

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

2015

**License No:** 2BE-HOP1222**Issued Date:** June 30, 2012**Expiry Date:** June 30, 2022**Project Name:** Hope Bay Regional Exploration Project**Licensee:** TMAC Resources**Mailing Address:**  
95 Wellington St. W.  
Suite 1010, PO Box 44  
TD Centre  
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 2BE-HOP1222 was issued June 30, 2012 to Hope Bay Mining Ltd. Effective June 18, 2013, the NWB authorized the assignment of Licence 2BE-HOP1222 from Hope Bay Mining Ltd. To TMAC Resources Inc.

**General Background Information on the Project (\*optional):**

Licence 2BE-HOP1222 allows TMAC to carry out activities in support of exploration drilling at the Hope Bay Regional Exploration Project and the Windy Camp, which supports exploration activities.

**Licence Requirements: the licensee must provide the following information in accordance with**

Part B



Item 2



**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):** Domestic from Windy Lake; drill water from local water sources

<b>Water Quantity:</b>	22995 cu.m	Quantity Allowable Domestic (cu.m)
	2758 cu. m.	Actual Quantity Used Domestic (cu.m)
	29200 cu.m	Quantity Allowable Drilling (cu.m)
	2683 cu. m.	Total Quantity Used Drilling (cu.m)
	30600 cu.m	Quantity Allowable Dust Suppression (cu.m)
	0	Total Quantity Used Dust Suppression

Waste Management and/or Disposal

☒ Solid Waste Disposal

☐ Sewage

☒ Drill Waste

☐ Greywater

☐ Hazardous

☒ Other:

Contaminated Soil

Additional Details:

The Hope Bay Project was placed into Care and Maintenance in October 2012. Occupancy of the Old Windy Camp ended October 23, 2008 and dismantling and reclamation of the area is on-going.

Water was used from Windy Lake to supply domestic water to Doris Camp in accordance with 2BE-HOP1222 Part C, Item 1. Water used for drilling is taken from the closest lake to each drill using a similar system to the domestic system, or for drill locations accessible by road or winter ice road, water is hauled by truck from Windy Lake, or compliant berm effluent from the Doris Project is recycled through the drills to lessen freshwater lake use. In the case of regional drilling, water is taken from the closest lake to the drill site in accordance with Part C Item 1. Water is supplied to a water tank at the drill, and recirculation to cool equipment occurs through this tank. Non-saline drill cuttings produced under this licence are deposited in a depression at Quarry D along the Doris-Windy AWR. Saline cuttings are removed to the waste rock pile at the Doris Project where any runoff is captured through the site water management system.

The Waste Water Treatment Facility for management of domestic sewage at Old Windy Camp was relocated in 2010 to the Boston Camp.

The Landfarm at Windy Camp and Bulk Fuel Storage Facilities at Windy Camp and Patch Lake have been dismantled and are in the process of reclamation. No effluent is produced at these locations.

Water accumulated in Quarries A, B and D is managed in accordance with the approved *Quarry A, B, D Management and Monitoring Plan* and the relevant sections of Part D of the licence. No discharges of water occurred from these sites in 2015.

**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 3 of attached Annual Report Supplement for a list, including details, of all unauthorized discharges that occurred in 2015 under licence 2BE-HOP1222.

### Revisions to the Spill Contingency Plan

Other: (see additional details)

Additional Details:

See Item 5 of attached Annual Report Supplement for details.

### Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

A revised Closure Plan for the licence was submitted to the NWB on May 26, 2014 and confirmation was received from the NWB August 27, 2014 that the plan was approved under Motion # 2014-B1-023. No revisions are provided this year.

### Progressive Reclamation Work Undertaken

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

See Item 6 of attached Annual Report Supplement 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 described below

Additional Details:

Drilling water source coordinates are maintained on file by the TMAC Exploration Department for all water sources utilized proximal to the drill targets.

**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 described below

Additional Details:

Monitoring Stations HOP-2 and HOP-3 had no discharge because Windy Camp has been closed since 2008 and these facilities were not operational in 2015. Discharges did not occur at the monitoring station HOP-4 because the landfarm at the location was dismantled in 2008.

Monitoring Stations HOP-5 and HOP-6 had no discharges in 2015, as these fuel storage facilities were decommissioned in 2012.

No discharges occurred at Quarries A, B or D (HOP-7a, b and d) as no water accumulated at these locations.

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

No additional sampling requested by an Inspector or the Board



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.**

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

N/A

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

Inspection and Compliance Report received by the Licensee (Date):



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

Details are set out at Item 4 of the attached supplement.

**Any additional comments or information for the Board to consider**

Please see attached supplement for additional information requirements set out in Licence No. 2BE-HOP1222.

**Date Submitted:**

April 26, 2016

**Submitted/Prepared by:**

Katsky Venter

**Contact Information:**

**Tel:**

250-538-2306

**Fax:**

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GPS Coordinates for water sources utilized						
Source Description	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
HOP-1 - Raw water supply intake at Windy Lake	68	3	38	106	37	6
GPS Locations of areas of waste disposal						
Location Description (type)	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "



**2015 2BE-HOP1222 Type B Water Licence  
Annual Report  
Supplemental Document**

**Hope Bay Regional Exploration Program**

**Nunavut Water Board**

Prepared by  
TMAC Resources Inc.  
Toronto, ON

Prepared for  
Nunavut Water Board  
Gjoa Haven, NU

March 2016

## **Executive Summary**

### **2BE-HOP1222 Annual Report**

TMAC Resources Inc. (“TMAC”) has filed its Annual Report on its activities during 2015 under Water Licence No. 2BE-HOP1222 issued by the Nunavut Water Board. As set out in Part B Item 2 of the Licence, the report includes information with respect to the following topics:

- a summary report of water use and waste disposal activities
- a summary of all information requested and results of the Monitoring Program
- a list of unauthorized discharges and a summary of follow-up actions taken
- a brief description of follow-up actions taken to address concerns detailed in inspection and compliance reports prepared by the Inspector
- an update to the Spill Contingency Plan, if required, including contact information in the form of an addendum
- a description of all progressive and/or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations
- a summary of modification 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 specific studies or reports requested by the board, and a brief description of future studies planned or proposed
- any other details on water use or waste disposal requested by the board

**Atanguyan Naetomik Okaohen**  
**2BE-HOP1222 Ukeotoagaagan Unipkaak**

TMAC Resources Inc.-kon (“TMAC-kon”) tonihimaliktaan Ukeotoagaagan Unipkagiyaktik havaamigun 2015-mi ilagani Imaknik Atoknigagun Laeseoyum Napaani 2BE-HOP1222-mi toniyaohimayok Nunavumi Imalikiyin Katimayinin. Okaotaoyomi Ilagani B Titigaknigani 2 Laeseoyum, unipkaak ilakaktok hivonikhiyotikhanik ukuniga:

- naetomik okaohik imaknik atoknigagun atakugutiniklo havaoheoyonik
- naetomik okaohik tamaenik hivonikhiyotikhanik tukhigaoyonik kanogilinigilo Amigiyotinun Havaami
- titigaknigin agiktaohimagitun kuvipkaeyotin naetomiklo okaohik kigoagun havaanik
- naetomi okateagun kigoani havaanik ihoakhiyaagani ihomalutaoyun okateakhimayun ihivgeokhiyotik atoteaknigagulo unipkaagini Ihivgeokhiyin
- kaogiliniganik Kuviyokakan Havaakhanun Opaogaeyaon, piyageakakan, okakatikhaniklo hivonikhiyotik makpigaami oegugilogo
- okateagutin tamaeta atoenaktun kigulelo nunan utiktiniganun havaagiyaoyun, ilakaklotik piksaleoganik iglukpakakveom kanoginiganik hivoani, havaktilogin inikmatalo
- naetomik okaohik ihoakhaotik agiyoniklunen hanayotik imiktakvikni atagukviknilo, ukoalo tamaeta iglukpaen atoktun, kanogitoniklo havaanik nahogiyamiknik atoktukhani ukeomi
- naetomik okaohik kituniklikaa naonaeyaotik unipkaanilunen tukhiktaenik katimayin, naetomiklo okaohik hivonikhami ilitokhaotik opalogaeyaotinun atoktaoyomayoniklunen
- hunaniklikaa ahenik okateagutinik imaknik atoknigagun atagukveoyoniklo tukhiktaenik katimayin



- [illegible]

## **Résumé opérationnel 2BE-HOP1222 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 2BE-HOP1222 émis par l'Office des eaux du Nunavut (Nunavut Water Board), tel qu'énoncé dans la partie B, point 2, du permis. Le rapport comprend des renseignements sur les sujets suivants :

- un aperçu de l'utilisation et du traitement de l'eau et de l'évacuation des rejets
- un résumé des résultats du programme de surveillance des requêtes au sujet du programme
- une liste des déversements non autorisés et un résumé des mesures de suivi prises à la suite de ces incidents
- une brève description des mesures de suivi prises pour régler les problèmes décrits dans les rapports d'inspection et de conformité établies par l'inspecteur
- si nécessaire, une mise à jour du plan d'urgence en cas de déversement « Spill Contingency Plan », comprenant une liste de contacts et leurs coordonnées pour le signalement des déversements fournie sous forme d'addenda
- une description de tous les travaux de remise progressive et terminés qui ont été entrepris, y compris les documents photographiques des conditions du site avant, pendant et après l'achèvement des travaux de remise
- un résumé des travaux d'entretien mineurs ou des travaux majeurs effectués sur les réserves d'eau potable et les installations d'élimination des résidus miniers et de toutes leurs composantes s'y rattachant, ainsi qu'un aperçu des travaux prévus l'année suivante
- un résumé des rapports ou études scientifiques exigés par l'Office et une brève description des éventuelles recherches ou celles prévues par l'Office
- 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. A summary report of water use and waste disposal activities [see Part B Item 2 (a)]**

General details on water use and waste disposal activities under licence 2BE-HOP1222 can be found in the annual report form. Further details on water use in 2015 are presented in part B of Appendix A.

Windy Camp was not operational in 2015 so no domestic waste was produced and an incinerator was not put into service. Waste produced in support of the Regional Exploration surface drilling program was transported to Doris Camp and disposed of appropriately and as outlined in the Doris North Non-Hazardous and Hazardous Waste Management Plans.

### **2. A summary of all information requested and results of the Monitoring Program [see Part B Item 2 (b) and Part J Item 21]**

This information is set out in Appendix A to this document.

### **3. A list of unauthorized discharges and a summary of follow-up actions taken [see Part B Item 2 (c)]**

**Date of Spill:** April 5, 2015

**Spill No:** 15-132

**Date of Notification to an Inspector:** April 6, 2015

**Product Spilled:** Turbid Water

**Details of Spill:** During on-ice drilling on Patch Lake, a hose line entering a cuttings containment bin was not weighted down properly causing the hose to come out of the bin. A volume of non-saline turbid water, estimated to be greater than 100L, was released onto the ice surface. The lake at this location was frozen to bottom and no turbid water entered the lake. Brine was not used during lake ice drilling, so the water consisted of suspended rock fines and no other substances. The turbid water and ice/snow was scraped from the ice surface and disposed of at a designated cuttings deposition area on land at Quarry D. A weight was added to the hose line to secure it inside the cuttings bin and the Drilling Site Supervisor reviewed the protocol of using a weighted system on the hose lines with all personnel.

### **4. A brief description of follow-up action taken to address concerns detailed in inspection and compliance reports prepared by the Inspector [see Part B Item 2 (d)]**

Inspection under the Hope Bay Regional Exploration Licence was conducted by INAC on July 18 and 19, 2015. No non-compliances were noted. One action was recorded as being required: to determine the effectiveness of the remediation measures taken for spill 13-357 and whether further action was required. This spill refers the historical Patch Cuttings Sump seepage. TMAC provided a response to the NWB on this INAC inspection on Sept 21, 2015 indicating that monitoring would be undertaken seasonally. 2015 conductivity measurements taken near the sump from the surface and shallow groundwater indicated improvement in comparison to 2013 and 2014 results (i.e. the years prior to sump capping), and vegetation in the area has shown

recovery (see Figure 1). Similar monitoring will be undertaken in 2016 to confirm continued improvement and effectiveness of mitigation applied in 2015.



**Figure 1. August 2015 aerial view of Patch Cuttings Sump with cap (right side of pad above) showing vegetation recovery. Photo looking East.**

A second INAC inspection occurred on September 26, 2015. No non-compliances or necessary actions were identified. Positive comments were recorded on the on-going drill site reclamation of drill holes drilled in 2015 and the opportunistic historical drill site reclamation that had previously been undertaken along the Windy Road.

**5. An update to the Spill Contingency Plan, if required, including contact information in the form of an addendum [see Part B Item 2 (e)]**

The Hope Bay Project Spill Contingency Plan, applicable to Water Licences 2AM-DOH1323, 2BB-BOS1217 and 2BE-HOP1222 is being revised and will be submitted to the NWB in April of 2016.

**6. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion or operations [see Part B Item 2 (f)]**

In March and April 2015, reclamation work was conducted on the Patch Lake Laydown cuttings sump facility. The reclamation work included the placement of quarry rock over the cuttings sump area where historically saline drill cuttings were stored. The quarry rock is intended to create a thermal barrier and prevent further migration of salts downstream of the sump. Quarry rock was

transported from Quarry 2 near Doris Camp to the sump via an ice road constructed over Patch Lake. Approximately 744 m<sup>3</sup> of quarry rock was placed over the sump (Figure 2).

Current surface exploration drill holes are remediated once drilling is completed and sites are inspected to document complete clean-up and restoration of each collar location. No reclamation of historic exploration drill holes was completed in 2015. This work will continue in 2016 as personnel and resources permit.

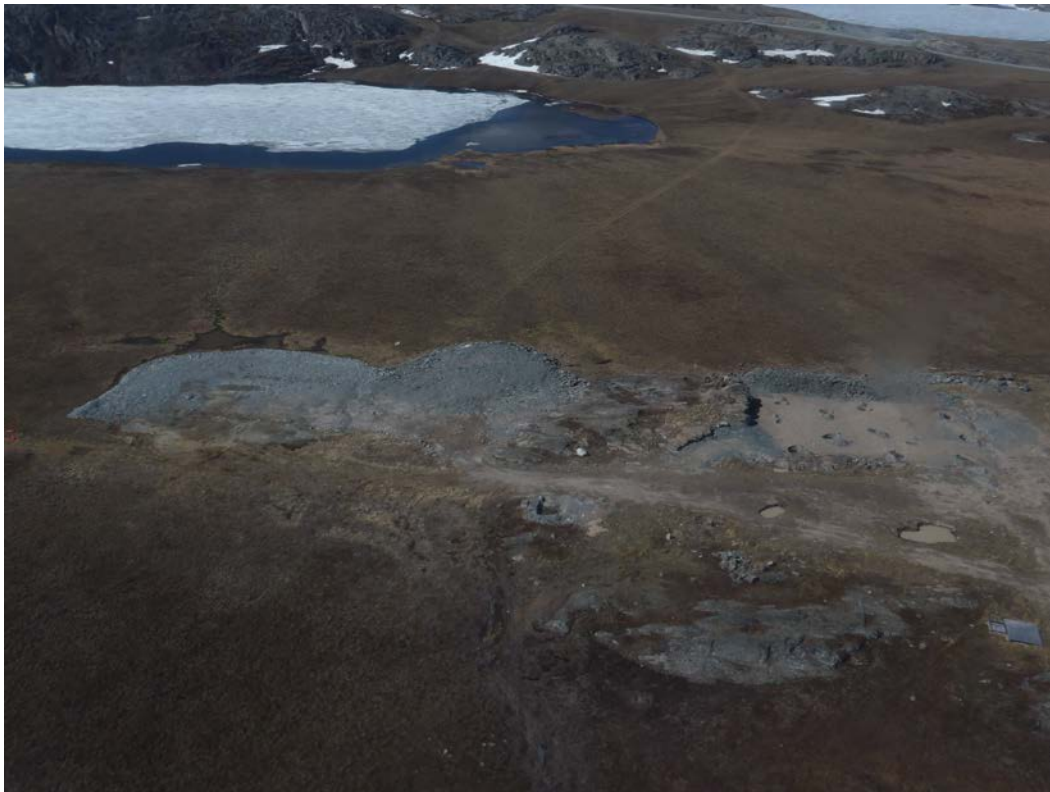


Figure 2. Thermal barrier placed over sump (far left) at Patch Lake Laydown facility. Photo looking West.

**7. A summary of modification and/or major 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 Part B Item 2 (g)]**

Windy Camp was closed on October 23, 2008. In 2010, the Waste Water Treatment Facility for management of domestic sewage at Old Windy Camp was removed to the Boston Camp. No modification and/or maintenance work was carried out on the Water Supply and the Waste Disposal Facilities in 2015. Water is obtained from Windy Lake (ST-7a) for use at Doris Camp under 2AM-DOH1323 and as allowed under 2BE-HOP1222. Water is taken up through a screened intake and sunken heat-traced line by a permanent pump house installed in 2014, which is used as needed to fill a water truck that transports the water to Doris Camp for use.

**8. A summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed [see Part B Item 2 (h)]**

No specific studies or reports were requested by the Board in 2015 and no studies are planned or proposed for 2016.

**9. Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported [see Part B Item 2 (i)]**

No other details on water use or waste disposal were requested by the Board by November 1, 2015.

**10. Report of any artesian flow occurrences [see Part F Item 3]**

No artesian flow occurrences were encountered in 2015.

**11. Where drilling activity has penetrated below the permafrost layer, the NWB requests that the proponent record the depth of permafrost and location of the drill hole to be included within the Annual Report [see Part F Item 4]**

For areas where exploration is carried out, depth of permafrost is calculated using thermistor strings that measure ground temperature, installed in geotechnical drill holes (thermistor strings are not installed in all drill holes). The thermistor strings are used because it is not possible to visually assess when a drill hole has passed through the permafrost layer. Results obtained from the thermistor strings are used to extrapolate the lower depth of permafrost using thermal gradient. There are several such thermistor strings throughout the Hope Bay Belt and measurements are taken on an on-going basis. The depth of permafrost extrapolated from data collected at thermistor string SRK-50 (200 m in length) is 570 m. The depth of permafrost extrapolated from data collected at thermistor string 08TDD632 (350 m in length) is 435 m. Results collected from all thermistor strings are presented in the Annual Geotechnical Inspection Reports filed under licence 2AM-DOH1323.



## **Appendix A**

### **Annual Monitoring Report – 2BE-HOP1222**

#### **a) Summary of Monitoring Information**

The following tables summarize the results of sampling undertaken as part of the monitoring program detailed in Part J of 2BE-HOP1222.

The camp water treatment and wastewater treatment facility (WWTF) permitted under this licence was not operational in 2015, therefore no sampling was conducted at monitoring stations HOP-1 (freshwater intake), HOP-2 (WWTF discharge), or HOP-3 (point of entry of WWTF discharge to Windy Lake). Water was utilized from Windy Lake for domestic consumption at Doris Camp and the monitoring station ST-7a (HOP-1) was sampled for the monitoring station ST-7 criteria under the Doris North Water Licence 2AM-DOH1323. For the ST-7a results see the 2AM-DOH1323 annual report. The Landfarm at Windy Camp (HOP-4) was dismantled in 2008, so no sampling was conducted at this monitoring station.

The bulk fuel storage tanks at Windy Camp were moved to Doris Camp in winter 2009 for use there, and the bulk fuel storage berm (HOP-5) was dismantled in 2012. The bulk fuel storage berm at Patch Lake laydown (HOP-6) was also dismantled in 2012. No sampling was conducted at either of these monitoring stations.

No sampling occurred at monitoring stations HOP-7A HOP-7B, or HOP-7D (located in Quarries A, B, and D, respectively) during 2015 because there was no ponded water to sample.

On-ice exploration drilling occurred in 2015, therefore samples were taken through lake ice (as required by Part F Item 7 and Part J Item 7) to establish water quality prior to, and upon completion of, the on-ice drilling program. Results are provided in Table 1 and Table 2.

**Table 1 – Water Quality Sampling Prior to On-Ice Drilling on Patch Lake, in March 2015, with results in mg/L unless otherwise specified.**

Sample ID		PL-13MAR15A	PL-13MAR15B	PL-13MAR15C	PL-13MAR15D	PL-13MAR15E
ALS ID		L1589853-1	L1589853-2	L1589853-3	L1589853-4	L1589853-5
Sample Date/Time		3/13/2015 1:40:00 PM	3/13/2015 2:05:00 PM	3/13/2015 2:17:00 PM	3/13/2015 2:28:00 PM	3/13/2015 2:39:00 PM
Parameter	Units	Results				
Conductivity	µS/cm	518	522	520	530	513
Hardness (as CaCO <sub>3</sub> )	mg/L	94.8	96.3	98	99.2	98.2
pH	pH	7.87	7.88	7.92	7.9	7.92
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Aluminum (Al)-Total	mg/L	0.0296	0.0262	0.0253	0.0311	0.029
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	0.000019	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	17.1	17.3	17.7	17.9	17.8
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	0.0016	0.0015	0.0015	0.0015	0.0015
Iron (Fe)-Total	mg/L	0.051	0.045	0.044	0.048	0.053
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0068	0.0072	0.0072	0.0075	0.0076
Magnesium (Mg)-Total	mg/L	12.7	12.9	13.1	13.3	13.1
Manganese (Mn)-Total	mg/L	0.00463	0.00448	0.00455	0.0047	0.00586
Mercury (Hg)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
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	<0.0010	<0.0010
Potassium (K)-Total	mg/L	4.6	4.6	4.7	4.8	4.7
Selenium (Se)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	59.4	60.1	60.7	61.9	60.7
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	<0.00050	<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

Sample ID		PL-13MAR15A	PL-13MAR15B	PL-13MAR15C	PL-13MAR15D	PL-13MAR15E
ALS ID		L1589853-1	L1589853-2	L1589853-3	L1589853-4	L1589853-5
Sample Date/Time		3/13/2015 1:40:00 PM	3/13/2015 2:05:00 PM	3/13/2015 2:17:00 PM	3/13/2015 2:28:00 PM	3/13/2015 2:39:00 PM
Parameter	Units	Results				
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

**Table 2 – Water Quality Sampling on Completion of On-Ice Drilling on Patch Lake, in May 2015, with results in mg/L unless otherwise specified.**

Sample ID		PL-21MAY15A	PL-21MAY15B	PL-21MAY15C	PL-21MAY15D	PL-21MAY15E
ALS ID		L1615575-1	L1615575-2	L1615575-3	L1615575-4	L1615575-5
Sample Date/Time		5/21/2015 4:20:00 PM	5/21/2015 4:35:00 PM	5/21/2015 4:05:00 PM	5/21/2015 4:50:00 PM	5/21/2015 5:10:00 PM
Parameter	Units	Results				
Conductivity	µS/cm	558	331	572	469	571
Hardness (as CaCO <sub>3</sub> )	mg/L	102	60.5	105	88.2	106
pH	pH	7.97	7.82	7.97	7.9	8.01
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Aluminum (Al)-Total	mg/L	0.0283	0.0645	0.0256	0.0649	0.0369
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	0.0000072	<0.0000050
Calcium (Ca)-Total	mg/L	18.3	10.8	18.8	15.8	18.9
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	0.0016	0.001	0.0017	0.0015	0.0016
Iron (Fe)-Total	mg/L	0.082	0.095	0.095	0.154	0.074
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0069	0.0049	0.0081	0.0069	0.0082
Magnesium (Mg)-Total	mg/L	13.7	8.12	14.1	11.9	14.4
Manganese (Mn)-Total	mg/L	0.00414	0.00441	0.00493	0.00793	0.00456
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050

Sample ID		PL-21MAY15A	PL-21MAY15B	PL-21MAY15C	PL-21MAY15D	PL-21MAY15E
ALS ID		L1615575-1	L1615575-2	L1615575-3	L1615575-4	L1615575-5
Sample Date/Time		5/21/2015 4:20:00 PM	5/21/2015 4:35:00 PM	5/21/2015 4:05:00 PM	5/21/2015 4:50:00 PM	5/21/2015 5:10:00 PM
Parameter	Units	Results				
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	<0.0010	<0.0010
Potassium (K)-Total	mg/L	4.8	3.1	5	4.3	5.1
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	62.2	39	65.1	55.3	65.7
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	<0.00050	<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	<0.0050	<0.0050	0.008	<0.0050	<0.0050

## b) Quantities of water utilized for camp, drilling and other purposes

During 2015, water was used from Windy Lake for domestic purposes at Doris Camp. This included consumption for drinking water, all camp domestic water supply, some ancillary domestic use for provisioning of portable wash cars, and filling site mobile fire suppression units. No water was used domestically at Windy Camp. A total of 144 m<sup>3</sup> of water was used from Windy Lake in 2015 for dust suppression on the Doris-Windy All-Weather Road; compliant berm water from the Doris North Project was also reused for dust suppression to minimize lake withdrawal. Exploration drill water usage occurred between March and October from Wolverine, Patch, Windy and Doris Lakes. All drill usage from raw lake sources was metered or measured by truck haul load when holding tanks were filled. Water was recirculated from the drills to the holding tanks for equipment cooling and to prevent line freezing. Daily water utilization is provided in Table 3. No withdrawals exceeded water licence allotments.

A total of 2,063 m<sup>3</sup> of water was applied in January, February, March and May for the development of ice roads to support surface exploration and reclamation work at the Patch Lake facility. This total is not a component of the water licence allocations in Table 3.

**Table 3 - Volume of Water Utilized for Camp, Drilling and Other Purposes, 2015, in cubic meters (m<sup>3</sup>)\***

Date	Dust Suppression (m <sup>3</sup> )	Regional Drill Water Usage Metered (m <sup>3</sup> )	Regional Drill Usage Trucked (m <sup>3</sup> )	Regional Drill Usage Total (m <sup>3</sup> )	Domestic Consumption at Doris (m <sup>3</sup> )	Total Daily Usage (m <sup>3</sup> )^
Jan-9	0	0	0	0	14	14
Jan-10	0	0	0	0	14	14
Jan-17	0	0	0	0	28	28
Jan-26	0	0	0	0	28	28
Feb-03	0	0	0	0	14	14
Feb-09	0	0	0	0	28	28
Feb-17	0	0	0	0	28	28
Feb-24	0	0	0	0	14	14
Feb-27	0	0	0	0	12	12
Mar-02	0	0	0	0	14	14
Mar-06	0	0	0	0	14	14
Mar-10	0	0	0	0	14	14
Mar-14	0	0	0	0	28	28
Mar-19	0	5	0	5	0	5
Mar-20	0	8	0	8	30	38
Mar-21	0	17	0	17	0	17
Mar-22	0	16	0	16	0	16
Mar-23	0	20	0	20	0	20
Mar-24	0	12	0	12	28	40
Mar-25	0	20	0	20	0	20
Mar-26	0	14	0	14	22	36
Mar-27	0	6	0	6	0	6
Mar-28	0	18	0	18	0	18
Mar-29	0	10	0	10	14	24
Mar-30	0	3	0	3	0	3
Mar-31	0	7	0	7	14	21

<b>Date</b>	<b>Dust Suppression (m³)</b>	<b>Regional Drill Water Usage Metered (m³)</b>	<b>Regional Drill Usage Trucked (m³)</b>	<b>Regional Drill Usage Total (m³)</b>	<b>Domestic Consumption at Doris (m³)</b>	<b>Total Daily Usage (m³)^</b>
Apr-01	0	15	0	15	28	43
Apr-02	0	8	0	8	0	8
Apr-03	0	12	0	12	0	12
Apr-04	0	13	0	13	0	13
Apr-05	0	16	0	16	28	44
Apr-06	0	8	0	8	0	8
Apr-07	0	13	0	13	23	36
Apr-08	0	7	0	7	0	7
Apr-09	0	10	0	10	0	10
Apr-10	0	9	0	9	0	9
Apr-11	0	8	0	8	28	36
Apr-12	0	6	0	6	0	6
Apr-13	0	5	0	5	0	5
Apr-14	0	11	20	31	35	66
Apr-15	0	13	0	13	0	13
Apr-16	0	17	11	28	1	29
Apr-17	0	12	0	12	0	12
Apr-18	0	9	0	9	38	47
Apr-19	0	20	0	20	0	20
Apr-20	0	9	16	25	0	25
Apr-21	0	12	0	12	28	40
Apr-22	0	9	0	9	0	9
Apr-23	0	10	0	10	0	10
Apr-24	0	18	8	26	29	54
Apr-25	0	16	0	16	0	16
Apr-26	0	11	4	14	0	14
Apr-27	0	16	0	16	28	43
Apr-28	0	8	4	12	0	12
Apr-29	0	8	0	8	0	8
Apr-30	0	9	4	13	28	41
May-01	0	9	0	9	0	9
May-02	0	9	6	15	0	15
May-03	0	22	0	22	28	50
May-04	0	3	6	9	0	9
May-05	0	1	8	9	0	9
May-06	0	3	18	21	14	35
May-07	0	2	6	7	0	7
May-08	0	14	12	26	14	40
May-09	0	6	16	22	0	22
May-10	0	6	12	18	28	46
May-11	0	7	0	7	0	7
May-12	0	5	10	15	28	43
May-13	0	13	14	27	0	27
May-14	0	1	15	16	0	16
May-15	0	5	11	16	40	56
May-16	0	5	13	18	0	18
May-17	0	6	9	15	0	15
May-18	0	10	10	20	28	48
May-19	0	0	0	0	14	14

<b>Date</b>	<b>Dust Suppression (m³)</b>	<b>Regional Drill Water Usage Metered (m³)</b>	<b>Regional Drill Usage Trucked (m³)</b>	<b>Regional Drill Usage Total (m³)</b>	<b>Domestic Consumption at Doris (m³)</b>	<b>Total Daily Usage (m³)^</b>
May-20	0	0	9	9	0	9
May-21	0	0	4	4	27	31
May-22	0	0	16	16	0	16
May-23	0	0	5	5	14	19
May-25	0	0	20	20	0	20
May-26	0	0	2	2	28	30
May-27	0	0	7	7	21	28
May-28	0	0	13	13	28	41
May-29	0	0	14	14	0	14
May-30	0	0	7	7	0	7
Jun-01	0	0	2	2	28	30
Jun-02	0	0	12	12	0	12
Jun-03	0	0	22	22	0	22
Jun-04	0	0	14	14	28	42
Jun-05	0	0	16	16	0	16
Jun-06	83	0	26	26	14	123
Jun-08	25	0	7	7	0	32
Jun-09	0	0	7	7	14	21
Jun-10	0	0	8	8	28	36
Jun-11	0	0	11	11	0	11
Jun-12	0	0	4	4	0	4
Jun-13	0	0	2	2	0	2
Jun-14	0	0	3	3	42	45
Jun-15	0	0	10	10	0	10
Jun-16	0	0	12	12	0	12
Jun-18	0	0	0	0	38	38
Jun-19	0	0	5	5	0	5
Jun-20	0	0	4	4	4	8
Jun-21	0	0	0	0	28	28
Jun-22	0	0	0	0	0	0
Jun-24	0	0	4	4	28	32
Jun-25	16	0	0	0	0	16
Jun-26	0	0	0	0	14	14
Jun-27	0	0	0	0	14	14
Jun-28	0	0	0	0	14	14
Jun-30	0	0	0	0	29	29
Jul-03	6	0	0	0	22	28
Jul-04	0	0	0	0	56	56
Jul-07	0	0	0	0	56	56
Jul-11	0	0	0	0	56	56
Jul-12	0	0	0	0	14	14
Jul-15	0	0	0	0	28	28
Jul-16	0	0	0	0	70	70
Jul-17	0	0	0	0	70	70
Jul-19	0	0	0	0	43	43
Jul-21	0	0	0	0	6	6
Jul-22	0	0	0	0	28	28
Jul-25	0	0	0	0	21	21
Jul-27	0	0	0	0	24	24



<b>Date</b>	<b>Dust Suppression (m³)</b>	<b>Regional Drill Water Usage Metered (m³)</b>	<b>Regional Drill Usage Trucked (m³)</b>	<b>Regional Drill Usage Total (m³)</b>	<b>Domestic Consumption at Doris (m³)</b>	<b>Total Daily Usage (m³)^</b>
Jul-28	0	0	0	0	14	14
Aug-01	0	0	0	0	42	42
Aug-03	0	0	0	0	12	12
Aug-06	0	0	0	0	42	42
Aug-08	0	0	0	0	28	28
Aug-09	0	0	30	30	0	30
Aug-10	14	0	10	10	0	24
Aug-11	0	0	16	16	28	44
Aug-12	0	0	0	0	14	14
Aug-13	0	0	25	25	30	55
Aug-14	0	0	10	10	14	24
Aug-15	0	0	6	6	28	34
Aug-16	0	0	4	4	14	18
Aug-17	0	0	24	24	14	38
Aug-18	0	0	7	7	44	51
Aug-19	0	0	25	25	0	25
Aug-20	0	0	14	14	14	28
Aug-21	0	0	21	21	14	35
Aug-22	0	0	16	16	28	44
Aug-23	0	0	6	6	14	20
Aug-24	0	0	16	16	14	30
Aug-25	0	0	15	15	28	43
Aug-26	0	0	12	12	0	12
Aug-27	0	0	17	17	28	45
Aug-28	0	0	16	16	14	30
Aug-29	0	0	15	15	28	43
Aug-30	0	0	24	24	14	38
Aug-31	0	0	21	21	14	35
Sept-01	0	0	15	15	25	40
Sept-02	0	0	14	14	14	28
Sept-03	0	0	20	20	14	34
Sept-04	0	0	7	7	14	21
Sept-05	0	0	11	11	28	39
Sept-06	0	0	0	0	14	14
Sept-07	0	0	16	16	28	44
Sept-08	0	3	16	19	14	33
Sept-09	0	4	10	14	28	42
Sept-10	0	4	10	14	21	35
Sept-11	0	2	5	7	26	33
Sept-12	0	2	3	5	14	19
Sept-13	0	10	11	21	28	49
Sept-14	0	0	6	6	14	20
Sept-15	0	0	8	8	28	36
Sept-16	0	0	4	4	14	18
Sept-17	0	0	6	6	28	34
Sept-18	0	0	6	6	14	20
Sept-19	0	0	9	9	14	23
Sept-20	0	0	10	10	30	40
Sept-21	0	0	3	3	14	17

<b>Date</b>	<b>Dust Suppression (m³)</b>	<b>Regional Drill Water Usage Metered (m³)</b>	<b>Regional Drill Usage Trucked (m³)</b>	<b>Regional Drill Usage Total (m³)</b>	<b>Domestic Consumption at Doris (m³)</b>	<b>Total Daily Usage (m³)^</b>
Sept-22	0	0	0	0	14	14
Sept-23	0	0	8	8	20	28
Sept-24	0	0	22	22	20	42
Sept-25	0	0	0	0	20	20
Sept-26	0	0	8	8	20	28
Sept-27	0	0	4	4	0	4
Sept-28	0	0	0	0	30	30
Sept-29	0	0	0	0	10	10
Sept-30	0	0	28	28	40	68
Oct-01	0	0	8	8	0	8
Oct-02	0	0	0	0	20	20
Oct-03	0	0	13	13	20	33
Oct-04	0	0	0	0	20	20
Oct-05	0	0	9	9	20	29
Oct-06	0	0	21	21	10	31
Oct-07	0	0	5	5	20	25
Oct-08	0	0	0	0	15	15
Oct-09	0	0	8	8	20	28
Oct-10	0	0	0	0	20	20
Oct-11	0	0	2	2	10	12
Oct-12	0	0	3	3	20	23
Oct-13	0	0	3	3	10	13
Oct-14	0	0	3	3	30	33
Oct-15	0	0	0	0	21	21
Oct-16	0	0	2	2	20	22
Oct-17	0	0	4	4	16	20
Oct-18	0	0	0	0	20	20
Oct-19	0	0	0	0	15	15
Oct-20	0	0	0	0	20	20
Oct-21	0	0	0	0	10	10
Oct-22	0	0	0	0	16	16
Oct-23	0	0	0	0	15	15
Oct-24	0	0	0	0	10	10
Oct-25	0	0	0	0	10	10
Oct-26	0	0	0	0	20	20
Oct-27	0	0	0	0	20	20
Oct-28	0	0	0	0	20	20
Oct-29	0	0	0	0	10	10
Oct-30	0	0	0	0	20	20
Oct-31	0	0	0	0	20	20
Nov-01	0	0	0	0	20	20
Nov-02	0	0	0	0	10	10
Nov-03	0	0	0	0	20	20
Nov-04	0	0	0	0	10	10
Nov-05	0	0	0	0	20	20
Nov-06	0	0	0	0	10	10
Nov-07	0	0	0	0	20	20
Nov-08	0	0	0	0	20	20
Nov-09	0	0	0	0	10	10

<b>Date</b>	<b>Dust Suppression (m³)</b>	<b>Regional Drill Water Usage Metered (m³)</b>	<b>Regional Drill Usage Trucked (m³)</b>	<b>Regional Drill Usage Total (m³)</b>	<b>Domestic Consumption at Doris (m³)</b>	<b>Total Daily Usage (m³)^</b>
Nov-10	0	0	0	0	20	20
Nov-11	0	0	0	0	20	20
Nov-12	0	0	0	0	10	10
Nov-13	0	0	0	0	16	16
Nov-14	0	0	0	0	10	10
Nov-15	0	0	0	0	10	10
Nov-16	0	0	0	0	20	20
Nov-17	0	0	0	0	10	10
Nov-18	0	0	0	0	20	20
Nov-19	0	0	0	0	20	20
Nov-20	0	0	0	0	10	10
Nov-21	0	0	0	0	20	20
Nov-22	0	0	0	0	20	20
Nov-23	0	0	0	0	10	10
Nov-24	0	0	0	0	10	10
Nov-25	0	0	0	0	30	30
Nov-26	0	0	0	0	20	20
Nov-27	0	0	0	0	10	10
Nov-28	0	0	0	0	20	20
Nov-29	0	0	0	0	10	10
Nov-30	0	0	0	0	20	20
Dec-01	0	0	0	0	20	20
Dec-02	0	0	0	0	10	10
Dec-03	0	0	0	0	10	10
Dec-04	0	0	0	0	20	20
Dec-05	0	0	0	0	10	10
Dec-06	0	0	0	0	20	20
Dec-07	0	0	0	0	10	10
Dec-08	0	0	0	0	20	20
Dec-10	0	0	0	0	25	25
Dec-11	0	0	0	0	20	20
Dec-12	0	0	0	0	20	20
Dec-13	0	0	0	0	20	20
Dec-14	0	0	0	0	20	20
Dec-15	0	0	0	0	20	20
Dec-16	0	0	0	0	20	20
Dec-17	0	0	0	0	20	20
Dec-18	0	0	0	0	20	20
Dec-19	0	0	0	0	20	20
Dec-20	0	0	0	0	20	20
Dec-21	0	0	0	0	20	20
Dec-22	0	0	0	0	30	30
Dec-23	0	0	0	0	10	10
Dec-24	0	0	0	0	10	10
Dec-25	0	0	0	0	30	30
Dec-26	0	0	0	0	10	10
Dec-27	0	0	0	0	10	10
Dec-28	0	0	0	0	20	20
Dec-29	0	0	0	0	20	20

<b>Date</b>	<b>Dust Suppression (m<sup>3</sup>)</b>	<b>Regional Drill Water Usage Metered (m<sup>3</sup>)</b>	<b>Regional Drill Usage Trucked (m<sup>3</sup>)</b>	<b>Regional Drill Usage Total (m<sup>3</sup>)</b>	<b>Domestic Consumption at Doris (m<sup>3</sup>)</b>	<b>Total Daily Usage (m<sup>3</sup>)^</b>
Dec-30	0	0	0	0	10	10
Dec-31	0	0	0	0	20	20

*\* values rounded to nearest whole cubic meter*

### **c) Quantity of effluent discharged**

Windy Camp was closed throughout 2015 therefore no discharges occurred related to the waste water treatment facility (WWTF) at monitoring station HOP-2.

No discharges occurred at the Windy Camp bulk fuel storage facility (HOP-5) in 2015 as this facility was decommissioned in 2012 and the containment berm removed.

No discharges occurred at the Patch Lake bulk fuel storage facility (HOP-6) in 2015 as this facility was decommissioned and the berm removed in 2012.

### **d) Volume of sludge removed from sewage disposal facility**

No sludge was removed from the Windy Camp WWTF in 2015 because this facility was not operational and the camp was closed.

### **e) Results of Toxicity Testing**

TMAC did not perform toxicity testing to demonstrate the non-acute toxicity of the effluent discharged from the WWTF at HOP-3 (at a point of entry to Windy Lake), as the camp is closed and no effluent was discharged (this facility has been removed). The testing is normally conducted in accordance with the following test procedures:

- i. Acute lethality to Rainbow Trout, *Oncorhynchus mykiss* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and
- ii. Acute lethality to the crustacean, *Daphnia magna* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).