 14:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Hardness (as CaCO ₃)	mg/L	0.50	-	356
pH	pH units	0.10	6.0 - 9.5	8.15
Total Suspended Solids	mg/L	1.0	15	2.1
Total Dissolved Solids	mg/L	20	-	643
Turbidity	NTU	0.10	-	1.66
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	77.1
Ammonia, Total (as N)	mg/L	0.010	-	<0.010
Chloride (Cl)	mg/L	0.50	-	123
Fluoride (F)	mg/L	0.020	-	0.115
Nitrate (as N)	mg/L	0.020	-	2.39
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.470
Phosphorus, Total	mg/L	0.0030	-	<0.0030
Sulfate (SO ₄)	mg/L	0.30	-	217
Dissolved Organic Carbon	mg/L	0.50	-	8.17
Total Organic Carbon	mg/L	0.50	-	7.92
Aluminum (Al)-Total	mg/L	0.0050	-	0.0187
Arsenic (As)-Total	mg/L	0.00010	0.50	0.00020
Cadmium (Cd)-Total	mg/L	0.0000050	-	<0.0000050
Calcium (Ca)-Total	mg/L	0.050	-	52.9
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00076
Iron (Fe)-Total	mg/L	0.010	-	0.015
Lead (Pb)-Total	mg/L	0.000050	0.20	<0.000050
Magnesium (Mg)-Total	mg/L	0.0050	-	53.5
Manganese (Mn)-Total	mg/L	0.00050	-	0.0429
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.00362
Nickel (Ni)-Total	mg/L	0.00050	0.50	0.00122
Potassium (K)-Total	mg/L	0.050	-	7.26
Selenium (Se)-Total	mg/L	0.000050	-	0.000410
Sodium (Na)-Total	mg/L	0.050	-	55.7
Thallium (Tl)-Total	mg/L	0.000010	-	0.000015
Uranium (U)-Total	mg/L	0.000010	-	0.0406
Zinc (Zn)-Total	mg/L	0.0030	0.50	<0.0030
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0108
Arsenic (As)-Dissolved	mg/L	0.00010	-	0.00023
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000061
Calcium (Ca)-Dissolved	mg/L	0.050	-	52.2
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00069
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	54.9
Manganese (Mn)-Dissolved	mg/L	0.00050	-	0.0410
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.00356
Nickel (Ni)-Dissolved	mg/L	0.00050	-	0.00112
Potassium (K)-Dissolved	mg/L	0.050	-	7.44
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.000491
Sodium (Na)-Dissolved	mg/L	0.050	-	56.1
Thallium (Tl)-Dissolved	mg/L	0.000010	-	0.000017
Uranium (U)-Dissolved	mg/L	0.000010	-	0.0407
Zinc (Zn)-Dissolved	mg/L	0.0010	-	0.0016
Oil and Grease, Total	mg/L		-	-
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	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 2.7: Water Quality Results for Water Licence Monitoring Location - MP-C-B

Analyte	Sample ID			MP-C-B	MP-C-B	MP-C-B	MP-C-B
	ALS Laboratory Sample ID			L2611804-3	L2614208-3	L2617707-3	L2620706-3
	Sample Date & Time			2021-07-06 8:50	2021-07-13 16:40	2021-07-20 9:15	2021-07-27 14:15
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	488	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.22	8.21	8.28	8.31
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	1.8	<2.0	<2.0	3.2
Total Dissolved Solids	mg/L	10/20	-	320	344	354	389
Turbidity	NTU	0.10	-	2.22	3.80	2.93	9.88
Ammonia, Total (as N)	mg/L	0.010	-	0.022	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.903	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-	-
	-	-	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-C-H

Analyte	Sample ID			MP-C-H	MP-C-H	MP-C-H	MP-C-H	MP-C-H	MP-C-H
	ALS Laboratory Sample ID			L2611804-1	L2611804-2	L2614208-7	L2617707-2	L2620706-6	L2620706-7
	Sample Date & Time			2021-07-06 7:40	2021-07-06 7:40	2021-07-13 15:00	2021-07-20 7:20	2021-07-28 7:15	2021-07-28 7:15
	QA/QC Sample Type			N/A	Field Duplicate	N/A	N/A	N/A	Travel Blank
	Units	LOR	Criteria ¹						
Conductivity	umhos/cm	1.0	-	227	228	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.06	8.12	8.15	8.23	8.19	5.95
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10/20	-	142	144	152	183	157	14
Turbidity	NTU	0.10	-	0.49	0.62	0.48	0.38	0.17	<0.10
Ammonia, Total (as N)	mg/L	0.010	-	0.015	0.012	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.335	0.327	-	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<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 2.9: Water Quality Results for Water Licence Monitoring Location - MP-C-J

Analyte	Sample ID			MP-C-J	MP-C-J	MP-C-J	MP-C-J
	ALS Laboratory Sample ID			L2611804-5	L2614208-5	L2617707-5	L2620706-5
	Sample Date & Time			2021-07-06 9:55	2021-07-13 16:00	2021-07-20 8:50	2021-07-28 8:00
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	400	-	-	-
pH	pH units	0.10	6.0 - 9.5	7.98	7.96	8.09	7.95
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	<1.0	2.1	<2.0	<2.0
Total Dissolved Solids	mg/L	10/20	-	244	276	220	244
Turbidity	NTU	0.10	-	0.29	<0.10	0.50	0.25
Ammonia, Total (as N)	mg/L	0.010	-	0.021	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.079	-	-	-
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 2.10: Water Quality Results for Water Licence Monitoring Location - MP-C-K

Analyte	Sample ID			MP-C-K	MP-C-K	MP-C-K	MP-C-K
	ALS Laboratory Sample ID			L2611804-4	L2614208-4	L2617707-4	L2620706-4
	Sample Date & Time			2021-07-06 9:30	2021-07-13 15:45	2021-07-20 8:35	2021-07-27 14:45
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	569	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.20	8.00	8.13	8.18
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	1.0	12.7	<2.0	<2.0
Total Dissolved Solids	mg/L	10/20	-	406	404	437	425
Turbidity	NTU	0.10	-	0.75	0.51	0.52	0.42
Ammonia, Total (as N)	mg/L	0.010	-	0.017	-	-	-
Nitrate (as N)	mg/L	0.020	-	1.43	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-	-
	-	-	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 2.11: Water Quality Results for Water Licence Monitoring Location - MP-Q1-01

Analyte	Sample ID			MP-Q1-01	MP-Q1-01	MP-Q1-01	MP-Q1-01	MP-Q1-01
	ALS Laboratory Sample ID			L2611804-7	L2614208-1	L2614208-2	L2617707-1	L2620706-1
	Sample Date & Time			2021-07-06 11:20	2021-07-13 13:40	2021-07-13 13:40	2021-07-20 7:55	2021-07-27 13:40
	QA/QC Sample Type			N/A	N/A	Travel Blank	N/A	N/A
	Units	LOR	Criteria ¹					
Conductivity	umhos/cm	1.0	-	190	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	7.92	7.86	6.06	7.97	7.82
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	<1.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10/20	-	128	101	17	133	115
Turbidity	NTU	0.10	-	1.66	3.88	<0.10	2.52	2.47
Ammonia, Total (as N)	mg/L	0.010	-	0.031	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.811	-	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-	-	-
	-	-	No Visible Sheen	No Visible Sheen	-	-	-	-
Acute Toxicity	-	-	Not Acutely Toxic	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 2.12: Water Quality Results for Water Licence Monitoring Location - MP-Q1-02

Analyte	Sample ID			MP-Q1-02	MP-Q1-02	MP-Q1-02	MP-Q1-02
	ALS Laboratory Sample ID			L2611804-6	L2614208-6	L2617707-6	L2620706-2
	Sample Date & Time			2021-07-06 10:30	2021-07-13 17:10	2021-07-22 15:50	2021-07-27 14:00
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	336	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.02	8.01	8.12	8.05
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	21.6	327	8.9	5.1
Total Dissolved Solids	mg/L	10/20	-	279	257	292	286
Turbidity	NTU	0.10	-	34.7	241	9.83	8.29
Ammonia, Total (as N)	mg/L	0.10	-	1.62	-	-	-
Nitrate (as N)	mg/L	0.020	-	9.21	-	-	-
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 2.13: Water Quality Results for Water Licence Monitoring Location - MS-01

Analyte	Sample ID			MS-01
	ALS Laboratory Sample ID			L2614654-1
	Sample Date & Time			2021-07-14 14:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.60
Total Suspended Solids	mg/L	1.0	35	<1.0
Ammonia, Total (as N)	mg/L	0.010	4.0	0.076
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.720
Phosphorus, Total	mg/L	0.0060	4.0	1.29
Fecal Coliforms	CFU/100 mL	-	1,000	0
BOD	mg/L	2.0	30	<2.0
Oil and Grease, Total	mg/L	5.0	-	7.3
	-	-	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 2.14: Water Quality Results for Water Licence Monitoring Location - MS-01B

Analyte	Sample ID			MS-01B
	ALS Laboratory Sample ID			L2614658-1
	Sample Date & Time			2021-07-14 15:00
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.87
Total Suspended Solids	mg/L	1.0	35	2.2
Ammonia, Total (as N)	mg/L	0.010	4.0	0.207
Total Kjeldahl Nitrogen	mg/L	0.050		0.230
Phosphorus, Total	mg/L	0.0030	4.0	0.444
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 2.15: Water Quality Results for Water Licence Monitoring Location - MS-06

Analyte	Sample ID			MS-06
	ALS Laboratory Sample ID			L2611695-1
	Sample Date & Time			2021-07-08 9:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	1050
Hardness (as CaCO3)	mg/L	0.50	-	536
pH	pH units	0.10	6.0 - 9.5	7.69
Total Suspended Solids	mg/L	2.0	15	<2.0
Total Dissolved Solids	mg/L	10	-	800
Turbidity	NTU	0.10	-	10.6
Alkalinity, Total (as CaCO3)	mg/L	1.0	-	39.1
Ammonia, Total (as N)	mg/L	0.10/0.10	-	2.66
Chloride (Cl)	mg/L	2.5/0.50	-	29.2
Fluoride (F)	mg/L	0.10/0.020	-	<0.10
Nitrate (as N)	mg/L	0.10/0.020	-	11.9
Total Kjeldahl Nitrogen	mg/L	0.050	-	3.71
Phosphorus, Total	mg/L	0.0030	-	<0.0030
Sulfate (SO4)	mg/L	1.5/0.30	-	489
Dissolved Organic Carbon	mg/L	0.50	-	3.31
Total Organic Carbon	mg/L	0.50	-	3.73
Aluminum (Al)-Total	mg/L	0.050/0.0050	-	<0.050
Antimony (Sb)-Total	mg/L	0.0010/0.00010	-	<0.0010
Arsenic (As)-Total	mg/L	0.0010/0.00010	0.50	<0.0010
Barium (Ba)-Total	mg/L	0.0010/0.00010	-	0.0134
Beryllium (Be)-Total	mg/L	0.0010/0.00010	-	<0.0010
Bismuth (Bi)-Total	mg/L	0.00050/0.000050	-	<0.00050
Boron (B)-Total	mg/L	0.10/0.010	-	<0.10
Cadmium (Cd)-Total	mg/L	0.000050/0.0000050	-	<0.000050
Calcium (Ca)-Total	mg/L	0.50/0.050	-	48.2
Cesium (Cs)-Total	mg/L	0.00010/0.000010	-	<0.00010
Chromium (Cr)-Total	mg/L	0.0050/0.00050	-	<0.0050
Cobalt (Co)-Total	mg/L	0.0010/0.00010		0.0033
Copper (Cu)-Total	mg/L	0.0050/0.00050	0.30	<0.0050
Iron (Fe)-Total	mg/L	0.10/0.010	-	<0.10
Lead (Pb)-Total	mg/L	0.00050/0.000050	0.20	<0.00050
Lithium (Li)-Total	mg/L	0.010/0.0010	-	0.021
Magnesium (Mg)-Total	mg/L	0.050/0.0050	-	97.6
Manganese (Mn)-Total	mg/L	0.0050/0.00050	-	1.70
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00050/0.000050	-	0.00395
Nickel (Ni)-Total	mg/L	0.0050/0.00050	0.50	0.0082
Phosphorus (P)-Total	mg/L	0.50/0.050	-	<0.50
Potassium (K)-Total	mg/L	0.50/0.050	-	10.5
Rubidium (Rb)-Total	mg/L	0.0020/0.00020	-	0.0118
Selenium (Se)-Total	mg/L	0.00050/0.000050	-	0.00157
Silicon (Si)-Total	mg/L	1.0/0.10	-	1.1
Silver (Ag)-Total	mg/L	0.00050/0.000050	-	<0.00050
Sodium (Na)-Total	mg/L	0.50/0.050	-	11.4
Strontium (Sr)-Total	mg/L	0.010/0.0010	-	0.103
Sulfur (S)-Total	mg/L	5.0/0.50	-	150
Tellurium (Te)-Total	mg/L	0.0020/0.00020	-	<0.0020
Thallium (Tl)-Total	mg/L	0.00010/0.000010	-	<0.00010
Thorium (Th)-Total	mg/L	0.0010/0.00010	-	<0.0010
Tin (Sn)-Total	mg/L	0.0010/0.00010	-	<0.0010
Titanium (Ti)-Total	mg/L	0.0030/0.00030	-	<0.0030
Tungsten (W)-Total	mg/L	0.0010/0.00010	-	<0.0010
Uranium (U)-Total	mg/L	0.00010/0.000010	-	0.00525
Vanadium (V)-Total	mg/L	0.0050/0.00050	-	<0.0050
Zinc (Zn)-Total	mg/L	0.030/0.0030	0.50	<0.030
Zirconium (Zr)-Total	mg/L	0.0020/0.00020	-	<0.0020
Aluminum (Al)-Dissolved	mg/L	0.0050	-	<0.0050
Antimony (Sb)-Dissolved	mg/L	0.00010	-	0.00014
Arsenic (As)-Dissolved	mg/L	0.00010	-	0.00012
Barium (Ba)-Dissolved	mg/L	0.00010	-	0.0136
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050
Boron (B)-Dissolved	mg/L	0.010	-	0.047
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000291
Calcium (Ca)-Dissolved	mg/L	0.050	-	50.6
Cesium (Cs)-Dissolved	mg/L	0.000010	-	0.000050
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00010	-	0.00297

Table 2.15: Water Quality Results for Water Licence Monitoring Location - MS-06

Analyte	Sample ID			MS-06
	ALS Laboratory Sample ID			L2611695-1
	Sample Date & Time			2021-07-08 9:30
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00045
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	-	0.0252
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	99.4
Manganese (Mn)-Dissolved	mg/L	0.00050	-	1.67
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.00419
Nickel (Ni)-Dissolved	mg/L	0.00050	-	0.00696
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050
Potassium (K)-Dissolved	mg/L	0.050	-	10.9
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	0.0129
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.00212
Silicon (Si)-Dissolved	mg/L	0.050	-	1.14
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050
Sodium (Na)-Dissolved	mg/L	0.050	-	11.7
Strontium (Sr)-Dissolved	mg/L	0.0010	-	0.112
Sulfur (S)-Dissolved	mg/L	0.50	-	167
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	-	0.000090
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	-	0.00550
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	-	0.0071
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020
Ra-226	Bq/L	0.0058/0.0033	-	0.013
Oil and Grease, Total	mg/L	-	-	-
	-	-	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	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 2.15: Water Quality Results for Water Licence Monitoring Location - MS-06

Analyte	Sample ID			MS-0603
	ALS Laboratory Sample ID			L2611695-2
	Sample Date & Time			2021-07-08 9:30
	QA/QC Sample Type			Travel Blank
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	<1.0
Hardness (as CaCO3)	mg/L	0.50	-	<0.50
pH	pH units	0.10	6.0 - 9.5	5.74
Total Suspended Solids	mg/L	2.0	15	<2.0
Total Dissolved Solids	mg/L	10	-	<10
Turbidity	NTU	0.10	-	<0.10
Alkalinity, Total (as CaCO3)	mg/L	1.0	-	<1.0
Ammonia, Total (as N)	mg/L	0.10/0.10	-	<0.010
Chloride (Cl)	mg/L	2.5/0.50	-	<0.50
Fluoride (F)	mg/L	0.10/0.020	-	<0.020
Nitrate (as N)	mg/L	0.10/0.020	-	<0.020
Total Kjeldahl Nitrogen	mg/L	0.050	-	<0.050
Phosphorus, Total	mg/L	0.0030	-	<0.0030
Sulfate (SO4)	mg/L	1.5/0.30	-	<0.30
Dissolved Organic Carbon	mg/L	0.50	-	0.60
Total Organic Carbon	mg/L	0.50	-	1.01
Aluminum (Al)-Total	mg/L	0.050/0.0050	-	<0.0050
Antimony (Sb)-Total	mg/L	0.0010/0.00010	-	<0.00010
Arsenic (As)-Total	mg/L	0.0010/0.00010	0.50	<0.00010
Barium (Ba)-Total	mg/L	0.0010/0.00010	-	<0.00010
Beryllium (Be)-Total	mg/L	0.0010/0.00010	-	<0.00010
Bismuth (Bi)-Total	mg/L	0.00050/0.000050	-	<0.000050
Boron (B)-Total	mg/L	0.10/0.010	-	<0.010
Cadmium (Cd)-Total	mg/L	0.000050/0.0000050	-	<0.0000050
Calcium (Ca)-Total	mg/L	0.50/0.050	-	<0.050
Cesium (Cs)-Total	mg/L	0.00010/0.000010	-	<0.000010
Chromium (Cr)-Total	mg/L	0.0050/0.00050	-	<0.00050
Cobalt (Co)-Total	mg/L	0.0010/0.00010	-	<0.00010
Copper (Cu)-Total	mg/L	0.0050/0.00050	0.30	<0.00050
Iron (Fe)-Total	mg/L	0.10/0.010	-	<0.010
Lead (Pb)-Total	mg/L	0.00050/0.000050	0.20	<0.000050
Lithium (Li)-Total	mg/L	0.010/0.0010	-	<0.0010
Magnesium (Mg)-Total	mg/L	0.050/0.0050	-	0.0112
Manganese (Mn)-Total	mg/L	0.0050/0.00050	-	<0.00050
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00050/0.000050	-	<0.000050
Nickel (Ni)-Total	mg/L	0.0050/0.00050	0.50	<0.00050
Phosphorus (P)-Total	mg/L	0.50/0.050	-	<0.050
Potassium (K)-Total	mg/L	0.50/0.050	-	<0.050
Rubidium (Rb)-Total	mg/L	0.0020/0.00020	-	<0.00020
Selenium (Se)-Total	mg/L	0.00050/0.000050	-	<0.000050
Silicon (Si)-Total	mg/L	1.0/0.10	-	<0.10
Silver (Ag)-Total	mg/L	0.00050/0.000050	-	<0.000050
Sodium (Na)-Total	mg/L	0.50/0.050	-	<0.050
Strontium (Sr)-Total	mg/L	0.010/0.0010	-	<0.0010
Sulfur (S)-Total	mg/L	5.0/0.50	-	<0.50
Tellurium (Te)-Total	mg/L	0.0020/0.00020	-	<0.00020
Thallium (Tl)-Total	mg/L	0.00010/0.000010	-	<0.000010
Thorium (Th)-Total	mg/L	0.0010/0.00010	-	<0.00010
Tin (Sn)-Total	mg/L	0.0010/0.00010	-	<0.00010
Titanium (Ti)-Total	mg/L	0.0030/0.00030	-	<0.00030
Tungsten (W)-Total	mg/L	0.0010/0.00010	-	<0.00010
Uranium (U)-Total	mg/L	0.00010/0.000010	-	<0.000010
Vanadium (V)-Total	mg/L	0.0050/0.00050	-	<0.00050
Zinc (Zn)-Total	mg/L	0.030/0.0030	0.50	<0.0030
Zirconium (Zr)-Total	mg/L	0.0020/0.00020	-	<0.00020
Aluminum (Al)-Dissolved	mg/L	0.0050	-	<0.0050
Antimony (Sb)-Dissolved	mg/L	0.00010	-	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010
Barium (Ba)-Dissolved	mg/L	0.00010	-	<0.00010
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050
Boron (B)-Dissolved	mg/L	0.010	-	<0.010
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	<0.0000050
Calcium (Ca)-Dissolved	mg/L	0.050	-	<0.050
Cesium (Cs)-Dissolved	mg/L	0.000010	-	<0.000010
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00010	-	<0.00010

Table 2.15: Water Quality Results for Water Licence Monitoring Location - MS-06

Analyte	Sample ID			MS-0603
	ALS Laboratory Sample ID			L2611695-2
	Sample Date & Time			2021-07-08 9:30
	QA/QC Sample Type			Travel Blank
	Units	LOR	Criteria ¹	
Copper (Cu)-Dissolved	mg/L	0.00020	-	<0.00020
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	-	<0.0010
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	<0.0050
Manganese (Mn)-Dissolved	mg/L	0.00050	-	<0.00050
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	<0.000050
Nickel (Ni)-Dissolved	mg/L	0.00050	-	<0.00050
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050
Potassium (K)-Dissolved	mg/L	0.050	-	<0.050
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	<0.00020
Selenium (Se)-Dissolved	mg/L	0.000050	-	<0.000050
Silicon (Si)-Dissolved	mg/L	0.050	-	<0.050
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050
Sodium (Na)-Dissolved	mg/L	0.050	-	<0.050
Strontium (Sr)-Dissolved	mg/L	0.0010	-	<0.0010
Sulfur (S)-Dissolved	mg/L	0.50	-	<0.50
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	-	<0.000010
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	-	<0.000010
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	-	<0.0010
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020
Ra-226	Bq/L	0.0058/0.0033	-	<0.0033
Oil and Grease, Total	mg/L	-	-	-
	-	-	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 10: Effluent Quality Discharge Limits for Open Pit, Stockpiles and Sedimentati

Table 2.16: Water Quality Results for Water Licence Monitoring Location - MS-07

Analyte	Sample ID			MS-07
	ALS Laboratory Sample ID			L2611689-1
	Sample Date & Time			2021-07-08 11:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	399
Hardness (as CaCO ₃)	mg/L	0.50	-	176
pH	pH units	0.10	6.0 - 9.5	7.56
Total Suspended Solids	mg/L	2.0	15	<2.0
Total Dissolved Solids	mg/L	10	-	265
Turbidity	NTU	0.10	-	1.59
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	31.1
Ammonia, Total (as N)	mg/L	0.010	-	0.340
Chloride (Cl)	mg/L	0.50	-	3.54
Fluoride (F)	mg/L	0.020	-	0.117
Nitrate (as N)	mg/L	0.020	-	5.99
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.860
Phosphorus, Total	mg/L	0.0030	-	<0.0030
Sulfate (SO ₄)	mg/L	0.30	-	134
Dissolved Organic Carbon	mg/L	0.50	-	2.19
Total Organic Carbon	mg/L	0.50	-	2.42
Aluminum (Al)-Total	mg/L	0.0050	-	0.0435
Antimony (Sb)-Total	mg/L	0.00010	-	0.00013
Arsenic (As)-Total	mg/L	0.00010	0.50	<0.00010
Barium (Ba)-Total	mg/L	0.00010	-	0.0153
Beryllium (Be)-Total	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Total	mg/L	0.000050	-	<0.000050
Boron (B)-Total	mg/L	0.010	-	0.016
Cadmium (Cd)-Total	mg/L	0.0000050	-	0.0000233
Calcium (Ca)-Total	mg/L	0.050	-	24.8
Cesium (Cs)-Total	mg/L	0.000010	-	<0.000010
Chromium (Cr)-Total	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Total	mg/L	0.00010	-	0.00062
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00090
Iron (Fe)-Total	mg/L	0.010	-	0.042
Lead (Pb)-Total	mg/L	0.000050	0.20	0.000071
Lithium (Li)-Total	mg/L	0.0010	-	0.0050
Magnesium (Mg)-Total	mg/L	0.0050	-	28.0
Manganese (Mn)-Total	mg/L	0.00050	-	0.0421
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.00729
Nickel (Ni)-Total	mg/L	0.00050	0.50	0.00061
Phosphorus (P)-Total	mg/L	0.050	-	<0.050
Potassium (K)-Total	mg/L	0.050	-	8.47
Rubidium (Rb)-Total	mg/L	0.00020	-	0.00345
Selenium (Se)-Total	mg/L	0.000050	-	0.00114
Silicon (Si)-Total	mg/L	0.10	-	1.07
Silver (Ag)-Total	mg/L	0.000050	-	<0.000050
Sodium (Na)-Total	mg/L	0.050	-	2.83
Strontium (Sr)-Total	mg/L	0.0010	-	0.0300
Sulfur (S)-Total	mg/L	0.50	-	45.9
Tellurium (Te)-Total	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Total	mg/L	0.000010	-	<0.000010
Thorium (Th)-Total	mg/L	0.00010	-	<0.00010
Tin (Sn)-Total	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Total	mg/L	0.00030	-	0.00106
Tungsten (W)-Total	mg/L	0.00010	-	<0.00010
Uranium (U)-Total	mg/L	0.000010	-	0.00236
Vanadium (V)-Total	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Total	mg/L	0.0030	0.50	<0.0030
Zirconium (Zr)-Total	mg/L	0.00020	-	<0.00020
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0192
Antimony (Sb)-Dissolved	mg/L	0.00010	-	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010
Barium (Ba)-Dissolved	mg/L	0.00010	-	0.0155
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050
Boron (B)-Dissolved	mg/L	0.010	-	0.016
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000244
Calcium (Ca)-Dissolved	mg/L	0.050	-	25.7
Cesium (Cs)-Dissolved	mg/L	0.000010	-	<0.000010
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00010	-	0.00055

Table 2.16: Water Quality Results for Water Licence Monitoring Location - MS-07

Analyte	Sample ID			MS-07
	ALS Laboratory Sample ID			L2611689-1
	Sample Date & Time			2021-07-08 11:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00080
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	-	0.0047
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	27.2
Manganese (Mn)-Dissolved	mg/L	0.00050	-	0.0372
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.00736
Nickel (Ni)-Dissolved	mg/L	0.00050	-	<0.00050
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050
Potassium (K)-Dissolved	mg/L	0.050	-	8.35
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	0.00334
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.00133
Silicon (Si)-Dissolved	mg/L	0.050	-	1.01
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050
Sodium (Na)-Dissolved	mg/L	0.050	-	2.72
Strontium (Sr)-Dissolved	mg/L	0.0010	-	0.0308
Sulfur (S)-Dissolved	mg/L	0.50	-	47.2
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	-	<0.000010
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	-	0.00242
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	-	0.0010
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020
Ra-226	Bq/L	0.0064/0.0035	-	0.0068
Oil and Grease, Total	mg/L	-	-	-
	-	-	No Visible Sheen	No Visible Sheen
Acute Toxicity	-	-	Not Acutely Toxic	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 2.16: Water Quality Results for Water Licence Monitoring Location - MS-07

Analyte	Sample ID			MS-0702
	ALS Laboratory Sample ID			L2611689-2
	Sample Date & Time			2021-07-08 11:45
	QA/QC Sample Type			Field Duplicate
	Units	LOR	Criteria ¹	
Conductivity	umhos/cm	1.0	-	402
Hardness (as CaCO ₃)	mg/L	0.50	-	175
pH	pH units	0.10	6.0 - 9.5	7.58
Total Suspended Solids	mg/L	2.0	15	<2.0
Total Dissolved Solids	mg/L	10	-	274
Turbidity	NTU	0.10	-	1.62
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	31.3
Ammonia, Total (as N)	mg/L	0.010	-	0.336
Chloride (Cl)	mg/L	0.50	-	3.55
Fluoride (F)	mg/L	0.020	-	0.116
Nitrate (as N)	mg/L	0.020	-	6.00
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.910
Phosphorus, Total	mg/L	0.0030	-	<0.0030
Sulfate (SO ₄)	mg/L	0.30	-	134
Dissolved Organic Carbon	mg/L	0.50	-	2.26
Total Organic Carbon	mg/L	0.50	-	2.50
Aluminum (Al)-Total	mg/L	0.0050	-	0.0563
Antimony (Sb)-Total	mg/L	0.00010	-	0.00013
Arsenic (As)-Total	mg/L	0.00010	0.50	<0.00010
Barium (Ba)-Total	mg/L	0.00010	-	0.0152
Beryllium (Be)-Total	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Total	mg/L	0.000050	-	<0.000050
Boron (B)-Total	mg/L	0.010	-	0.017
Cadmium (Cd)-Total	mg/L	0.0000050	-	0.0000210
Calcium (Ca)-Total	mg/L	0.050	-	25.0
Cesium (Cs)-Total	mg/L	0.000010	-	<0.000010
Chromium (Cr)-Total	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Total	mg/L	0.00010	-	0.00062
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00109
Iron (Fe)-Total	mg/L	0.010	-	0.057
Lead (Pb)-Total	mg/L	0.000050	0.20	0.000081
Lithium (Li)-Total	mg/L	0.0010	-	0.0050
Magnesium (Mg)-Total	mg/L	0.0050	-	28.2
Manganese (Mn)-Total	mg/L	0.00050	-	0.0427
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.00729
Nickel (Ni)-Total	mg/L	0.00050	0.50	0.00060
Phosphorus (P)-Total	mg/L	0.050	-	<0.050
Potassium (K)-Total	mg/L	0.050	-	8.48
Rubidium (Rb)-Total	mg/L	0.00020	-	0.00341
Selenium (Se)-Total	mg/L	0.000050	-	0.00121
Silicon (Si)-Total	mg/L	0.10	-	1.11
Silver (Ag)-Total	mg/L	0.000050	-	<0.000050
Sodium (Na)-Total	mg/L	0.050	-	2.82
Strontium (Sr)-Total	mg/L	0.0010	-	0.0299
Sulfur (S)-Total	mg/L	0.50	-	46.5
Tellurium (Te)-Total	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Total	mg/L	0.000010	-	<0.000010
Thorium (Th)-Total	mg/L	0.00010	-	<0.00010
Tin (Sn)-Total	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Total	mg/L	0.00030	-	0.00184
Tungsten (W)-Total	mg/L	0.00010	-	<0.00010
Uranium (U)-Total	mg/L	0.000010	-	0.00236
Vanadium (V)-Total	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Total	mg/L	0.0030	0.50	<0.0030
Zirconium (Zr)-Total	mg/L	0.00020	-	<0.00020
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0189
Antimony (Sb)-Dissolved	mg/L	0.00010	-	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010
Barium (Ba)-Dissolved	mg/L	0.00010	-	0.0152
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050
Boron (B)-Dissolved	mg/L	0.010	-	0.016
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000231
Calcium (Ca)-Dissolved	mg/L	0.050	-	25.7
Cesium (Cs)-Dissolved	mg/L	0.000010	-	<0.000010
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00010	-	0.00055

Table 2.16: Water Quality Results for Water Licence Monitoring Location - MS-07

Analyte	Sample ID			MS-0702
	ALS Laboratory Sample ID			L2611689-2
	Sample Date & Time			2021-07-08 11:45
	QA/QC Sample Type			Field Duplicate
	Units	LOR	Criteria ¹	
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00064
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	-	0.0048
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	26.9
Manganese (Mn)-Dissolved	mg/L	0.00050	-	0.0366
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.00744
Nickel (Ni)-Dissolved	mg/L	0.00050	-	<0.00050
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050
Potassium (K)-Dissolved	mg/L	0.050	-	8.34
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	0.00348
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.00131
Silicon (Si)-Dissolved	mg/L	0.050	-	1.02
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050
Sodium (Na)-Dissolved	mg/L	0.050	-	2.69
Strontium (Sr)-Dissolved	mg/L	0.0010	-	0.0315
Sulfur (S)-Dissolved	mg/L	0.50	-	47.1
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	-	<0.000010
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	-	0.00242
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	-	<0.0010
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020
Ra-226	Bq/L	0.0064/0.0035	-	<0.0035
Oil and Grease, Total	mg/L	-	-	-
	-	-	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 10: Effluent Quality Discharge Limits for Open Pit, Stockpiles and Sedi

Table 2.17: Water Quality Results for Water Licence Monitoring Location - MS-08

Analyte	Sample ID			MS-08	MS-0802
	ALS Laboratory Sample ID			L2611670-1	L2611670-2
	Sample Date & Time			2021-07-08 13:05	2021-07-08 13:05
	QA/QC Sample Type			N/A	Field Blank
	Units	LOR	Criteria ¹		
Conductivity	umhos/cm	1.0	-	943	<1.0
Hardness (as CaCO3)	mg/L	0.50	-	520	<0.50
pH	pH units	0.10	6.0 - 9.5	8.04	5.62
Total Suspended Solids	mg/L	2.0	15	13.0	<2.0
Total Dissolved Solids	mg/L	10	-	772	20
Turbidity	NTU	0.10	-	8.45	<0.10
Alkalinity, Total (as CaCO3)	mg/L	1.0	-	10.4	<1.0
Ammonia, Total (as N)	mg/L	0.10/0.010	-	1.09	<0.010
Chloride (Cl)	mg/L	0.50	-	3.94	<0.50
Fluoride (F)	mg/L	0.020	-	0.076	<0.020
Nitrate (as N)	mg/L	0.020	-	7.13	<0.020
Total Kjeldahl Nitrogen	mg/L	0.050	-	1.46	<0.050
Phosphorus, Total	mg/L	0.0030	-	<0.0030	<0.0030
Sulfate (SO4)	mg/L	0.300000	-	472	<0.30
Dissolved Organic Carbon	mg/L	0.50	-	1.87	<0.50
Total Organic Carbon	mg/L	0.50	-	1.42	0.87
Aluminum (Al)-Total	mg/L	0.050/0.0050	-	0.202	<0.0050
Antimony (Sb)-Total	mg/L	0.0010/0.00010	-	<0.0010	<0.00010
Arsenic (As)-Total	mg/L	0.0010/0.00010	0.50	<0.0010	<0.00010
Barium (Ba)-Total	mg/L	0.0010/0.00010	-	0.0093	<0.00010
Beryllium (Be)-Total	mg/L	0.0010/0.00010	-	<0.0010	<0.00010
Bismuth (Bi)-Total	mg/L	0.00050/0.000050	-	<0.00050	<0.000050
Boron (B)-Total	mg/L	0.10/0.010	-	<0.10	<0.010
Cadmium (Cd)-Total	mg/L	0.000050/0.0000050	-	<0.000050	<0.0000050
Calcium (Ca)-Total	mg/L	0.50/0.050	-	50	<0.050
Cesium (Cs)-Total	mg/L	0.00010/0.000010	-	<0.00010	<0.000010
Chromium (Cr)-Total	mg/L	0.0050/0.00050	-	<0.0050	<0.00050
Cobalt (Co)-Total	mg/L	0.0010/0.00010	-	0.0268	<0.00010
Copper (Cu)-Total	mg/L	0.0050/0.00050	0.30	0.0051	<0.00050
Iron (Fe)-Total	mg/L	0.10/0.010	-	2.52	<0.010
Lead (Pb)-Total	mg/L	0.00050/0.000050	0.20	<0.00050	<0.000050
Lithium (Li)-Total	mg/L	0.10/0.0010	-	<0.010	<0.0010
Magnesium (Mg)-Total	mg/L	0.050/0.0050	-	96.9	0.0382
Manganese (Mn)-Total	mg/L	0.0050/0.00050	-	2.29	<0.00050
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.00050/0.000050	-	<0.00050	<0.000050
Nickel (Ni)-Total	mg/L	0.0050/0.00050	0.50	0.0238	<0.00050
Phosphorus (P)-Total	mg/L	0.50/0.050	-	<0.50	<0.050
Potassium (K)-Total	mg/L	0.50/0.050	-	3.02	<0.050
Rubidium (Rb)-Total	mg/L	0.0020/0.00020	-	0.004	<0.00020
Selenium (Se)-Total	mg/L	0.00050/0.000050	-	0.00166	<0.000050
Silicon (Si)-Total	mg/L	1.0/0.10	-	<1.0	<0.10
Silver (Ag)-Total	mg/L	0.00050/0.000050	-	<0.00050	<0.000050
Sodium (Na)-Total	mg/L	0.50/0.050	-	1.55	<0.050
Strontium (Sr)-Total	mg/L	0.010/0.0010	-	0.135	<0.0010
Sulfur (S)-Total	mg/L	5.0/0.50	-	165	<0.50
Tellurium (Te)-Total	mg/L	0.0020/0.00020	-	<0.0020	<0.00020
Thallium (Tl)-Total	mg/L	0.00010/0.000010	-	<0.00010	<0.000010
Thorium (Th)-Total	mg/L	0.0010/0.00010	-	<0.0010	<0.00010
Tin (Sn)-Total	mg/L	0.0010/0.00010	-	<0.0010	<0.00010
Titanium (Ti)-Total	mg/L	0.0030/0.00030	-	0.003	<0.00030
Tungsten (W)-Total	mg/L	0.0010/0.00010	-	<0.0010	<0.00010
Uranium (U)-Total	mg/L	0.00010/0.000010	-	0.00054	<0.000010
Vanadium (V)-Total	mg/L	0.0050/0.00050	-	<0.0050	<0.00050
Zinc (Zn)-Total	mg/L	0.030/0.0030	0.50	<0.030	<0.0030
Zirconium (Zr)-Total	mg/L	0.0020/0.00020	-	<0.0020	<0.00020
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0434	<0.0050
Antimony (Sb)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Barium (Ba)-Dissolved	mg/L	0.00010	-	0.00859	<0.00010
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	0.010	-	0.015	<0.010
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	0.0000052	<0.0000050
Calcium (Ca)-Dissolved	mg/L	0.050	-	49.6	0.055
Cesium (Cs)-Dissolved	mg/L	0.000010	-	0.000013	<0.000010
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00010	-	0.00657	<0.00010
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00382	<0.00020
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	-	0.0117	<0.0010
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	96.1	<0.0050
Manganese (Mn)-Dissolved	mg/L	0.00050	-	1.74	<0.00050
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.000115	<0.000050
Nickel (Ni)-Dissolved	mg/L	0.00050	-	0.00795	<0.00050
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050	<0.050
Potassium (K)-Dissolved	mg/L	0.050	-	3.03	<0.050
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	0.00378	<0.00020

Table 2.17: Water Quality Results for Water Licence Monitoring Location - MS-08

Analyte	Sample ID			MS-08	MS-0802
	ALS Laboratory Sample ID			L2611670-1	L2611670-2
	Sample Date & Time			2021-07-08 13:05	2021-07-08 13:05
	QA/QC Sample Type			N/A	Field Blank
	Units	LOR	Criteria ¹		
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.00208	<0.000050
Silicon (Si)-Dissolved	mg/L	0.050	-	0.463	<0.050
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050	<0.000050
Sodium (Na)-Dissolved	mg/L	0.050	-	1.51	<0.050
Strontium (Sr)-Dissolved	mg/L	0.0010	-	0.137	<0.0010
Sulfur (S)-Dissolved	mg/L	0.50	-	170	<0.50
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	-	0.000046	<0.000010
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	-	0.000067	<0.000010
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	-	<0.0010	<0.0010
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020	<0.00020
Ra-226	Bq/L	0.0060/0.0033	-	0.0067	0.004
Oil and Grease, Total	mg/L	-	-	-	-
	-	-	No Visible Sheen	No Visible Sheen	-
Acute Toxicity	-	-	Not Acutely Toxic	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 2.18: Water Quality Results for Water Licence Monitoring Location - MS-MRY-6

Analyte	Sample ID			MS-MRY-06
	ALS Laboratory Sample ID			L2618137-2
	Sample Date & Time			2021-07-23 9:10
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	-	8.05
Total Suspended Solids	mg/L	2.0	-	31.8
Lead (Pb)-Total	mg/L	0.000050	0.001	0.000443
Oil and Grease, Total	mg/L	5.0	15.0	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Benzene	mg/L	0.00050	0.370	<0.00050
Ethylbenzene	mg/L	0.00050	0.090	<0.00050
Toluene	mg/L	0.00045	0.002	0.00088
F1 (C6-C10)	mg/L	0.10	-	<0.10
F2 (C10-C16)	mg/L	0.10	-	0.18
F3 (C16-C34)	mg/L	0.25	-	0.30
F4 (C34-C50)	mg/L	0.25	-	<0.25
Total Petroleum Hydrocarbons (TPH)	mg/L	-	-	-

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 8: Effluent Quality Discharge Limits for the Bulk Fuel Storage Facilities

Table 2.19: Water Quality Results for Water Licence Monitoring Location - MS-MRY-09

Analyte	Sample ID			MS-MRY-09	MS-MRY-09	MS-MRY-09	MS-MRY-09
	ALS Laboratory Sample ID			L2609333-1	L2614342-1	L2618103-1	L2621268-10
	Sample Date & Time			2021-07-04 8:15	2021-07-13 10:55	2021-07-21 10:35	2021-07-30 9:10
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Hardness (as CaCO ₃)	mg/L	0.5	-	44.5	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.05	7.78	7.91	7.98
Total Suspended Solids	mg/L	2.00	15	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10.0	-	90	72	60	75
Turbidity	NTU	0.10	-	1.01	2.01	1.12	0.55
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	46.2	-	-	-
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	-	-	-
Chloride (Cl)	mg/L	0.50	-	1.11	-	-	-
Fluoride (F)	mg/L	0.020	-	<0.020	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.052	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.110	-	-	-
Phosphorus, Total	mg/L	0.0030	-	<0.0030	-	-	-
Sulfate (SO ₄)	mg/L	0.30	-	2.43	-	-	-
Dissolved Organic Carbon	mg/L	0.50	-	1.69	-	-	-
Total Organic Carbon	mg/L	0.50	-	2.09	-	-	-
Aluminum (Al)-Total	mg/L	0.0050	-	0.0242	-	-	-
Arsenic (As)-Total	mg/L	0.00010	0.50	<0.00010	-	-	-
Cadmium (Cd)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-
Calcium (Ca)-Total	mg/L	0.050	-	8.83	-	-	-
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00203	-	-	-
Iron (Fe)-Total	mg/L	0.010	-	0.031	-	-	-
Lead (Pb)-Total	mg/L	0.000050	0.20	<0.000050	-	-	-
Magnesium (Mg)-Total	mg/L	0.0050	-	5.33	-	-	-
Manganese (Mn)-Total	mg/L	0.00050	-	0.00062	-	-	-
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.000491	-	-	-
Nickel (Ni)-Total	mg/L	0.00050	0.50	<0.00050	-	-	-
Potassium (K)-Total	mg/L	0.050	-	1.23	-	-	-
Selenium (Se)-Total	mg/L	0.000050	-	<0.000050	-	-	-
Sodium (Na)-Total	mg/L	0.050	-	0.418	-	-	-
Thallium (Tl)-Total	mg/L	0.000010	-	0.000012	-	-	-
Uranium (U)-Total	mg/L	0.000010	-	0.00149	-	-	-
Zinc (Zn)-Total	mg/L	0.0030	0.50	<0.0030	-	-	-
Aluminum (Al)-Dissolved	mg/L	0.0050	-	0.0076	-	-	-
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	<0.0000050	-	-	-
Calcium (Ca)-Dissolved	mg/L	0.050	-	8.95	-	-	-
Copper (Cu)-Dissolved	mg/L	0.010	-	<0.010	-	-	-
Iron (Fe)-Dissolved	mg/L	0.000050	-	<0.000050	-	-	-
Lead (Pb)-Dissolved	mg/L	0.0010	-	<0.0010	-	-	-
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	5.37	-	-	-
Manganese (Mn)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050	-	-	-
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.000495	-	-	-
Nickel (Ni)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Potassium (K)-Dissolved	mg/L	0.050	-	1.28	-	-	-
Selenium (Se)-Dissolved	mg/L	0.000050	-	0.000053	-	-	-
Sodium (Na)-Dissolved	mg/L	0.050	-	0.436	-	-	-
Thallium (Tl)-Dissolved	mg/L	0.000010	-	<0.000010	-	-	-
Uranium (U)-Dissolved	mg/L	0.000010	-	0.00147	-	-	-
Zinc (Zn)-Dissolved	mg/L	0.0010	-	0.0015	-	-	-
Oil and Grease, Total	mg/L		-	-	-	-	-
	-	-	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 10: Effluent Quality Discharge Limits for Open Pit, Stockpiles, and Sedimentation Ponds

Table 2.20: Water Quality Results for Water Licence Monitoring Location - MS-MRY-10

Analyte	Sample ID			MS-MRY-10	MS-MRY-10	MS-MRY-10	MS-MRY-10
	ALS Laboratory Sample ID			L2609728-7	L2612809-16	L2618103-2	L2621358-7
	Sample Date & Time			2021-07-05 16:20	2021-07-12 15:35	2021-07-22 16:15	2021-07-31 14:55
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Hardness (as CaCO3)	mg/L	0.50	-	124	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.42	7.75	8.32	8.34
Total Suspended Solids	mg/L	2.0	15	<2.0	2.7	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	153	124	157	128
Turbidity	NTU	0.10	-	0.13	0.33	0.17	0.19
Alkalinity, Total (as CaCO3)	mg/L	1.0	-	108	-	-	-
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	-	-	-
Chloride (Cl)	mg/L	0.50	-	11.3	-	-	-
Fluoride (F)	mg/L	0.020	-	0.028	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.022	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.130	-	-	-
Phosphorus, Total	mg/L	0.0030	-	<0.0030	-	-	-
Sulfate (SO4)	mg/L	0.30	-	10.4	-	-	-
Dissolved Organic Carbon	mg/L	0.50	-	1.13	-	-	-
Total Organic Carbon	mg/L	0.50	-	2.20	-	-	-
Aluminum (Al)-Total	mg/L	0.0050	-	0.0207	-	-	-
Antimony (Sb)-Total	mg/L	0.00010	-	0.00011	-	-	-
Arsenic (As)-Total	mg/L	0.00010	0.50	<0.00010	-	-	-
Barium (Ba)-Total	mg/L	0.00010	-	0.0148	-	-	-
Beryllium (Be)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Bismuth (Bi)-Total	mg/L	0.000050	-	<0.000050	-	-	-
Boron (B)-Total	mg/L	0.010	-	<0.010	-	-	-
Cadmium (Cd)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-
Calcium (Ca)-Total	mg/L	0.050	-	25.3	-	-	-
Cesium (Cs)-Total	mg/L	0.000010	-	<0.000010	-	-	-
Chromium (Cr)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Cobalt (Co)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Copper (Cu)-Total	mg/L	0.00050	0.30	0.00130	-	-	-
Iron (Fe)-Total	mg/L	0.010	-	0.026	-	-	-
Lead (Pb)-Total	mg/L	0.000050	0.20	<0.000050	-	-	-
Lithium (Li)-Total	mg/L	0.0010	-	0.0015	-	-	-
Magnesium (Mg)-Total	mg/L	0.0050	-	14.8	-	-	-
Manganese (Mn)-Total	mg/L	0.00050	-	0.00064	-	-	-
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-
Molybdenum (Mo)-Total	mg/L	0.000050	-	0.000311	-	-	-
Nickel (Ni)-Total	mg/L	0.00050	0.50	<0.00050	-	-	-
Phosphorus (P)-Total	mg/L	0.050	-	<0.050	-	-	-
Potassium (K)-Total	mg/L	0.050	-	1.51	-	-	-
Rubidium (Rb)-Total	mg/L	0.00020	-	0.00146	-	-	-
Selenium (Se)-Total	mg/L	0.000050	-	<0.000050	-	-	-
Silicon (Si)-Total	mg/L	0.10	-	1.26	-	-	-
Silver (Ag)-Total	mg/L	0.000050	-	<0.000050	-	-	-
Sodium (Na)-Total	mg/L	0.050	-	2.42	-	-	-
Strontium (Sr)-Total	mg/L	0.0010	-	0.0153	-	-	-
Sulfur (S)-Total	mg/L	0.50	-	3.61	-	-	-
Tellurium (Te)-Total	mg/L	0.00020	-	<0.00020	-	-	-
Thallium (Tl)-Total	mg/L	0.000010	-	<0.000010	-	-	-
Thorium (Th)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Tin (Sn)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Titanium (Ti)-Total	mg/L	0.00030	-	0.00110	-	-	-
Tungsten (W)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Uranium (U)-Total	mg/L	0.000010	-	0.00138	-	-	-
Vanadium (V)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Zinc (Zn)-Total	mg/L	0.0030	0.50	<0.0030	-	-	-
Zirconium (Zr)-Total	mg/L	0.00020	-	<0.00020	-	-	-
Aluminum (Al)-Dissolved	mg/L	0.0050	-	<0.0050	-	-	-
Antimony (Sb)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Arsenic (As)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Barium (Ba)-Dissolved	mg/L	0.00010	-	0.0143	-	-	-
Beryllium (Be)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Bismuth (Bi)-Dissolved	mg/L	0.000050	-	<0.000050	-	-	-
Boron (B)-Dissolved	mg/L	0.010	-	<0.010	-	-	-
Cadmium (Cd)-Dissolved	mg/L	0.0000050	-	<0.0000050	-	-	-
Calcium (Ca)-Dissolved	mg/L	0.050	-	25.7	-	-	-
Cesium (Cs)-Dissolved	mg/L	0.000010	-	<0.000010	-	-	-
Chromium (Cr)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Cobalt (Co)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Copper (Cu)-Dissolved	mg/L	0.00020	-	0.00104	-	-	-
Iron (Fe)-Dissolved	mg/L	0.010	-	<0.010	-	-	-
Lead (Pb)-Dissolved	mg/L	0.000050	-	<0.000050	-	-	-
Lithium (Li)-Dissolved	mg/L	0.0010	-	0.0010	-	-	-
Magnesium (Mg)-Dissolved	mg/L	0.0050	-	14.6	-	-	-
Manganese (Mn)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Mercury (Hg)-Dissolved	mg/L	0.0000050	-	<0.0000050	-	-	-
Molybdenum (Mo)-Dissolved	mg/L	0.000050	-	0.000299	-	-	-

Table 2.20: Water Quality Results for Water Licence Monitoring Location - MS-MRY-10

Analyte	Sample ID			MS-MRY-10	MS-MRY-10	MS-MRY-10	MS-MRY-10
	ALS Laboratory Sample ID			L2609728-7	L2612809-16	L2618103-2	L2621358-7
	Sample Date & Time			2021-07-05 16:20	2021-07-12 15:35	2021-07-22 16:15	2021-07-31 14:55
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Nickel (Ni)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Phosphorus (P)-Dissolved	mg/L	0.050	-	<0.050	-	-	-
Potassium (K)-Dissolved	mg/L	0.050	-	1.50	-	-	-
Rubidium (Rb)-Dissolved	mg/L	0.00020	-	0.00141	-	-	-
Selenium (Se)-Dissolved	mg/L	0.000050	-	<0.000050	-	-	-
Silicon (Si)-Dissolved	mg/L	0.050	-	1.16	-	-	-
Silver (Ag)-Dissolved	mg/L	0.000050	-	<0.000050	-	-	-
Sodium (Na)-Dissolved	mg/L	0.050	-	2.35	-	-	-
Strontium (Sr)-Dissolved	mg/L	0.0010	-	0.0155	-	-	-
Sulfur (S)-Dissolved	mg/L	0.50	-	3.75	-	-	-
Tellurium (Te)-Dissolved	mg/L	0.00020	-	<0.00020	-	-	-
Thallium (Tl)-Dissolved	mg/L	0.000010	-	<0.000010	-	-	-
Thorium (Th)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Tin (Sn)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Titanium (Ti)-Dissolved	mg/L	0.00030	-	<0.00030	-	-	-
Tungsten (W)-Dissolved	mg/L	0.00010	-	<0.00010	-	-	-
Uranium (U)-Dissolved	mg/L	0.000010	-	0.00129	-	-	-
Vanadium (V)-Dissolved	mg/L	0.00050	-	<0.00050	-	-	-
Zinc (Zn)-Dissolved	mg/L	0.0010	-	<0.0010	-	-	-
Zirconium (Zr)-Dissolved	mg/L	0.00020	-	<0.00020	-	-	-
Oil and Grease, Total	mg/L	-	-	-	-	-	-
	-	-	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 10: Effluent Quality Discharge Limits for Open Pit, Stockpiles, and Sedimentation Ponds

Table 2.21: Water Quality Results for Water Licence Monitoring Location - MS-MRY-13A

Analyte	Sample ID			MS-MRY-13A	MS-MRY-13A	MS-MRY-13A	MS-MRY-13A	MS-MRY-13A
	ALS Laboratory Sample ID			L2609333-5	L2612809-9	L2612809-10	L2615981-2	L2621268-6
	Sample Date & Time			2021-07-04 12:45	2021-07-12 11:45	2021-07-12 11:45	2021-07-19 10:35	2021-07-29 11:40
	QA/QC Sample Type			N/A	N/A	Field Duplicate	N/A	N/A
	Units	LOR	Criteria ¹					
Conductivity	umhos/cm	1.0	-	749	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.26	7.94	7.92	8.01	7.95
Total Suspended Solids	mg/L	2.0	15	<2.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	526	480	486	497	512
Turbidity	NTU	0.10	-	0.30	0.35	0.22	0.17	0.12
Alkalinity, Total (as CaCO ₃)	mg/L	1.0	-	136	-	-	-	-
Dissolved Organic Carbon	mg/L	0.50	-	4.54	-	-	-	-
Total Organic Carbon	mg/L	0.50	-	5.53	-	-	-	-
Aluminum (Al)-Total	mg/L	0.050	-	<0.050	-	-	-	-
Antimony (Sb)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-
Arsenic (As)-Total	mg/L	0.0010	0.50	<0.0010	-	-	-	-
Barium (Ba)-Total	mg/L	0.0010	-	0.0472	-	-	-	-
Beryllium (Be)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-
Bismuth (Bi)-Total	mg/L	0.00050	-	<0.00050	-	-	-	-
Boron (B)-Total	mg/L	0.10	-	1.44	-	-	-	-
Cadmium (Cd)-Total	mg/L	0.000050	-	<0.000050	-	-	-	-
Calcium (Ca)-Total	mg/L	0.50	-	65.3	-	-	-	-
Cesium (Cs)-Total	mg/L	0.00010	-	<0.00010	-	-	-	-
Chromium (Cr)-Total	mg/L	0.0050	-	<0.0050	-	-	-	-
Cobalt (Co)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-
Copper (Cu)-Total	mg/L	0.0050	0.30	<0.0050	-	-	-	-
Iron (Fe)-Total	mg/L	0.10	-	<0.10	-	-	-	-
Lead (Pb)-Total	mg/L	0.00050	0.20	<0.00050	-	-	-	-
Lithium (Li)-Total	mg/L	0.010	-	0.026	-	-	-	-
Magnesium (Mg)-Total	mg/L	0.050	-	48.9	-	-	-	-
Manganese (Mn)-Total	mg/L	0.0050	-	<0.0050	-	-	-	-
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-	-
Molybdenum (Mo)-Total	mg/L	0.00050	-	0.00056	-	-	-	-
Nickel (Ni)-Total	mg/L	0.0050	0.50	0.0125	-	-	-	-
Phosphorus (P)-Total	mg/L	0.50	-	<0.50	-	-	-	-
Potassium (K)-Total	mg/L	0.50	-	3.08	-	-	-	-
Rubidium (Rb)-Total	mg/L	0.0020	-	0.0088	-	-	-	-
Selenium (Se)-Total	mg/L	0.00050	-	<0.00050	-	-	-	-
Silicon (Si)-Total	mg/L	1.0	-	3.3	-	-	-	-
Silver (Ag)-Total	mg/L	0.00050	-	<0.00050	-	-	-	-
Sodium (Na)-Total	mg/L	0.50	-	15.2	-	-	-	-
Strontium (Sr)-Total	mg/L	0.010	-	0.055	-	-	-	-
Sulfur (S)-Total	mg/L	5.0	-	56.6	-	-	-	-
Tellurium (Te)-Total	mg/L	0.0020	-	<0.0020	-	-	-	-
Thallium (Tl)-Total	mg/L	0.00010	-	<0.00010	-	-	-	-
Thorium (Th)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-

Table 2.21: Water Quality Results for Water Licence Monitoring Location - MS-MRY-13A

Analyte	Sample ID			MS-MRY-13A	MS-MRY-13A	MS-MRY-13A	MS-MRY-13A	MS-MRY-13A
	ALS Laboratory Sample ID			L2609333-5	L2612809-9	L2612809-10	L2615981-2	L2621268-6
	Sample Date & Time			2021-07-04 12:45	2021-07-12 11:45	2021-07-12 11:45	2021-07-19 10:35	2021-07-29 11:40
	QA/QC Sample Type			N/A	N/A	Field Duplicate	N/A	N/A
	Units	LOR	Criteria ¹					
Tin (Sn)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-
Titanium (Ti)-Total	mg/L	0.0030	-	<0.0030	-	-	-	-
Tungsten (W)-Total	mg/L	0.0010	-	<0.0010	-	-	-	-
Uranium (U)-Total	mg/L	0.00010	-	0.00255	-	-	-	-
Vanadium (V)-Total	mg/L	0.0050	-	<0.0050	-	-	-	-
Zinc (Zn)-Total	mg/L	0.030	0.5	<0.030	-	-	-	-
Zirconium (Zr)-Total	mg/L	0.0020	-	<0.0020	-	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-	-	-
	-	-	No Visible Sheen	No Visible Sheen	-	-	-	-
Phenols (4AAP)	mg/L	0.0010	-	<0.0010	-	-	-	-
F1 (C6-C10)	ug/L	25	-	<25	-	-	-	-
F2 (C10-C16)	ug/L	100	-	<100	-	-	-	-
F3 (C16-C34)	ug/L	250	-	<250	-	-	-	-
F4 (C34-C50)	ug/L	250	-	<250	-	-	-	-
Total Hydrocarbons (C6-C50)	ug/L	370	-	<370	-	-	-	-

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 7: Effluent Quality Discharge Limits for the Landfill Facilities

Table 2.22: Water Quality Results for Water Licence Monitoring Location - MS-MRY-13B

Analyte	Sample ID			MS-MRY-13B	MS-MRY-13B	MS-MRY-13B	MS-MRY-13B
	ALS Laboratory Sample ID			L2609333-4	L2612809-8	L2615981-1	L2621268-5
	Sample Date & Time			2021-07-04 12:10	2021-07-12 11:20	2021-07-19 10:10	2021-07-29 11:15
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	835	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.29	8.01	8.10	8.01
Total Suspended Solids	mg/L	2.0	15	2.1	2.5	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	563	366	681	606
Turbidity	NTU	0.10	-	0.31	1.53	0.16	0.20
Alkalinity, Total (as CaCO3)	mg/L	1.0	-	135	-	-	-
Dissolved Organic Carbon	mg/L	0.50	-	4.72	-	-	-
Total Organic Carbon	mg/L	0.50	-	5.69	-	-	-
Aluminum (Al)-Total	mg/L	0.050	-	<0.050	-	-	-
Antimony (Sb)-Total	mg/L	0.0010	-	<0.0010	-	-	-
Arsenic (As)-Total	mg/L	0.0010	0.50	<0.0010	-	-	-
Barium (Ba)-Total	mg/L	0.0010	-	0.0501	-	-	-
Beryllium (Be)-Total	mg/L	0.0010	-	<0.0010	-	-	-
Bismuth (Bi)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Boron (B)-Total	mg/L	0.10	-	1.92	-	-	-
Cadmium (Cd)-Total	mg/L	0.000050	-	<0.000050	-	-	-
Calcium (Ca)-Total	mg/L	0.50	-	82.1	-	-	-
Chromium (Cr)-Total	mg/L	0.0050	-	<0.0050	-	-	-
Cobalt (Co)-Total	mg/L	0.0010	-	<0.0010	-	-	-
Copper (Cu)-Total	mg/L	0.0050	0.30	<0.0050	-	-	-
Iron (Fe)-Total	mg/L	0.10	-	<0.10	-	-	-
Lead (Pb)-Total	mg/L	0.00050	0.20	<0.00050	-	-	-
Lithium (Li)-Total	mg/L	0.010	-	0.023	-	-	-
Magnesium (Mg)-Total	mg/L	0.050	-	46.5	-	-	-
Manganese (Mn)-Total	mg/L	0.0050	-	0.0072	-	-	-
Mercury (Hg)-Total	mg/L	0.0000050	-	<0.0000050	-	-	-
Molybdenum (Mo)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Nickel (Ni)-Total	mg/L	0.0050	0.50	0.0130	-	-	-
Potassium (K)-Total	mg/L	0.50	-	3.57	-	-	-
Selenium (Se)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Silicon (Si)-Total	mg/L	1.0	-	3.2	-	-	-
Silver (Ag)-Total	mg/L	0.00050	-	<0.00050	-	-	-
Sodium (Na)-Total	mg/L	0.50	-	18.4	-	-	-
Strontium (Sr)-Total	mg/L	0.010	-	0.101	-	-	-
Thallium (Tl)-Total	mg/L	0.00010	-	<0.00010	-	-	-
Tin (Sn)-Total	mg/L	0.0010	-	<0.0010	-	-	-
Titanium (Ti)-Total	mg/L	0.0030	-	<0.0030	-	-	-
Tungsten (W)-Total	mg/L	0.0010	-	<0.0010	-	-	-
Uranium (U)-Total	mg/L	0.00010	-	0.00493	-	-	-
Vanadium (V)-Total	mg/L	0.0050	-	<0.0050	-	-	-
Zinc (Zn)-Total	mg/L	0.030	0.50	<0.030	-	-	-
Zirconium (Zr)-Total	mg/L	0.0020	-	<0.0020	-	-	-
Oil and Grease, Total	mg/L	2.0	-	<2.0	-	-	-
	-	-	No Visible Sheen	No Visible Sheen	-	-	-
Phenols (4AAP)	ug/L	0.0010	-	<0.0010	-	-	-
F1 (C6-C10)	ug/L	25	-	<25	-	-	-
F2 (C10-C16)	ug/L	100	-	<100	-	-	-
F3 (C16-C34)	ug/L	250	-	<250	-	-	-
F4 (C34-C50)	ug/L	250	-	<250	-	-	-
Total Hydrocarbons (C6-C50)	ug/L	370	-	<370	-	-	-

Notes:

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

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 7: Effluent Quality Discharge Limits for the Landfill Facilities

Table 2.23: Water Quality Results for Water Licence Monitoring Location - MS-C-A

Analyte	Sample ID			MS-C-A	MS-C-A	MS-C-A	MS-C-A	MS-C-A	MS-C-A
	ALS Laboratory Sample ID			L2609728-4	L2612809-1	L2612809-2	L2615981-9	L2621358-2	L2621358-3
	Sample Date & Time			2021-07-05 11:30	2021-07-12 8:50	2021-07-12 8:50	2021-07-19 13:40	2021-07-31 9:10	2021-07-31 9:10
	QA/QC Sample Type			N/A	N/A	Field Blank	N/A	N/A	Field Duplicate
	Units	LOR	Criteria ¹						
Conductivity	umhos/cm	1.0	-	155	-	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.14	7.80	5.54	7.91	7.87	7.88
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	<2.0	<2.0	2.9	2.5	2.5
Total Dissolved Solids	mg/L	10	-	69	88	11	128	117	120
Turbidity	NTU	0.10	-	1.15	1.16	<0.10	9.03	7.43	7.57
Ammonia, Total (as N)	mg/L	0.20	-	0.34	-	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.180	-	-	-	-	-
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 2.24: Water Quality Results for Water Licence Monitoring Location - MS-C-B

Analyte	Sample ID			MS-C-B	MS-C-B	MS-C-B	MS-C-B	MS-C-B
	ALS Laboratory Sample ID			L2609728-5	L2612809-3	L2615981-12	L2615981-14	L2621358-4
	Sample Date & Time			2021-07-05 12:05	2021-07-12 9:20	2021-07-19 14:10	2021-07-19 14:10	2021-07-31 9:45
	QA/QC Sample Type			N/A	N/A	N/A	Field Duplicate	N/A
	Units	LOR	Criteria ¹					
Conductivity	umhos/cm	1.0	-	160	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.16	7.79	7.88	7.63	7.87
Total Suspended Solids	mg/L	1.0/2.0	Grab 30, Average 15	<2.0	<2.0	2.1	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	82	101	120	133	118
Turbidity	NTU	0.10	-	1.38	1.45	10.2	10.4	8.83
Ammonia, Total (as N)	mg/L	0.010	-	0.033	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.195	-	-	-	-
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 2.25: Water Quality Results for Water Licence Monitoring Location - MS-C-C

Analyte	Sample ID			MS-C-C	MS-C-C	MS-C-C	MS-C-C
	ALS Laboratory Sample ID			L2609333-9	L2612809-7	L2615981-13	L2621268-9
	Sample Date & Time			2021-07-04 15:10	2021-07-12 10:25	2021-07-19 14:10	2021-07-29 14:05
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	930	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.18	7.82	7.92	7.93
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	5.8	2.5	<2.0
Total Dissolved Solids	mg/L	10	-	679	556	601	564
Turbidity	NTU	0.10	-	4.64	94.1	3.67	2.18
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	-	-	-
Nitrate (as N)	mg/L	0.020	-	7.40	-	-	-
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 2.26: Water Quality Results for Water Licence Monitoring Location - MS-C-D

Analyte	Sample ID			MS-C-D	MS-C-D	MS-C-D	MS-C-D	MS-C-D
	ALS Laboratory Sample ID			L2609333-7	L2609333-8	L2612809-6	L2615981-11	L2621268-8
	Sample Date & Time			2021-07-04 14:35	2021-07-04 14:35	2021-07-12 10:10	2021-07-19 13:55	2021-07-29 13:50
	QA/QC Sample Type			N/A	Field Duplicate	N/A	N/A	N/A
	Units	LOR	Criteria ¹					
Conductivity	umhos/cm	1.0	-	845	854	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.45	8.44	8.10	8.31	8.20
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	4.6	5.9	10.9	10.1	4.7
Total Dissolved Solids	mg/L	10	-	610	624	616	677	626
Turbidity	NTU	0.10	-	23.7	23.9	71.3	42.5	20.5
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	<0.010	-	-	-
Nitrate (as N)	mg/L	0.020	-	3.99	4.00	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<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 2.27: Water Quality Results for Water Licence Monitoring Location - MS-C-E

Analyte	Sample ID			MS-C-E	MS-C-E	MS-C-E	MS-C-E
	ALS Laboratory Sample ID			L2609333-6	L2612809-5	L2615981-10	L2621268-7
	Sample Date & Time			2021-07-04 14:20	2021-07-12 10:00	2021-07-19 13:45	2021-07-29 13:45
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	730	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.30	7.99	8.05	8.03
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	2.5	2.1	<2.0
Total Dissolved Solids	mg/L	10	-	537	559	672	605
Turbidity	NTU	0.10	-	4.75	11.3	5.85	3.71
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	-	-	-
Nitrate (as N)	mg/L	0.020	-	2.74	-	-	-
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 2.28: Water Quality Results for Water Licence Monitoring Location - MS-C-F

Analyte	Sample ID			MS-C-F	MS-C-F	MS-C-F	MS-C-F
	ALS Laboratory Sample ID			L2609333-10	L2612809-4	L2616345-1	L2621358-1
	Sample Date & Time			2021-07-04 16:10	2021-07-12 9:45	2021-07-21 7:45	2021-07-31 8:50
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	152	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.19	7.94	7.87	7.92
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	2.5	16.7	10.4
Total Dissolved Solids	mg/L	10	-	105	106	117	138
Turbidity	NTU	0.10	-	8.84	11.3	33.3	31.9
Ammonia, Total (as N)	mg/L	0.010	-	0.016	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.184	-	-	-
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 2.29: Water Quality Results for Water Licence Monitoring Location - MS-C-G

Analyte	Sample ID			MS-C-G	MS-C-G	MS-C-G	MS-C-G
	ALS Laboratory Sample ID			L2609333-2	L2612809-11	L2615981-7	L2621358-5
	Sample Date & Time			2021-07-04 10:30	2021-07-12 12:15	2021-07-19 12:05	2021-07-31 11:50
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	191	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.17	7.77	7.77	7.76
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	117	120	121	106
Turbidity	NTU	0.10	-	0.54	0.26	<0.10	0.17
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.693	-	-	-
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 2.30: Water Quality Results for Water Licence Monitoring Location - MS-C-H

Analyte	Sample ID			MS-C-H	MS-C-H	MS-C-H	MS-C-H
	ALS Laboratory Sample ID			L2609333-3	L2612809-12	L2615981-8	L2621358-6
	Sample Date & Time			2021-07-04 11:10	2021-07-12 12:45	2021-07-19 12:35	2021-07-31 12:20
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	187	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.29	8.10	8.06	8.17
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	111	118	100	102
Turbidity	NTU	0.10	-	0.29	0.48	0.18	0.16
Ammonia, Total (as N)	mg/L	0.010	-	0.018	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.184	-	-	-
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 2.31: Water Quality Results for Water Licence Monitoring Location - MQ-C-A

Analyte	Sample ID			MQ-C-A	MQ-C-A	MQ-C-A	MQ-C-A	MQ-C-A	MQ-C-A
	ALS Laboratory Sample ID			L2609728-1	L2609728-2	L2612809-15	L2615981-5	L2621268-1	L2621268-2
	Sample Date & Time			2021-07-05 9:30	2021-07-05 9:30	2021-07-12 15:15	2021-07-19 11:05	2021-07-29 9:40	2021-07-29 9:40
	QA/QC Sample Type			N/A	Travel Blank	N/A	N/A	N/A	Field Duplicate
	Units	LOR	Criteria ¹						
Conductivity	umhos/cm	1.0	-	211	<1.0	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.31	6.01	8.00	8.03	8.12	8.15
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	10	-	106	25	140	153	162	156
Turbidity	NTU	0.10	-	0.23	<0.10	0.72	0.19	0.20	0.19
Ammonia, Total (as N)	mg/L	0.010	-	<0.010	<0.010	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.026	<0.020	-	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<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 2.32: Water Quality Results for Water Licence Monitoring Location - MQ-C-B

Analyte	Sample ID			MQ-C-B	MQ-C-B	MQ-C-B	MQ-C-B
	ALS Laboratory Sample ID			L2609728-3	L2612809-13	L2615981-6	L2621268-4
	Sample Date & Time			2021-07-05 10:30	2021-07-12 14:05	2021-07-19 11:35	2021-07-29 10:45
	QA/QC Sample Type			N/A	N/A	N/A	N/A
	Units	LOR	Criteria ¹				
Conductivity	umhos/cm	1.0	-	287	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.33	8.06	8.14	8.14
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	5.6	10.4	5.3	<2.0
Total Dissolved Solids	mg/L	10	-	167	153	163	159
Turbidity	NTU	0.10	-	24.1	23.3	9.76	3.41
Ammonia, Total (as N)	mg/L	0.010	-	0.037	-	-	-
Nitrate (as N)	mg/L	0.020	-	2.09	-	-	-
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 2.33: Water Quality Results for Water Licence Monitoring Location - MQ-C-D

Analyte	Sample ID			MQ-C-D	MQ-C-D	MQ-C-D	MQ-C-D	MQ-C-D
	ALS Laboratory Sample ID			L2609728-6	L2612809-14	L2615981-3	L2615981-4	L2621268-3
	Sample Date & Time			2021-07-05 15:30	2021-07-12 14:40	2021-07-19 11:05	2021-07-19 11:05	2021-07-29 10:00
	QA/QC Sample Type			N/A	N/A	Travel Blank	N/A	N/A
	Units	LOR	Criteria ¹					
Conductivity	umhos/cm	1.0	-	250	-	-	-	-
pH	pH units	0.10	6.0 - 9.5	8.35	8.00	5.97	8.14	8.05
Total Suspended Solids	mg/L	2.0	Grab 30, Average 15	6.0	24.0	<2.0	11.5	9.0
Total Dissolved Solids	mg/L	10	-	132	180	<10	179	177
Turbidity	NTU	0.10	-	21.8	50.1	<0.10	25.2	21.5
Ammonia, Total (as N)	mg/L	0.010	-	0.022	-	-	-	-
Nitrate (as N)	mg/L	0.020	-	0.597	-	-	-	-
Oil and Grease, Total	mg/L	5.0	-	<5.0	-	-	-	-
	-	-	No Visible Sheen	No Visible Sheen	-	-	-	-
Acute Toxicity	-	-	Not Acutely Toxic	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 - July 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)	Km 32 Lake Milne Port Camp Daily Water Use for Domestic Purposes MP- MRY-3 (m ³)	Km 32 Lake Milne Port Camp Fresh 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)	Sludge Removed from Milne Port WTPs to PWSP at Milne Port (m ³)	Water Use for Dust Suppression from Authorized Sources (m ³)	Effluent Discharge from Mine Site Crusher Pad Sedimentation Pond (MS-06) (m ³)	Effluent Discharge from Mine Site Run of Mine Ore Stockpile Pond Stormwater (MS-07) (m ³)	Effluent Discharge from Mine Site Waste Rock Stockpile Pond (MS-08) (m ³)	Effluent Discharge from Milne Port Ore Stockpile Sedimentation Pond (East) to Milne Inlet (MP-05) (m ³)	Effluent Discharge from Milne Port Ore Stockpile Sedimentation Pond (West) to Milne Inlet (MP-06) (m ³)	Treated Oily Water from Exploration Camp Bulk Fuel Storage Facility to Tundra (MS-MRY-6) (m ³)	Effluent Discharge from Milne Port Bulk Fuel Tank Farm Facility to Milne Inlet (MP-03) (m ³)	Effluent Discharge from Milne Port Landfarm Facility to Tundra (MP-04) (m ³)
1-Jul-21	132.8	20.3	22.0	118.1	0.9	46.8	2.0	22.0	31.3	1.5	0.0	121.1	0.0	0.0	5,094.7	0.0	0.0	0.0	0.0	0.0
2-Jul-21	128.3	53.0	31.0	116.3	0.8	55.4	0.0	21.0	21.6	0.3	0.0	0.0	0.0	0.0	4,066.0	88.3	0.0	0.0	0.0	0.0
3-Jul-21	133.1	16.6	31.0	101.9	0.8	48.4	2.0	25.0	13.9	1.5	0.0	0.0	0.0	0.0	4,774.6	0.0	0.0	0.0	0.0	0.0
4-Jul-21	142.1	6.0	22.0	97.7	0.8	64.9	0.0	23.0	26.1	0.3	0.0	0.0	0.0	0.0	4,674.1	0.0	0.0	0.0	0.0	0.0
5-Jul-21	112.0	1.0	22.0	113.4	0.9	38.2	13.3	22.0	19.3	1.3	0.0	0.0	0.0	0.0	4,567.9	94.4	18.7	0.0	0.0	0.0
6-Jul-21	166.3	4.7	28.0	112.7	0.9	69.6	4.0	24.0	28.1	0.6	0.0	0.0	0.0	0.0	4,441.3	566.8	705.8	0.0	0.0	0.0
7-Jul-21	129.1	6.0	32.0	129.7	0.0	59.6	2.0	23.0	16.2	1.0	0.0	0.0	0.0	0.0	4,631.3	47.5	7.8	0.0	0.0	0.0
8-Jul-21	174.7	7.7	30.0	125.0	0.7	56.1	2.0	25.0	28.4	1.0	0.0	333.1	3.6	16.8	4,405.9	0.0	0.0	0.0	0.0	0.0
9-Jul-21	144.2	4.3	29.0	121.4	0.8	58.8	0.0	25.0	19.6	0.3	0.0	0.0	0.0	508.0	8,112.1	0.0	0.0	0.0	98.9	0.0
10-Jul-21	161.6	4.3	30.0	125.6	0.8	47.5	0.0	25.0	16.4	0.3	0.0	90.8	0.0	0.0	0.0	0.0	0.0	0.0	116.6	0.0
11-Jul-21	140.2	4.3	28.0	127.6	0.8	40.6	0.0	23.0	32.9	0.3	0.0	0.0	0.0	0.0	1,540.6	0.0	0.0	0.0	88.9	0.0
12-Jul-21	161.3	8.6	23.0	135.4	0.9	58.0	1.0	22.0	17.6	0.3	0.0	30.3	0.0	0.0	521.2	0.0	0.0	0.0	118.8	0.2
13-Jul-21	176.9	4.3	32.0	130.0	0.9	49.1	0.0	21.0	28.7	0.3	0.0	0.0	0.0	0.0	3,780.9	0.0	0.0	0.0	168.2	0.0
14-Jul-21	153.7	0.0	32.0	126.5	0.9	63.4	0.0	26.0	25.6	0.3	0.0	0.0	0.0	0.0	3,376.7	0.0	0.0	0.0	0.0	0.0
15-Jul-21	192.3	8.6	32.0	141.6	0.9	22.6	0.0	27.0	35.1	0.3	0.0	0.0	0.0	0.0	1,457.5	0.0	0.0	0.0	0.0	1.3
16-Jul-21	158.5	0.0	32.0	119.8	1.0	52.8	0.0	26.0	23.9	0.2	0.0	212.0	0.0	0.0	3,741.5	0.0	0.0	0.0	0.0	0.0
17-Jul-21	200.0	0.0	30.0	136.0	1.0	74.0	1.5	25.0	32.1	0.2	0.0	484.5	0.0	0.0	3,429.1	0.0	0.0	0.0	0.0	12.4
18-Jul-21	169.3	3.3	32.0	139.8	0.9	78.0	6.0	25.0	25.6	0.0	1.0	757.1	0.0	0.0	3,211.5	0.0	0.0	0.0	0.0	0.0
19-Jul-21	148.8	0.0	31.0	132.5	0.9	70.9	6.0	25.0	32.5	0.2	0.0	393.7	0.0	0.0	3,763.2	0.0	0.0	0.0	0.0	0.0
20-Jul-21	142.6	3.4	32.0	114.4	1.0	66.4	0.0	28.0	33.7	0.0	0.0	0.0	0.0	0.0	3,851.0	0.0	0.0	0.0	0.0	0.0
21-Jul-21	155.1	0.0	33.0	104.2	0.9	50.9	6.0	30.0	26.6	0.2	0.0	0.0	0.0	0.0	4,422.0	943.9	534.6	0.0	0.0	79.0
22-Jul-21	160.6	2.6	31.0	107.9	0.9	58.6	6.0	28.0	23.5	0.2	0.0	60.6	0.0	0.0	2,167.0	0.0	0.0	18.8	0.0	0.0
23-Jul-21	139.6	0.0	33.0	101.0	0.9	57.9	0.0	31.0	34.8	0.2	0.0	212.0	0.0	0.0	1,757.0	0.0	0.0	51.5	0.0	0.0
24-Jul-21	159.8	0.0	34.0	106.4	0.9	41.7	0.0	29.0	23.3	0.2	0.0	424.0	0.0	0.0	1,443.0	0.0	0.0	49.0	0.0	0.0
25-Jul-21	137.4	0.0	34.0	97.7	0.9	65.7	0.0	27.0	30.1	0.2	0.0	181.7	0.0	0.0	3,342.0	0.0	0.0	29.9	0.0	0.0
26-Jul-21	112.4	12.9	34.0	99.4	1.1	57.1	0.0	23.0	30.3	0.2	0.0	0.0	0.0	0.0	2,511.0	0.0	0.0	41.5	0.0	0.0
27-Jul-21	140.5	0.0	36.0	103.2	1.1	64.5	0.0	26.0	30.9	0.3	0.0	0.0	0.0	0.0	3,414.0	0.0	0.0	39.5	0.0	0.0
28-Jul-21	130.4	0.0	33.0	112.1	1.1	88.4	0.0	27.0	28.3	0.3	0.0	0.0	0.0	0.0	3,272.0	0.0	0.0	42.4	0.0	0.0
29-Jul-21	159.4	0.0	37.0	111.8	1.0	74.6	0.0	30.0	36.8	0.3	0.0	0.0	0.0	0.0	720.0	0.0	0.0	5.2	0.0	0.0
30-Jul-21	160.2	6.9	37.0	109.4	0.9	63.4	0.0	31.0	33.7	0.0	0.0	0.0	0.0	0.0	227.0	0.0	0.0	0.0	0.0	0.0
31-Jul-21	135.3	0.0	36.0	108.3	1.1	76.9	0.0	28.0	38.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4,658.3	178.9	959.0	3,626.8	27.3	1,820.8	51.8	793.0	845.0	13.6	1.0	3,300.9	3.6	524.8	96,716	1,741.0	1,266.9	277.8	591.3	93.0

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