NWB Annual Report **Year being reported:** 2015

License No: 2AM-DOH1323 **Issued Date:** August 16, 2013
Expiry Date: August 15, 2023

Project Name: Doris North Project

Licensee: TMAC Resources Inc.

Mailing Address:
95 Wellington St. W.
Suite 1010, PO Box 44
Toronto, Ontario M5J 2N7

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

Licence 2AM-DOH0713 was assigned from Hope Bay Mining Ltd. to TMAC Resources Inc. on June 18, 2013. This licence was renewed on Aug. 16, 2013 and renamed 2AM-DOH1323.

General Background Information on the Project (*optional):

Doris North re-entered construction phase in 2015, after a period of care and mantenance between 2012 and 2015. The Doris North underground development was also resumed in 2015, expanding on development undertaken in 2010 and 2011. The tailings impoundment area (TIA) and mill have not yet been completed and no tailings have been deposited in the TIA to date. The Doris North facilities continued to support surface drilling activities related to the Doris North mine as well as exploration driling per 2BE-HOP1222.

Licence Requirements: the licensee must provide the following information in accodance with

Part B | Item 3

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s): Doris Lake/Windy Lake

Water Quantity:

480000 cu.m/yr*	Quantity Allowable Domestic (cu.m)
6936 cu. m/yr	Actual Quantity Used Domestic (cu.m)
not specified	Quantity Allowable Drilling (cu.m)
826 cu. m/yr	Total Quantity Used Drilling (cu.m)

**Part E, Item 1 total volume from "all sources and for all purposes"*

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [x] Drill Waste
- [x] Greywater
- [x] Hazardous
- [x] Other: Containment Berm and Control Pond Effluent

Additional Details:

Water for domestic use at Doris Camp was obtained from Windy Lake. Water is drawn from the lake at the freshwater intake and trucked to Doris Camp. The Doris Lake pumphouse is not supplying domestic water to Doris Camp at this time.

Waste produced on site is treated according to Part G of the licence, and in accordance with the relevant Management Plans *(Incinerator Management Plan, Non-Hazardous Waste Management Plan, Hazardous Waste Management Plan, Ore and Waste Rock Management Plan, Landfarm Management Plan, Waste Water Treatment Management Plan, and Interim Water Management Plan*).

Some specifics are as follows:

-Food waste is burned in the incinerator as per Part G Item 5.
-Paper products, paperboard packing, and untreated wood waste is open burned as per Part G Item 6.
-TMAC is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 9. To date, a landfill has not been built. All waste that cannot be incinerated on site is backhauled to an approved facility off site or will be held for deposit in a landfill once constructed. No waste was removed from site in 2015.
-Sewage and greywater produced onsite is processed in the sewage treatment plant as per Part G Item 3. Sludge produced by the treatment plant is burned in the incinerator or disposed as outlined in the Waste Water Treatment Management Plan.
-Hazardous materials such as waste oil, glycol, and contaminated soil are shipped offsite for disposal at an approved site as per Part G Item 11.
-All containment berm effluent is sampled for water quality against the discharge criteria of the licence. Effluent that meets the standards for discharge is released in accordance with the licence following a notification to the Inspector; effluent that does not meet the licence criteria is treated onsite until it is remediated to acceptable levels for discharge, and/or it is discharged to the TIA.
-Runoff and contact seepage at site is managed in accordance with the Quarry Management and Monitoring Plan and Interim Water Management Plan.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Please see Item 9 of the attached Annual Report Supplement for a list, including details, of all unauthorized discharges that occurred in 2014 under licence 2AM-DOH1323.

Revisions to the Spill Contingency Plan

Other: (see additional details)

Additional Details:

See attached Annual Report Supplement at Item 8 for details.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

See attached Annual Report Supplement at Item 8 and 11 for details.

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

See attached Annual Report Supplement at Item 15 for details

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

Select

Additional Details: (date of request, analysis of results, data attached, etc)

N/A

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

Select

Additional Details: (Attached or provided below)

See attached Annual Report Supplement at Item 18 for details

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

See Item 18 of attached Annual Report Supplement for details on inspection action items and how these were addressed.

Any additional comments or information for the Board to consider

Please see attached supplement for additional information requirements set out in Licence No. 2AM-DOH1323.

Date Submitted:	April 26, 2016	
Submitted/Prepared by:	Katsky Venter	
Contact Information:	**Tel:**	250-538-2306
	Fax:	
	email:	katsky.venter@tmacresources.com

GPS Coordinates for water sources utilized

Source Description	UTM Easting	UTM Northing
ST-7 Doris Freshwater Intake	433598	7558710
ST-7a Windy Freshwater Intake	432529	7550500

GPS Locations of areas of waste disposal

Location Description	UTM Easting	UTM Northing
TL-1 (temp during dewatering)	434401	7559099
ST-4	432450	7559600
ST-5	432960	7559270
ST-6A	432910	7563340
ST-6B	432730	7563200
ST-8 STP Discharge	432933	7559057
ST-9 STP Tundra Discharge	430798	7559290

GPS Locations of Active Monitoring Stations not included above*

Monitoring Station	UTM Easting	UTM Northing
ST-1	7558923	433146
ST-2	7558921	432232
ST-10	various locations as required	
TL-2	434053	7559507
TL-3	434204	7559983
TL-10	434890	7558238

** Thermal monitoring locations are documented in the Annual Geotechnical Report*

2015 2AM-DOH1323 Type A Water Licence Annual Report Supplemental Document

Doris North Project

Nunavut Water Board

Prepared by
TMAC Resources Inc.
Toronto, ON

Prepared for
Nunavut Water Board
Gjoa Haven, NU

April 2016

Executive Summary
2AM-DOH1323 Annual Report

TMAC Resources Inc. ("TMAC") has filed its Annual Report on its activities during 2015 under Water Licence No. 2AM-DOH1323 issued by the Nunavut Water Board on August 16, 2013. Licence 2AM-DOH1323 is a renewal of licence 2AM-DOH0713 first issued to Miramar Hope Bay Mining Ltd. on September 19, 2007, then assigned to Hope Bay Mining Ltd. on January 23, 2008, and finally assigned to TMAC on June 18, 2013.

As set out in Schedule B, Item 1 to 19 of the Licence, the report includes information with respect to the following topics:

- summary of monthly monitoring data
- summary of the Construction Monitoring Report
- information with respect to Geochemical Monitoring and Waste Rock Storage Assessment
- summary of the results of monthly water balance and water quality model assessments
- a summary of the Geotechnical Inspection Report
- update on current capacity of the Tailings Impoundment Area
- a comparison of flows at monitoring stations TL-1, TL-2, TL-3, and TL-4
- annual review and any revisions of management plans and Emergency Response and Contingency Plan
- a list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up actions taken
- results of the Aquatic Effects Monitoring Program
- annual adjustments to reclamation security
- annual incineration stack testing results
- annual Landfill Management Report
- a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and an outline of any work anticipated for the next year
- a summary of any closure and reclamation work undertaken and an outline of any work anticipated for next year, including changes to implementation and scheduling
- a summary report describing consultation and participation with local organizations and residents of nearby communities, including a schedule of upcoming events/information sessions
- GPS locations of monitoring stations
- a summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector any other details on water use and waste disposal requested by the board

Atanguyan Naetomik Okaohen
2AM-DOH1323 Ukeotoagaagan Unipkaak

TMAC Resources Inc.-kon ("TMAC-kon") tunihihimaliktun Ukeotoagaagan Unipkaamik havaamigun 2015-mi ilagagun Imaknik Atogeagani Laeseoyum Napaani 2AM-DOH1323 toniyaohimayum Nunavumi Imalikiyin Katimayin August 16-mi 2013-mi. Laeseoyok 2AM-DOH1323 nutaguktigun laeseoyomik 2AM-DOH0713-mik tunihaolgaktok Miramar-konun September 19-mi 2007-mi, tuniyaovlonilo Hope Bay Mining-konun January 23-mi 2008-mi, kigoani toniyaohimayok TMAC-konun June 18-mi 2013-mi.

Okaotaoyomi Naonaepkotimi B-mi, Okaoheoyun 1-min 9-mun Laeseoyomi, unipkaak ilakaktok hivonikhiyutikhanik ukuniga okaoheoyun:

- naetomik okaohik tatkikheon naatkagan amigiyotinun naonaepkotin
- naetomik okaohik Hanayaolikan Amigiyotinun Unipkaak
- hivonikhiyutikhan Kuvilaaktonun Amigiyotin Ikaguniklo Oyakanik Tutkktigiveon Ihivgeoktaoniga
- naetomik okaohik kanogilinigagun tatkikheon naatkagan imakakniga imagiknigalo ilitokhaknigagun
- naetomik okaohik Nunameotanik Ihivgoekhiyotinik Unipkaak
- kanoginiga taya imiktoktaolaakniganik Atagukveom Nuna
- naonaeyaknigin kukniginik amigivikni TL-1-mi, TL-2-mi, TL-3-mi, TL-4-milo
- ukeotoagaagan ihivgoekniga nutaguktiniglo monagiyotinun oplaogaeyaotini Opaloknaktokageakalo Upiyotin Ihoakhaotilo Opalogaeyaon
- titigaknigin okateaknigilo tamaeta agiktaohimagitun kuktiyotin ila kanogaalok, kuviyomik unipkaak naonaepkun napaanik naetomiklo okaoeoyun kigoagun havaanik
- kanogilinigin Imakmeotan Aktokniginun Amigiyotinik Havaak
- ukeotoagaagan ihoakhakniga nunan otiktitaagani ilitkohenun akileotaoyaakekhimayok
- ukeotoagaagan ikulativikmin poyukniganik ilitokhaotin kanogilinigagun
- ukeotoagaagan Haohivikmik Monagiyotinik Unipkaak
- naetomik okaohik ihoakhakniginik hanaloagutiniklunen Imiktakvikmi Atagukvikmilo Pikotini, ukoalo tamaeta ilaoyun napayun kituniklo havaanik nahugikmagaa atoktukhami ukeomi
- naetomik okaohik hunamiklikaa umiktiknigagun nunalo utiktinigagun ilitkohenun havaan nahogiyaoyun atoktukhami ukeomi, ukoalo aalaguknigin atokpaleanigagun kagugulo pineaknigagun
- naetomik unipkaak okateaknigagun okakatigegutinik ilaoyotiniklo nunagiyaoyoni timeyonin inuknilo kanitomi nunagiyaoyoni, ukoalo pivikhakaknigin tikitukhan hulilogaakven hivonikhiyotiniklo okaohikaklotik katimavikhan
- GPS-mi humenigin amigiyotinun iglukpaen
- naetomik okaohik upiyotinik ihoakhiyaagani ihomalutaoyun ilakoenaelo titigakhimayun ihivgoekhonikun unipkaani maligoaknigagulo unipkaan Ihivgeokhiyomin
- anenik okateakhimayonik imaknik atoknigagun atagukveoyoniklo piyomayaenik katimayin

ᑐᓴᙳᖅᓴᑦ ᓇᐃᓅᖅᓯᒪᔪᑦ
2AM-DOH1323 ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑏᑦ ᑐᓴᙳᖅᓴᑦ

ᐅᑯᐊ TMAC Resources Inc.–ᑯᑦ ᑐᓂᓯᔪᒻᒪᑕ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐊᕐᒍᓕᒫᖅᓯᐅᑎᓂᒃ ᑐᓴᙳᖅᓴᓂᒃ ᐱᔾᔪᑎᓕᖕᓂᒃ ᐊᐅᓚᖃᑦᑕᔪᔪᓂᒃ 2015–ᒥ ᐅᑯᓂᖓ ᒪᓕᒃᓱᑎᒃ ᐱᔪᓐᓇᐅᑎᓂᒃ ᓚᐃᓴᓂᒃ No. 2AM-DOH1323 ᐱᔭᐅᔪᔪᓂᒃ ᓄᓇᕗᑦᒥ ᐃᒥᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ ᐊᐅᒡᒍᓯ 16, 2013–ᒥ. ᓚᐃᓴ 2AM-DOH1323 ᓄᑖᕈᕆᐊᖅᓯᒪᔭᖅ ᓚᐃᓴ 2AM-DOH0713 ᓱᕘᓪᓕᖅ ᑐᓂᔭᐅᔪᔪᖅ ᐅᑯᓄᖓ Miramar Hope Bay Mining Ltd.–ᑯᓐᓄᑦ ᐅᑉᓂ ᓯᑦᑕᑊᐱ 19, 2007–ᒥ, ᑐᕌᔪᔪᑦ Hope Bay Mining Ltd.–ᑯᓐᓄᑦ ᐅᑉᓂ ᔭᓐᓄᐊᕆ 23, 2008–ᒥ, ᐊᓯᐃᓪᓛᒃ ᐋᑐᑎᓕᔪᔭᖓᑦ ᐅᑯᐊ TMAC ᐅᑉᓂ 18, 2013.

ᐋᕿᒃᓯᒪᔭᖅ ᐅᑉᓂ Schedule B–ᒥ, ᐱᕝᔪᑕᐅᔪᖅ 1–ᒥᒃ ᑎᑭᑦᓱᒍ 19–ᒧᑦ ᐊᑐᖅᓱᒍ ᓚᐃᓴᖃᕈᑦ, ᑐᓴᙳᖅᓴᑦ ᑖᒃᑯᙵᙵᔪᓂᒃ ᒪᑯᓂᖓ ᐃᓚᖏᑦ ᑐᓴᙳᖅᓴᓂᒃ:

- ᑐᓴᙳᖅᓴᑦ ᓇᐃᓅᖅᓯᒪᔪᑦ ᑕᕿᑕᒫᑦ ᖃᐅᔨᓴᖅᑕᐅᕙᒃᑐᓂᒃ ᐱᕝᔪᑎᓖᑦ ᓄᐊᑕᐅᕙᒃᑐᓂᒃ
- ᑐᓴᙳᖅᓴᑦ ᓇᐃᓅᖅᓯᒪᔪᑦ ᐱᕝᔪᑎᓖᑦ ᖃᓄᖅ ᓴᓇᔭᐅᓯᒪᓂᖓᓂᒃ ᖃᐅᔨᓴᕈᑎᐅᑉ
- ᑐᓴᙳᖅᓴᑦ ᐱᕝᔪᑎᓖᑦ ᓄᓇᒥᒃ ᖃᐅᔨᓴᕈᑏᑦ ᖃᓄᖅ ᓱᕌᔪᖃᒻᒪᖖᒑᖅ ᐊᒻᒪᓗ ᐊᒃᑕᑯᓂᒃ ᐅᔭᖃᓂᒃ ᖃᐅᔨᓴᕈᑏᑦ
- ᐱᕝᔪᑎᓖᑦ ᖃᓄᐃᑦᑐᑦ ᓱᕌᕙᖓᖖᑕ ᑕᕿᑕᒫᑦ ᐃᒥᐅᑉ ᖃᓄᐃᑦᑑᓂᖓ ᓇᓕᒨᓂᖓ ᐊᒻᒪᓗ ᐃᒥᓕᕆᔾᔪᑎᑦ
- ᓇᐃᓅᖅᓯᒪᔪᑦ ᐱᕝᔪᑎᓖᑦ ᓄᓇᒥᒃ ᕿᒥᕐᕈᒍᑏᑦ ᖃᐅᔨᓴᕈᑏᑦ ᑐᓴᙳᖅᓴᑦ
- ᑐᓴᙳᖅᓴᑦ ᒫᓐᓇᕐᓂᑕᑦ ᖃᓄᐃᓪᓗᐊᖅᑎᒋᔪᑦ ᐊᒃᑕᑯᑦ ᐅᔭᖃᒃᓯᐅᕈᑎᒥᓃᑦ ᐃᓂᒥᓃᑐᑦ
- ᖃᓄᖅ ᓱᕌᒻᒪᖖᒑᖅ ᑰᖕᓂᖓᑕ ᓴᖏᓂᖓ ᖃᐅᔨᓴᖅᑕᑦ ᖃᐅᔨᓴᖅᕕᖕᓂ ᐅᑯᓇᓂ TL-1, TL-2, TL-3, TL-4
- ᐊᕐᕋᒎᑕᒫᑦ ᕿᒥᕐᕈᔭᐅᕙᒃᑐᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓐᓇᖅ ᐋᕿᒋᐊᖅᑕᐅᕙᒃᑐᑦ ᐊᐅᓚᓯᒍᑎᑦ ᐸᕐᓇᐃᒍᑎᑦ, ᑐᐊᕕᕐᓇᕐᑐᖃᓕᕐᓂᐸᓪᓗ ᐋᑐᑕᐅᕙᔭᖅᑐᑦ ᐊᒻᒪᓗ ᓇᓪᓕᐅᒃᑯᒫᑦ
- ᑎᑎᕋᖅᓯᒪᔭᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᓯᒪᔭᑦ ᑭᓱᐃᑦ ᐃᓗᓐᓇᑎᒃ ᖃᐅᔨᓴᔭᐅᓯᒪᕖᑦᑐᑦ ᑲᔪᓯᑦᓯᒍᑎᒃᑯᑦ ᒪᑯᐊ ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᖃᓄᐃᓪᓗᐊᖅᑐᑦ, ᑯᕕᔪᕕᓃᑦ ᑐᓴᙳᖅᓴᑦ ᖃᓄᖅ ᓇᓗᓇᐃᒃᑯᑕᓖᑦ ᓈᓴᐅᑎᓖᑦ ᐊᒻᒪᓗ ᓇᐃᓅᖅᓯᒪᔪᓂᒃ ᐅᓂᒃᑳᑕᓖᑦ ᐱᓕᕆᐊᕐᒋᐊᓖᑦ ᖃᓄᖅ ᐊᐅᓚᑕᐅᓗᑎᒃ
- ᖃᐅᔨᔭᐅᓂᑯᑦ ᑭᖑᕐᖓᒍᑦ ᐃᒪᕐᒥᐅᑕᑦ ᖃᓄᖅ ᓱᕋᒃᓯᒪᔪᓂᒃ ᖃᐅᔨᓴᕈᑏᑦ ᐱᓕᕆᔾᔪᑏᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᐋᕿᒋᐊᖅᑕᐅᓯᒪᔪᑦ ᓴᓗᒪᖅᓴᐃᒍᑎᑦ ᓇᓪᓕᐅᒃᑯᒫᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᐃᑭᑦᓯᕕᖓᒥ ᓄᐊᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᑦ ᑭᖑᕐᖓᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᓄᓇᒦᑦᑐᑦ ᐊᒃᑕᑯᑦ ᐊᐅᓚᓯᒍᑎᑦ ᑐᓴᙳᖅᓴᑦ
- ᓇᐃᓅᖅᓯᒪᔪᑦ ᐋᕿᒋᐊᕈᑏᑦ ᐊᒻᒪᓗ ᐅᕙᓗᑭᐊᖅ ᐊᖏᔩᑎᑦ ᐋᕿᒋᐊᖅᑕᐅᓯᒪᔪᑦ ᑲᔪᓯᓯᒪᔪᑦ ᐃᒪᖃᕈᒪᓘᖓᔪᖅ ᐊᒻᒪᓗ ᐊᒃᑕᕕᖔᕐᒥᑦᑐᑦ, ᐃᓚᖃᖅᓱᑎᒃ ᒪᑯᓂᖓ ᐃᓘᓐᓇᑎᒃ ᑖᒃᑯᙵᙵᔪᑦ ᓴᓇᔭᐅᓯᒪᓂᖓᓄᑦ ᐊᒻᒪᓗ ᖃᓄᖅ ᑭᒡᓕᖓᓅᖓᔪᑦ ᖃᓄᐃᓐᓇᖅ ᐱᓕᕆᐊᕐᒋᐊᓖᑦ ᐊᕐᕌᒍᓖᖅᑐᖅ
- ᓇᐃᓅᖅᓯᒪᔪᑦ ᑐᓴᙳᖅᓴᑦ ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᒪᑐᔭᐅᓂᐊᖅᑐᑦ ᐊᒻᒪᓗ ᓴᓗᒪᓴᖅᑕᐅᕆᐊᓖᑦ ᐱᓕᕆᐊᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᐅᕙᕆᖅᑐᑦ ᐱᓕᕆᐊᒃᓴᑦ ᓱᓕ ᖃᓄᐃᓐᓇᖅ ᐊᕐᕌᒍᖏᖅᑐᖅ, ᐃᓚᖏᑦ ᐊᓯᕈᖅᑎᕆᐊᓕᖕᓂᒃ ᐊᒻᒪᓗ ᖃᖓ ᑲᒪᒋᔭᐅᖏᖅᑐᑦ
- ᑐᓴᙳᖅᓴᑦ ᓇᐃᓅᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᑦ ᐱᒃᑯᔾᔭᐅᒍᑕᐅᕙᒃᑐᑦ ᐊᒻᒪᓗ ᐃᓚᐅᔾᔪᑕᐅᕙᒃᑐᑦ ᓄᓇᓖᑦ ᑲᑐᔾᔨᖃᑎᒌᑎᒍᑦ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂᒃ ᖃᓂᒋᔮᙱᓐᓂᒃ, ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᖃᖓ ᐱᓕᕆᐊᕐᒍᓰᑦ ᖃᓄᐃᓐᓇᖅ ᐱᕝᔪᑕᐅᕆᐊᓖᑦ ᐋᖀᕈᑕᐅᕙᒃᑐᑦ
- ᑕᒻᒪᕈᒃᑯᑎᒃᑯᑎᑦ (GPS) ᐊᑐᖅᑕᐅᖃᑦᑕᖅᑐᑦ ᓇᒥ ᖃᐅᔨᓴᖅᕕᒃᑕᓖᑦ
- ᑐᓴᙳᖅᓴᑦ ᓇᐃᓅᖅᓯᒪᔪᖅ ᖃᓄᖅ ᐊᐅᓚᑕᐅᖃᑦᑕᖅᓯᒪᔪᑦ ᐃᓱᒫᓗᕆᔭᑦ ᐅᕝᕙᓗᑭᐊᖅ ᑭᖑᓂᖅᑕᓖᑦ ᑎᑎᕋᖅᓯᒪᔭᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᑦ ᑐᓴᙳᖅᓴᓃᑦᑐᑦ ᐅᕝᕙᓗᑭᐊᖅ ᒪᓕᒃᑐᑦ ᒪᓕᒃᑕᐅᕆᐊᓕᖕᓂᒃ ᐱᕐᑯᔭᖅᑎᒍᑦ ᑐᓴᙳᖅᓴᓂᒃ ᑎᑎᕋᖅᕕᕆᓯᒪᔭᕆᑦ ᖃᐅᔨᓴᖅᑎᐅᕐᖃᓄᐃᓐᓇᖅ ᐊᓯᕆᓐᓂᒃ ᐱᕝᔪᑎᓖᑦ ᐃᒥᕐᒥᒃ ᐊᑐᖃᑦᑕᕐᓂᖅ ᐊᒻᒪᓗ ᐊᒃᑕᑯᓕᕆᔪᑦ ᐋᑐᑕᐅᖁᓯᒪᔨᕆᑦ ᑲᑎᒪᔩᑦ

Résumé opérationnel
2AM-DOH1323 Rapport annuel

TMAC Resources Inc. (« TMAC ») a déposé son rapport annuel sur ses activités au cours de l'année 2015 en conformité avec le Permis no 2AM-DOH1323 émis par l'Office des eaux du Nunavut (« Nunavut Water Board ») le 16 août 2013. Le Permis no 2AM-DOH1323 est le renouvellement du Permis 2AM-DOH0713 préalablement émis à Miramar Hope Bay Mining Ltd. le 19 septembre 2007, ce permis a par la suite été attribué à Hope Bay Mining Ltd., le 23 janvier 2008 et finalement cédé à TMAC, le 18 juin 2013.

Tel qu'énoncé à l'annexe B (« Schedule B »), point 1 à 19 du Permis no 2AM-DOH1323, le rapport comprend des renseignements sur les sujets suivants:

- un résumé des résultats mensuels du programme de surveillance
- un résumé du rapport de la surveillance des travaux de construction « Construction Monitoring Report »
- des renseignements sur les résultats du programme de surveillance géochimique et de la gestion de stockage des déchets rocheux
- un résumé des résultats mensuels du bilan hydrique et des modèles des évaluations de la qualité de l'eau et des modèles d'analyse de l'utilisation des eaux
- un résumé du rapport d'inspection géotechnique « Geotechnical Inspection Report »
- une mise à jour de la capacité de la zone du bassin d'accumulation de résidus de mine
- une comparaison des débits d'eau aux postes de surveillance TL-1, TL-2, TL-3 et TL-4
- une revue annuelle ainsi que tous ajustements des plans de gestion ainsi que du plan d'intervention en cas d'urgence et mesures exceptionnelles
- une liste et une description de tous les rejets non autorisés, y compris les volumes des rejets, les numéros de dossier attribués, ainsi que des résumés des mesures de suivi prises à la suite de ces incidents
- les résultats du programme de surveillance des répercussions sur le milieu aquatique
- l'ajustement annuel du dépôt de garantie relatif à la remise en état
- les résultats annuels de l'analyse des émissions de l'incinérateur
- un rapport annuel de gestion d'enfouissement
- un résumé des travaux d'entretien mineurs ou majeurs effectués sur les réserves d'eau potable et les installations d'élimination des déchets et de toutes leurs composantes s'y rattachant, ainsi qu'un aperçu des travaux prévus l'année suivante
- un résumé de toute fermeture et de travaux de remise en état entrepris ainsi qu'un aperçu des travaux prévus l'année suivante, y compris les modifications apportées à l'échéancier et la mise en œuvre de cette remise en état
- un aperçu décrivant la participation et la réalisation de consultations avec les organisations locales et les habitants des communautés voisines, y compris un calendrier des forums de discussion et séances d'information à venir
- les coordonnées GPS des stations de surveillance
- un résumé des mesures de suivi prises pour régler les problèmes décrits dans les rapports d'inspection et de conformité établies par l'inspecteur
- tout autre détail en lien avec l'utilisation et du traitement de l'eau et de l'évacuation des rejets, tel que demandé par l'Office

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1. Summary of monthly monitoring reporting [see Part J Item 21]

Doris Camp began 2015 in a Care and Maintenance status with water management and environmental compliance as the focus of activities. In June of 2015, the project re-entered construction as well as underground mine development. A notification of resumption of these activities was provided to the NWB and the NIRB on April 10, 2015. Construction activities in 2015 included; preparation of the mill pad and erection of the mill building (in anticipation of the arrival of the processing plant in 2016), completion of the airstrip expansion, construction of Pad T, and initiation of construction of the Tail Lake Road towards the south dam.

Some deposit definition drilling in support of the Doris North Mine was conducted and Regional exploration activities, permitted under 2BE-HOP1222, were also based out of Doris Camp in 2015. Early in the year when surface drilling was not occurring and construction had not yet been initiated, the camp was staffed with minimal personnel to maintain essential services.

During 2015, TMAC collected data from the following active or seasonally active monitoring stations: ST-1, ST-2, ST-4, ST-5, ST-6a, ST-6b, ST-7, ST-7a, ST-8, and ST-9. Site runoff monitoring from sediment controls (ST-10) was not required as construction took place upslope of water management structures that collected all runoff for deposit in the tailings impoundment area (i.e. construction of the Mill Pad and Pad T were upslope of the Sedimentation and Pollution Control Ponds) or were located such that turbid runoff to natural freshwater was not possible (e.g. the airstrip expansion). Further, all construction took place from the late summer onward, when surface water runoff was minimal to none.

Monitoring station ST-3 (Landfill Sump) was not sampled as this facility was not constructed as of 2015.

Monitoring station ST-11 (Reagent and Cyanide Storage Facility Sumps) was not sampled as this facility was not constructed as of 2015.

Dewatering of the Tailings Impoundment Area (TIA) occurred between June 30 and September 23, 2015. Monitoring was undertaken at the following TIA stations: TL-1, TL-2, TL-3, TL-4, and TL-10. In 2015, the processing plant had not yet been constructed so no ore processing occurred and no tailings were produced. As described in the Doris North Project Interim Water Management Plan, dated February 2012, the sedimentation pond (ST-1) was used as a collection pond for the water that accumulated in the pollution control pond (ST-2) and the two underflow sumps (ST2-S1 and ST2-S2). The water collected in ST-1 was then transferred to the TIA by pipeline. Sampling for criteria specified under 2AM-DOH1323 was conducted prior to and during all dewatering activities.

Monitoring associated with the mill and tailings discharge stations (TL-5 through TL-9) and underground seepage and minewater stations (TL-11 and TL-12) was not conducted as these activities did not occur or the facilities have not been constructed. Station TL-10 (water column in deepest part of the TIA) was sampled once in 2015.

All monitoring was conducted in accordance with the Hope Bay Mining Ltd. Quality Assurance and Quality Control Plan 2AM-DOH0713, 2BB-BOS1217, 2BE-HOP1222 HB-QA-ENV-MP-001, November 2012 (REV 7.1) that was found to be acceptable to an Analyst by letter dated November 27, 2012.

TMAC uses an external certified laboratory to carry out all analyses reported in the monthly and annual reports. The QA/QC data produced by ALS Canada Ltd. are used to determine the accuracy and precision of results in these reports.

Thermal monitoring was undertaken in 2015 at active ground temperature monitoring stations. Results of this monitoring are included in the annual Geotechnical Inspection report.

During open water season, visual assessments were made of suspended sediment along the perimeter of the TIA shoreline.

Conditions of the Doris North Diversion Berm's effectiveness during spring freshet, major rain events, and periods of sustained (non-frozen) precipitation were monitored and documented.

Details of all monitoring follows.

ST-1 Sedimentation Pond

This facility was constructed and first used in 2011. In 2015, during open water season, all discharges from the facility were made directly to the TIA via pipeline. All discharges from the facility were metered. Water quality samples were collected from an outlet on the discharge pump with the intake on the pump submerged approximately 0.25m below the water surface in the Sedimentation Pond. If the pump was not running, samples were collected from the pond itself. Samples were taken prior to discharge, as per Part G Item 23b, and then monthly thereafter during periods of discharge for internal monitoring purposes.

Water was transferred from ST-1 to the TIA beginning in June and continued into September. The final day of discharge from the Sedimentation Pond was September 26, 2015.

Volumes transferred to the TIA from ST-1 are summarized in Table 1. This includes water transferred from ST-2, ST2-S1, and ST2-S2 to ST-1, as described above. Results of water quality samples, collected monthly from ST-1, are summarized in Table 2. The water was found to be elevated relative to discharge to tundra criteria for three parameters: ammonia, and iron as well as zinc. However, because the water was discharged to the TIA and not to the tundra, the compliance criteria for ST-1 are not applicable. The elevated parameters are highlighted bold in Table 2 for information only.

Table 1 – Summary of Monthly Water Management Volumes for Monitoring Station ST-1, June to September 2015

Month	Monthly Volume (m^3)	Cumulative Volume (m^3)*
June	6381	6381
July	7681	14062
August	3340	17402
September	760	18162
Total Volume of Water Transferred from ST-1 (includes water from ST-2, ST2-S1, and ST2-S2) to TIA in 2015		**18,162**

**values rounded to nearest whole cubic meter*

Table 2 – Water quality monitoring program results for ST-1, May to October, 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST1-30MAY15	ST1-08JUN15	ST1-05JUL15	ST1-10AUG15	ST1-10SEP15A	ST1-10SEP15B^^	ST1-05OCT15	Part G Item 23(a)	
ALS ID		L1619268-1	L1624328-1	L1638337-1	L1656544-1	L1672060-1	L1672060-2	L1684307-1	Maximum Average Concentration (mg/L)	Max Conc. in any Grab Sample (mg/L)
Sample Date/Time		5/30/2015 9:52:00 AM	6/8/2015 4:06:00 PM	7/5/2015 5:45:00 PM	8/10/2015 11:30:00 AM	9/10/2015 5:30:00 PM	9/10/2015 5:30:00 PM	10/5/2015 10:24:00 AM		
Parameters	**Units**	**Results**								
Hardness (as CaCO3)	mg/L	348	225	373	707	1640	1640	2430		
pH	pH	7.78	7.94	8	8.04	7.93	7.95	7.8	6.0 - 9.0	9.0
Total Suspended Solids	mg/L	11.7	12.8	<3.0	<3.0	6.4	5	6.1	15.0	30.0
Alkalinity, Total (as CaCO3)	mg/L	33.6	57.2	90.2	125	129	128	135		
Ammonia, Total (as N)	mg/L	**3.38**	**2.78**	**2.67**	**5.97**	**19.9**	**20.1**	**30.9**	2.0	4.0
Bromide (Br)	mg/L	<0.50 *	0.3	<0.50 *	<1.0 *	<2.5 *	<2.5 *	4		
Chloride (Cl)	mg/L	333	201	333	642	1700	1690	2620		
Fluoride (F)	mg/L	<0.20 *	0.049	<0.20 *	<0.40 *	<1.0 *	<1.0 *	<1.0 ^		
Nitrate (as N)	mg/L	12.5	8.33	17.7	35.3	78.1	77.3	112		
Nitrite (as N)	mg/L	0.111	0.0768	0.199	0.507	0.84	0.84	0.723		
Sulfate (SO4)	mg/L	29.6	21.5	49.7	126	162	162	195		
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	1.0	2.0
Aluminum (Al)-Total	mg/L	0.365	0.568	0.165	0.0966	0.0407	0.0376	0.048	1.0	2.0
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Arsenic (As)-Total	mg/L	<0.00050	0.0005	0.0006	0.00095	0.00146	0.00091	0.00089	0.05	0.10
Barium (Ba)-Total	mg/L	0.028	<0.020	0.03	0.042	0.093	0.09	0.129		
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Boron (B)-Total	mg/L	<0.10	0.1	0.19	0.37	0.42	0.4	0.41		
Cadmium (Cd)-Total	mg/L	0.0000582	0.0000177	0.0000312	0.0000746	0.000263	0.000261	0.000442		
Calcium (Ca)-Total	mg/L	105	68	117	215	545	533	765		
Chromium (Cr)-Total	mg/L	0.0021	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Cobalt (Co)-Total	mg/L	0.00099	0.0007	0.00074	0.00215	0.00421	0.00406	0.00546		
Copper (Cu)-Total	mg/L	0.0048	0.0055	0.0063	0.0067	0.0106	0.0094	0.0065	0.02	0.30
Iron (Fe)-Total	mg/L	**0.615**	**0.684**	0.201	0.154	0.186	0.183	0.171	0.30	0.60
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00059	0.00055	<0.00050	0.01	0.02
Lithium (Li)-Total	mg/L	0.0109	0.0084	0.0138	0.0246	0.0567	0.0546	0.0778		
Magnesium (Mg)-Total	mg/L	12.6	9.73	19.9	37.3	71.1	68.6	98.1		
Manganese (Mn)-Total	mg/L	0.301	0.108	0.112	0.343	0.975	0.953	1.46		
Molybdenum (Mo)-Total	mg/L	<0.0010	0.0013	0.0021	0.005	0.0047	0.0045	0.0042		
Nickel (Ni)-Total	mg/L	0.0024	0.0016	0.0019	0.0025	0.0049	0.0047	0.007	0.05	0.10
Potassium (K)-Total	mg/L	5.3	5.5	8.5	15.7	29.8	28.9	39.2		
Selenium (Se)-Total	mg/L	0.000337	0.000295	0.000627	0.00155	0.00193	0.0019	0.00213		
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050 **		
Sodium (Na)-Total	mg/L	81.8	67.3	131	241	476	458	646		
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Titanium (Ti)-Total	mg/L	0.022	0.037	0.011	0.011	<0.010	<0.010	<0.010		
Uranium (U)-Total	mg/L	0.00024	0.00024	0.00052	0.00106	0.00125	0.0012	0.00152		
Vanadium (V)-Total	mg/L	0.00178	0.00208	0.00082	0.0008	<0.0010 **	<0.0010 **	<0.0025 **		
Zinc (Zn)-Total	mg/L	**0.0378**	**0.0171**	**0.0469**	**0.0906**	**0.141**	**0.146**	**0.2**	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	NO	No Visible Sheen	No Visible Sheen

Note: Bold text indicates that the value is above criteria for discharge to the tundra. No water from ST-1 was discharged to the tundra in 2015, all water was directed to the TIA.
** Detection Limit Adjusted due to sample matrix effects. ** Detection Limit adjusted for required dilution.*
^ Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
^^ Duplicate sample

ST-2 Pollution Control Pond

This facility was constructed in 2011. In 2015, it was active between May and October. Samples from ST-2 were collected from a depth of 0.25 m below the water surface. All water from the Pollution Control Pond was directed to the Sedimentation Pond.

Monthly water quality monitoring sampling at ST-2 occurred from May to October, as per Schedule J of the water licence. Results of the sampling are presented in Table 3.

Table 3 - Water quality monitoring program results for ST-2, May to October 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST2-30MAY15	ST2-08JUN15	ST2-05JUL15	ST2-10AUG15	ST2-10SEP15A	ST2-10SEP15B ¥¥	ST2-05OCT15
ALS ID		L1619282-1	L1624328-2	L1638337-2	L1656544-2	L1672060-3	L1672060-4	L1684307-2
Sample Date/Time		5/30/2015 9:55:00 AM	6/8/2015 3:47:00 PM	7/5/2015 5:35:00 PM	8/10/2015 11:45:00 AM	9/10/2015 7:00:00 PM	9/10/2015 7:00:00 PM	10/5/2015 11:21:00 AM
Parameter	**Unit**	**Results**						
Hardness (as CaCO3)	mg/L	340	425	656	774	2240	1950	5610
pH	pH	7.99	7.98	7.92	7.6	7.64	7.64	7.6
Total Suspended Solids	mg/L	5.7	3.9	<3.0	6.5	8.7	13.1	270
Alkalinity, Total (as CaCO3)	mg/L	63.5 ^	81.4	116	133	136	136	164
Ammonia, Total (as N)	mg/L	3.71	10.6	5.22	5.63	20.9	25.2	48.9
Bromide (Br)	mg/L	0.38	0.63	<1.0 *	1	3	2.9	8
Chloride (Cl)	mg/L	303	472	601	725	2440	2370	6120
Fluoride (F)	mg/L	<0.10 *	<0.20 *	<0.40 *	<0.40 *	<1.0 *	<1.0 *	<2.0 ¥
Nitrate (as N)	mg/L	12.2	26.9	37.3	38.2	107	104	146
Nitrite (as N)	mg/L	0.0917	0.188	0.392	0.507	0.942	0.915	0.94
Sulfate (SO4)	mg/L	44.9	46.3	127	155	210	204	335
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0057 ^^	0.0062 ^^	<0.0050
Aluminum (Al)-Total	mg/L	0.343	0.136	0.0239	0.139	0.181	0.097	7.1
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010 **
Arsenic (As)-Total	mg/L	0.0007	0.00068	0.00063	0.00089	0.00089	0.00101	0.0028
Barium (Ba)-Total	mg/L	0.025	0.03	0.033	0.036	0.109	0.111	0.267
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	0.12	0.22	0.34	0.38	0.46	0.47	0.23
Cadmium (Cd)-Total	mg/L	0.0000328	0.0000448	0.0000686	0.0000988	0.000349	0.000422	0.000862
Calcium (Ca)-Total	mg/L	111	135	197	229	730	732	1940
Chromium (Cr)-Total	mg/L	0.0013	0.001	<0.0010	<0.0010	0.0011	<0.0010	0.0238
Cobalt (Co)-Total	mg/L	0.00088	0.00103	0.00157	0.00229	0.00602	0.00613	0.0175
Copper (Cu)-Total	mg/L	0.0045	0.0041	0.0047	0.006	0.0073	0.0072	0.0336
Iron (Fe)-Total	mg/L	0.463	0.24	<0.030	0.276	0.426	0.26	14.2
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00207
Lithium (Li)-Total	mg/L	0.0135	0.0218	0.0239	0.0273	0.0725	0.064	0.129
Magnesium (Mg)-Total	mg/L	15.8	18.4	38.5	41.1	89.8	91.7	241
Manganese (Mn)-Total	mg/L	0.213	0.212	0.333	0.442	1.38	1.4	5.41
Molybdenum (Mo)-Total	mg/L	0.0019	0.0024	0.0042	0.0055	0.0053	0.0044	0.0025
Nickel (Ni)-Total	mg/L	0.0016	0.0014	0.0027	0.0032	0.0069	0.007	0.0255
Potassium (K)-Total	mg/L	6.6	12.6	15.1	16.3	37.5	37.9	66.9
Selenium (Se)-Total	mg/L	0.000382	0.000667	0.00148	0.00177	0.00232	0.00212	0.00171
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050 **	<0.000050 **	<0.00010 **
Sodium (Na)-Total	mg/L	87.7	177	240	262	599	598	1250
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00025
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010 **
Titanium (Ti)-Total	mg/L	0.018	0.011	<0.010	0.015	0.011	<0.010	0.253
Uranium (U)-Total	mg/L	0.00039	0.00043	0.00122	0.00131	0.00168	0.00145	0.00255
Vanadium (V)-Total	mg/L	0.00148	0.0009	<0.00050	0.00107	<0.0025 **	<0.0025 **	0.0258
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.062
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	NO

** Detection Limit Adjusted due to sample matrix effects. ** Detection Limit adjusted for required dilution. ¥¥ Duplicate sample.*

¥ Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.

^ Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.

^^ Test result for Total Cyanide may be biased high due to interference from high nitrite in this sample. Nitrite can cause false positives for T-CN at up to ~ 0.8% of the nitrite concentration. Interpret result as a maximum possible value.

ST-4 Landfarm

A discharge notification for this facility was provided to the Inspector on May 13, 2015. Water from the Landfarm (ST-4) was sampled on June 28, 2015 and August 16, 2015 prior to discharge events and results were compliant with the water licence discharge criteria of Part G Item 24(c). Water was discharged from this facility to tundra at a location north of the Quarry 2 access road (13W 432447 7559568) as approved by the Inspector. Water was discharged on July 10, July 11 and August 27, 2015; volumes of water discharged were 61 m^3, 15 m^3 and 105 m^3 respectively. Water quality samples were collected daily during all discharge events and were compliant with water licence criteria for discharge to tundra. Results of Landfarm water sampling is presented in Table 4**.**

Table 4 - Water quality monitoring program results for ST-4, pre-discharge and daily discharge in June, July and August 2015, in mg/L, unless specified otherwise

Sample ID		ST4-28JUN15	ST4-10JUL15A	ST4-10JUL15B*	ST4-11JUL15	ST4-16AUG15	ST4-27AUG15	Part G Item 24(c)	
ALS ID		L1635560-1	L1642348-1	L1642348-2	L1642348-5	L1659477-1	L1665001-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		6/28/2015 11:20:00 AM	7/10/2015 8:35:00 AM	7/10/2015 8:35:00 AM	7/11/2015 7:36:00 AM	8/16/2015 11:00:00 AM	8/27/2015 1:37:00 PM		
Parameter	Unit	Results							
pH	pH	8.33	8.31	8.28	8.34	8.18	8.3	6.0-9.0	9
Total Suspended Solids	mg/L	3.3	4.8	5	4	14.8	6	15.0	30.0
Total Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	10.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	No Visible Sheen	No Visible Sheen
Total Ammonia - N	mg/L	0.0096	0.0114	0.0115	0.0118	<0.0050	0.866	2.0	4.0
Total Lead	mg/L	0.000098	<0.000050	0.000051	<0.000050	0.000128	0.00015	0.01	0.02
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.090	

ST-5 Doris Plant Site Fuel Storage and Containment

Water from the Doris tank farm (ST-5) was sampled on May 22 and July 18, 2015 prior to discharge events. The water was compliant with discharge criteria. A discharge notification was provided to the Inspector May 13, 2015. A total of 913 m^3 of water was discharged during May, June, July and August to a location just north of the berm (13W 432966 7559268) as approved by the Inspector. Daily samples were collected during discharge and were compliant with discharge criteria. Results of pre-discharge and daily discharge sampling are presented in Table 5 and Table 6.

ST-6a Roberts Bay Bulk Fuel Storage Facility

Water from the Roberts Bay 5ML tank farm (ST-6A) was sampled on May 22, 2015 prior to discharge and was found to be compliant with discharge criteria for all parameters. A discharge notification was provided to the Inspector May 13, 2015. Discharge from the facility occurred in May, June, July and August.

All water was applied to road surfaces for dust suppression or discharged to the oversize stockpile located north of the tank farm as approved by the Inspector until July 25, 2015. At this time a visible sheen was noted on the surface of water accumulating in the tank farm. All discharge from the facility was halted until further investigation could be conducted. It was determined that heavy rains had caused a small amount of hydrocarbons (<40L) to be flushed from under a seacan stored in the tank farm facility. The contaminated crush was removed. Water quality sampling was conducted on July 27 and July 31, 2015 and results confirmed compliance with discharge criteria; discharge recommenced on August 7, 2015. Water discharged in August was recycled for use in underground mining as approved by the Inspector or was discharged to the Tailings Impoundment Area.

A total of 1,675 m^3 of water was discharged from the facility between May and August. Daily samples collected during discharge were found to be compliant with discharge criteria for all parameters except TSS on June 24 and July 22, 2015; heavy rainfall at this time is believed to have contributed to the elevated TSS levels. Results of pre-discharge and daily water quality monitoring during discharge are presented in Table 7, Table 8 and Table 9.

ST-6b Roberts Bay Bulk Fuel Storage Facility

Water from the Roberts Bay 3x5ML tank farm (ST-6B) was sampled on May 28 and July 6, 2015 prior to discharge and results were found to be compliant with discharge criteria. A discharge notification was provided to the Inspector May 13, 2015. Discharge from the facility occurred in May, June July and August. A total of 1,212 m^3 of water was discharged to the southwest of the berm onto a rock outcrop (13W 432731 7563153). Daily samples collected during discharge were compliant with discharge criteria. Results of pre-discharge and daily discharge monitoring are presented in Table 10 and Table 11.Table 10

Table 5 - Water quality monitoring program results for ST-5, pre-discharge and daily discharge in May and June 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST5-22MAY15	ST5-28MAY15	ST5-31MAY15	ST5-01JUN15	ST5-09JUN15	ST5-22JUN15	Part G Item 24(e)	
ALS ID		L1615568-1	L1618547-1	L1620640-3	L1620640-4	L1624616-6	L1631704-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		5/22/2015 7:40:00 AM	5/28/2015 9:12:00 AM	5/31/2015 10:15:00 AM	6/1/2015 8:32:00 AM	6/9/2015 10:00:00 AM	6/22/2015 8:05:00 AM		
Parameter	**Unit**	**Results**							
pH	pH	7.96	7.97	8.09	8.12	8.23	8.13	6.0 – 9.0	9
Total Suspended Solids	mg/L	6.5	<3.0	<3.0	<3.0	<3.0	<3.0	15	30
Lead (Pb)-Total	mg/L	0.000314	0.000117	0.000122	0.000088	<0.000050	<0.000050	0.01	0.02
Oil and Grease (Visible Sheen)	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	

Table 6 - Water quality monitoring program results for ST-5, pre-discharge and daily discharge in July and August 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST5-18JUL15	ST5-23JUL15	ST5-24JUL15	ST5-25JUL15	ST5-26JUL15	ST5-27JUL15	ST5-28JUL15	ST5-08AUG15	Part G Item 24(e)	
ALS ID		L1645780-1	L1647932-5	L1647932-1	L1649400-1	L1649400-2	L1649400-3	L1649400-4	L1654734-4	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		7/18/2015 8:00:00 AM	7/23/2015 8:19:00 AM	7/24/2015 8:10:00 AM	7/25/2015 9:45:00 AM	7/26/2015 9:40:00 AM	7/27/2015 8:10:00 AM	7/28/2015 8:10:00 AM	8/8/2015 7:50:00 AM		
Parameter	**Unit**	**Results**									
pH	pH	8.31	8.16	8.1	8.12	8.24	8.28	8.34	8.19	6.0 – 9.0	9
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	15	30
Lead (Pb)-Total	mg/L	<0.000050	0.000092	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.01	0.02
Oil and Grease (Visible Sheen)	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	

Table 7 - Water quality monitoring program results for ST-6a, pre-discharge and daily discharge in May and June 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST6A-22MAY15	ST6A-28MAY15	ST6A-29MAY15	ST6A-30MAY15	ST6A-31MAY15	ST6A-03JUN15	ST6A-05JUN15	ST6A-06JUN15	ST6A-08JUN15	ST6A-12JUN15	Part G Item 24(e)	
ALS ID		L1615572-1	L1618547-2	L1619262-1	L1619262-2	L1620640-1	L1624616-1	L1624616-2	L1624616-3	L1624616-4	L1626304-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		5/22/2015 8:20:00 AM	5/28/2015 8:50:00 AM	5/29/2015 8:00:00 AM	5/29/2015 7:44:00 AM	5/31/2015 8:14:00 AM	6/3/2015 10:50:00 AM	6/5/2015 8:52:00 AM	6/6/2015 9:05:00 AM	6/8/2015 9:00:00 AM	06/12/2015 9:15:00AM		
Parameter	**Units**	**Results**											
pH	pH	8.18	8.03	8.17	8.11	8.1	8.21	8.13	8.06	8.16	8.06	6.0 - 9.0	9
Total Suspended Solids	mg/L	6.4	4.2	<3.0	8.4	<3.0	3.1	<3.0	<3.0	4.2	4	15	30
Lead (Pb)-Total	mg/L	<0.000050	0.000093	<0.000050	0.000155	0.000251	<0.000050	0.000314	0.000327	0.000296	0.000331	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NO	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	-

Table 8 - Water quality monitoring program results for ST-6a, daily discharge in June and July 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST6A-13JUN15	ST6A-19JUN15	ST6A-22JUN15	STA6A-24JUN15	ST6A-28JUN15	ST6A-01JUL15	ST6A-06JUL15	ST6A-14JUL15	ST6A-18JUL15	ST6A-21JUL15	Part G Item 24(e)	
ALS ID		L1627960-1	L1631704-4	L1631704-2	L1633291-2	L1635600-1	L1636804-1	L1638332-1	L1642311-2	L1645780-2	L1645780-3	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		6/13/2015 8:45:00 AM	6/19/2015 8:20:00 AM	6/22/2015 8:25:00 AM	6/24/2015 6:20:00 PM	6/28/2015 8:00:00 AM	7/1/2015 11:35:00 AM	7/6/2015 11:25:00 AM	7/14/2015 7:45:00 AM	7/18/2015 7:30:00 AM	7/21/2015 8:45:00 AM		
Parameter	**Units**	**Results**											
pH	pH	8.1	8.15	8.18	8.12	8.3	8.31	8.31	8.35	8.31	8.16	6.0 - 9.0	9
Total Suspended Solids	mg/L	<3.0	7.1	<3.0	**21.3**	<3.0	4.2	<3.0	<3.0	<3.0	<3.0	15	30
Lead (Pb)-Total	mg/L	0.000239	0.000369	0.000094	0.000297	0.000084	0.000098	0.00007	0.0001	<0.000050	0.000123	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	-

Note: Bold text indicates that the value is above criteria for discharge to the tundra. Water was discharged to roads or recycled for use in underground mining (as approved).

Table 9 - Water quality monitoring program results for ST-6a, daily discharge in July and August 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST6A-22JUL15	ST6A-24JUL15	ST6A-25JUL15	ST6A-27JUL15	ST6A-31JUL15	ST6A-07AUG15	ST6A-08AUG15	ST6A-17AUG15	ST6A-18AUG15	Part G Item 24(e)	
ALS ID		L1647932-4	L1647932-2	L1649367-1	L1649367-2	L1651309-2	L1654734-1	L1654734-2	L1659478-1	L1661539-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		7/22/2015 7:00:00 PM	7/24/2015 7:37:00 AM	7/25/2015 9:00:00 AM	7/27/2015 12:00:00 PM	7/31/2015 8:20:00 AM	8/7/2015 8:10:00 AM	8/8/2015 8:15:00 AM	8/17/2015 11:35:00 AM	8/18/2015 11:16:00 AM		
Parameter	**Units**	**Results**										
pH	pH	8.31	8.16	8.04	8.12	8.21	8.18	8.17	8.33	7.9	6.0 - 9.0	9
Total Suspended Solids	mg/L	**39.7**	11.1	6.6	<3.0	<3.0	<3.0	<3.0	<3.0	10.6	15	30
Lead (Pb)-Total	mg/L	0.000747	0.000313	0.00021	0.000085	<0.000050	<0.000050	0.00006	<0.000050	0.000103	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	-

Note: Bold text indicates that the value is above criteria for discharge to the tundra. Water discharged to roads or recycled for use in underground mining (as approved).

Table 10 - Water quality monitoring program results for ST-6b, pre-discharge and daily discharge in May, June and July 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST6B-22MAY15	ST6B-28MAY15	ST6B-31MAY15	ST6B-09JUN15	ST6B-16JUN15A	ST6B-16JUN15B^	ST6B-22JUN15	ST6B-29JUN15	ST6B-06JUL15	ST6B-14JUL15	Part G Item 24(e)	
ALS ID		L1615568-2	L1618547-3	L1620640-2	L1624616-5	L1627960-2	L1627960-3	L1631704-3	L1635600-2	L1638332-2	L1642311-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		5/22/2015 8:05:00 AM	5/28/2015 8:30:00 AM	5/31/2015 9:54:00 AM	6/9/2015 8:55:00 AM	6/16/2015 9:15:00 AM	6/16/2015 9:15:00 AM	6/22/2015 8:55:00 AM	6/28/2015 8:00:00 AM	7/6/2015 11:10:00 AM	7/14/2015 7:54:00 AM		
Parameter	**Units**	**Results**											
pH	pH	8.1	8.09	8.26	8.34	8.27	8.29	8.27	8.41	8.37	8.43	6.0 - 9.0	9
Total Suspended Solids	mg/L	7.5	6.6	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	15	30
Lead (Pb)-Total	mg/L	0.000289	0.00024	0.000144	0.000065	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000104	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	-

^ *Duplicate sample.*

Table 11 - Water quality monitoring program results for ST-6b, pre-discharge and daily discharge in July and August 2015, in mg/L, unless specified otherwise

TMAC Sample ID		ST6B-17JUL15	ST6B-24JUL15	ST6B-25JUL15	ST6B-26JUL15	ST6B-27JUL15	ST6B-28JUL15	ST6B-29JUL15	ST6B-08AUG15	ST6B-28AUG15	Part G Item 24(e)	
ALS ID		L1644253-1	L1647932-3	L1649400-5	L1649400-6	L1649400-7	L1649400-8	L1651309-1	L1654734-3	L1665013-1	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Sample Date/Time		7/17/2015 8:10:00 AM	7/24/2015 7:40:00 AM	7/25/2015 9:15:00 AM	7/26/2015 9:20:00 AM	7/27/2015 7:40:00 AM	7/28/2015 7:45:00 AM	7/29/2015 7:35:00 AM	8/8/2015 8:30:00 AM	8/28/2015 8:54:00 AM		
Parameter	**Units**	**Results**										
pH	pH	8.33	8.17	8.19	8.19	8.25	8.24	8.3	8.22	8.36	6.0 - 9.0	9
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	15	30
Lead (Pb)-Total	mg/L	<0.000050	0.000151	0.000115	0.000061	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.01	0.02
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37	-
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09	-
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002	-

ST-7 and ST-7a Freshwater Usage from Doris and Windy Lakes

Table 12 provides the volumes of water usage at the Doris North project area as required under Part E Item 1 of water licence 2AM-DOH1323. The water extraction pump for Doris operations is located off the northwest shoreline of Doris Lake and the sampling station ST-7 is located within the Doris Lake pump house. In 2015, water from Doris Lake was not used for domestic consumption; all water for domestic consumption was obtained from Windy Lake at ST-7a (equivalent to location HOP-1 of the Regional Exploration Licence 2BE-HOP1222). Water for dust suppression in 2015 was obtained from Doris Lake and Windy Lake, as well as from containment berm effluent when found to be compliant for discharge to the environment under the criteria established in Part G of Licence 2AM-DOH1323 as approved by the Inspector. Surface drilling, underground development and construction occurred in support of the Doris North mine; water was sourced from Doris Lake, and compliant berm water was also recycled for these purposes. Table 12 provides only water volumes used from lake sources and does not include water recycled from berms that would otherwise have been discharged to tundra as effluent.

Table 12 – Doris North water usage in 2015, in cubic meters (m^3)*

Month	Domestic Use from Windy Lake ST-7a/HOP-1 (m^3)	Drill Water Usage from Doris Lake (m^3)	Industrial Usage** from Doris Lake (m^3)	Dust Suppression from Doris Lake (m^3)	Cumulative Usage (m^3)
January	84	0	0	0	84
February	96	0	3	0	183
March	178	0	0	0	361
April	291	0	35	0	687
May	312	0	105	0	1104
June	323	0	126	47	1600
July	508	0	79	48	2235
August	520	149	225	259	3388
September	597	399	147	345	4876
October	518	278	67	0	5739
November	476	0	98	0	6313
December	535	0	88	0	6936

** All values rounded to nearest whole cubic meter*

*** Industrial Usage includes activities associated with underground mine development and construction.*

Additionally, a total of 1,371 m^3 was used from Doris Lake and/or Windy Lake for seasonal ice road construction in February, March, April and December of 2015.

Table 13 and Table 14 provide the results of water quality sampling for monitoring station ST-7a (HOP-1) at Windy Lake in compliance with the requirements set out in Schedule J of water licence 2AM-DOH1323. The Doris Lake pumphouse was operational for non-domestic use from March to December 2015; samples were collected from ST-7 during those months. Results of sampling at ST-7 are provided in Table 15 and Table 16.

Table 13 - Water sampling monitoring program results for January to July, 2015 taken from ST-7a (HOP-1), in mg/L, unless otherwise specified

TMAC Sample ID		ST7A-20JAN15	ST7A-17FEB15	ST7A-18MAR15	ST7A-21APR15	ST7A-20MAY15	ST7A-16JUN15	ST7A-14JUL15
ALS ID		L1569213-1/ L1569271-1*	L1578524-1/ L1578416-1*	L1589239-1/ L1589241-1*	L1601722-1/ L1601726-1*	L1614177-1/ L1614198-1*	L1627832-1/ L1627821-1*	L1642126-1/ L1642288-1*
Sample Date/Time		1/20/2015 11:30	2/17/2015 11:35	3/18/2015 11:00:00 AM	4/21/2015 8:30:00 AM	5/20/2015 8:25:00 AM	6/16/2015 10:45:00 AM	7/14/2015 8:35:00 AM
Parameter	**Unit**	**Results**						
Hardness (as CaCO3)	mg/L	85.1	92.1	86.4	92.9	87.8	14.9	69.5
pH	pH	7.97	8.06	8.04	8.09	7.93	7.23	7.97
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Ammonia, Total (as N)	mg/L	0.013	0.0177	0.013	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0049	0.0057	0.0053	0.0043	0.004	0.0083	0.0051
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms	CFU/100mL	<1	<1	<1	<1	<1	<1*	<1*
Total cyanobacterial cell count	cells/mL	<1*	<1*	<1*	<1*	<1*	877*	22*
Aluminum (Al)-Total	mg/L	0.0126	0.0145	0.0089	0.0099	0.0077	0.151	0.0626
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	14.7	16.1	15.3	16.3	15.5	2.95	12.4
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	<0.0010	0.0012	<0.0010	0.001	<0.0010	0.0011	0.0011
Iron (Fe)-Total	mg/L	<0.030	<0.030	<0.030	<0.030	<0.030	0.194	0.069
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	<0.0050	<0.0050	<0.0050	0.0035	0.0032	<0.0010	0.0029
Magnesium (Mg)-Total	mg/L	11.7	12.6	11.7	12.7	11.9	1.83	9.37
Manganese (Mn)-Total	mg/L	0.00096	0.00124	0.00073	0.00094	0.0007	0.00637	0.00421
Mercury (Hg)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	5.1	5.3	4.9	5.2	5.1	<2.0	3.6
Selenium (Se)-Total	mg/L	<0.00010	<0.00010	<0.00010	0.000157	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	65.8	72.2	67.8	70.4	65.9	7.3	49.7
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.0002	0.00021	<0.00020	0.00021	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Biochemical Oxygen Demand	mg/L	<2.0	2	2	3	<2.0	<2.0	<2.0
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	NO
Microcystin	ug/L	<0.20*	<0.20*	<0.20*	<0.20*	<0.20*	<0.20*	<0.20*

** results on Lab Work Order for Potable Water Station PDC10 (same location as ST-7a).*

Table 14 - Water sampling monitoring program results for August to December 2015, taken from ST-7a (HOP-1), in mg/L, unless otherwise specified

TMAC Sample ID		ST7A-04AUG15	ST7A-01SEP15	ST7A-06OCT15	ST7A-06OCT15^	ST7A-03NOV15	ST7A-01DEC15
ALS ID		L1652326-1/ L1652406-1*	L1666413-1/ L1666560-1*	L1684218-1/ L1684280-1*	L1684218-2	L1697748-1/ L1697723-1*	L1709033-1/ L1709029-1*
Sample Date/Time		8/4/2015 8:15:00 AM	9/1/2015 8:15:00 AM	10/6/2015 8:55:00 AM	10/6/2015 8:55:00 AM	11/3/2015 10:15:00 AM	12/1/2015 10:05:00 AM
Parameter	**Unit**	**Results**					
Hardness (as CaCO3)	mg/L	70.2	71.2	71.6	70.5	75.8	79.8
pH	pH	7.92	8.11	7.87	7.88	7.97	8
Total Suspended Solids	mg/L	4.5	<3.0	5.4	5.6	<3.0	<3.0
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	87.5	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	2.84	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0061	<0.0020	0.0085	0.009	0.0025	0.0028
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms	CFU/100mL	10*	<1*	<1*	-	<1*	<1*
Total cyanobacterial cell count	cells/mL	424*	<1*	1*	-	60*	<1*
Aluminum (Al)-Total	mg/L	0.161	0.0897	0.291	0.307	0.0646	0.0262
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00447	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	12.4	12.8	12.6	12.3	13.2	13.7
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0013	<0.0010	0.0013	0.0015	0.0011	<0.0010
Iron (Fe)-Total	mg/L	0.17	0.084	0.267	0.288	0.037	<0.030
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.003	0.0029	0.0034	0.0032	0.0038	0.003
Magnesium (Mg)-Total	mg/L	9.5	9.54	9.78	9.67	10.4	11.1
Manganese (Mn)-Total	mg/L	0.00851	0.00322	0.00601	0.00596	0.00154	0.00157
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	3.8	3.9	4	3.9	4.1	4.5
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	52.5	51.2	52.9	52.5	57.6	66.1
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	0.014	0.016	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	0.00068	0.00073	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Biochemical Oxygen Demand	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO
Microcystin	ug/L	<0.20*	<0.20*	<0.20*	-	<0.20*	<0.20*

** results on Lab Work Order for Potable Water Station PDC10 (same location as ST-7a). ^ Duplicate sample.*

Table 15 - Water sampling monitoring program results for March to August, 2015 taken from ST-7, in mg/L, unless otherwise specified

TMAC Sample ID		ST7-03MAR15	ST7-14APR15	ST7-12MAY15	ST7-09JUN15	ST7-07JUL15	ST7-25AUG15
ALS ID		L1583462-1	L1598654-1	L1610745-1	L1624288-1	L1638343-1	L1662919
Sample Date/Time		3/3/2015 11:45:00 AM	4/14/2015 8:35:00 AM	05/12/2015 8:50:00 AM	6/9/2015 2:10:00 PM	7/7/2015 9:50:00 AM	8/25/2015 8:05:00 AM
Parameter	**Unit**	**Results**					
Hardness (as CaCO3)	mg/L	56.8	60.9	55.8	63	68.7	59.8
pH	pH	7.65	7.59	7.12	7.52	7.81	7.74
Total Suspended Solids	mg/L	4.3	<3.0	4.2	5.1	<3.0	6.4
Ammonia, Total (as N)	mg/L	0.021	0.007	0.286	<0.0050	<0.0050	<0.0050
Nitrate (as N)	mg/L	0.0417	0.0304	<0.0050	<0.0050	0.0261	0.2
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	0.0029
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	0.0042	<0.0010	0.0033	<0.0010
Phosphorus (P)-Total	mg/L	0.0273	0.0264	0.0188	0.0213	0.0158	0.0316
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms	CFU/100mL	<1	<1	<1	<1	<1	<1
Total cyanobacterial cell count	cells/mL	19200	-	120	52700	252000	17800
Aluminum (Al)-Total	mg/L	<0.0050	0.0054	0.015	0.0094	0.0369	0.0639
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.000010	0.0000069	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	10.2	10.8	10.1	11.2	15.5	12.5
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0075	0.103	0.0115	0.0046	0.0015	0.0015
Iron (Fe)-Total	mg/L	1.3	1.02	2.34	0.831	0.266	0.151
Lead (Pb)-Total	mg/L	0.00051	0.0342	0.00321	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	<0.0050	0.0035	0.004	0.0041	0.0034	0.0036
Magnesium (Mg)-Total	mg/L	7.62	8.22	7.44	8.51	7.27	6.96
Manganese (Mn)-Total	mg/L	0.0119	0.0134	0.0555	0.0196	0.0397	0.0208
Mercury (Hg)-Total	mg/L	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	0.001	0.0019	0.0015	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	2.7	3.4	2.9	3.1	2.4	2.5
Selenium (Se)-Total	mg/L	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	38.4	45.2	39.3	45.9	36.2	34.5
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	0.0112	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.0087	0.0634	0.0093	<0.0050	<0.0050	<0.0050
Biochemical Oxygen Demand	mg/L	2	2	<2.0	3	<2.0	3
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO

Table 16 - Water sampling monitoring program results for September to December, 2015 taken from ST-7, in mg/L, unless otherwise specified

TMAC Sample ID		ST7-22SEP15A	ST7-22SEP15B^	ST7-20OCT15	ST7-24NOV15	ST7-15DEC15
ALS ID		L1676829-1	L1676829-2	L1690953-1	L1706385-1	L1715104-1
Sample Date/Time		9/22/2015 8:00:00 AM	9/22/2015 8:00:00 AM	10/20/2015 9:10:00 AM	11/24/2015 8:55:00 AM	12/15/2015 9:15:00 AM
Parameter	**Unit**	**Results**				
Hardness (as CaCO3)	mg/L	47.4	47.7	48.8	50.4	51.2
pH	pH	7.65	7.62	8	7.89	7.39
Total Suspended Solids	mg/L	5.7	4.5	4.1	8	5.2
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	0.0084	<0.0050
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	0.115	0.0355
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0223	0.0107	0.0161	0.0149	0.0229
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms	CFU/100mL	<1	<1	<1	<1	<1
Total cyanobacterial cell count	cells/mL	111000	116000	115000	66100	115000
Aluminum (Al)-Total	mg/L	0.0551	0.0569	0.0299	0.0185	0.027
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000084	<0.0000050
Calcium (Ca)-Total	mg/L	8.56	8.63	8.7	8.95	9.07
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0052	0.0046	0.0017	0.0361	0.0023
Iron (Fe)-Total	mg/L	0.629	0.925	0.588	4.4	0.897
Lead (Pb)-Total	mg/L	0.00058	<0.00050	<0.00050	0.0122	<0.00050
Lithium (Li)-Total	mg/L	0.0033	0.0033	0.0032	0.0033	0.0035
Magnesium (Mg)-Total	mg/L	6.32	6.34	6.59	6.82	6.92
Manganese (Mn)-Total	mg/L	0.0164	0.0194	0.0102	0.0397	0.0105
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	0.0011	<0.0010
Potassium (K)-Total	mg/L	2.4	2.4	2.5	2.6	2.4
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	33.4	33.5	33	34.5	35
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	0.00107	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.0056	<0.0050	<0.0050	0.0246	<0.0050
Biochemical Oxygen Demand	mg/L	<2.0	<2.0	2	3	<2.0
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO

^ *Duplicate sample.*

ST-8 Discharge from Sewage Treatment Plant Bio-Membrane

During 2015, TMAC operated one of two sewage treatment plants which make up the Water Treatment Plant (WTP) at Doris Camp. Each plant has the capacity to treat wastewater for up to 180 personnel. Treated effluent samples were collected from a sampling port inside the plant (ST-8B) to test the quality of the effluent to be discharged to the tundra, in accordance with Part G, Item 3(b) of the Licence. In-plant sampling facilitates year-round compliance evaluation of plant performance.

All effluent quality samples collected in 2015 were in compliance with the discharge criteria. All water quality monitoring results for ST-8B are provided in Table 17 and Table 18.

Table 17 - Water quality monitoring program results for ST-8B (Sewage Treatment Plant ST-8), January to June 2015, in mg/L, unless otherwise specified

	TMAC ID	ST8B-13JAN15	ST8B-03FEB15	ST8B-03MAR15	ST8B-07APR15	ST8B-05MAY15	ST8B-02JUN15	Part G Item 3 (b)	
	ALS ID	L1566647-1	L1574095-1	L1583472-1	L1595894-1	L1607441-1	L1620402-1	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
	Sample Date/Time	1/13/2015 9:30:00AM	02/03/2015 11:15:00 AM	3/3/2015 9:15:00 AM	04/07/2015 8:30: AM	5/5/2015 10:15:00 AM	6/2/2015 9:19:00 AM		
Parameters	**Units**	**Results**							
pH	pH	7.4	7.6	7.82	7.48	7.74	7.87	6-9	9
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	100 mg/L	100 mg/L
Biochemical Oxygen Demand	mg/L	<1	<1	<1	<1	<1	<1	80 mg/L	80 mg/L
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	No Visible Sheen	No Visible Sheen
Fecal Coliform	CFU/100mL	4	3	2	3	3	<2.0	10,000 CFU/100mL	10,000 CFU/100mL

Table 18 - Water quality monitoring program results for ST-8B (Sewage Treatment Plant ST-8), July to December 2015, in mg/L, unless otherwise specified

	TMAC ID	ST8B-07JUL15A	ST8B-07JUL15B^	ST8B-04AUG15	ST8B-15SEP15	ST8B-13OCT15	ST8B-03NOV15	ST8B-08DEC15	Part G Item 3 (b)	
	ALS ID	L1638411-1	L1638411-2	L1652332-1	L1673168-1	L1687214-1	L1697742-1	L1712345-1	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
	Sample Date/Time	7/7/2015 10:25:00 AM	7/7/2015 10:25:00 AM	8/4/2015 9:00:00 AM	9/15/2015 8:45:00 AM	10/13/2015 8:37:00 AM	11/3/2015 10:40:00 AM	12/8/2015 8:00:00 AM		
Parameters	**Units**	**Results**								
pH	pH	7.72	7.68	7.93	8.13	8.06	7.73	7.84	6-9	9
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	100 mg/L	100 mg/L
Biochemical Oxygen Demand	mg/L	<1	<1	<1	<1	<1	<1	<1	80 mg/L	80 mg/L
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	10
Oil And Grease (Visible Sheen)		NO	NO	NO	NO	NO	NO	NO	No Visible Sheen	No Visible Sheen
Fecal Coliform	CFU/100mL	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2	10,000 CFU/100mL	10,000 CFU/100mL

Treated effluent volumes released from ST-8 are metered daily and summary volumes reported in the monthly monitoring reports. The monthly volumes discharged in 2015 are presented in Table 19.

Table 19 – Treated effluent released from the Doris sewage treatment plant (ST-8), 2015, in cubic meters (m^3)

Month	Monthly Volume (m^3)*	Cumulative Volume (m^3)*
January	66	66
February	78	144
March	148	292
April	239	531
May	272	803
June	260	1063
July	259	1322
August	411	1733
September	512	2245
October	486	2731
November	415	3146
December	475	3621
Total Volume of Treated Effluent Released 2015 (m^3)		**3,621**

**values rounded to nearest whole cubic meter*

The sludge produced at the sewage treatment plant is pressed regularly to remove processed solids and to allow for proper functioning of the plant. Each press produces approximately 0.11 m^3 of sludge. In 2015, pressed sludge was sent to the incinerator for disposal. The volume of pressed sludge produced in 2015 is presented in Table 20.

Table 20 – Volume of pressed sludge removed from the Doris sewage treatment plant, 2015, in cubic meters (m^3)

Month	Monthly Volume (m^3)	Cumulative Volume (m^3)
January	0.5664	0.5664
February	0.45312	1.01952
March	0.5664	1.58592
April	1.24608	2.832
May	0.90624	3.73824
June	1.1328	4.87104
July	0.79296	5.664
August	1.47264	7.13664
September	1.35936	8.496
October	1.01952	9.51552
November	0.90624	10.42176
December	0.70871	11.13047
Total Volume of Sludge Produced in 2015 (m^3)		**11.1**

ST-9 Runoff from Sewage Treatment Plant Discharge

In consultation with the Inspector during the 2009 inspection tour, the location of sampling point ST-9 was set at geographical coordinates 68°8’20” N, 106°39’55” W. This point is east of Glenn Lake and down slope from the ST-8 tundra discharge location. Monthly monitoring was conducted at ST-9 June through September in 2015 in accordance with Schedule J of 2AM-DOH1323. The station is frozen during the remainder of the year. There is no water quality criteria specified in the licence for this monitoring station. Table 21 provides results of the 2015 seasonal monitoring.

Table 21 - Water quality monitoring program results for ST-9, June to September 2015, in mg/L, unless otherwise specified

TMAC Sample ID		ST9-30JUN15	ST9-21JUL15	ST9-18AUG15A	ST9-18AUG15B	ST9-15SEP15
ALS ID		L1635441-1	L1645778-1	L1659415-1	L1659415-2	L1673168-2
Sample Date/Time		6/30/2015 8:25:00 AM	7/21/2015 8:05:00 AM	8/18/2015 8:30:00 AM	8/18/2015 8:30:00 AM	9/15/2015 9:30:00 AM
Parameters	**Units**	**Results**				
pH	pH	7.87	7.89	8.06	7.99	7.86
Total Suspended Solids	mg/L	<3.0	11.4	10.20	12.90	8.60
Biochemical Oxygen Demand (BOD_5)	mg/L	<1	<1	1.00	<1	<1
Oil and Grease	mg/L	3	<2.0	<2.0	<2.0	<2.0
Oil And Grease (Visible Sheen)		<5.0	<5.0	<5.0	<5.0	<5.0
Fecal Coliform	CFU/ 100mL	NO	NO	NO	NO	NO

ST-10 Site Runoff from Sediment Controls

In 2015 construction activities resumed at the Doris Site. This included the expansion of the existing airstrip, construction of an explosive magazine berm on an existing pad structure located near the Tailings Impoundment Area, and initiation of construction of the future waste rock storage pad (Pad T) and the mill site foundation in preparation for anticipated arrival of the processing plant in 2016. Construction also began on the access road to the south end of the Tailings Impoundment Area (TIA) in preparation for construction of the south dam.

Site runoff monitoring from sediment controls (ST-10) was not required as construction took place after freshet and the remarkable July rainfall event. All construction took place upslope of water management structures that collected all runoff for deposit in the tailings impoundment area (i.e. construction of the Mill Pad and Pad T were upslope of the Sedimentation and Pollution Control Ponds, and the explosives berm was upslope of the TIA) or were located such that flow could not directly or indirectly enter a water body (e.g. the airstrip expansion which is located on a plateau away from waterbodies).

TIA Dewatering and Doris Creek Monitoring - TL-1, TL-2, TL-3, TL-4 and TL-10

This section presents the results of the dewatering monitoring of the Tailings Impoundment Area (TIA) as per the applicable sections of Part G (Conditions Applying to Waste Management and Waste Management Plans) and Part J (Conditions Applying to General and Aquatic Effects Monitoring) of the water licence as they pertain to sampling prior to Operations.

- **TL-1 – TIA at the Reclaim Pump Barge:** The reclaim pump barge did not exist at the TIA during 2015 but representative monitoring for TL-1 was undertaken pre-discharge commencing in June from the lakeshore adjacent to the intake pump at the North Dam on the TIA and throughout the discharge season from an outlet on the discharge pump. The intake of the discharge pipeline at the TIA is submerged to a depth of 1.5m below the surface.
- **TL-2 – Doris Outflow Creek Upstream at the Flow Monitoring Station:** Monitoring during 2015 was undertaken from a point on Doris Creek established at UTM 7559507 N, 434053 E
- **TL-3 – Doris Creek Outflow 80m Downstream of Base of Waterfall:** Monitoring during 2015 was undertaken from a point on Doris Creek established at UTM 7559985 N, 434204 E
- **TL-4 – TIA Discharge End-Of-Pipe:** During the first week of discharge in 2015, monitoring was undertaken from a valve established in the dewatering discharge line to Doris Creek at end-of-pipe. For the remainder of the discharge period, water quality sampling required for monitoring station TL-4 was conducted at monitoring station TL-1 (intake of TIA discharge pipeline). These monitoring stations are at opposite ends of the same discharge line and no water quality treatment is undertaken between the two monitoring stations. After July 3 samples collected at monitoring station TL-1 were analyzed for licence criteria outlined in Part J Item 8 and Schedule J, Table 2 for monitoring station TL-4 in addition to any parameters outlined for TL-1.
- **TL-10 – Water Column in Deepest Portion of the TIA and at a Location Away from the TIA Reclaim Water Floating Pump House, Sampled at Surface, Mid-depth and Near Bottom:** Monitoring was undertaken from a point established at UTM 7558239 N, 434914 E.

Seasonal dewatering of the Tailing Impoundment Area began June 30, 2015. Prior to the initiation of the discharge, samples were first collected at TL-1, TL-2, and TL-3 at the beginning of June, with samples collected 3 times per week one week prior to discharge at station TL-1 starting June 8, and one duplicate set of samples collected at each of stations TL-2 and TL-3 prior to discharge collected on June 15. For two weeks after discharge started, samples were collected twice per week at TL-1, TL-2 and TL-3, reducing to once per week in the third week. One sample was collected at TL-4 on July 3 during the first week of discharge.

During the period June 30 to September 23, the total discharge from the TIA to Doris Creek, as measured at TL-1 and TL-4, was 631,418 m^3 and 630,509 m^3, respectively. Table 22 shows the

monthly and annual volumes discharged. A complete comparison of flows at TL-1 through 4 is presented in Section 7 of this report.

In compliance with the requirements of Part G Item 29, acute lethality testing conducted at TL-1 once prior to the initiation of discharge (on June 15) indicated that this water was non-acutely toxic to trout and daphnia. Water collected from TL-1 mid-way through discharge on August 17 was also shown to be non-acutely toxic to trout and daphnia. All sampling results are provided in Table 23.

Monitoring results for TL-1 are provided in Table 24 and Table 25 and TL-4 monitoring results are provided in Table 26; a comparison of these results with discharge criteria under Part G Item 28 of Licence 2AM-DOH1323 is provided for both monitoring stations. One exceedance of the Part G Item 28 discharge criteria for TSS occurred at monitoring station TL-1 on June 8 prior to the start of discharge. This sample was collected from near shore (as pumping had not yet started) and during freshet, and the elevated TSS is attributed surface meltwater runoff entering the lake during that time. All other parameters were below discharge criteria at TL-1 and TL-4 for the remainder of the discharge period.

Sample results for TL-2 (Doris Creek upstream) are presented in Table 27 and Table 28 and are compared to the discharge criteria for TL-3. Sample results for TL-3 (Doris Creek downstream) are presented in Table 29 and Table 30. As expected, the TL-3 water quality was similar to the TL-2 water quality. Water samples at TL-3 exceeded the discharge criteria for aluminum and iron on June 15; these parameters were also shown to be elevated in samples of background water at TL-2 upstream, but were not elevated in the intake discharge at TL-1. On July 11, water quality measured at TL-3 exceeded discharge criteria for oil and grease. Organic foam was noted on the water surface when the sample was collected; duplicate analysis was conducted on the sample with a silica gel cleanup to remove natural organic sources. Results of the duplicate analysis were below discharge criteria indicating that the oil and grease was of natural origin. All other samples for these parameters were within normal ranges and complaint with licence criteria.

One annual sample was collected at TL-10 (deepest portion of the TIA) in August to supplement information for the water quality model. Table 31presents the sampling results.

Table 22 - Monthly and annual volumes discharged from the TIA, at TL-1 and TL-4, June to September 2015, in m^3*

Month	Monthly Volume TL-1**	Monthly Volume TL-4**
June	3095	3183
July	230460	230144
August	233603	234948
September	164260	162234
Total Volume Dewatered from the TIA 2015	**631,418**	**630,509**

**Volumes rounded to the nearest cubic meter*
*** TL-1 and TL-4 are opposite ends of the same pipeline: TL-1 is the intake, TL-4 is the discharge*
^ Differences in metered values are suspected to be due to slight differences in meters as well as occasional double-metering of water at TL-1 if water backflows when the pump is stopped, as the pump and meter are located below the crest of the dam. The higher TL-1 volumes recorded were used to compare to allowable discharge to Doris Creek to be conservative, although TL-4 meters are believed to be more accurate.

Table 23 - Acute Toxicity Bioassay at sampling stations TL-1 (June) and TL-4 (August), 2015

TMAC Sample ID	TL1-15JUN15	TL1-17AUG15*
ALS ID	L1628002-1	L1659466-1
Sample Date/Time	6/15/2015 5:30:00 PM	8/17/2015 2:50:00 PM
Trout		
96-h LC50 Rainbow Trout Acute Toxicity EPS 1/RM/13	>100%	>100%
Daphnia		
48-h LC50 Daphnia magna Acute Toxicity EPS 1/RM/14	>100%	>100%

Note: LC50 = lethal concentration that results in mortality of 50% of the test organisms; a result of 100% indicates all organisms survived
** Acute lethality monitored at TL-1 mid-discharge.*

TL-1 TIA at the Reclaim Pump Barge

Table 24 - Water Quality from the Tailings Impoundment Area (TL-1), June to July, 2015

Sample ID		TL1-08JUN15	TL1-12JUN15	TL1-15JUN15	TL1-03JUL15	TL1-06JUL15	TL1-11JUL15	TL1-13JUL15	TL1-20JUL15	TL1-27JUL15	Part G Item 28	
ALS ID		L1624424-1	L1626296-1	L1628002-1	L1636792-1	L1638435-1	L1642261-1	L1642261-4	L1645878-1	L1649292-1	TL-4 Max Average (mg/L)	TL-4 Max Grab (mg/L)
Sample Date/Time		6/8/2015 10:05:00 AM	6/12/2015 8:15:00 AM	6/15/2015 5:30:00 PM	7/3/2015 8:20:00 AM	7/6/2015 2:35:00 PM	7/11/2015 11:07:00 AM	7/13/2015 4:15:00 PM	7/20/2015 9:15:00 AM	7/27/2015 4:00:00 PM		
Parameter	**Units**	**Results**										
Hardness (as CaCO3)	mg/L	62.7	40.5	82.6	51.2	52.9	51.6	53.2	51.9	51.6		
pH	pH	7.62	7.49	7.93	7.65	7.71	7.81	7.8	7.63	7.92	Between 6.0-9.5	Between 6.0-9.5
Total Suspended Solids	mg/L	**16.1**	3.3	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	15.00	30.00
Total Dissolved Solids	mg/L	135	92	189	131	123	114	121	115	145		
Ammonia, Total (as N)	mg/L	0.0258	0.0117	0.0113	<0.0050	0.0051	0.0089	0.0064	0.006	0.0233	6 ^	
Bromide (Br)	mg/L	0.078	<0.050	0.102	0.072	0.063	0.078	0.062	0.077	0.076		
Chloride (Cl)	mg/L	46.9	29.4	48.8	40.5	40.9	40.5	39.9	39.5	39.8		
Fluoride (F)	mg/L	0.055	0.041	0.051	0.052	0.052	0.054	0.052	0.054	0.053		
Nitrate (as N)	mg/L	0.0866	<0.0050	0.0263	<0.0050	<0.0050	0.0099	<0.0050	<0.0050	0.0877		
Nitrite (as N)	mg/L	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0018		
Orthophosphate-Dissolved (as P)	mg/L	0.0024	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013		
Phosphorus (P)-Total	mg/L	0.0196	0.0359	0.0134	0.0154	0.0153	0.0117	0.0106	0.0147	0.0134		
Sulphate (SO_4)	mg/L	3.09	1.9	2.42	1.94	1.83	2.24	2.05	2.05	3.03		
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	1.00	2.00
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Aluminum (Al)-Total	mg/L	0.0145	0.0245	0.0108	0.0115	0.0109	0.014	0.0116	0.0114	0.0306		
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.50	1.00
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000054	<0.0000050	0.0000084	<0.0000050		
Calcium (Ca)-Total	mg/L	14.6	9.6	18.6	11.3	11.6	11.6	11.9	11.5	11.8		
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		
Copper (Cu)-Total	mg/L	<0.0010	0.0011	0.001	<0.0010	<0.0010	0.0071	0.0011	0.0043	0.0016	0.30	0.60
Iron (Fe)-Total	mg/L	0.169	0.17	0.096	0.163	0.157	0.27	0.14	0.156	0.161		
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00255	<0.00050	0.00226	<0.00050	0.20	0.40
Lithium (Li)-Total	mg/L	0.0038	0.0027	0.0057	0.0033	0.0032	0.0033	0.0032	0.0039	0.0035		
Magnesium (Mg)-Total	mg/L	6.38	4.02	8.77	5.59	5.55	5.51	5.7	5.62	5.37		
Manganese (Mn)-Total	mg/L	0.0225	0.0306	0.0197	0.0445	0.031	0.029	0.02	0.0255	0.0323		
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.50	1.00
Potassium (K)-Total	mg/L	2.5	<2.0	2.9	<2.0	<2.0	<2.0	2	<2.0	<2.0		
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020		
Sodium (Na)-Total	mg/L	22.6	12.8	29.7	19.8	18.9	19.1	19.1	18.4	19.4		
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0528	0.0063	0.0159	<0.0050	0.50	1.00
Redox Potential	mV	-	-	-	351	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	11.56 **	-	-	-	-	-		

Sample ID		TL1-08JUN15	TL1-12JUN15	TL1-15JUN15	TL1-03JUL15	TL1-06JUL15	TL1-11JUL15	TL1-13JUL15	TL1-20JUL15	TL1-27JUL15	Part G Item 28	
ALS ID		L1624424-1	L1626296-1	L1628002-1	L1636792-1	L1638435-1	L1642261-1	L1642261-4	L1645878-1	L1649292-1	TL-4 Max Average (mg/L)	TL-4 Max Grab (mg/L)
Sample Date/Time		6/8/2015 10:05:00 AM	6/12/2015 8:15:00 AM	6/15/2015 5:30:00 PM	7/3/2015 8:20:00 AM	7/6/2015 2:35:00 PM	7/11/2015 11:07:00 AM	7/13/2015 4:15:00 PM	7/20/2015 9:15:00 AM	7/27/2015 4:00:00 PM		
Parameter	Units	Results										
Radium 226*	Bq/L	-	-	-	-	< 0.01	<0.0100	<0.0100	<0.0100	<0.0100	0.37 Bq/L	1.11 Bq/L
BOD*	mg/L	-	-	-	-	-	-	-	-	-	80	160
Fecal Coliform*	CFU/mL	-	-	-	-	-	-	-	-	-	10,000 CFU/100mL	10,000 CFU/100mL

** Analysis included at monitoring station TL-1 to satisfy monitoring requirements of monitoring station TL-4 under Part G, Item 28.*

*** Field Measurement*

^Ammonia maximum criteria based on pH 7 at 20°C.

***Bold** text indicates an exceedance of discharge criteria under Part G, Item 28 for monitoring station TL-4.*

Table 25 - Water Quality from the Tailings Impoundment Area (TL-1), August to September 2015

Sample ID		TL1-03AUG15	TL1-11AUG15	TL1-17AUG15	TL1-24AUG15	TL1-31AUG15	TL1-8SEP15A	TL1-8SEP15B^	TL1-14SEP15	TL1-21SEP15	Part G Item 28	
ALS ID		L1652373-1	L1655590-1	L1659466-1	L1663071-1	L1666614-1	L1669385-1	L1669385-2	L1673349-1	L1676985-1	TL-4 Max Average (mg/L)	TL-4 Max Grab (mg/L)
Sample Date/Time		8/3/2015 8:55:00 AM	8/11/2015 8:30:00 AM	8/17/2015 2:50:00 PM	8/24/2015 9:10:00 AM	8/31/2015 8:45:00 AM	9/8/2015 10:05:00 AM	9/8/2015 10:05:00 AM	9/14/2015 4:30:00 PM	9/21/2015 1:20:00 PM		
Parameter	Units	Results										
Hardness (as CaCO3)	mg/L	50.4	55.3	53.7	52	55.6	54	54.6	50.5	53.1		
pH	pH	7.67	7.4	7.76	7.55	7.78	7.71	7.7	7.77	7.55	Between 6.0-9.5	Between 6.0-9.5
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	3.6	<3.0	<3.0	3.3	<3.0	15.00	30.00
Total Dissolved Solids	mg/L	143	145	137	151	121	137	133	126	130		
Ammonia, Total (as N)	mg/L	0.0161	0.0342	0.0228	0.0154	0.0243	0.0313	0.031	0.0226	0.0343	6 ^	
Bromide (Br)	mg/L	0.074	0.08	0.081	0.077	0.077	0.075	0.081	0.08	0.07		
Chloride (Cl)	mg/L	39	42.1	39.1	40	40.5	40.4	40.4	40.1	40.2		
Fluoride (F)	mg/L	0.05	0.051	0.056	0.054	0.054	0.051	0.052	0.054	0.056		
Nitrate (as N)	mg/L	0.0056	0.141	<0.0050	<0.0050	0.0138	0.0357	0.0353	0.0187	0.0191		
Nitrite (as N)	mg/L	<0.0010	0.0042	<0.0010	<0.0010	<0.0010	0.0013	0.0013	<0.0010	<0.0010		
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010		
Phosphorus (P)-Total	mg/L	0.013	0.0129	0.0146	0.0112	<0.0020	0.0151	0.0136	0.012	0.0119		
Sulphate (SO_4)	mg/L	2.37	2.92	2.5	2.93	2.76	2.61	2.6	2.7	2.77		
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	1.00	2.00
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Aluminum (Al)-Total	mg/L	0.0437	0.0324	0.0372	0.0398	0.0674	0.0481	0.0465	0.202	0.158		
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.50	1.00
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Cadmium (Cd)-Total	mg/L	0.0000052	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		
Calcium (Ca)-Total	mg/L	11.4	12.7	11.9	11.6	12.5	12.1	12.2	11.1	11.7		
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		
Copper (Cu)-Total	mg/L	0.002	0.0012	0.0013	0.0013	0.0013	0.0015	0.0029	0.002	0.0016	0.30	0.60
Iron (Fe)-Total	mg/L	0.259	0.341	0.325	0.277	0.315	0.283	0.332	0.359	0.3		
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00066	<0.00050	<0.00050	0.20	0.40
Lithium (Li)-Total	mg/L	0.0035	0.0039	0.0036	0.0036	0.0037	0.004	0.004	0.0044	0.0038		
Magnesium (Mg)-Total	mg/L	5.33	5.72	5.83	5.62	5.9	5.79	5.87	5.54	5.8		
Manganese (Mn)-Total	mg/L	0.0518	0.0452	0.0332	0.023	0.0262	0.0232	0.0239	0.0141	0.0177		
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000055	0.0000055	<0.0000050	<0.0000050		

Sample ID		TL1-03AUG15	TL1-11AUG15	TL1-17AUG15	TL1-24AUG15	TL1-31AUG15	TL1-8SEP15A	TL1-8SEP15B^	TL1-14SEP15	TL1-21SEP15	Part G Item 28	
ALS ID		L1652373-1	L1655590-1	L1659466-1	L1663071-1	L1666614-1	L1669385-1	L1669385-2	L1673349-1	L1676985-1	TL-4 Max Average (mg/L)	TL-4 Max Grab (mg/L)
Sample Date/Time		8/3/2015 8:55:00 AM	8/11/2015 8:30:00 AM	8/17/2015 2:50:00 PM	8/24/2015 9:10:00 AM	8/31/2015 8:45:00 AM	9/8/2015 10:05:00 AM	9/8/2015 10:05:00 AM	9/14/2015 4:30:00 PM	9/21/2015 1:20:00 PM		
Parameter	Units	Results										
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	0.50	1.00
Potassium (K)-Total	mg/L	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0	2		
Selenium (Se)-Total	mg/L	<0.000050	0.000107	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020		
Sodium (Na)-Total	mg/L	18	18.7	19.7	18.8	18.8	19.1	19.3	18.2	20.1		
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0009	<0.00050		
Zinc (Zn)-Total	mg/L	0.0089	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.008	0.0073	0.0074	0.50	1.00
Redox Potential	mV	-	-	-	-	-	-	-	-	438		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	12.7 **		
Radium 226*	Bq/L	<0.0100	<0.0100	<0.0100	<0.0100	-	<0.0100	<0.0100	<0.0100	<0.0100	0.37 Bq/L	1.11 Bq/L
BOD*	mg/L	-	3	-	-	-	3	2	-	-	80	160
Fecal Coliform*	CFU/mL	-	<1	-	-	-	<1	1	-	-	10,000 CFU/100mL	10,000 CFU/100mL

** Analysis included at monitoring station TL-1 to satisfy monitoring requirements of monitoring station TL-4 under Part G, Item 28.*

*** Field Measurement*

^Ammonia maximum criteria based on pH 7 at 20°C.

TL-4 TIA Discharge End-Of-Pipe

Table 26 - Water Quality from the Tailings Impoundment Area Discharge End-of-Pipe (TL-4), July 2015, in mg/L unless otherwise specified

		Sample ID	TL4-03JUL15	Part G Item 28	
		ALS ID	L1636792-4		
		Sample Date/Time	7/3/2015 7:45:00 AM	TL-4 Max Average (mg/L)	TL-4 Max Grab (mg/L)
Parameter	**Units**		**Results**		
Hardness (as CaCO3)	mg/L		50.6		
pH	pH		7.5	Between 6.0-9.5	Between 6.0-9.5
Total Suspended Solids	mg/L		<3.0	15.00	30.00
Total Dissolved Solids	mg/L		130		
Ammonia, Total (as N)	mg/L		0.006	6 ^	
Bromide (Br)	mg/L		0.077		
Chloride (Cl)	mg/L		40.8		
Fluoride (F)	mg/L		0.054		
Nitrate (as N)	mg/L		<0.0050		
Nitrite (as N)	mg/L		<0.0010		
Orthophosphate-Dissolved (as P)	mg/L		<0.0010		
Phosphorus (P)-Total	mg/L		0.0186		
Sulphate (SO_4)	mg/L		1.95		
Cyanide, Total	mg/L		<0.0050	1.00	2.00
Cyanide, Free	mg/L		<0.0050		
Aluminum (Al)-Total	mg/L		0.013		
Antimony (Sb)-Total	mg/L		<0.00050		
Arsenic (As)-Total	mg/L		<0.00050	0.50	1.00
Barium (Ba)-Total	mg/L		<0.020		
Beryllium (Be)-Total	mg/L		<0.0010		
Boron (B)-Total	mg/L		<0.10		
Cadmium (Cd)-Total	mg/L		<0.0000050		
Calcium (Ca)-Total	mg/L		11.1		
Chromium (Cr)-Total	mg/L		0.0011		
Cobalt (Co)-Total	mg/L		<0.00030		
Copper (Cu)-Total	mg/L		0.0015	0.30	0.60
Iron (Fe)-Total	mg/L		1.65		
Lead (Pb)-Total	mg/L		<0.00050	0.20	0.40
Lithium (Li)-Total	mg/L		0.0032		
Magnesium (Mg)-Total	mg/L		5.55		
Manganese (Mn)-Total	mg/L		0.0712		
Mercury (Hg)-Total	mg/L		<0.0000050		
Molybdenum (Mo)-Total	mg/L		<0.0010		
Nickel (Ni)-Total	mg/L		0.0011	0.50	1.00
Potassium (K)-Total	mg/L		<2.0		
Selenium (Se)-Total	mg/L		<0.000050		
Silver (Ag)-Total	mg/L		<0.000020		
Sodium (Na)-Total	mg/L		19.4		
Thallium (Tl)-Total	mg/L		<0.00020		
Tin (Sn)-Total	mg/L		<0.00050		
Titanium (Ti)-Total	mg/L		<0.010		
Uranium (U)-Total	mg/L		<0.00020		
Vanadium (V)-Total	mg/L		<0.00050		
Zinc (Zn)-Total	mg/L		0.152	0.50	1.00
Radium 226	Bq/L		< 0.01	0.37 Bq/L	1.11 Bq/L
BOD	mg/L		3	80	160
Fecal Coliform	CFU/mL		<1	10,000 CFU/100mL	10,000 CFU/100mL

^Ammonia maximum criteria based on pH 7 at 20°C.

TL-2 Doris Outflow Creek Upstream at the Flow Monitoring Station

Table 27 - Water Quality from Doris Outflow Creek (TL-2), June to July 2015, in mg/L unless otherwise specified

TMAC Sample ID		TL2-15JUN15A	TL2-15JUN15B	TL2-03JUL15	TL2-06JUL15	TL2-11JUL15	TL2-13JUL15	TL2-20JUL15	TL2-27JUL15	Part G Item 30
ALS ID		L1628002-2	L1628002-3	L1636792-2	L1638435-2	L1642261-2	L1642261-5	L1645878-2	L1649292-2	Max Grab Sample (mg/L)
Sample Date/Time		6/15/2015 6:30:00 PM	6/15/2015 6:30:00 PM	7/3/2015 8:00:00 AM	7/6/2015 2:25:00 PM	7/11/2015 10:50:00 AM	7/11/2015 4:00:00 PM	7/20/2015 3:30:00 PM	7/27/2015 4:15:00 PM	
Parameter	**Units**	**Results**								
Hardness (as CaCO3)	mg/L	35.5	35.8	50.4	53.3	47.2	48	46.3	45.5	
pH	pH	7.5	7.46	7.46	7.56	7.71	7.7	7.76	7.85	6.0 – 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	4.8	5.6	5.1	5.3	4.7	<3.0	15
Total Dissolved Solids	mg/L	130	128	182	184	153	152	140	172	
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	1.54 *
Bromide (Br)	mg/L	0.172	0.169	0.237	0.234	0.216	0.222	0.209	0.207	
Chloride (Cl)	mg/L	49.6	49.5	69.4	71.8	64	63.7	63.1	61.8	150
Fluoride (F)	mg/L	0.044	0.044	0.055	0.056	0.051	0.051	0.048	0.05	
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.9
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.060
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	mg/L	0.0181	0.0243	0.0219	0.0281	0.0274	0.0206	0.0253	0.0175	
Sulphate (SO_4)	mg/L	2.14	2.14	2.96	2.63	2.76	2.76	2.69	2.74	
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.01
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005
Aluminum (Al)-Total	mg/L	**0.179**	**0.19**	0.0507	0.0589	0.078	0.0622	0.07	0.0711	0.100
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000017
Calcium (Ca)-Total	mg/L	5.88	5.91	8.98	9.56	8.43	8.54	8.29	8.24	
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Total	mg/L	0.0014	0.0014	0.0015	0.0014	0.0013	0.0014	0.0014	0.0014	0.002
Iron (Fe)-Total	mg/L	**0.383**	**0.392**	0.103	0.252	0.23	0.207	0.175	0.132	0.300
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.001
Lithium (Li)-Total	mg/L	0.003	0.0029	0.0036	0.0036	0.0032	0.0031	0.0036	0.0033	
Magnesium (Mg)-Total	mg/L	5.07	5.12	6.78	7.15	6.35	6.47	6.21	6.06	
Manganese (Mn)-Total	mg/L	0.0443	0.0452	0.0128	0.0367	0.0279	0.0234	0.0185	0.0119	
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000026
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.073
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.025
Potassium (K)-Total	mg/L	2.1	2.2	2.4	2.6	2.3	2.3	2.3	2.2	
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.0010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.0001
Sodium (Na)-Total	mg/L	25.2	25.5	34.5	36.8	32.9	33.4	31.2	32.2	
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0008
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Vanadium (V)-Total	mg/L	0.00052	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.030

Note: Bold text indicates exceedence of TL-3 (downstream) criteria at TL-2 (upstream).

** Ammonia maximum criteria based on pH 7 at 20°C.*

Table 28 - Water Quality from Doris Outflow Creek (TL-2), August to September, 2015, in mg/L unless otherwise specified

TMAC Sample ID		TL2-03AUG15	TL2-11AUG15	TL2-17AUG15	TL2-24AUG15	TL2-31AUG15	TL2-8SEP15	TL2-14SEP15	TL2-21SEP15	Part G Item 30
ALS ID		L1652373-2	L1655590-2	L1659466-2	L1663071-2	L1666614-2	L1669385-3	L1673349-2	L1676985-2	Max
Sample Date/Time		8/3/2015 8:40:00 AM	8/11/2015 7:50:00 AM	8/17/2015 2:35:00 PM	8/24/2015 8:45:00 AM	8/31/2015 8:30:00 AM	9/8/2015 10:25:00 AM	9/14/2015 5:10:00 PM	9/21/2015 9:00:00 AM	Grab Sample (mg/L)
Parameter	**Units**	**Results**								
Hardness (as CaCO3)	mg/L	43.3	46.7	47.1	45.4	47.7	48.2	46.1	46.9	
pH	pH	7.72	7.68	7.83	7.72	7.93	7.9	7.94	7.64	6.0 – 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	3.6	5.1	7	6	6.6	9.8	15
Total Dissolved Solids	mg/L	159	157	140	171	141	164	150	149	
Ammonia, Total (as N)	mg/L	0.0216	<0.0050	0.009	<0.0050	<0.0050	<0.0050	0.007	<0.0050	1.54 *
Bromide (Br)	mg/L	0.193	0.197	0.203	0.205	0.2	0.199	0.2	0.201	
Chloride (Cl)	mg/L	58.3	58.7	60.2	60.5	60.3	59.9	60.8	60.1	150
Fluoride (F)	mg/L	0.052	0.047	0.052	0.05	0.052	0.047	0.051	0.052	
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.9
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.060
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	mg/L	0.0094	0.0172	0.0209	0.0213	0.0162	0.0253	0.0233	0.0262	
Sulphate (SO_4)	mg/L	2.63	2.63	2.91	2.93	2.76	2.69	2.91	2.69	
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.01
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005
Aluminum (Al)-Total	mg/L	0.0919	0.0875	0.0625	0.0626	**0.123**	0.0712	0.0769	0.0748	0.100
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000017
Calcium (Ca)-Total	mg/L	7.81	8.47	8.53	8.19	8.65	8.71	8.29	8.48	
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Total	mg/L	0.0015	0.0014	0.0015	0.0014	0.0015	0.0015	0.0015	0.0015	0.002
Iron (Fe)-Total	mg/L	0.116	0.136	0.121	0.138	0.229	0.142	0.133	0.121	0.300
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.001
Lithium (Li)-Total	mg/L	0.0033	0.0033	0.0031	0.0035	0.0034	0.0035	0.0037	0.0034	
Magnesium (Mg)-Total	mg/L	5.77	6.22	6.26	6.07	6.33	6.41	6.17	6.25	
Manganese (Mn)-Total	mg/L	0.00973	0.0144	0.0181	0.0211	0.0273	0.018	0.0193	0.016	
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000026
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.073
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.025
Potassium (K)-Total	mg/L	2.1	2.2	2.3	2.2	2.3	2.3	2.2	2.3	
Selenium (Se)-Total	mg/L	<0.000050	0.000105	<0.000050	<0.000050	<0.000050	0.000065	<0.000050	<0.000050	0.0010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.0001
Sodium (Na)-Total	mg/L	29.6	30.1	30.9	30.5	30.6	31.7	30.6	32.4	
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0008
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00084	<0.00050	
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.030

Note: Bold text indicates exceedence of TL-3 (downstream) criteria at TL-2 (upstream).

** Ammonia maximum criteria based on pH 7 at 20°C.*

TL-3 Doris Outflow Creek 80m Downstream of Base of Waterfall

Table 29 - Water Quality from Doris Outflow Creek (TL-3), June to July, 2015, in mg/L unless otherwise specified

TMAC Sample ID		TL3-15JUN15A	TL3-15JUN15B	TL3-03JUL15	TL3-06JUL15	TL3-11JUL15	TL3-11JUL15 DUP	TL3-13JUL15	TL3-20JUL15	TL3-27JUL15	Part G Item 30
ALS ID		L1628002-4	L1628002-5	L1636792-3	L1638435-3	L1642261-3	L1642261-7	L1642261-6	L1645878-3	L1649292-3	Max Grab Sample (mg/L)
Sample Date/Time		6/15/2015 6:30:00 PM	6/15/2015 6:30:00 PM	7/3/2015 7:45:00 AM	7/6/2015 2:10:00 PM	7/11/2015 10:35:00 AM	7/11/2015 10:35:00 AM	7/11/2015 3:40:00 PM	7/20/2015 4:00:00 PM	7/27/2015 4:30:00 PM	
Parameter	**Units**	**Results**									
Hardness (as CaCO3)	mg/L	37.2	36.9	51.1	54.6	48.1	-	48.1	47.4	46.4	
pH	pH	7.5	7.55	7.53	7.62	7.72	-	7.71	7.81	7.75	6.0 – 9.0
Total Suspended Solids	mg/L	5.4	<3.0	7.3	5.4	4.5	-	3.5	3	4.1	15
Total Dissolved Solids	mg/L	134	127	184	183	154	-	156	142	173	
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0093	-	0.009	0.0127	0.0118	1.54 *
Bromide (Br)	mg/L	0.175	0.176	0.23	0.225	0.215	-	0.207	0.2	0.199	
Chloride (Cl)	mg/L	51	51	68.1	70.4	62.6	-	62.3	61.3	61	150
Fluoride (F)	mg/L	0.045	0.045	0.055	0.056	0.051	-	0.051	0.048	0.05	
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	2.9
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	0.060
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	0.0024	<0.0010	-	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	mg/L	0.0173	0.0184	0.0306	0.0272	0.0302	-	0.0128	0.0207	0.0212	
Sulphate (SO_4)	mg/L	2.24	2.24	2.92	2.64	2.75	-	2.73	2.69	2.74	
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	0.01
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	0.005
Aluminum (Al)-Total	mg/L	**0.156**	**0.161**	0.0487	0.058	0.0652	-	0.0525	0.0553	0.0663	0.100
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	0.0050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	<0.0000050	0.000017
Calcium (Ca)-Total	mg/L	6.29	6.21	9.19	9.91	8.74	-	8.73	8.68	8.5	
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	-	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Total	mg/L	0.0013	0.0014	0.0015	0.0013	0.0013	-	0.0014	0.0013	0.0014	0.002
Iron (Fe)-Total	mg/L	**0.353**	**0.35**	0.107	0.246	0.212	-	0.185	0.164	0.129	0.300
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	0.001
Lithium (Li)-Total	mg/L	0.003	0.0029	0.0036	0.0036	0.003	-	0.0031	0.0036	0.0032	
Magnesium (Mg)-Total	mg/L	5.22	5.19	6.84	7.24	6.38	-	6.39	6.26	6.12	
Manganese (Mn)-Total	mg/L	0.0379	0.037	0.0143	0.0333	0.0249	-	0.0216	0.018	0.0132	
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	<0.0000050	0.000026
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	0.073
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	0.025
Potassium (K)-Total	mg/L	2.2	2.2	2.4	2.6	2.3	-	2.3	2.3	2.2	
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	<0.000050	0.0010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	-	<0.000020	<0.000020	<0.000020	0.0001
Sodium (Na)-Total	mg/L	26.1	25.9	33.9	36.5	32.2	-	32.5	30.5	32.3	
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-	<0.00020	<0.00020	<0.00020	0.0008
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-	<0.00020	<0.00020	<0.00020	
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	0.030
Hexavalent Chromium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	0.0010
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	**6.3**	<5.0 **	<5.0	<5.0	<5.0	5
Oil and Grease (visible sheen)		NO	NO	NO	NO	NO	-	NO	NO	NO	

**Ammonia maximum criteria based on pH 7 at 20°C.*

*** Duplicate analysis for Oil and Grease with silica gel cleanup to remove natural organic sources.*

Notes: Bold text and shaded cell indicates TL-3 was above discharge criteria and above background at TL-2 during the same sampling event.

Table 30 - Water Quality from Doris Outflow Creek (TL-3), August to September, 2015, in mg/L unless otherwise specified

TMAC Sample ID		TL3-03AUG15	TL3-11AUG15	TL3-17AUG15	TL3-24AUG15	TL3-31AUG15	TL3-8SEP15	TL3-14SEP15	TL3-21SEP15	Part G Item 30
ALS ID		L1652373-3	L1655590-3	L1659466-3	L1663071-3	L1666614-3	L1669385-4	L1673349-3	L1676985-3	Max Grab Sample (mg/L)
Sample Date/Time		8/3/2015 8:20:00 AM	8/11/2015 8:05:00 AM	8/17/2015 2:50:00 PM	8/24/2015 8:35:00 AM	8/31/2015 8:17:00 AM	9/8/2015 10:35:00 AM	9/14/2015 4:55:00 PM	9/21/2015 8:15:00 AM	
Parameter	**Units**	**Results**								
Hardness (as CaCO3)	mg/L	44.8	47.6	48	46.3	48.4	47.6	46.8	47.4	
pH	pH	7.67	7.65	7.81	7.67	7.87	7.87	7.75	7.57	6.0 – 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	5.2	5	7	6.2	7.4	10.4	15
Total Dissolved Solids	mg/L	159	162	155	171	137	158	152	149	
Ammonia, Total (as N)	mg/L	0.0073	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	0.0052	0.0076	1.54 *
Bromide (Br)	mg/L	0.194	0.187	0.193	0.199	0.191	0.191	0.198	0.193	
Chloride (Cl)	mg/L	57.3	57.7	58.5	59.1	58.9	58.4	58.6	58.1	150
Fluoride (F)	mg/L	0.052	0.047	0.053	0.05	0.052	0.048	0.05	0.053	
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.9
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.060
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	
Phosphorus (P)-Total	mg/L	0.0091	0.0145	0.0221	0.0222	0.0181	0.0238	0.0253	0.0139	
Sulphate (SO_4)	mg/L	2.47	2.47	2.72	2.82	2.69	2.56	2.65	2.68	
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.01
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005
Aluminum (Al)-Total	mg/L	0.0883	0.0906	0.0559	0.059	0.0886	0.0717	0.0801	0.0861	0.100
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000017
Calcium (Ca)-Total	mg/L	8.17	8.75	8.83	8.6	8.99	8.8	8.65	8.78	
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Total	mg/L	0.0015	0.0014	0.0014	0.0013	0.0015	0.0014	0.0015	0.0015	0.002
Iron (Fe)-Total	mg/L	0.132	0.153	0.136	0.161	0.203	0.168	0.166	0.151	0.300
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.001
Lithium (Li)-Total	mg/L	0.0033	0.0034	0.0031	0.0034	0.0033	0.0036	0.0038	0.0033	
Magnesium (Mg)-Total	mg/L	5.93	6.24	6.31	6.03	6.31	6.23	6.12	6.18	
Manganese (Mn)-Total	mg/L	0.0135	0.017	0.0195	0.0214	0.0256	0.0197	0.0202	0.0181	
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000026
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.073
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.025
Potassium (K)-Total	mg/L	2.1	2.2	2.3	2.2	2.3	2.2	2.1	2.3	
Selenium (Se)-Total	mg/L	0.000059	0.000095	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.0010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.0001
Sodium (Na)-Total	mg/L	29.8	29.4	30.7	27.6	29.9	29.8	29.3	31.1	
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0008
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00095	<0.00050	
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.030
Hexavalent Chromium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil and Grease (visible sheen)		NO	NO	NO	NO	NO	NO	NO	NO	

**Ammonia maximum criteria based on pH 7 at 20°C.*

*** Duplicate analysis for Oil and Grease with silica gel cleanup to remove natural organic sources.*

Notes: Bold text and shaded cell indicates TL-3 was above discharge criteria and above background at TL-2 during the same sampling event.

TL-10 Water Column in Deepest Portion of the TIA and at a Location Away from the TIA Reclaim Water Floating Pump House, Sampled at Surface, Mid-depth and Near Bottom

Table 31 - Water Column Sampling in the TIA (TL-10), August 2015, in mg/L unless otherwise specified

TMAC Sample ID		TL10-07AUG15S*	TL10-07AUG15M*	TL10-07AUG15D*
ALS ID		L1654731-1	L1654731-2	L1654731-3
Sample Date/Time		8/7/2015 4:55:00 PM	8/7/2015 5:10:00 PM	8/7/2015 5:25:00 PM
Parameter	**Units**	**Results**		
Hardness (as CaCO3)	mg/L	51.2	50.8	51.8
pH	pH	7.5	7.58	7.58
Redox Potential	mV	486	489	477
Dissolved Oxygen	mg/L	9.4 ^	9.3 ^	9.3 ^
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	122	122	123
Ammonia, Total (as N)	mg/L	0.0114	0.0253	0.0093
Bromide (Br)	mg/L	0.088	0.08	0.08
Chloride (Cl)	mg/L	38	37.7	37.8
Fluoride (F)	mg/L	0.053	0.054	0.054
Nitrate (as N)	mg/L	0.0107	<0.0050	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0126	0.0201	0.013
Sulfate (SO4)	mg/L	2.2	2.15	2.15
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0403	0.0415	0.0419
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	11.3	11.2	11.3
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0013	0.0011	0.001
Iron (Fe)-Total	mg/L	0.167	0.162	0.165
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0036	0.0037	0.0036
Magnesium (Mg)-Total	mg/L	5.6	5.56	5.75
Manganese (Mn)-Total	mg/L	0.038	0.0377	0.0374
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	<2.0	<2.0	2.1
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	19	18.7	19.9
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020

TMAC Sample ID		TL10-07AUG15S*	TL10-07AUG15M*	TL10-07AUG15D*
ALS ID		L1654731-1	L1654731-2	L1654731-3
Sample Date/Time		8/7/2015 4:55:00 PM	8/7/2015 5:10:00 PM	8/7/2015 5:25:00 PM
Parameter	**Units**	**Results**		
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.0062	<0.0050	<0.0050

** S = Shallow, M = Mid-depth, D = Deep*

^ Field measurement.

Measurement of Ice Thickness on the TIA

TIA ice thickness measurement is not required prior to tailings deposition (Part J, Item 12(g)).

Visual Assessment of Suspended Sediment along Perimeter of TIA Shoreline

During weekly inspections at the North Dam and during water quality monitoring activities, a visual assessment of suspended sediment along the perimeter of the TIA shoreline was conducted in accordance with Part J, Item 21(e). No shoreline-specific turbidity was noted.

Doris North Camp Diversion Berm Effectiveness

The Diversion Berm north of the camp and mine infrastructure appears to effectively route surface runoff away from the camp pads. The berm is monitored during spring melt and in association with heavy or sustained rainfall events and is included in the routine inspection of all site water management structures.

2. Summary of the Construction Monitoring Report [see Part D, Item 8 and outlined in Schedule D]

Construction activities resumed in summer of 2015 at the Doris North Project. The airstrip was expanded within the footprint previously permitted. Construction began on the future waste rock storage pad (Pad T) and on the mill site foundation in preparation for anticipated construction of the processing plant in 2016. A Construction Monitoring Report for 2015 will be submitted to the NWB in April 2015.

3. Summary of Geochemical Monitoring and Waste Rock Storage Assessment [see Schedule B Item 3]

The only section of Schedule B, Item 3 reporting relevant to Doris North at this time is Part (c) pertaining to waste rock. Geochemical Monitoring pertaining to Parts (a), (b), (d) and (e) do not yet apply.

A total of 30,955 tonnes of waste rock was placed on Pad T and the temporary waste rock pad. The total volume of waste rock on the surface as of the end of 2015 was 220,562 tonnes.

In 2015, additional waste rock was removed from the mine and deposited in the Pollution Control System as per the Waste Rock Management Plan. More recently, waste rock on Pad I has been re-contoured resulting in a broader flat surface. This approach to management of the waste rock at Pad I facilitated the creation of more space for ore storage adjacent to the location of the mill footprint. The waste rock at Pad I remains in the Pollution Control System as required for waste rock management and introduces no additional requirements for runoff management or collection. Annual assessment of this waste rock and other pads within the waste rock storage area will continue to be assessed as per Section 3 of the Waste Rock and Ore Storage Management Plan.

4. Summary of the results of the monthly water balance and water quality model assessments referred to in Part G, Item 33 and any re-calibrations that have been carried out [see Schedule B, Item 4]

The TIA has not yet been fully commissioned, and no mill tailings have been deposited. The Doris North mine plan is currently being re-evaluated and new modelling will be developed to incorporate planned changes. Updates to the water balance and water quality model have been provided to the NWB through the Doris North Water Licence Amendment Process, as outlined in TMAC's *Revisions to TMAC Resources Inc. Amendment Application No. 1 of Project Certificate No. 003 and Water Licence 2AM-DOH1323 (the Amendment Application)* submitted to the Nunavut Impact and Review Board (NIRB) and the Nunavut Water Board (NWB) in June 2015.

5. Summary of the Geotechnical Inspection Report referred to in Part J, Item 18 [see Schedule B, Item 5]

TMAC contracted SRK Consulting (Canada) Inc. (SRK) to conduct the annual geotechnical site inspection of the Doris North Project in accordance with the stipulated license conditions. This investigation was carried out from August 15-16, 2015. TMAC will be submitting the full reports for the 2015 Annual Geotechnical Inspection of Doris North and 2015 Annual Geotechnical Inspection of the North Dam Tailings Impoundment Area in April of 2016.

Indigenous and Northern Affairs Canada (INAC) also conducted a geotechnical inspection of the Doris North Project in 2016. INAC submitted a report on this inspection to the NWB on December 23, 2015. The summary recommendations of that report are presented below along with INAC's ranking of priority, SRK response and, where necessary, a response from TMAC.

Table 32 – Responses to INAC Geotechnical Inspection Recommendations

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
L	Roberts Bay Jetty	The thermistors should be monitored in accordance with the recommended schedule.	This is part of TMAC's standard operating procedure for geotechnical data collection. No further action required.	

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		The recommendations with respect to staff inspections and repairs, and staff operational awareness, as well as settlement monitoring made by PND Engineers Canada Inc. (PND) should be implemented (PND 2013).	TMAC is fully aware of these conditions, and SRK reminds TMAC annually of this during the geotechnical inspection. No further action required.	
L	Shoreline Laydown Area	It is recommended that the area along the south edge of the main laydown pad be monitored to determine whether water regularly ponds against the main laydown pad. If so, accumulated water should be pumped out during freshet and after significant or prolonged rainfall events.	This is part of TMAC's standard operating procedure for water management. No further action required.	
L	20 ML Roberts Bay Tank Farm Secondary Containment	Pieces of spalled rock should be removed from within the limits of the HDPE liner area. The pieces have sharp edges that can damage the liner, particularly if they are pushed into the liner under the weight of equipment moving within the containment area.	SRK agrees with this recommendation	TMAC will undertake this action in 2016
		Sections of exposed liner should be documented and inspected for damage. The gravel cover at wheel and track marks should be measured. Where the gravel is less than the design thickness, the gravel should be scraped back to expose the liner for inspection. The liner should be repaired if required by qualified personnel, and the cover gravel replaced.	SRK can confirm that the gravel cover at all locations did meet design specification. No further action required.	
		Appropriate snow clearing and water management practices should be maintained to prevent water from building up inside the containment berm that can cause potential erosion of the cover gravel and the raised tank pedestals.	This is part of TMAC's standard operating procedures. No further action required. .	
		The construction of the sump should be checked to see if it were designed to allow water to enter from the sides. If so, the sump should be pumped out and monitored to see if water is entering from the sides. The concentration of sediment may be blinding the gravel cover in the immediate vicinity of the sump, and the gravel may need to be replaced with cleaner material at some time.	SRK can confirm that the sump has been designed to allow water to enter from the side. Water management within the containment area is part of TMAC water management standard operating procedure. SRK agrees that the performance of the sump should be confirmed.	Sump performance will be monitored during the 2016 season

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		Recommendations from inspections carried out by specialists examining the stability of the rock face and a rockfall protection system should be implemented	Noted. This is part of TMAC's standard operating procedures. No further action required. .	
		Only essential traffic should be permitted inside the containment area.	This is part of TMAC's standard operating procedures. No further action required.	
H	5 ML Roberts Bay Tank Farm Secondary Containment	Pieces of spalled rock should be removed from within the limits of the secondary containment area. The pieces have sharp edges that can damage the liner, particularly if they are pushed into the liner under the weight of equipment moving within the containment area.	SRK agrees with this recommendation	TMAC will undertake this action in 2016
		Sections of exposed liner should be documented and inspected for damage. The gravel cover at wheel and track marks should be measured. Where the gravel is less than the design thickness, the gravel should be scraped back to expose the liner for inspection. The liner should be repaired if required by qualified personnel, and the cover gravel replaced.	SRK can confirm that the gravel cover at all locations did meet design specification. No further action required.	
		If an extension of the liner limits is required to meet the design capacity of the tank farm, it must be completed before the re-commissioning of the tank.	TMAC is aware of this constraint. No further action required.	
		Because a portion of the secondary containment facility bears on bedrock and a portion on engineered fill, regular inspections should include an assessment for differential settlement.	This is part of TMAC's regular maintenance protocol. No further action required.	
		The construction of the sump should be checked to see if it were designed to allow water to enter from the sides. If so, the sump should be pumped out and monitored to see if water is entering from the sides. The concentration of sediment may be blinding the gravel cover in the	SRK can confirm that the sump has been designed to allow water to enter from the side. Water management within the containment area is part of TMAC water management standard operating	Sump performance will be checked during the 2016 season

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		immediate vicinity of the sump, and the gravel may need to be replaced with cleaner material.	procedure. SRK agrees that the performance of the sump should be confirmed.	
L	Roberts Bay Waste Management Area	Continue monitoring areas where rock was relocated from the tundra for signs of thermal settlement, and for ponded water along the edges of the thermal pad.	This is part of TMAC's standard operating procedure for water management. No further action required.	
L	Quarry #1 Overburden Dump	The perimeter of the sedimentation control berm should be visually monitored to see that it is performing as designed, and that there is no sediment transport off of the overburden pile onto the tundra.	This is part of TMAC's standard operating procedure for water management. No further action required.	
		The areas of subsidence are expected to require periodic ongoing maintenance with the placement of additional material. If this area is used for storage at some time in the future, increased maintenance requirements can be expected.	TMAC is aware of this constraint. No further action required at this time.	
M	Airstrip	Areas where rock has been removed from the tundra should be monitored visually for deterioration. Even if the rock was carefully removed a thin layer of sand and gravel generally remains that will affect the vegetation and underlying thermal properties. This could depress the active layer and result in thawing and settlement.	This is part of TMAC's standard operating procedure for water management. No further action required.	
		Although no standing water was observed on the airstrip at the time of the inspection, it is understood that there is a maintenance protocol in place whereby standing water is pumped out, and should be implemented whenever necessary.	This is part of TMAC's standard operating procedure for water management. No further action required.	
		The tension cracks observed in the vicinity of the control tower and other nearby structures should be repaired. Generally these structures lie close to the edge of the pad and may experience some movement or damage if the cracks widen and are not repaired.	These cracks will continue to occur as it is an expected permafrost degradation feature. Repair will only mask the cracks. TMAC routinely monitors these areas and will relocate structures as required. No further action required	
L	Former Wash Bay/Explosives Mixing Plant	If it is proposed to repurpose the building in the future, the tension cracks should be repaired. There is some potential for the cracking to propagate back into the pad and undermine the concrete building pad.	Noted. TMAC is aware of this issue and will take actions as necessary to ensure safety of personnel and equipment. No further action required at this time.	TMAC has relocated this building and currently there are no plans for new structures on this pad.
L	Upper Reagent Pad AN Storage	If it is proposed to use this area for secondary containment, the liner	SRK agrees with this recommendation.	Area, if used, will be examined and

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		should be exposed to confirm that it is undamaged.		repaired if required before use. TMAC has obtained approval from the Mines Inspector for new explosives storage facility off the new Tail Lake Road extension. There are currently no plans for bulk AN storage on site as TMAC has moved to shipping premixed explosives to site.
H	Sewage Treatment Plant Outfall	The original pipeline outlet should be monitored in the Spring for thermal settlement. The outlet should be switched to the bedrock outcrop as soon as possible in the Spring.	SRK agrees with this recommendation.	This is done as TMAC standard operating procedure
M	Landfarm / Rock Core Storage	Large pieces of stone / rock should be removed from the cells to avoid damage to the HDPE liner. Areas where stone has been (partly) scuffed off the liner should be replaced to provide a full cover thickness. The pothole at the base of the snow pond ramp should be repaired and a diffuser should be used to reduce the impact of the inflow into the pond.	SRK agrees with the recommendations except the diffuser. Instead of a diffuser, TMAC can use something like an old conveyor belt to reduce the energy impact.	This is done as TMAC standard operating procedure
		The area between the rock core storage and the Quarry #2 overburden dump should be kept free of standing water.	This is part of TMAC's standard operating procedure for water management. No further action required.	
L	Quarry #2 and Crusher Area	Continue to manage the facility in accordance with the approved Quarry Management Plan.	Noted. No action required.	
M	Doris North Camp Pads (Pad X, Y, C, E/P, F, G, J/H, Q and Helipad)	Thermal pads are designed with the intent that no permanent heated facilities will be located on top of them. The heat can reduce the insulation properties of the pad and lead to permafrost degradation, and subsequent settlement below the structures. There are several heated structures on-site that should be monitored for settlement.	Structures are occupied daily. Any signs of deformation will be observed as a matter of routine operations. No further action required.	
		The vertical rock face should be inspected periodically, particularly after periods of freeze thaw, and loose rock should be scaled. Alternatively, netting and rock bolts could be installed, or barricades installed to prevent access to the	TMAC has a safety barricade and safety berm in place and has a standard operating procedure to ensure personnel and equipment safety. No further action required.	

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		base of the wall.		
M	7.5 ML Doris North Camp Tank Farm - Pad R Power Generation Station - Pad B	Long term stabilization measures have been designed for the rock faces to prevent damage to the tanks and the HDPE liner. These should be implemented as the site moves out of Care and Maintenance.	SRK agrees with this recommendation	This area is monitored and stabilization will be installed as needed
		The monitoring of the settlement points should continue regularly. A review of the foundation system should be undertaken to determine where the footings lie in proximity to the slope and what they bear on. A structural assessment of the stacks should also be undertaken.	The foundation of the stacks are understood. They are founded on compacted rockfill overlying deep permafrost. Ongoing settlement is part of TMAC's geotechnical monitoring standard operating procedure. No further action required.	
H	Waste Rock Pile Pad I	Once production resumes and if Pad I is used to store more waste rock, it will need to be managed in accordance with the Waste Rock Management Plan.	TMAC is aware of this requirement. No action required.	
		The stability of the waste rock pile along the south edge should be assessed, or the waste rock be removed from the edge of the pad. This area should be barricaded off until an assessment confirms that the pile is stable.	SRK has assessed this carefully looking at the pad configuration since inception. There are no cause for concern as the cracks are simple active zone cracks along the pad edge. No action required.	
H	Pollution Control Pond	The stability of the south edge of the Pollution Control Pond and the waste rock stockpile should be assessed. Continue to regularly regular monitor the temperature at the downstream side of the pond.	SRK has assessed this carefully looking at the pad configuration since inception. There is no cause for concern as the cracks are simple active zone cracks along the pad edge. No action required.	
H	Sedimentation Control Pond	It should be confirmed that the cuts in the HDPE liner lie above the elevation of the overflow pipelines. The overlap between the two sections of liner at the north end of the berm that separates the two ponds should be sealed.	The cuts are above the pond FSL and are therefore not of concern. The overlap between the ponds does not need to be sealed. This overlap is above the ponds FSL. No action required.	
M	Sumps #1 and #2	A previous recommendation to backfill a low area around Sump #1 should be implemented to prevent standing water and further degradation of the permafrost.	SRK agrees with this recommendation, or alternately TMAC should ensure that any ponded water gets pumped out.	This is a TMAC standard seasonal practice
H	Doris Primary Vent Raise Pad	The rock wall is in close proximity to the vent raise. Previous recommendations with respect to the installation of appropriate barricades and signage should be implemented to keep people and	SRK agrees with this recommendation.	This has been implemented

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
		equipment at a safe distance from the wall.		
		The sump and cut-off trench should be completed to divert surface runoff from the bedrock away from the raise.	This is part of TMAC's operational plan for 2015. No further action required	TMAC is reviewing options for curtain grouting around the raise opening to reduce water inflow from surface runoff.
H	Doris North Dam	If not already implemented, a regular program should be carried out for the depressions across the upstream and downstream faces.	This is being done as part of the weekly inspection reports carried out by TMAC. No further action required.	
		As previously recommended, sampling and testing of the seepage water along the toe should be carried out to characterize the seepage water to eliminate seepage from under the dam as a source.	This was completed by TMAC and the data analyzed by SRK. Ongoing monitoring is part of TMAC's standard operating procedure for North Dam monitoring. No further action required.	
		A regular maintenance program of the thermosyphons should be developed and implemented.	TMAC has received a cost estimate to complete the work from a contractor. This should be scheduled before onset of the next winter season.	This program is carried out by TMAC's Electrical and Instrumentation Department
M	All-Weather Roads (Doris Site)	Former roadside turnout areas should be monitored for signs of thermal settlement. Areas where water regularly ponds against the road's toe should be documented and checked during freshet and after significant precipitation. Standing water should be pumped from these areas.	This is part of TMAC's standard operating procedure for water management. No further action required.	
		It has been recommended that a buttress be constructed along the toe of the Secondary Road where there was a previous instability, although this has not been implemented. With construction activities, and as the mine goes into production, this road is expected to see increased traffic. It is recommended that a toe berm should be constructed. Until it is in place, the slope should be monitored for signs of movement	This area has not seen any movement for at least three years. SRK is of the opinion that the area has stabilized and no longer recommends construction of a toe buttress.	
M	Doris Creek Bridge	The thermistors should continue to monitor permafrost conditions at the bridge abutments. The gabions should be monitored to see if there is ongoing deformation.	This is part of TMAC's standard operating procedure for geotechnical data collection. No further action required.	
M	Doris-Windy All-Weather Road	Former roadside turnout areas should be visually monitored for signs of thermal settlement.	This is part of TMAC's standard operating procedure for water	

Priority	Area	2015 INAC Recommendations	SRK Response	TMAC Action Taken
			management. No further action required.	

6. An update on the current capacity of the Tailings Impoundment Area [See Schedule B, Item 6]

The North Dam which ensures containment of the TIA was completed in 2012 but no mill tailings have been deposited to date. The available capacity is 100%.

7. A comparison of the flows (m^3/day) at monitoring stations TL-1, TL-2, TL-3, and TL-4 [See Schedule B, Item 7]

TL-1 is the intake for the pump used to dewater the TIA and TL-4 is the discharge end of the same pipe. TL-2 is the background Doris Creek flow (upstream of TL-4), and TL-3 is the flow measured just downstream of TL-4 in Doris Creek. Table 33 presents a flow comparison between the four monitoring stations. The total volume of water discharged from the TIA to Doris Creek in 2015 is presented above in Table 22.

The values presented in Table 33 include the corrected Doris Creek (TL-2 and TL-3) flows. These may differ slightly from the values presented in the monthly 2AM-DOH1323 reports, as they would have been retroactively corrected based on open-water season hydrological surveys. These surveys occasionally identify the need to revise the Doris Creek discharge curve relationship (based on changes in stream channel morphology) which prompts a re-estimation of creek discharge.

Discharge marginally exceeded 10% of Doris Creek flows on 15 days in September. On these occasions, discharge was equivalent to 10 – 11 % of Doris Creek flow, and this exceedance was due to a retroactive correction of the Doris Creek discharge estimate as a result of stream morphology change. Full information on Doris Creek flows is presented in the 2015 Doris North Project Hydrology Compliance Monitoring Program Report (ERM 2016).

Table 33 – Comparison of Flows between Monitoring Stations TL-1, TL-2, TL-3, and TL-4, in cubic metres (m^3) for 2015, when discharge occurred.

Date	TL-1 Flows	TL-4 Flows	TL-2 Flows	TL-3 Flows
30/06/2015	3094.63	3182.83	183290.79	184913.97
01/07/2015	7958.64	7832.73	178968.09	180369.08
02/07/2015	4273.73	4413.08	173383.38	173780.49
03/07/2015	7920.21	7896.83	165830.45	164772.74
04/07/2015	7867.56	7822.54	158822.85	157235.07
05/07/2015	7745.23	7729.94	154162.86	152397.62
06/07/2015	7813.1	7821.53	149047.87	147148.97

Date	TL-1 Flows	TL-4 Flows	TL-2 Flows	TL-3 Flows
07/07/2015	7879.64	7888.03	143643.84	142202.07
08/07/2015	5155.17	5149.37	138491.60	137868.83
09/07/2015	7874.92	7821.84	134821.64	134964.70
10/07/2015	7831.72	7829.49	133545.04	134215.09
11/07/2015	7932.14	7925.02	130221.87	131232.61
12/07/2015	7516.65	7546.47	125817.94	128167.12
13/07/2015	7932.54	7927.15	122360.89	124743.08
14/07/2015	7861.26	7848.71	118413.54	121198.20
15/07/2015	7521.24	7519.18	114337.91	116662.67
16/07/2015	8050.35	8034.92	109933.06	113062.75
17/07/2015	7784.14	7781.47	107845.93	108319.51
18/07/2015	7721.71	7705.94	105896.83	104239.33
19/07/2015	7648.03	7630.58	104053.95	99908.19
20/07/2015	7679.21	7658.26	105629.41	103377.65
21/07/2015	7696.23	7679.48	105976.89	105453.61
22/07/2015	7333.61	7320.59	112541.65	120639.88
23/07/2015	7524.16	7507.08	139266.83	154872.39
24/07/2015	4190.13	4178.8	160087.97	170849.84
25/07/2015	7314.9	7268.56	189693.68	202161.57
26/07/2015	7342.64	7337.27	227467.43	240247.71
27/07/2015	7611.18	7607.89	255043.03	269049.32
28/07/2015	7905.29	7899.35	273319.37	288912.57
29/07/2015	7860	7855.54	280675.15	295760.25
30/07/2015	7652.95	7647.53	279678.81	295186.65
31/07/2015	8062.03	8058.8	274715.78	289746.15
01/08/2015	7762.89	7757.26	264019.21	279042.25
02/08/2015	7875	7871.49	251045.97	264456.46
03/08/2015	7714.52	7700.83	233990.62	247410.38
04/08/2015	6569.56	7945.44	220044.02	232753.66
05/08/2015	6056.35	6217.38	204789.01	217571.65
06/08/2015	7530.32	7523.1	193501.65	207102.06
07/08/2015	7802.09	7781.07	177451.32	191267.79
08/08/2015	7945.5	7926.39	166144.20	181786.33
09/08/2015	7646.68	7640.62	157202.88	173199.65
10/08/2015	7599.3	7572.88	147741.00	164423.25
11/08/2015	7418.23	7442.78	137205.19	153811.12
12/08/2015	7599.23	7616.74	127518.06	144069.17
13/08/2015	7667.3	7740.04	121063.31	140451.27
14/08/2015	7531.73	7524.69	115509.52	133624.38
15/08/2015	7567.82	7470	111507.49	128990.91
16/08/2015	5376.74	5305.71	108537.32	123378.57
17/08/2015	8320.42	8226.76	105493.26	117960.42
18/08/2015	8342.75	8225.66	102343.94	113174.03
19/08/2015	8236.22	8231.75	99234.27	108231.25
20/08/2015	7995.36	8008.94	95923.27	103359.42
21/08/2015	7699.92	7733.31	93188.87	99324.25
22/08/2015	7668.32	7708.33	92948.75	99445.51
23/08/2015	7378	7447.89	92670.29	99511.99
24/08/2015	7033.24	7109.78	91084.19	97027.15

Date	TL-1 Flows	TL-4 Flows	TL-2 Flows	TL-3 Flows
25/08/2015	7832.15	7823.65	89619.34	95718.15
26/08/2015	7857.25	7853.12	88663.39	94558.68
27/08/2015	7551.68	7557.39	87962.49	93411.58
28/08/2015	7557.85	7552.75	86471.23	91536.48
29/08/2015	7707.25	7704.06	85407.66	90843.76
30/08/2015	7543.44	7516.28	84862.85	89823.80
31/08/2015	7215.61	7212.22	84669.77	89225.03
01/09/2015	6946.72	6941.68	82412.44	86485.91
02/09/2015	7072.54	7067.69	81742.07	84866.96
03/09/2015	7058.39	7045.85	81391.88	83437.58
04/09/2015	7857.37	7855.95	80588.95	83553.68
05/09/2015	**8052.68**	**8047.68**	79673.87	82540.39
06/09/2015	7796.36	7804	79027.40	81461.18
07/09/2015	**8245.75**	**8244.19**	78141.04	80426.76
08/09/2015	**7921.7**	**7913.26**	75867.57	77375.43
09/09/2015	**7633.52**	**7630.75**	74942.56	76241.02
10/09/2015	**7604.97**	**7600.37**	73835.79	75009.30
11/09/2015	**7762.03**	**7756.58**	71195.52	71399.00
12/09/2015	**7426.42**	**7422.82**	67943.76	66396.16
13/09/2015	**7422.5**	**7418.59**	66617.24	64721.57
14/09/2015	**7085.49**	**7081.21**	65642.77	63232.85
15/09/2015	**7002.43**	**7016.38**	65204.32	62560.47
16/09/2015	**6636.92**	6502.05	65094.86	61874.53
17/09/2015	6460.38	6234.38	64663.47	62091.98
18/09/2015	6398.25	6118.51	64425.86	61959.39
19/09/2015	6478.01	6233.36	64313.24	61954.69
20/09/2015	**6367.24**	**6299.76**	62493.10	59471.50
21/09/2015	**6353.23**	6150.28	61838.93	58110.73
22/09/2015	**6364.63**	5612.89	59757.64	56173.12
23/09/2015	**6312.88**	**6235.93**	57746.41	54300.11

Note: Figures in bold show when metered discharge to Doris Creek exceeded 10% of flow measured at TL-2.All exceedences ranged from 10-11% of TL-2 flows, and were a result of retroactive correction of the TL-2 flow estimates due to observed changes in stream morphology over the open water season.

8. Annual review and any revisions submitted in the form of addendums to the Management Plans or Emergency Response and Contingency Plan [See Schedule B, Item 8]

In 2015, TMAC revised and submitted, with the 2015 Water Licence Amendment Application, the following Plans:

- Interim Closure and Reclamation Plan
- Waste Rock and Ore Management Plan
- Water Management Plan

The revisions outlined in these plans reflect the proposed changes to the Project as outlined in the Amendment application.

TMAC will provide revisions to the following plans subsequent to this annual report submission:

- Spill Contingency Plan
- Waste Water Treatment Plan
- Incinerator Management Plan

These plans are being updated to reflect TMAC Project ownership, any additions or changes needed to appropriately reflect construction as well as operations phases, and to address any outstanding comments previously submitted to the NWB.

9. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken [See Schedule B, Item 9]

Date of Spill: November 2, 2015
Spill No: 15-543
Date of Notification to an Inspector: November 3, 2015
Product Spilled: Sewage
Details of Spill: A leak of an estimated 70L of sewage occurred beneath a dormitory building (D-Wing) at Doris Camp. The root cause was attributed to a disconnection of the sewage pipe from the coupler casing due to temperature changes beneath the building. A blockage occurred at this location and 20L of sewage was released and froze onto the camp pad surface. While thawing the pipe to repair the connection, an estimated 50L of additional sewage leaked onto the camp pad. The pipe was repaired and sewage was removed by vacuum truck or manually excavated from the camp pad surface. All sewage was disposed of in the Overburden stockpile as requested by the Inspector.

10. The results of the Aquatic Effects Monitoring Program in accordance with Part J, Item 3 [See Schedule B, Item 10]

The executive summary of the 2015 Aquatic Effects Monitoring Program Report is presented below. The complete report will be submitted to the NWB.

The Doris North Gold Mine Project (the Project) is located on the Hope Bay Belt (the Belt), an 80 by 20 km property along the south shore of Melville Sound in Nunavut. TMAC Resources Inc. (TMAC) acquired the Belt from Newmont Corporation in March 2013. The acquisition included exploration and mineral rights over the Hope Bay Belt, including the Doris North Gold Mine and its permits, licences and authorizations for development received by previous owners. In late 2012, prior to the sale, the Hope Bay Belt Project was placed into care and maintenance, and the Project was seasonally closed during the winter of 2012/2013. TMAC re-opened the Doris North Camp in March of 2013 for the purposes of conducting site water management and environmental compliance programs and to support exploration activities which have continued through 2015. Following notification to the Nunavut Water Board (NWB) and Nunavut Impact Review Board (NIRB), construction was resumed during the summer of 2015.

This report presents the results of the Doris North Project's 2015 Aquatic Effects Monitoring Program (AEMP). The 2015 AEMP was executed in accordance with the March 25, 2010, Aquatic Effects Monitoring Plan (the Plan; Rescan 2010c). This report presents the results from the sixth year of the AEMP pre-operations. The AEMP was designed to detect effects on the aquatic environment largely due to discharge of tailings effluent from the Tailings Impoundment Area (TIA). However, to date, no mine tailings have been placed in the TIA, although site contact water is placed in the TIA. As a result, minimal effects are expected on the aquatic environment at present. Operations, and the production of mine tailings, are anticipated to commence in late 2016/early 2017.

In accordance with the Plan, five stream sites (Doris Outflow, Roberts Outflow, Little Roberts Outflow, Reference B Outflow, and Reference D Outflow), five lake sites (Doris Lake North, Doris Lake South, Little Roberts Lake, Reference Lake B, and Reference Lake D), and three marine sites (Roberts Bay East, Roberts Bay West, and REF-Marine 1) were monitored. Aquatic components evaluated in 2015 included the following: lake and marine under-ice dissolved oxygen concentrations; lake Secchi depth; stream, lake, and marine water and sediment quality; stream periphyton biomass; lake and marine phytoplankton biomass; and stream, lake, and marine benthic invertebrate community density, taxa richness, evenness, diversity, and Bray-Curtis Index. Statistical and/or graphical analyses were performed in order to determine whether Project activities had affected exposure sites in 2015. The analyses included comparisons of baseline data to current (2015) data and/or comparisons of reference sites to exposure sites through time. Data were considered to be from the baseline period if they were collected prior to 2010, except in the case of under-ice dissolved oxygen (DO) for which 2010 data were also considered baseline. Lake and marine fish communities were last surveyed in 2010 (Rescan 2011) and were not resurveyed in 2015.

Streams

The water quality effects analysis found that mean 2015 pH levels and concentrations of evaluated nutrients and metals in exposure streams were all below CCME guidelines (CCME 2015b), except total aluminum. However, the total aluminum guideline was frequently exceeded in all exposure streams during baseline years, suggesting that the exposure streams contain naturally high concentrations of aluminum. Based on the 18 water quality variables that were evaluated, there were no apparent adverse changes to the water quality of exposure streams as a result of 2015 Project activities.

Mean 2015 sediment quality concentrations in AEMP exposure streams were below CCME interim sediment quality guidelines (ISQGs) and probable effects levels (PELs) except chromium in the sediments of Doris Outflow, which was slightly higher than the ISQG. At Doris and Little Roberts outflows, there were some differences in the particle size composition of sediment samples collected in 2015 compared to the particle size composition of baseline samples. Variation in sediment particle size composition was likely unrelated to 2015 Project activities, and probably reflected natural spatial heterogeneity in stream sediments. At Little Roberts Outflow, sediments in 2015 contained significantly lower concentrations of total organic carbon (TOC), copper, lead, and mercury than did baseline sediments. These decreases were likely attributable to the significant decrease in the proportion of fine sediments in 2015 samples compared to baseline samples, since fine sediments tend to be associated with higher

concentrations of TOC and metals than coarse sediments. Decreases in sediment metal concentrations are not of concern. Therefore, there were no apparent adverse effects of 2015 Project activities on the sediment quality of exposure streams.

There was no indication that 2015 Project activities affected periphyton biomass in the exposure streams.

There was no evidence of Project-related effects on benthos density, richness, evenness or diversity in exposure streams despite significant evidence of non-parallelism in trends in benthos family evenness and the Bray-Curtis Index between Doris Outflow and the reference streams, and total density between Little Roberts Outflow and the reference streams. Benthos community descriptors tended to be highly variable over time in both the exposure and reference streams, and the 2015 results were generally similar to previous years or within the range expected given these high levels of natural variability. The non-parallelism in trends between the exposure and reference sites was likely a result of the naturally high variability in the data, and no adverse effects of Project activities on stream benthos were found.

Lakes

There was no evidence of an effect of 2015 Project activities on either under-ice dissolved oxygen concentrations or Secchi depths in the exposure lakes.

The water quality effects analysis found that mean 2015 pH levels and concentrations of evaluated nutrients and metals in exposure lakes were all below CCME guidelines, except total copper which was slightly above the CCME guideline in Little Roberts Lake. However, the baseline mean total copper concentration at Little Roberts Lake was also above this CCME guideline, suggesting that copper concentrations are naturally elevated in this lake. Based on the 18 water quality variables that were evaluated, there were no apparent adverse changes to the water quality of exposure streams as a result of 2015 Project activities. Although pH increased significantly at Little Roberts Lake and hardness increased significantly at Doris Lake South in 2015, similar increases in pH and hardness occurred at Reference Lake B in 2015. This suggests that slight changes in pH and hardness can occur naturally and are not necessarily related to Project activities. There was also a slight (7%) increase in the total molybdenum concentration in Little Roberts Lake between baseline years and 2015. Although this increase in molybdenum was statistically significant, it is not considered environmentally or biologically important, as the increase was slight and 2015 concentrations remained well below the CCME guideline concentration. Therefore, there was no evidence of adverse effects of Project activities on lake water quality.

Mean 2015 concentrations of sediment quality variables were generally below CCME ISQGs, except arsenic in Doris Lake South and Doris Lake North, chromium at all exposure and reference sites, and copper at Doris Lake North. The arsenic PEL was also slightly exceeded at Doris Lake South. At all three lake exposure sites, there were some differences in the particle size composition in the sediment samples collected in 2015 compared to the particle size composition of baseline samples. Variation in sediment particle size composition was likely unrelated to 2015 Project activities, and probably reflected natural spatial heterogeneity in lake sediments. There was evidence of a slight increase in the TOC content in Doris Lake North sediments in 2015; however, the increase was quite small (8.2%) and was likely related to

natural variability rather than Project effects. Concentrations of several metals decreased in the sediments of exposure lakes in 2015 including cadmium in Doris Lake North, copper in Doris Lake South and North, lead in all three exposure sites, and zinc in Doris Lake North and Little Roberts Lake. Decreases in the concentrations of metals in sediments are not a cause for concern, so there were no apparent adverse effects of 2015 Project activities on sediment quality in exposure lake sites.

There was no indication of a Project-related effect on 2015 phytoplankton biomass in the exposure lakes.

In lake exposure sites, there was non-parallelism in 2010 to 2015 trends for nearly all benthos community descriptors when compared to the reference sites. There was evidence of significant non-parallelism for benthos density, the Simpson's Evenness Index, and the Bray Curtis Index for all exposure lakes relative to reference lakes. Benthos family richness trends were also non-parallel for Doris Lake South and Little Roberts Lake relative to the reference lakes, and Simpson's Diversity Index trends were non-parallel for Doris Lake North and South compared to the reference lakes. Benthos community descriptors tended to be highly variable over time in both the exposure and reference lakes, and the 2015 results were generally similar to previous years or within the range expected given these high levels of natural variability. The non-parallelism in trends between the exposure and reference sites was likely a result of the naturally high variability in the data, and no adverse effects of Project activities on lake benthos were found.

Marine

There was no evidence of an effect of 2015 Project activities on under-ice dissolved oxygen concentrations at the marine exposure sites in Roberts Bay, and 2015 concentrations remained above the CCME interim guideline for the minimum concentration of dissolved oxygen in marine and estuarine waters (8.0 mg/L).

The water quality effects analysis found that mean 2015 pH levels and concentrations of evaluated nutrients and metals in marine exposure sites were all below CCME guidelines. Based on the 18 water quality variables that were evaluated, there were no apparent adverse changes to the water quality of marine exposure sites that can be attributed to the Project.

Mean 2015 concentrations of sediment quality variables were generally below CCME ISQGs, except for copper at site RBW near the jetty. All sediment metal concentrations remained well below CCME PEL guidelines. Although there was no suitable baseline data to compare against 2015 sediment quality data from site RBE, concentrations of sediment quality variables were consistently lowest at this site, likely due to the greater levels of sand compared to the finer sediments at sites RBW and REF-Marine 1. At site RBW, there were significant increases in TOC and arsenic concentrations in sediments, but these increases were found to be parallel to the trends at the reference site, suggesting that the observed changes were unrelated to the Project. There were also increases in several metals in RBW sediments in 2015 that were not parallel to reference site trends, including chromium, copper, lead, and zinc. Concentrations of all these metals except for copper were higher in REF-Marine 1 sediments than RBW sediments in 2015, suggesting that concentrations of these metals in RBW sediments remained within levels expected for the region, and that Project activities did not adversely affect the sediment quality at

RBW. 2015 sediment copper concentrations at RBW were within range of concentrations measured at that site since 2012, and were just slightly higher than the upper limit of the range of copper concentrations measured in reference site sediments between 2009 and 2015. Thus, it is unlikely that 2015 Project activities are responsible for the increased concentrations of copper measured in the sediments of RBW, and the difference between baseline (2002) and 2015 copper levels at RBW is probably due to natural variability.

There was no indication of a Project-related effect on 2015 phytoplankton biomass at the marine exposure sites.

In the whole benthos community (adults and juveniles) and the adult subset of the community, significant non-parallelisms were detected for all evaluated benthos community descriptors at RBW and RBE relative to the REF-Marine 1, except for whole community benthos density and Simpson's Evenness Index at RBE. Most 2015 benthos community descriptors were within range of previous years, and there was no indication that benthos communities in 2015 at RBW or RBE were adversely affected by Project activities. Non-parallelisms in trends in the benthos communities were likely attributable to high inter-annual variability of all community descriptors at the exposure and reference sites.

Mitigation measures to reduce the potential for adverse effects to stream, lake, and marine habitats in the Doris North area included surface water runoff management, dust abatement measures, site water management, quarry and waste rock management, and waste management. The 2015 results indicate that these mitigation measures were effective in preventing potential effects to dissolved oxygen levels, water clarity (Secchi depth), water and sediment quality variables, periphyton and phytoplankton biomass levels, and benthic invertebrate communities in Project area waterbodies.

11. Annual adjustments to reclamation security including any additional security that may be required [See Schedule B, Item 11]

With the submission of the revised Doris North Mine Closure and Reclamation Plan in April 2014, TMAC included a revised securities estimate to the NWB for review. The revised closure cost estimate for Doris in that Plan is $21,660,000. The licence is currently bonded for $13,090,000 which covers the extent of facilities currently built at the project site. The bonding would only increase as additional facilities are constructed and the project enters the Operations phase, to eventually reach the revised closure cost estimate of $21,660,000.

With the submission of the Amendment Application in 2015, an additional Interim Closure and Reclamation Plan that reflected the amended Project was also provided.

12. Annual Incineration stack testing results [See Schedule B, Item 12]

Annual incinerator stack testing is required under the Canada Wide Standards (CWS) for Dioxins and Furans and the Canada Wide Standards for Mercury, when volumes incinerated exceed 26 tonnes per year. While the Project was in Care and Maintenance this quantity was not exceed.

However, with the resumption of construction project incineration was increased and stack testing will be conducted in 2016 to verify continued compliance with the CWS for dioxins and Furans, and Mercury.

13. Annual Landfill Management Report [See Schedule B, Item 13]

TMAC is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 9. To date, a landfill has not been built. All waste that cannot be incinerated on site is backhauled to an approved facility off site or stored on site for later landfilling. Because a landfill has not been constructed, no landfill management report has been prepared. TMAC will continue to manage solid waste produced in Hope Bay according to three waste management plans:

- Interim Non-Hazardous Waste Management Plan
- Hazardous Waste Management Plan
- Incinerator Management Plan

These plans describe how various streams of waste are managed. See Item 8 of this supplement for details on any revisions to these plans.

14. A summary of modifications and/or maintenance work carried out on the Water Supply and the Waste Disposal Facilities, including all associated structures, and an outline of any work anticipated for the next year [See Schedule B, Item 14]

In 2015, no modifications were made to the water supply. Pad T was constructed in 2015 for Waste Rock placement and new Westland CY-2050FA incinerators replaced the aging Westland CY 100 incinerator. The Incineration Management Plan is currently under revision to reflect the new incinerators and will be submitted to the NWB in Q2 2016.

In 2016, replacement and commissioning of a new Sewage Treatment Plant module (ST-8A) is anticipated to be completed (notification of this was submitted to the NWB on April 15, 2016). The existing burn pan will be replaced with one manufactured on site of similar design (notification of this was submitted to the NWB on April 15, 2016). The water uptake line for Windy Lake is also planned to be replaced by a slightly longer line of the same design (notification of this was submitted to the NWB on April 16, 2016). Construction is also expected to be completed on the TIA road, and initiated on the south and interim dams of the Tailings Impoundment Area in 2016.

15. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling [See Schedule B, Item 15]

In May 2015, reclamation work was conducted in one set of track depressions to the west of Doris Camp near the lower reagent pad and Quarry 2 where historical tundra vehicle trials occurred. This set of tracks was backfilled with material from the overburden stockpile mixed with peat moss.

Monitoring was conducted in June and August to evaluate the effectiveness of the reclamation methods in mitigating pooling water in this area. Pooling will be re-examined in 2016.

Progressive reclamation of 2015 surface exploration drill sites associated with the Doris North mine also occurred. The majority of the 2015 drill sites were reclaimed as soon as the drill setup was dismantled; freezing conditions at the end of the 2015 drill program prevented some sites from being fully remediated. These sites will be evaluated in 2016 and any outstanding reclamation activities will be completed.

16. A summary report describing public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events/information sessions [See Schedule B, Item 16]

Community consultations continued in accordance with the Community Relations Plan, which is a responsibility of the Cambridge Bay office of TMAC Resources Inc.

Alex Buchan, Director of Community Relations, based in Cambridge Bay is primarily responsible for implementing this Plan, with support from Julia Micks, VP of Human Resources. The Community Relations team includes and is supported by Ikey Evalik, Inuit Impact and Benefit Agreement Coordinator, and designated TMAC Liaison pursuant to Schedule B of the 2015 Hope Bay IIBA.

Community relations in 2015 focused on providing information to the public on the reactivation of the Doris North Project, providing information on TMAC Advanced Exploration activities, concluding Inuit Land Tenure negotiations and implementing said new agreements, including the establishment and activation of the Hope Bay Inuit Environmental Advisory Committee pursuant to Schedule I of the new IIBA.

TMAC continued to maintain a Kitikmeot office, located on the 2nd floor of the Kitikmeot Center, above the Northern Store at #18 Mitik Street. TMAC maintains an open door policy and Cambridge Bay residents and Beneficiaries regularly visit the TMAC office for their own interest. Also in 2015, the Ekaluktutiak Hunters and Trappers Organization (EHTO) began using the same office location. This has resulted in a noticeable increase in casual, walk-in visitation by Cambridge Bay harvesters.

TMAC participated in key Nunavut, regional and community organizations and groups aligned to support community relations and consultation efforts. These groups include the NWT/Nunavut Chamber of Mines, the Nunavut Mining Symposium Society, the Nunavut Mine Training Roundtable, the KIA regional ASETS Stakeholder group, Cambridge Bay Community Readiness Committee, Kitikmeot Socio-Economic Monitoring Committee and the Cambridge Bay Canadian High Arctic Research Station Committee.

TMAC involvement in the Chamber of Mines and Mining Symposium promotes industry awareness and advocacy and mine focused dialogue at a territorial level. Participation in the Mine Training Roundtable and ASETS Stakeholder group promotes understanding and coordination of training and education initiatives in the region and territory. Involvement of in Community Readiness and CHARS committees supports sustainable community development and planning. Participation in the Kitikmeot Socio-Economic Monitoring Committee supports discussion on the effects of major development on Kitikmeot communities and residents.

Cambridge Bay Logistics Hub

Cambridge Bay continues to be the logistics hub for TMAC in the Kitikmeot. TMAC employees from across the region are flown to Cambridge Bay via commercial airline service, and are then transported to and from Site utilizing a charter aircraft.

Other Communications

TMAC continues the use of a project/company Facebook page to provide information on Hope Bay primarily to northern stakeholders. Content of this page includes permitting information, meeting notices, and pictures of site activities linked to Kitikmeot community news pages. Some feedback is received through the Page, including employment inquiries. The page can be viewed at the following link: https://www.facebook.com/tmacresources.

Community Relations Monthly Summary

January

- Reviewed new draft Caribou contribution agreement with GN-DOE.
- Assisted in developing a training proposal with Kitikmeot Corporation for Diamond Driller Training with onsite contractor – Geotech Drilling.
- Processed a request to obtain Windy Camp cabins and Roberts Bay surplus snowmobiles from a local harvester.
- Prepared the 2014 Contract spend report with final figures for use in various annual reports.
- KIA Senior staff were engaged to begin the Hope Bay Inuinnaqtun naming initiative with positive results. The aim of this project is to compile a list of traditional names of the Hope Bay area that could be used for future facilities and sites.
- Scheduled meetings between TMAC and a number of project stakeholders for during the upcoming Cordilleran Roundup mining conference, including Nunavut Mine Minister Ell.

February

- Presentation materials developed for the Kitikmeot Trade Show to provide delegates of this conference with a project update.

- 2014 SEMP report draft was developed and reviewed for eventual submission.
- Annual KIA Land Use License applications processed to allow for 2015 TMAC exploration program.
- Elders in Cambridge Bay selected for Hope Bay Inuinnaqtun naming project.
- Responded to 3 media requests; Nunavut News North referral from Farrow, Nunatsiaq News for site photos, and Nunavut Mining magazine request for employee profile
- Conducted a Doris North Socio Economic Monitoring Committee meeting with representatives of Government of Nunavut Department of Economic Development and Transportation and Department of Aboriginal Affairs and Northern Development Canada, where the 2014 DNSEMP report was presented and discussed.
- Participated in KIA Update call in continued efforts to conclude land tenure negotiations.
- Attended the Kitikmeot Trade Show with VP of Operations; arranged for introductions to key Kitikmeot stakeholders and political leaders. Participated in a presentation to the KTS Youth Delegates.
- Responded to a local business request for information regarding the disposition of NTCL freight at Roberts Bay, and to the request from a local family to salvage wood from Windy Camp.
- Provided a range of CSR documentation to ERM Rescan consultant working as PFS reviewer for TMAC. This will be used to confirm the PFS tenure and Inuit relations assertions.
- A meeting was held this month with the owners of Elu Inlet Lodge to ascertain details and interest in using this location for fuel caching this summer for Elu Belt geophysical work.
- Initial courtesy meeting held with new Wildlife Officer staff for Cambridge Bay area.
- Support provided to TMAC negotiation team in direct talks with NTI and KIA towards signing the Mineral Exploration Agreement and discussing KIA Framework Agreement financial terms.

March

- First 2015 TMAC exploration crew rotations arranged; Onboarding complete, travel and accommodations arranged.
- Attended Cambridge Bay Community Readiness Steering Committee meeting with an aim to develop RFP for Community Baseline study. Subsequently reviewed RFP for data collection contract for Hamlet of Cambridge Bay community readiness project.
- Met with GN-DOE Wildlife research team in Cambridge Bay to review details of and prepare to host caribou study at Hope Bay this month. Items brought forward from this meeting to Environment, Surface Managers and Logistics.
- Met with CHARS Chief Scientist during which was informed of CHARS environmental baseline study plans for Elu Inlet area this summer. Item brought forward to Geology and Environment.
- Received information back from GN-DOE on a dead red fox submitted to them for sampling last year. The likely cause of death was Rabies.
- Reviewed draft new IIBA as part of TMAC Negotiation Team and provided final substantive comments back to KIA.

- Several scheduling meetings were held with Kitnuna Cat Train staff to keep abreast of their operation in preparation for inspecting cement powder to be shipped to Hope Bay from Cambridge Bay.
- Handled 1 inquiry from Saskatchewan based helicopter company requesting refueling in Hope Bay to ferry machine to Cambridge Bay for DND work.
- Delivered 2015 Wildlife Research Applications for TMAC WMMP to HTOs for support. Assisted in identifying contact for 1 HTO.
- Review and forwarding of KIA comments on 2014 Windy Shoal Compliance Monitoring Report.
- Concluded Inuit land tenure negotiations with signing ceremony in Cambridge Bay for 20 year NTI Mineral Exploration Agreement and 20 year KIA Framework Agreement.

April

- Communicated Inuit Land Tenure agreement approval to northern stakeholders.
- Supported Kitnuna Cat Train operations from Cambridge Bay to Hope Bay with communications to NTCL consignees of stranded freight.
- Donated 1 drum of heating fuel to EHTO sports hunters for use at harvesting cabin, Kent Peninsula.
- Attended Community Readiness Initiative meeting to determine list of potential consultants to distribute Request for Proposals to, including assistance to Hamlet of Cambridge Bay in adding potential consulting firms to RFP list
- Attended Nunavut Mining Symposium. Delivered Hope Bay Project presentation to main audience at Astro 1 Theater. Scheduled and attended meetings with government and regulator groups including NWB, NIRB, GN-ED&T (Minister Ell), CanNor, AANDC, Senator Patterson and attended Nunavut Mine Training Roundtable. Accepted Murray Pike Award on behalf of TMAC.
- Helped secure $50K in funding from the Nunavut Mine Training Roundtable for the Geotech Igutak Diamond Drill Training Programme.
- Made presentation to Kitikmeot Mayors providing a Hope Bay Project Update.
- Caribou MOU signing between TMAC and GN-DOE in support of DOE Dolphin and Union multi-year caribou study.
- Referred one Media request to C. Farrow in regards to PFS news release.
- Provided brief project update to Minister Peterson in his constituency office.
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May

- 2 media contacts this period; Kate Kyle of CBC News North referred to Catharine Farrow, Karen Ho of Northern News Services provided site and u/g mining photographs for newspaper story.
- Coordinated and took a teleconference Hope Bay project update with 7 Environment Canada participants at their request (could not meet with them during Nunavut Mining Symposium).

- Initial discussions with KIA Lands to initiate the IIBA Implementation Committee and Inuit Environmental Advisory Committee.
- Forwarded initial version of the Kitikmeot Qualified Business Registry to the TMAC Executive and responded to several queries regarding the same.
- Provided advice to Environment staff on laws of general application governing hunting adjacent to built-up areas to assist in better managing visiting Harvesters.
- Participated in initial planning teleconference with Chamber of Mines representatives aiming to prepare for the Nunavut Planning Commission Final Hearing on the Draft Nunavut Land Use Plan this summer, including discussing a request for standing at the hearing.
- Conducted teleconference meeting with KIA on initial IIBA implementation matters including the appointment of representatives to the IIBA Implementation Committee (IC), discussion of the initial version of the Kitikmeot Qualified Business Registry, and scheduling the initial meetings of both the IC and Inuit Environmental Advisory Committee.
- Began tracking Inuit Employment at Hope Bay utilizing new priority hiring categories as described in the new IIBA. This is now done on a monthly basis every month.
- Attended Cambridge Bay Community Readiness Initiative meeting to progress Request for Proposals for data collection work.
- Forwarded unrelated community concern to DeBeers Canada in reference to one of their Cambridge Bay contract workers.
- Assist Environment staff in responding to discovery of severed heads of seal and wolf behind Roberts Bay Fuel Dispenser.
- Facilitated translations of Doris Amendment Plain Language Summary.
- Updated Community Consultation summary for Doris Amendment application (December 2014 public meetings)
- Completed final version of IIBA Orientation Presentation and delivered same to 6 TMAC staff this week. Goal is to provide IIBA orientation to every TMAC employee.
- Updated TMAC Firearms Business Licence to include new Nuna appointees to the Wildlife Response Team.
- Developed initial list of persons that may be recommended by TMAC to the Inuit Environmental Advisory Committee.
- Supported the hiring of Environmental seasonal staff from within Kitikmeot communities.

June

- One communication with on-site Inuk staff to listen to a work related concern. Followed up with supervisor and HR. Appears to be resolved.
- Review and comments on Socio-Economic section of Doris Amendment package to Environment group.
- Some support provided to Nunavut EMO request for Hope Bay helicopter to retrieve stranded hunters on Victoria Island. 2 hunters returned to Cambridge Bay safely.
- Attended KIA Employment and Training Stakeholder Group meeting to learn of developments in this area within the region. Shared information on the Geotech Egutak

Diamond Driller training program.

- Attended meeting with KIA staff to select Inuit Environmental Advisory Committee members. 7 persons selected to be approached by KIA to join the committee, with 6 backup names in case any are unable.
- Attended Polar Knowledge Center Board of Director's open house in Cambridge Bay to meet CHARS station functionaries and AANDC senior staff including acting President Nellie Cournoyea.
- Attended Nunavut Planning Commission Technical hearing by telephone to participate in caribou calving ground protection discussion. NPC to conduct workshop in November to deal with this issue in depth.
- Attended Community Readiness Initiative meeting with the Hamlet of Cambridge Bay. Golder and Conference Board of Canada proposals short listed for CRI work.
- Courtesy visit to the NIRB with Monitoring Officer to explain initial and tentative Doris Amendment communications plans.

July

- Facilitated Doris North Socio-Economic Monitoring Committee teleconference to review ERM recommended government indicator substitution list. AANDC and GN representatives indicated general agreement with new indicators and will provide formal written feedback within 2 weeks.
- Attended Nunavut Resources Corporation Board of Directors meeting to provide a Hope bay project update with notes of proceedings to TMAC Executive.
- Participated in Cambridge Bay community cleanup along with over 200 volunteers. TMAC assisted KIA in picking garbage in their assigned goal, leading to some teambuilding.
- Participated in Diamond Driller Training Program candidate selection process with KIA Employment and Training Staff. Approached former Lupin Mine worker (and current GN Community Mineral Advisor) to act as Elder for training program. 11 applicants selected to attend the program starting in August.
- One additional Inuk member of wildlife response team added to TMAC Commercial Firearms Licence list of authorised users.
- Provided Kitikmeot Community Futures Manager (publically funded regional small business loan organization) with project update including high level details of signed IIBA. Community Futures has a current loan portfolio of $1.2M and has recently been provided another $1M in working capital from CanNor. Is interested in loaning money to mine services groups.
- Provided Premier of Nunavut with project update.
- Attended KIA Board of Directors meeting in Taloyoak and presented project update in concert with TMAC executive.
- Provided Hamlet of Taloyoak Mayor and Senior Administrative Officer with a verbal project update.
- Provided advice and support to onsite environment staff in responding to Red Bear incident, including providing liaison between Site and GN-DOE office in Cambridge Bay on same.

- Conducted first IIBA Implementation Committee meeting in Cambridge Bay.

August

- Discussion with GN Family Services staff on Family Support Orders and wage garnishment of Nunavut TMAC employees.
- Attended Can Nor Northern Major Project Office mineral development regulatory session in Iqaluit in support of Environment staff. Meeting was intended to provide an initial briefing to regulators on the Doris Amendment package. Over 15 federal and territorial officials attended. Draft minutes of proceedings taken and provided to S. Hamm for documentation purposes.
- Courtesy visit to GN-DOE Headquarters office in Iqaluit in order to touch base on Caribou studies.
- Distribution of KCMD job advertisements for Hope Bay related employment.
- Support to KIA and Geotech Egutak in orienting and preparing 9 participants of Diamond Drill training program begun in Cambridge Bay.
- Attended meeting with NIRB staff to discuss Environmental Assessment processes for Hope Bay including scheduling of 2015 NIRB site visit (now planned for week of September 25th).
- Attended Cambridge Bay Community Readiness Meeting with Hamlet and other stakeholders. This was the initial meeting with the Conference Board of Canada consultants selected to conduct community mapping work.
- Responded to a telephone complaint from Kugluktuk that TMAC staff were involved in goose hunting. Investigated same and determined that this was a misunderstanding based on an ambiguous Facebook post. Complainant advised.
- Supported TMAC sealift of supplies to be trans-shipped through Cambridge Bay.

September

- Attended reception on *MV Camilla Degagnes* to celebrate new NSSI/Kitikmeot Corporation partnership.
- Distributed Community Readiness program materials to Socio-Ec consultant and HR Manager for reference.
- Investigated college acceptance problem experienced by seasonal worker on request of site and environment staff; college misplaced application package leading to lack of acceptance into program,
- Informal meetings with Cathy Towtongie, President of NTI, and Leona Aglukkaq, Conservative candidate for Nunavut, and Natan Obed, new ITK President during ITK meetings in town.
- Review of Community Readiness Initiative Cambridge Bay resident questionnaire for survey to be conducted by Conference Board of Canada; inclusion of positive expected community effects of mining and development instead of only questions on “concerns”.
- Provided Inuit Employment data to NIRB monitoring officer based on request stemming from 2015 site visit.
- Reviewed and provided comments on Socio-Economic memo responding to Madrid Bulk Sample information requests from regulators.

- Initial discussion with KIA Business Development Officer on path forward to implementing a bit sharpening contract business in Cambridge Bay.
- Reviewed Hope Bay Phase 2 DEIS Socio-Economic Chapter (draft).
- Begin response to Doris Amendment socio-economic Information Requests from regulators.
- Initial introductory meeting with new KIA IIBA Implementation Manager – Michelle Gillis. She has now moved back to Cambridge Bay to assume her duties.

October

- Conducted Kitikmeot Community Tour with John Roberts, Sharleen Hamm, Ikey Evalik and Joe Otokiak. Focus of presentation was the Doris Amendment package, within a general company update. Gjoa Haven public meeting conducted by Sharleen and Joe as Cambridge Bay charter with rest of crew unable to reach community. Gjoa Haven Housing Association meeting conflicted.15 attended our meeting. Continued to Kugaaruk. Over 40 attended our meeting there. Continued to Taloyoak, with 8 community members attending this meeting. GN-CGS overbooked the night. Tour continued to Cambridge Bay with over 30 members of the public attending this meeting. Tour was completed in Kugluktuk with over 40 of the public in attendance.
- Met with Nunavut Arctic College Environmental Technology Class in Cambridge Bay to explain exploration and mining environmental techniques, and career opportunities. Encouraged class to continue studies and learn more about our operation.
- Excellent questions heard throughout the region focussed on Tailings Management, Ocean Discharge, and Employment demonstrated that the public understood our new mining plan. No negative comments received; generally supportive with a desire for clarification on details.
- Facilitated meeting between TMAC Tour team and staff of the NIRB and NWB in Cambridge Bay. Discussion focussed on understanding and predicting the Doris Amendment application review process, and providing regulators with an overview of proposed changes to the mining plan.
- Provided comments and recommended responses to Doris Amendment application Socio-Economic Information requests. Will be incorporating into ERM main document as soon as possible.
- Completed comments and review of Community Readiness Initiative Cambridge Bay Household survey questionnaire.
- Took interview from KIA Management Consultant working on business plan for Environmental Services on behalf of Kitikmeot Hunters and Trappers Organizations; a potential new Kitikmeot Qualified Business entity could be formed.
- Audited a number of KIA Annual General Meeting presentations including Lands Division report – generally positive response on KIA benefits from Hope Bay.
- Conducted IIBA Implementation Committee Meeting in Cambridge Bay with new KIA IIBA Implementation Manager. 12 action items to bring forward to support employment, contracting and IEAC business.
- Attended Nunavut Mining Symposium Steering Committee meeting to further plan 2016 event. Theme “Balancing Investment” discussed and finalized. Scheduling and venue bookings well progressed.

- Introductory meeting with Inuit Atco-Frontec joint venture arranged for TMAC Executive next month in Toronto.
- First Inuit Environmental Advisory Committee meeting held the 16th. Focus of discussion was on updating the Doris Wildlife Mitigation and Monitoring Plan with participation from Government responsible agencies. Full day meeting proved too short for material to be covered. Initial comments from IEAC on TMAC proposed future wildlife studies are positive to neutral.
- Preparation and data collection for 2015 Socio-Economic Monitoring Presentation including front end project update.
- Updated Kitikmeot Qualified Business Registry received and reviewed – forwarded to head office with explanation of changes.

November

- Attended meeting with Senator Patterson in Ottawa with TMAC Executive.
- Initial contact with Hunter Tootoo, MP for Nunavut and new DFO Minister.
- Participated in first TMAC/KIA Presidents meeting under the Hope Bay IIBA in Ottawa.
- Presented 2015 Doris North Socio-Economic Monitoring Report to the Kitikmeot Socio-Economic Monitoring Committee.
- Responded to 2 inquiries from GN-Family Services requesting information on potential term employees required to make family support payments; they did not work for us.
- Confirmed TMAC Presentation for 2016 Trade Show with Hamlet of Cambridge Bay.
- Copy of Kugluktuk Community Readiness Initiative final report obtained for use and inclusion in Phase II Socio-Ec Chapter.
- Received draft IIBA Plain Language Summary from KIA for review.
- Attended *KIA Employment and Training Stakeholders Working Group* meeting with TMAC HR Manager; provided project update and input into potential near term training and employment initiatives.
- Assisted TMAC Geology in developing Inuinnaqtun name alternative for Hope Bay exploration target.
- Attended 2015 Yellowknife Geoscience Forum and presented a project update to delegates.

December

- Attended Chamber of Mines AGM and have been elected Secretary Treasurer for another term; Executive Meeting held December 11th with a focus on “levelling the playing field” joint PDAC/MAC/Chamber report. Further actions include inviting Alaska Investment Bank representative to Canada to discuss and promote their model.
- Presented to Kitikmeot Corporation Board of Directors meeting in Cambridge Bay on December 9th. Present included Wilf Wilcox, Frank Ikpakohak, Edna Elias and Stanley Anablak.
- Completed review of KIA Traditional Knowledge report for inclusion into Phase 2 DEIS.
- Completed project update text for the 2015 DNSEMP report.
- Assistance in addressing the 4 Traditional Knowledge recommendation derived from the

KIA report including an environment scan for current Inuit Plant Use traditional knowledge studies.

- Support to Site environment staff in tracking and reporting on annual Land Use Licences and Quarry Permits in light of transition provisions in the KIA Framework Agreement and restated Doris North Commercial Lease.
- Review of intervenor comments on the completeness review of the Doris Amendment package for socio-economic topics.
- Requested Traditional Knowledge on Inuit Plant use in west Kitikmeot collaboration with Polar Knowledge Canada. PKC to develop listing of relevant studies for discussion early in 2016.
- Facilitated IEAC meeting primarily to discuss the Doris Amendment application; committee members now familiar with all proposed changes. Also discussed the Roberts Bay archaeological site that will be impacted by proposed routing of marine discharge pipeline. No immediate resolution of issue – IEAC requested summer site visit of site to better understand issue.

17. GPS locations of monitoring stations as confirmed with the Inspector Part J, Item 5 [See Schedule B, Item 17]

Please refer to the Annual Report Form for the GPS locations of the monitoring stations.

18. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector [See Schedule B, Item 18]

The INAC Inspector visited site July 18-19, 2015. The INAC Inspector requested that TMAC provide assistance in closing spills open with the spill line by providing additional information for the spills. TMAC provided this information in a letter submitted to the INAC Inspector and copied to the NWB on August 27, 2015.

During a second site inspection September 26-27, 2015, an Action Item to provide updated water records for the 2015 drilling was recorded. In response, corrected drill water usage numbers that account for the volume of water left in the water circulation tanks at the end of drilling are included in the volumes reported in Table 12 of this report.

David Abernethy of INAC also visited site in August of 2015 accompanied by geotechnical consultants from AMEC Foster Wheeler to examine the Doris North Project site infrastructure. INAC subsequently issued a report to the NWB entitled ``2015 Geotechnical Site Inspection Report, Doris North Gold Mine for Water Licence 2AM-DOH1323`` on December 23, 2015. The summary table recommendations from INAC's report are presented in Table 32 above, along with responses by TMAC's geotechnical consultants, SRK Consulting Inc., and responses to residual issues where needed by TMAC.

19. Any other details on Water use or Waste Disposal requested by the Board [See Schedule B, Item 19]

No additional details on water use or waste disposal were requested by the Board in 2015 related to the existing Doris North Project.