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**June 26, 2017**

Licensing  
Nunavut Water Board  
P.O. Box 119  
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**Re: May 2017 – Monthly Monitoring Report for Water Licence 2AM-DOH1323**

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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 INAC.

During the subject period of this report the focus of activities at Doris North was underground 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 2 at the end of this report.

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

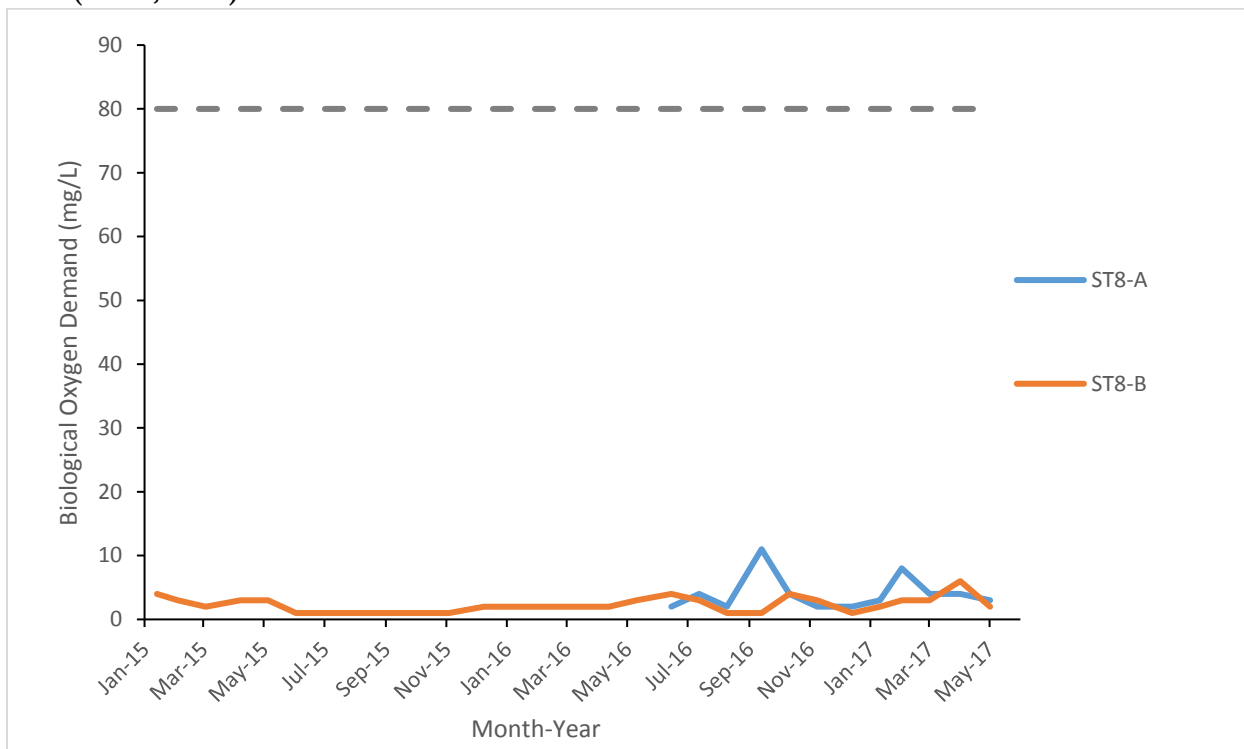
Water quality sampling was conducted in May at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet been constructed, were frozen during the month, or were not operationally active). All parameters were compared to the applicable effluent quality limits with no exceedances observed. Results of this monitoring are attached to the report in Appendix A.

Water quality samples were collected from monitoring stations ST-1 and ST-2 in accordance with Schedule J of the licence. All water collected in both the Pollution Control Pond and Sedimentation Pond were discharged to the Tailings impoundment Area (TIA).

Pre-discharge water quality samples were collected from monitoring stations ST-5, ST-6a and ST-6b in accordance with Schedule J. Analytical results received were in compliance with the effluent quality limits outlined in Part G, item 23(e). A discharge notification was submitted to the inspector on May 21, 2017 providing estimated discharge volumes and locations as per Part G, Item 1. 175 m<sup>3</sup> of complaint berm water was discharged to approved tundra locations.

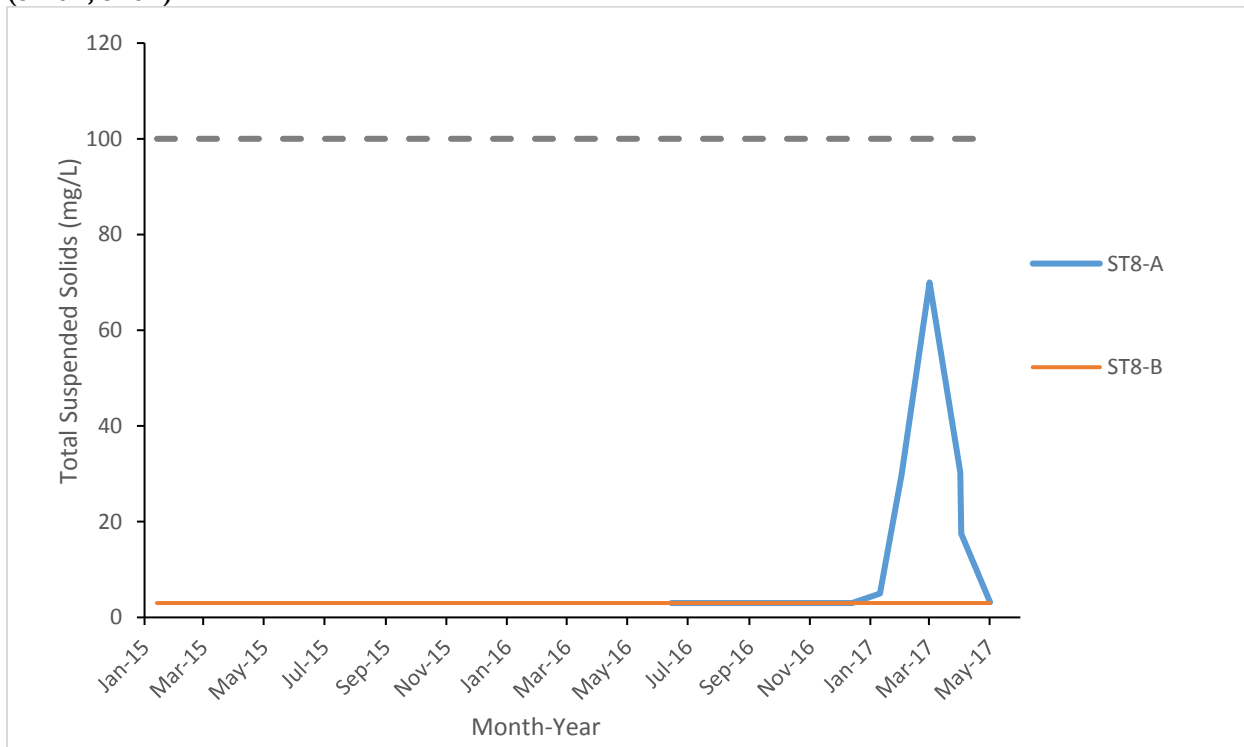
Figure 1 and 2 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

**Figure 1. Biological Oxygen Demand Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST-8A, ST8B)**



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 (ST-8A, 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, May 2017**

| Facility                                  | Station Code | Discharge Volume (m <sup>3</sup> ) | Exceedances of Discharge Criteria | Discharge Location                  | Licence Reference        |
|-------------------------------------------|--------------|------------------------------------|-----------------------------------|-------------------------------------|--------------------------|
| Sedimentation Pond                        | ST-1         | 0                                  | 0                                 | Tailings Impoundment Area           | Part G Item 22           |
| Pollution Control Pond #1                 | ST-2         | 0                                  | N/A                               | Tailings Impoundment Area           | Part G Item 22           |
| Landfill Sump                             | ST-3         | 0                                  | 0                                 | Facility not constructed            | Part G Item 24 (a, b, g) |
| Landfarm Sump                             | ST-4         | 0                                  | 0                                 | Tundra Discharge 13W 432450 7559600 | Part G Item 24 (c, d, g) |
| Doris Tank Farm                           | ST-5         | 28                                 | 0                                 | Tundra Discharge 13W 432960 7559270 | Part G Item 24 (e, f, g) |
| Rob Bay 5ML Tank Farm                     | ST-6a        | 0                                  | 0                                 | Tundra Discharge 13W 432973 7563440 | Part G Item 24 (e, f, g) |
| Rob Bay Three 5ML Tank Farm               | ST-6b        | 147                                | 0                                 | Tundra Discharge 13W 432730 7563200 | Part G Item 24 (e, f, g) |
| Wastewater Treatment Plant, Effluent      | ST-8         | 879                                | 0                                 | Tundra Discharge 13W 432933 7559057 | Part G Item 23(b-d)      |
| Wastewater Treatment Plant, Sewage Cake   | N/A          | 2.72                               | N/A                               | Tailings Impoundment Area           | Part J Item 12 (g)       |
| Reagent and Cyanide Storage Facility Sump | ST-11        | 0                                  | 0                                 | Facility not constructed            | Part G Item 23 (a)       |
| Pollution Control Pond #2                 | ST-13        | 0                                  | 0                                 | Tailings Impoundment Area           | Part G Item 22           |
| Mine Water Discharge                      | TL-12        | 0                                  | N/A                               | Tailings Impoundment Area           | Schedule J Table 2       |

Records of daily visual monitoring of discharged to tundra are maintained on file as per Part J Item 18.

**Table 2. Discharge from TIA to Doris Creek, May 2017**

| Month                    | Number of days of discharge | Discharge Volume (m <sup>3</sup> ) | Exceedances of Discharge Criteria* |
|--------------------------|-----------------------------|------------------------------------|------------------------------------|
| January                  | 0                           | 0                                  | 0                                  |
| February                 | 0                           | 0                                  | 0                                  |
| March                    | 0                           | 0                                  | 0                                  |
| April                    | 0                           | 0                                  | 0                                  |
| May                      | 0                           | 0                                  | 0                                  |
| <b>Annual Cumulative</b> | <b>0</b>                    | <b>0</b>                           | <b>0</b>                           |

\* 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 for the Tailings Impoundment Area to Doris Creek this month.

**Table 3. Water usage, May 2017**

| Month                   | Windy Lake (ST-7A)   |                          |                         |                       | Doris Lake (ST-7)    |                          |                         |                       | Total Usage    |
|-------------------------|----------------------|--------------------------|-------------------------|-----------------------|----------------------|--------------------------|-------------------------|-----------------------|----------------|
|                         | Domestic Water* (m³) | Surface Exploration (m³) | Industrial Usage** (m³) | Dust Suppression (m³) | Domestic Water* (m³) | Surface Exploration (m³) | Industrial Usage** (m³) | Dust Suppression (m³) |                |
| January                 | 849                  | 0                        | 15                      | 0                     | 0                    | 0                        | 0                       | 0                     | 864            |
| February                | 801                  | 0                        | 0                       | 0                     | 0                    | 0                        | 0                       | 0                     | 801            |
| March                   | 925                  | 1                        | 0                       | 0                     | 0                    | 0                        | 32                      | 0                     | 958            |
| April                   | 873                  | 0                        | 2                       | 0                     | 0                    | 0                        | 608                     | 0                     | 1,483          |
| May                     | 892                  | 0                        | 3                       | 0                     | 0                    | 0                        | 512                     | 32                    | 1,439          |
| <b>Annual Total</b>     | 4,340                | 1                        | 20                      | 0                     | 0                    | 0                        | 1,152                   | 32                    | 5,545          |
| <b>Annual Allowance</b> | <b>22,995</b>        |                          |                         |                       |                      |                          |                         |                       | <b>480,000</b> |

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

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

May Ice Road Development: 0m³. Cumulative total for Ice Road Development in 2017: 16m³.

**Table 4. Volume of Reclaim Water from the TIA May 2017**

| Month                    | Reclaim Water (m³) * |
|--------------------------|----------------------|
| January                  | 31,200               |
| February                 | 94,080               |
| March                    | 107,880              |
| April                    | 100,800              |
| <b>May</b>               | <b>107,880</b>       |
| <b>Annual Cumulative</b> | <b>441,840</b>       |

\* As per Part J Item 11(d)

**Table 5. Waste Rock and Process Volumes, May 2017**

| Month    | Waste Rock Stored Temporary Waste Rock Pile (tonnes)* | Waste Rock Returned Underground* (tonnes) | Quantity of Ore Processed** (tonnes) | Dry Tailings Placed in TIA** (tonnes) | Dry Cyanide Leach Tailings Placed Underground** (tonnes) | Volume of Void Space Underground (tonnes) | Volume of Void Space Underground (m³) |
|----------|-------------------------------------------------------|-------------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------------------------|-------------------------------------------|---------------------------------------|
| January  | 24,811                                                | 0                                         | 2,020                                | 600                                   | 0                                                        | -                                         | -                                     |
| February | 22,584                                                | 1,392                                     | 6,174                                | 5,927                                 | 247                                                      | -                                         | -                                     |
| March    | 23,917                                                | 5,060                                     | 11,177                               | 10,970                                | 207                                                      | 618,048                                   | 220,731                               |

|                         |         |        |        |        |       |         |         |
|-------------------------|---------|--------|--------|--------|-------|---------|---------|
| April                   | 23,437  | 11,226 | 19,058 | 17,761 | 1,297 | -162    | -58     |
| May                     | 24,341  | 7,660  | 20,867 | 20,418 | 449   | 4,269   | 1,525   |
| <b>Cumulative Total</b> | 518,057 | 25,338 | 59,296 | 55,676 | 2,200 | 622,155 | 222,198 |

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

\*\* As per Part J Item 12.

**Table 6. Doris Lake Water Level (ST-12), May 2017**

| Month    | Minimum Water Level (masl) | Maximum Water Level (masl) | Mean Water Level (masl) | Water Level Change (masl) | Low Action Level Trigger (masl)* |
|----------|----------------------------|----------------------------|-------------------------|---------------------------|----------------------------------|
| January  | 21.783                     | 21.833                     | 21.810                  | 0.049                     | 21.425                           |
| February | 21.804                     | 21.862                     | 21.831                  | 0.058                     | 21.425                           |
| March    | 21.814                     | 21.869                     | 21.837                  | 0.055                     | 21.425                           |
| April    | 21.827                     | 21.864                     | 21.850                  | 0.037                     | 21.425                           |
| May      | 21.845                     | 22.375                     | 21.929                  | 0.530                     | 21.425                           |

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

**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 May. 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 2017.

**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 May to evaluate the diversion berm's efficacy of diverting runoff away from the camp pad. The diversion was observed to be functioning as per its design purpose.

**Incident Reporting**

No incidents pertaining to this licence occurred in May.

Yours sincerely,



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Vice President, Environmental Affairs  
Hope Bay Project  
(416) 628-0216

cc. Eva Paul, Water Resources Officer, INAC

Figure 2. 2AM-DOH-1323 SNP Monitoring Locations

