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December 24, 2018

Licensing
Nunavut Water Board
P.O. Box 119
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Re: November 2018 – Monthly Monitoring Report for Water Licence 2AM-DOH1323

This report is comprised of monitoring requirements as set out in Part J and Schedule J of water licence 2AM-DOH1323 Amendment 1, and additional requirements from CIRNAC.

During the subject period of this report the focus of activities at Doris North was underground and surface mining, construction, ore processing, water management and environmental compliance. Sampling locations monitored under this licence (seasonally or when facilities are operational) are provided in Figure 5 at the end of this report.

In November TMAC continued with the Doris Crown Pillar Recovery activities. These activities included blasting and removal of waste rock and ore. All waste rock and ore was relocated to the permitted storage pads.

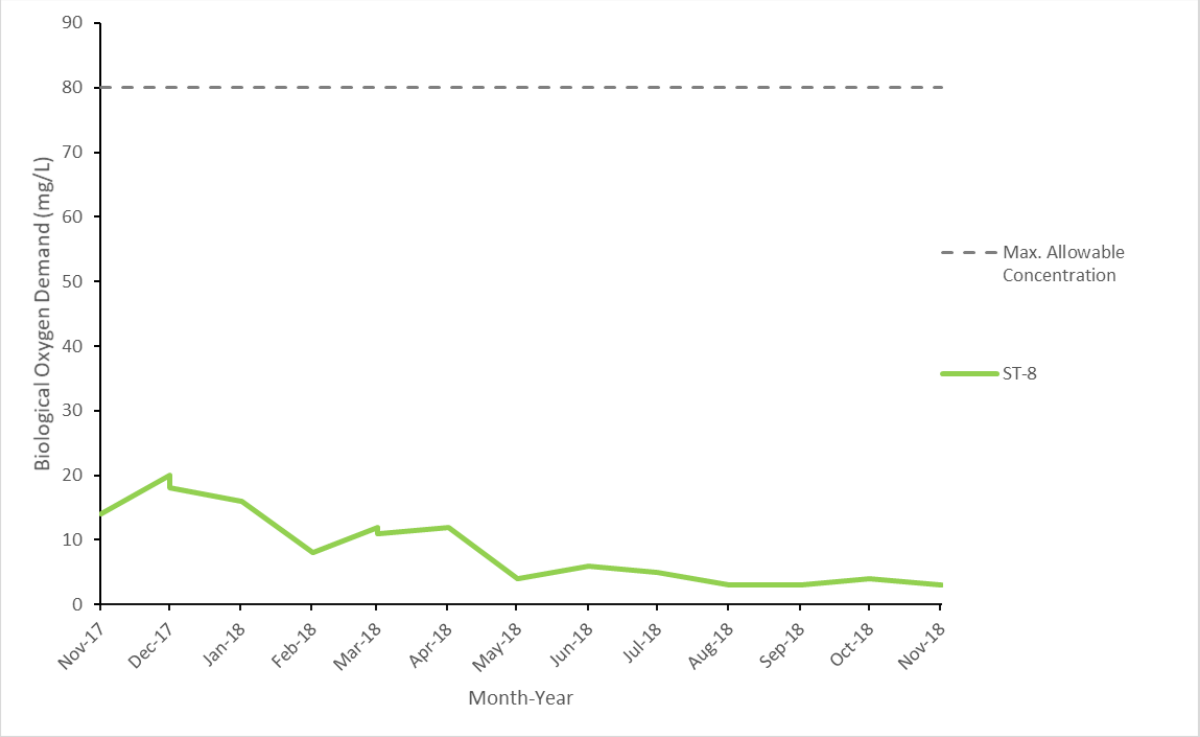
Site Wide Water Quality Monitoring Program (Part J Items 3, 8, and Schedule J)

Water quality sampling was conducted in November at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet been constructed, were frozen during the month, or were not operationally active).

All parameters were compared to the applicable effluent quality limits outlined in Part G of the licence. No exceedances of effluent quality limits were observed in any samples collected this month. Results of all water quality monitoring are provided in Appendix A attached to this report.

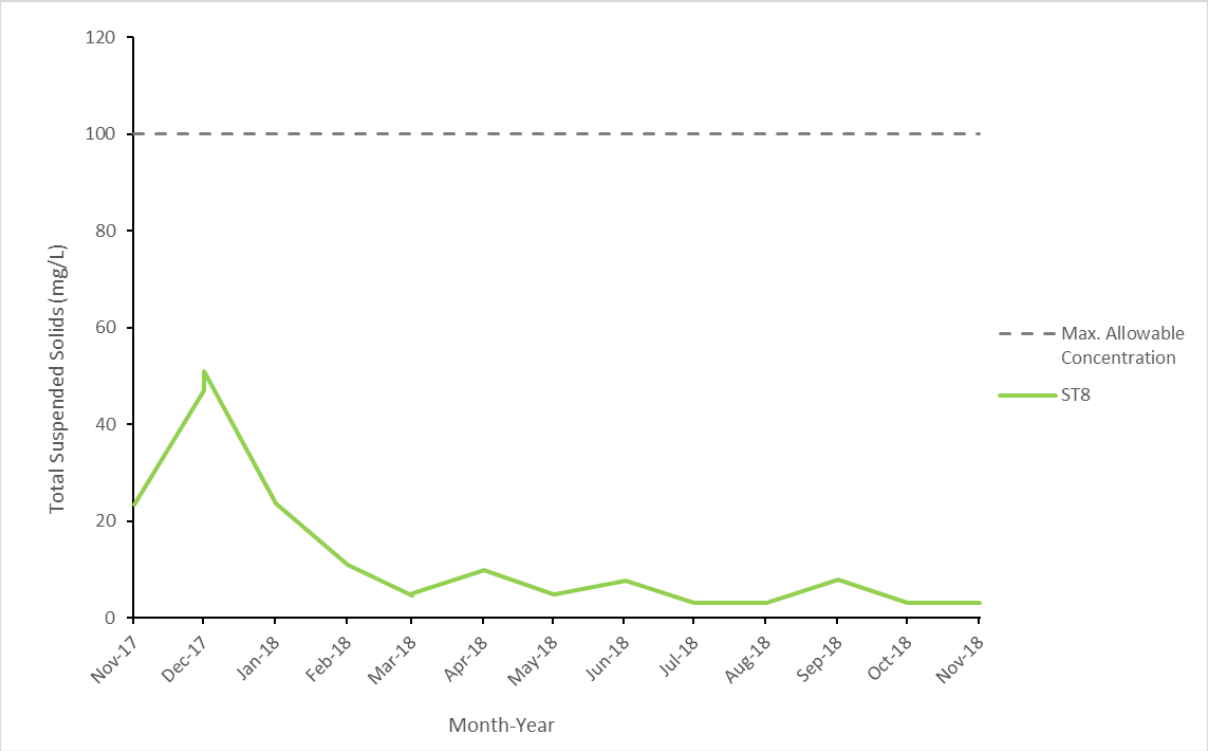
Figure 1 and 2 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

Figure 1. Biological Oxygen Demand Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST8)



Note: Maximum Average Concentration as per Part G Item 4(b).

Figure 2. Total Suspended Solids Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST8, ST8A, ST8B)



Note: Maximum Average Concentration as per Part G Item 4(b).

Flow and Volume Measurements (Part J Items 11, 12, and Schedule J)

Table 1. Effluent discharge, November 2018

Facility	Station Code	Discharge Volume (m^3)	Exceedances of Discharge Criteria	Discharge Location	Licence Reference
Sedimentation Pond	ST-1	0	N/A	Tailings Impoundment Area	Schedule J Table 2
Pollution Control Pond #1	ST-2	0	N/A	Tailings Impoundment Area	Schedule J Table 2
Landfill Sump	ST-3	0	0	Facility not constructed	Part G Item 23 (a, b, g)
Landfarm Sump	ST-4	0	0	Tundra Discharge 13W 432450 7559600	Part G Item 23 (c, d, g)
Doris Tank Farm	ST-5	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Rob Bay 5ML Tank Farm	ST-6a	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Rob Bay Three 5ML Tank Farm	ST-6b	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Wastewater Treatment Plant, Effluent	ST-8	1,187	0	Tundra Discharge 13W 432933 7559057	Part G Item 4 (b-d)
Wastewater Treatment Plant, Sewage Sludge	N/A	25.7	N/A	Tailings Impoundment Area	Part J Item 11 (g)
Reagent and Cyanide Storage Facility Sump	ST-11	0	0	Tailings Impoundment Area	Schedule J Table 2
Pollution Control Pond #2	ST-13	0	0	Facility not constructed	Schedule J Table 2
Mine Water Discharge	TL-12	22,061	N/A	Tailings Impoundment Area	Schedule J Table 2

Records of visual monitoring of discharge to tundra are maintained on file as per Part J Item 18.
Note: The Sedimentation Pond discharge line was shut down on September 18, 2018 for the winter season. Mine Water Discharge from underground is re-routed through the Mill Tailings Discharge pipeline to the Tailings Impoundment Area.

Table 2. Discharge from TIA to Doris Creek, November 2018

Month	Number of days of discharge	Discharge Volume (m^3)	Exceedances of Discharge Criteria*
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
Annual Cumulative	**0**	**0**	**0**

* Discharge criteria outlined in Part G Items 29, 30, 31 and Part J Item 8.

A comparison of flows between TL-4 and TL-2 as per Part G Item 32 of the licence was not conducted as no water was discharged from the Tailings Impoundment Area to Doris Creek this month.

Table 3. Water usage, November 2018

Month	Windy Lake (ST-7A)	Doris Lake (ST-7)					Mine Inflow	Total Usage
	Domestic Water* (m^3)	Domestic Water* (m^3)	Surface Exploration (m^3)	Industrial Usage** (m^3)	Dust Suppression (m^3)	Winter Track (m^3)	Industrial Usage ^ (m^3)	
January	1,051	0	0	0	0	119	433	1,603
February	1,277	0	0	34	0	136	0	1,447
March	1,231	0	0	29	0	0	0	1,260
April	1,208	0	0	74	0	0	0	1,282
May	1,224	0	93	46	0	0	0	1,363
June	1,115	0	4	45	669	0	0	1,833
July	1,064	0	0	78	1,863	0	0	3,005
August	1,153	0	0	67	225	0	0	1,445
September	1,144	0	0	114	0	0	0	1,258
October	1,293	0	0	42	0	8	0	1,343
November	1,265	0	0	58	0	0	0	1,323
Annual Total	13,025	0	97	587	2,757	263	433	17,162
Annual Allowance	**22,995**							**480,000**

* As permitted by water licences 2BE-HOP1222 and 2AM-DOH1323

** Includes industrial uses such as underground drilling, core processing, concrete batching, etc.

^ Discharge of groundwater inflow from mine development in the Doris Connector zone to the Tailings Impoundment Area began in February. Mine water inflow is no longer being recycled into underground sumps for use in mining activities. The volume of inflow discharged to the TIA is presented in Table 1 above.

Table 4. Volume of Reclaim Water from the TIA, November 2018

Month	Reclaim Water (m^3) *
January	82,577
February	69,744
March	78,864
April	74,638
May	76,444
June	69,120
July	66,699
August	71,186
September	65,833
October	64,395
November	66,692
Annual Cumulative	**786,461**

* As per Part J Item 11(d)
Numbers rounded to the nearest cubic meter.

Table 5. Waste Rock and Process Volumes, November 2018

Month	Waste Rock Management					Underground Void Space			Ore Processing and Tailings Management		
	Produced from Mining Activity (tonnes)*	Backfilled Directly to Underground Stopes (tonnes)*	Returned Underground from Temporary Waste Rock Pile* (tonnes)	Moved to Temporary Waste Rock Pile (tonnes)*	Cumulative on Temporary Waste Rock Pile (tonnes)	Volume Created from Mining Activities (tonnes)	Cumulative Volume Available for Backfill (tonnes)	Cumulative Volume Available for Backfill (m^3)	Quantity of Ore Processed** (tonnes)	Total Dry Tailings Placed in TIA** (tonnes)	Total Dry Cyanide Leach Tailings Placed Underground** (tonnes)
December Balance	-	-	-	-	542,884	-	774,674	277,762	-	-	-
January	22,951	25,584	0	0	542,884	16,558	791,232	283,676	25,219	23,916	1,304
February	21,415	20,308	0	1,107	543,991	22,438	813,670	291,689	27,036	25,615	1,434
March	27,092	20,360	0	6,732	550,723	24,236	837,906	300,345	31,375	30,366	1,008
April	25,068	17,536	0	7,532	558,255	22,069	859,975	308,227	33,619	32,209	1,403
May	34,829	9,392	0	25,437	583,692	40,314	900,289	322,625	28,869	27,692	1,150
June	26,985	16,856	0	10,129	593,821	31,176	931,465	333,759	25,826	24,527	1,296
July	25,330	17,480	0	7,850	601,671	28,043	959,508	343,774	31,843	30,030	1,453
August	24,420	22,648	0	1,772	603,443	19,571	979,079	350,764	45,276	42,973	2,300
September	29,216	22,424	0	6,792	610,235	34,823	1,013,902	363,201	50,645	48,426	2,219
October	97,090	25,624	0	71,446	681,701	114,297	1,128,199	404,021	58,885	57,379	1,583
November	161,749	26,496	0	135,253	816,954	189,298	1,317,497	471,627	56,564	55,253	1.319
Cumulative Total	496,145	224,708	0	274,070	816,954	542,823	1,317,497	471,627	415,157	398,386	16,469

* As per Part J Item 11(e, f)

** As per Part J Item 12.

Note: Void space created from mining activities is determined as the sum of the initial void space as calculated in March 2017 and void space created each month from mining activities. A negative volume of void space created in a month indicates that a higher volume of waste rock and dry cyanide leach tailings was returned underground compared to the volume of void space created from new mining activities. The significant increase in waste rock production and the associated void space can be attributed to the Doris Crown Pillar Recovery activities that commended in October 2018. Values associated with waste rock and underground void space have been adjusted for October due to an error in reporting.

Table 7. Doris Lake Water Level (ST-12), November 2018

Month	Minimum Water Level (masl)	Maximum Water Level (masl)	Mean Water Level (masl)	Monthly Water Level Variation (masl)**	Comparison of Mean Water Level from Month to Month (masl)^	Low Action Level Trigger (masl)*
January	21.672	21.689	21.679	0.017	0.003	21.346
February	21.674	21.689	21.681	0.015	0.002	21.346
March	21.681	21.694	21.686	0.013	0.005	21.346
April	21.680	21.692	21.687	0.012	0.001	21.346
May	21.703	21.711	21.707	0.008	0.020	21.346
June	21.709	22.389	22.073	0.680	0.366	21.346
July	21.902	22.244	22.063	0.342	-0.010	21.346
August	21.815	21.926	21.861	0.111	-0.202	21.346
September	21.755	21.781	21.764	0.026	-0.097	21.347
October	21.704	21.770	21.739	0.066	-0.025	21.347
November	21.694	21.715	21.704	0.021	-0.035	21.347

* Low action level trigger is relative to the average water level value (September 10-30, 2018) measured in Doris Lake. Low action level trigger (-0.42 m) outlined in Section 5.4 of the Doris Aquatic Effects Monitoring Plan, September 2016.

** Monthly Water Level Variation is calculated as the difference between the Maximum Water Level and the Minimum Water Level measured during the month.

^ Comparison of the change in water level from month to month. This value is calculated by subtracting the Mean Water Level of the current month from the Mean Water Level of the previous month (e.g. February Mean Water level - January Mean Water level). A positive value from this calculation indicates a rise in water level since the previous month; a negative value from this calculation indicates a drop in water level since the previous month.

Note: Water level surveys were performed in June to calibrate the two pressure transducer stations installed in Doris Lake. Based on these surveys there was an adjustment of +2.0cm to the constant added to the data to determine the water elevation. This has resulted in a 2cm step increase between the data from April and May.

Waste Management (Part G Item 12)

Empty cargo aircraft were utilized for waste backhaul from the Doris Camp. Approximately 8 totes (1m^3) of waste oil were transported to KBL Environmental in Yellowknife to arrange for final remediation/disposal.

Summary of Assessments of Water Balance and Water Quality Model (Part G Item 34)

Average monthly water quality, hydrologic, and climatic monitoring data were collected while in operations during November. Data will contribute to the assessment of the water and load balance model, and will be compared to the predicted water quality and elevation within the TIA and will be reported in the annual report for 2018.

Thermal Monitoring (Part J Items 13 and 14)

Thermal monitoring undertaken as per Part J Items 13, 14 and Schedule J is reported in the annual Geotechnical Report.

Doris North Camp Diversion Berm Effectiveness (Part J Item 19(d))

Visual monitoring was conducted during November to evaluate the diversion berm's efficacy of diverting runoff away from the camp pad. The diversion berm was observed to be functioning as per its design purpose.

Incident Reporting

No incidents pertaining to this license occurred during the month of November.

Should there be any questions regarding this monthly report, please contact enviro@tmacresources.com.

Yours sincerely,

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Cc:
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Figure 3. 2AM-DOH-1323 SNP Monitoring Locations