



November 17, 2014

2013-2014 Annual Monitoring Report for the Nunavut Impact Review Board's Monitoring of TMAC Resources Inc.'s Doris North Gold Mine Project (NIRB File No. 05MN047)

Report Title: 2013 – 2014 Annual Monitoring Report for the Nunavut Impact Review Board’s Monitoring of TMAC Resources Inc.’s Doris North Gold Mine Project (NIRB File No. 05MN047)

Project: Doris North Gold Mine Project

Project Location: Kitikmeot Region, Nunavut

Project Owner: TMAC Resources Inc.
40 King Street West Suite 2100
Toronto, ON M5H 3C2
Tel: (416) 628-0216

Monitoring Officer: Kelli Gillard

Report Prepared by: Kristina Benoit, Technical Advisor
Kelli Gillard, Monitoring Officer

Monitoring Period: October 1, 2013 – October 1, 2014

Date Issued: November 17, 2014

Photo credit: NIRB Staff

Cover Photo: Aerial view of Tail Lake frozen core dam at Doris North Gold Mine Project

Table of Contents

1.0	INTRODUCTION	1
1.1	PROJECT HISTORY AND CURRENT STATUS	1
1.2	PROJECT COMPONENTS AS ORIGINALLY PROPOSED	2
1.2.1	Tail Lake Area	2
1.2.2	Camp and Mine Site	2
1.2.3	Roberts Bay Area	3
2.0	MONITORING ACTIVITIES	3
2.1	GENERAL REPORTING REQUIREMENTS	3
2.2	COMPLIANCE MONITORING	5
2.2.1	Compliance with the NIRB Project Certificate	5
2.2.1.1	Compliance Achievements	5
2.2.1.2	TMAC's Response to the Board's 2013 Recommendations	8
2.2.1.3	Items for consideration	15
2.2.2	Compliance Monitoring by Authorizing Agencies	16
2.2.2.1	Kitikmeot Inuit Association (KIA)	16
2.2.2.2	Aboriginal Affairs and Northern Development Canada (AANDC)	16
2.2.2.3	Environment Canada (EC)	16
2.2.2.4	Transport Canada (TC)	16
2.3	EFFECTS MONITORING	16
2.3.1	NIRB's Review of TMAC's 2013 Annual Report	17
2.3.2	Effects Monitoring by Authorizing Agencies	17
2.3.2.1	Kitikmeot Inuit Association (KIA)	17
2.3.2.3	Aboriginal Affairs and Northern Development Canada	18
2.3.2.4	Environment Canada	18
2.3.3	Areas Requiring Further Study or Changes to the Monitoring Program	19
2.3.3.1	Appendix D and the Annual Report	19
2.4	OTHER ACTIONABLE ITEMS	19
2.4.1	Project Certificate Reconsideration per NLCA 12.8.2	19
2.4.1.1	Proposed Changes to the Doris North Project	19
2.4.1.2	Procedural History	20
3.0	SITE VISIT	21
4.0	SUMMARY	21
	APPENDIX A: THE NIRB'S 2014 SITE VISIT REPORT	24

1.0 INTRODUCTION

1.1 Project History and Current Status

In September 2006, the Nunavut Impact Review Board (NIRB or Board) issued Project Certificate No. 003 (the PC) to Miramar Hope Bay Ltd. (Miramar) for the Doris North Gold Mine Project (Doris North or the Project). The PC was issued following completion of the NIRB's Review of the Project in accordance with Part 5 of Article 12 of the Nunavut Land Claims Agreement (NLCA). Doris North is located 125 kilometres (km) south of Cambridge Bay and 150 km north of Umingmaktok (Bay Chimo), near Melville Sound in the West Kitikmeot region of Nunavut. The site is accessed by sealift for fuel and supplies, and by air for select freight and all personnel movements.

In early 2008, Newmont Mining Corporation (Newmont) successfully purchased all interests of Miramar and its subsidiary properties in the Hope Bay Belt, including the Doris North holding. Following this acquisition, Hope Bay Mining Ltd. (HBML) was established for the purposes of operating Doris North and other properties in the Hope Bay Belt.

From early 2008 to late 2009, construction of Doris North was suspended as HBML re-evaluated the original mine development plan. In November 2009, HBML decided to proceed with the Project through a staged development strategy. Doris North subsequently resumed infrastructure construction in the summer of 2010, and mine operation had been anticipated to commence in 2012.

In 2011, activity at Doris North was focused on completing infrastructure necessary for the advanced exploration stage of the Project. On January 31, 2012 Newmont announced that it had decided to move the Project into care and maintenance with the camp being opened seasonally to meet and maintain regulatory obligations. Prior to this decision, a number of facilities and structures had been constructed to support the proposed mine, including infrastructure at Roberts Bay, the Doris North Camp, and the north dam at Tail Lake which are all linked by an all-weather road. Other facilities that were constructed included an airstrip, landfarm, wash bay area and laydown pads.

In early March 2013, HBML notified the NIRB that it was selling the Project to TMAC Resources Inc. (TMAC) and later that month TMAC notified the NIRB that it planned to re-open the camp in order to continue exploration activities while maintaining the site in care and maintenance. On April 11, 2013 the NIRB received notice that TMAC had completed the purchase of the Project from HBML. Throughout the summer of 2013, TMAC continued ongoing exploration and site management while in care and maintenance. On December 3, 2013 TMAC informed the NIRB of its intentions to maintain a presence throughout the winter in order to operate essential Doris North Camp facilities and systems, conduct monitoring programs under their applicable licences and permits, and continue exploration activities.

On December 9, 2013 TMAC filed an application with the NIRB for a reconsideration of the PC in order to allow for Project modifications which were required in order to allow TMAC to bring the Project out of care and maintenance. The NIRB commenced the reconsideration pursuant to the NLCA section 12.8.2; however, on April 22, 2014 received notice from TMAC that it planned to submit further

amendments to be considered as part of the application. On April 30, 2014 in conjunction with the Nunavut Water Board (NWB), the NIRB suspended its review until such time as TMAC submits a complete scope of proposed modifications. At the time of this report, there have been no further submissions from TMAC.

Through the summer of 2014, TMAC has continued with ongoing exploration and site management activities while Doris North remains in care and maintenance. TMAC has also indicated that it has plans to maintain a presence on site again during the winter of 2014.

1.2 Project Components as originally proposed

The original Project proposal approximated a physical footprint of 62 hectares, with an ore processing capacity of 668 tonnes per day. The anticipated life of mine was 24 months, processing 458,000 tonnes of ore yielding approximately 306,830 ounces of gold.

The major components of the Project include a main camp, fuel tankfarm, office complex, workshops, power generation plant, sewage treatment plant, portal and underground mine and associated crusher and mill at the main mine site. Tailings generated during the milling process would be deposited in a tailings impoundment area (TIA) at Tail Lake. At Roberts Bay a jetty, fuel tank farm, and laydown area have also been constructed to support the Project.

A 4.8 kilometre (km) all-weather road (AWR) links Roberts Bay with the main camp, mine site and related infrastructure. An airstrip has been constructed along the alignment of the all-weather road, with a portion of the infrastructure serving as both access road and landing strip. During 2011, HBML proposed amendments to the Project's Type A water licence with the NWB (NWB File No. 2AM-DOH0713) which included an airstrip expansion/bypass road. On January 14, 2011 the amendments were approved through 12.4.3 of the NLCA for construction to begin; however the Project was placed in care and maintenance prior to completion of construction of the airstrip expansion.

1.2.1 Tail Lake Area

The Project area around Tail Lake currently includes the frozen core north dam which is located approximately 1 km southeast of Doris Camp, accessible via a secondary road called Tail Lake Road. The north dam is a rock fill dam with a permanently frozen core constructed to contain the tailings storage at Tail Lake. The frozen core is maintained using thermosyphons which are filled with liquid carbon dioxide to remain cool and the dam is monitored to ensure its integrity.

1.2.2 Camp and Mine Site

The Doris Camp is located approximately 5 km south of Roberts Bay and constructed on-site facilities are:

- 180-person capacity accommodations camp;
- mine offices;
- sewage treatment plant;
- power plant;
- bulk fuel storage area;

-
- warehouses;
 - underground mining support facilities;
 - vehicle parking;
 - material laydown; and
 - helicopter operations and landing area.

All listed facilities are situated on rock pads; a measure taken to protect the permafrost and to allow positive drainage and prevent permanent ponding of water. Rock fill used for the pads is non-acid generating and non-mineralized material from Quarries no. 2 and no. 4.

Though no active mining has been undertaken at site, during the bulk sample program an underground decline and portal was constructed east of the camp along with a vent raise to supply heating and ventilation for the underground workings. Approximately 200,000 tonnes of waste rock was extracted during the bulk sampling program and are stockpiled on the permitted waste rock pad. Additional ore that was not used in the bulk sampling program has been stored on a rock pad near the underground portal. The Project had not commenced with processing of ore or the deposition of tailings, as it has not yet entered the production mining stage of operations and a mill is not on site.

A diversion berm with an impermeable liner was constructed upslope of the camp to divert non-contact runoff to reduce site contact water. A program to collect and manage runoff from the camp pads and underflow through the pads as described in TMAC's Interim Water Management Plan is also in place.

Facilities located near the camp include a landfarm and open burn pan area, an overburden storage pile, core storage area, reagent storage pads, and the all-weather road/airstrip. The crushing, milling and processing plant, south dam and road for the Tail Lake TIA and the landfill have not been constructed to date and are not expected to be constructed until the Project is moved out of care and maintenance.

1.2.3 Roberts Bay Area

The Roberts Bay area includes the marine port and other ancillary facilities required for the Project. A rock fill jetty was constructed and underwent an upgrade in 2013 for barge operations, two bulk fuel storage facilities, one containing a single 5 million litre (ML) tank, and the second facility which houses three 5 ML tanks. A mechanical shop, vehicle repair complex, waste management facility, and laydown area are also located at Roberts Bay. All structures and facilities at the Roberts Bay area had been built on bedrock or rock fill pads.

2.0 MONITORING ACTIVITIES

2.1 General Reporting Requirements

During the 2013-2014 monitoring period, TMAC demonstrated overall compliance with reporting requirements resulting from the NIRB's Review of the Project, including commitments contained in related reports and plans as stipulated through the NIRB's Project Certificate. TMAC has provided the following items as required by the terms and conditions contained within the PC No. 003 for the current monitoring period of October 2013 through October 2014:

-
- 2013 Meteorology Compliance Report (May 2013);
 - 2013 Annual Roberts Bay Jetty Inspection (May 2014);
 - 2013 Doris North Socio-Economic Monitoring Report (May 2014);
 - 2013 Wildlife compliance Monitoring Report (May 2014);
 - 2014 Wildlife Monitoring and Management Plan Q1 Reporting (April 2014);
 - 2013 Air Quality Compliance Report (May 2014);
 - 2013 Hydrology Compliance Report (May 2014);
 - 2013 TMAC Annual Report (May 2014); and
 - 2014 WMMP Q2 Reporting (September 2014).

On May 27, 2014 the NIRB invited interested parties to comment on TMAC's 2013 Annual Report for the Doris North project. On or before June 27, 2014 the NIRB received comments from the following parties:

- Kitikmeot Inuit Association;
- Government of Nunavut;
- Aboriginal Affairs and Northern Development Canada;
- Environment Canada; and
- Transport Canada.

On September 9, 2014 the NIRB provided TMAC with an opportunity to respond to comments, requesting that its submission be provided to the NIRB on or before September 23, 2014. On September 23, 2014 TMAC indicated that it would be in a position to provide a response on or before October 31, 2014.

The following updated plans were also submitted to the NIRB during the current monitoring period:

- Community Relations Management Program (January 2014);
- Updates to the Doris North No Net Loss Plan for Tail Lake (January 2014);
- Updates to the Doris North No Net Loss Plan for Tail Outflow (January 2014);
- Doris North Waste Rock and Ore Management Plan (January 2014);
- 2014 Reclamation Plan (March 2014);
- Hope Bay Project Spill Contingency Plan (May 2014); and
- Tundra Reclamation Work Plan (May 2014).

The following plans have not been forwarded to the NIRB to date, but may be required should the Project move out of care and maintenance.

- Education and Orientation Plan;
- Human Resources Plan;
- Inuit Involvement Plan;
- Auditing and Continuous Improvement Plan; and
- Reclamation Plan.

2.2 Compliance Monitoring

Compliance monitoring involves an assessment undertaken by regulators and other agencies to establish whether or not the project is being carried out as required by relevant legislation, regulations, instruments, commitments and agreements as such are applicable to certain project activities. Compliance monitoring as reported by authorizing agencies is also a requirement of the NIRB's Monitoring Program for the Doris North Gold Mine Project.

2.2.1 Compliance with the NIRB Project Certificate

During the 2013-2014 reporting period, the Proponent was successful in having met the requirements of the NIRB Project Certificate, including Appendix A which contains a list of the Proponent's commitments. Some Terms and Conditions may not be applicable to the Project as it continues to be maintained in care and maintenance.

2.2.1.1 COMPLIANCE ACHIEVEMENTS

CONDITION 7

HBML SHALL MEET IMMEDIATELY WITH ENVIRONMENT CANADA AND THE DEPARTMENT OF FISHERIES AND OCEANS CANADA TO ENSURE THE INFORMATION REQUIRED FOR SCHEDULE 2 OF THE METAL MINING EFFLUENT REGULATIONS CAN BE PROCESSED ACCORDING TO LAW.

On January 27, 2014, as part of its response to the NIRB's 2013 Annual Monitoring Report and Board recommendations, TMAC submitted its "2010 Hope Bay Belt Project Updates to the Doris North No Net Loss Plan for Tail Lake" (No Net Loss Plan) to the NIRB. A change in ownership during 2008 had resulted in delays in the Project schedule, including the timelines in the No Net Loss Plan. In addition, information obtained through environmental surveys in 2009 led to further understanding of the Project area, which then resulted in refinements in the schedule and costs of the No Net Loss Plan.

CONDITION 27

HBML SHALL UPDATE AND REVISE THE WILDLIFE MITIGATION AND MONITORING PLAN TO REFLECT THESE TERMS AND CONDITIONS AND SHALL SUBMIT THE REVISED WILDLIFE MITIGATION AND MONITORING PLAN TO NIRB. NIRB MAY CONSULT WITH RELEVANT GOVERNMENT DEPARTMENTS AND THE NUNAVUT WILDLIFE MANAGEMENT BOARD PRIOR TO APPROVING THE REVISED WILDLIFE MITIGATION AND MONITORING PLAN. THE WILDLIFE MITIGATION AND MONITORING PLAN MUST BE SUBMITTED WITHIN THREE (3) MONTHS OF THE ISSUANCE OF A PROJECT CERTIFICATE AND IT MUST BE APPROVED BY NIRB PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. HBML MUST ALSO SUBMIT AN UPDATED PLAN ON AN ANNUAL BASIS WHICH ALSO MUST BE APPROVED BY NIRB.

COMMENTARY: NIRB EXPECTS THE ANNUAL PLAN TO INCLUDE THE QUARTERLY PLANS AND THE FOURTH QUARTER REPORT THEN BECOMES PART OF THE ANNUAL REPORT.

On May 12, 2014 TMAC submitted the 2013 Wildlife Mitigation and Monitoring Plan (WMMP) Annual Report. Within the WMMP Annual Report, TMAC indicated that while the Project remained in care and maintenance, the compliance monitoring included caribou monitoring, recording wildlife incidents and accidents relative to Project activities and using motion-triggered cameras to monitor Project

infrastructure. Additional monitoring studies were conducted for upland breeding birds, waterbirds, and raptors as a precautionary measure because helicopter-based exploration surveys took place during the year. The area being assessed remained the same as 2012, which would focus monitoring activities around the Doris North Project site rather than the combined Doris North compliance monitoring and Phase 2 baseline study areas completed previously.

CONDITION 28

WITHIN SIX (6) MONTHS OF THE ISSUANCE OF A PROJECT CERTIFICATE, A HOPE BAY BELT SOCIO-ECONOMIC MONITORING COMMITTEE ("SEMC") SHALL BE FORMED TO SUPPLEMENT, NOT DUPLICATE AREAS COVERED BY THE INUIT IMPACT BENEFIT AGREEMENT NEGOTIATED FOR THIS PROJECT. IN ORDER TO ENSURE CONSISTENT DATA COLLECTION AND TRACKING OF DATA TRENDS IN A COMPARABLE FORM TO BE SHARED AT THE REGIONAL LEVEL AND TO MINIMIZE THE DUPLICATION OF EFFORTS, THE COMPOSITION OF THE SEMC SHOULD INCLUDE THE SAME MEMBERSHIP AS THE KITIKMEOT SOCIO-ECONOMIC MONITORING COMMITTEE APPROVED BY THE MINISTER. ADDITIONALLY, THE SEMC MUST ENGAGE THE AFFECTED COMMUNITIES OF CAMBRIDGE BAY, KUGLUKTUK, GJOA HAVEN, TALOYOK, AND NIRB'S MONITORING OFFICER, AND CONSIDER CONCERNS FROM BATHURST INLET AND OMINGMAKTOK. IN CONSULTATION WITH THESE PARTIES AND IMMEDIATELY UPON THE SEMC'S FORMATION, MHBL SHALL PROVIDE THE TERMS OF REFERENCE FOR A SOCIO-ECONOMIC MONITORING PROGRAM TO THE SEMC FOR REVIEW AND SUBSEQUENT DIRECTION BY NIRB. THE TERMS OF REFERENCE ARE TO INCLUDE THE ROLE OF MHBL IN DATA COLLECTION AND ANALYSIS; THE KEY SOCIO-ECONOMIC INDICATORS TO BE MONITORED; THE REPORTING REQUIREMENTS; AND THE FUNDING FORMULA.

The Doris North SEMC was established in April 2007, with a Socio-Economic Monitoring Program (SEMP) and its associated Terms of Reference (ToR) developed and subsequently revised by Miramar at the end of 2007. The SEMP and ToR were approved by the Doris North SEMC in 2010.

On May 5, 2014 TMAC submitted its 2013 Doris North Socio-Economic Monitoring Report to the NIRB. The report stated several key results using data from 2009-2013 and which had been supplemented with information from the Government of Nunavut, the Kitikmeot School Operations and Nunavut Tunngavik Incorporated. TMAC indicated that it anticipated no further actions with respect to the management of socio-economic impacts. It stated that should Project expenditures and employment increase over the coming years in preparation for the start of production, TMAC would continue to track Project-specific indicators as defined by the Doris North project SEMP, and would respond to any arising issues or concerns in consultation with the NIRB and the KIA, as appropriate.

CONDITION 30

HBML WILL INSTALL AND FUND AN ATMOSPHERIC MONITORING STATION. THIS STATION AND ITS LOCATION SHALL BE DEVELOPED IN CONSULTATION WITH EC AND HC AIR QUALITY OFFICIALS AND FOCUS ON PARTICULATES OF CONCERN GENERATED AT THE MINE SITE. THE RESULTS OF AIR-QUALITY MONITORING ARE TO BE REPORTED EVERY SIX (6) MONTHS TO NIRB THROUGH THE MONITORING OFFICER, AND FROM THERE TO ALL PARTIES.

COMMENTARY: NIRB EXPECTS THE CANADA WIDE STANDARDS FOR DIOXINS AND FURANS AND THE CANADA WIDE STANDARDS FOR MERCURY WILL APPLY AND SHOULD BE FOLLOWED INCLUDING STACK TESTING OF INCINERATORS.

The on-site incinerator was established at the Roberts Bay waste management area in 2009. TMAC indicated that during the 2013-2014 monitoring period, it had not been required to conduct a stack test as it had burned less than 26 tonnes of waste in a year, and that this was in accordance with direction from Environment Canada¹ and the NIRB².

During the summer of 2014, TMAC commissioned the Doris North mine site power plant, which contains stacks, and noted in an email to the NIRB on October 10, 2014, its understanding that the power plant would not trigger a stack testing requirement for dioxins and furans under the CCME Canada-Wide Standards. Environment Canada confirmed through email to the NIRB on October 22, 2014 that EC does not have any requirements for emission testing that would apply to the Doris North diesel-fired power plant.

CONDITION 32

PRIOR TO THE COMMENCEMENT OF OPERATION HBML SHALL HAVE A COMPLETE ENVIRONMENT, HEALTH AND SAFETY MANAGEMENT SYSTEM IN PLACE WHICH INCLUDES THE FOLLOWING: WILDLIFE MITIGATION AND MONITORING PLAN; ENVIRONMENTAL PROTECTION PLAN; EMERGENCY RESPONSE AND SPILL CONTINGENCY PLAN; OCCUPATIONAL HEALTH AND SAFETY PLAN; RECLAMATION PLAN; EDUCATION AND ORIENTATION PLAN; HUMAN RESOURCES PLAN; INUIT INVOLVEMENT PLAN; COMMUNITY RELATIONS PLAN; MONITORING AND FOLLOW-UP PLAN; AND AUDITING AND CONTINUOUS IMPROVEMENT PLAN. WHEN COMPLETE, THESE PLANS SHALL BE FORWARDED TO NIRB'S MONITORING OFFICER.

COMMENTARY: HBML IS EXPECTED TO CONTACT FEDERAL AND TERRITORIAL GOVERNMENT DEPARTMENTS IMMEDIATELY REGARDING THE PREPARATION OF THESE PLANS. THE GN, IN PARTICULAR, IS INVOLVED WITH THE APPROVAL OF MANY OF THE PLANS AND IS ENCOURAGED TO DESIGNATE AN OFFICIAL TO APPROVE THE PLANS AS APPLICABLE. PLEASE SEE APPENDIX E FOR A LIST OF GN CONTACTS. NIRB CONSIDERS THE ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT SYSTEM TO BE COMPLETED ONCE HBML HAS SUBMITTED ALL REQUIRED PLANS. NIRB EXPECTS THE ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT SYSTEM TO BE COMPLETED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

On January 28, 2014 TMAC submitted its *Community Relations Management Program 2011/12* to the NIRB. On May 23, 2014 TMAC submitted an updated Closure and Reclamation Plan which included information relevant to the closure of the Project, in accordance with the existing Type A Water Licence (No. 2AM-DOH1323). On June 5, 2014 TMAC also submitted an updated Spill Contingency Plan

¹ Correspondence dated April 15, 2013 from C. Ogilvie (Environment Canada) to G. Sorensen (NIRB), Available from the NIRB's online registry at <http://ftp.nirb.ca/03-MONITORING/05MN047-DORIS%20NORTH%20GOLD%20MINE/02-MONITORING%20AND%20MANAGEMENT%20PLANS/AIR%20QUALITY%20PLAN/03-INCINERATION/>

² Correspondence dated June 26, 2013 from K. Gillard (NIRB) to T. MacGibbon (TMAC Resources Inc.), Available from the NIRB's online registry at <http://ftp.nirb.ca/03-MONITORING/05MN047-DORIS%20NORTH%20GOLD%20MINE/02-MONITORING%20AND%20MANAGEMENT%20PLANS/AIR%20QUALITY%20PLAN/03-INCINERATION/130626-05MN047-NIRB%20Ltr%20TMAC%20Re%20Doris%20North%20Stack%20Testing-OT3E.pdf>

which included updated roles, responsibilities and contact information for relevant parties, details regarding fuel storage, and updated spill response procedures.

2.2.1.2 TMAC'S RESPONSE TO THE BOARD'S 2013 RECOMMENDATIONS

The Board made a number of recommendations as a result of the 2012-2013 monitoring efforts, and the 2013 site visit. The following provides an overview of TMAC's responses to the Board's recommendations as provided in correspondence dated February 6, 2013.

RECOMMENDATION 1 (RE: CONDITION 27)

THAT TMAC AND THE GOVERNMENT OF NUNAVUT PROVIDE THE BOARD WITH AN UPDATE ON ACTIVITIES AND AN ANTICIPATED TIMELINE FOR THE IMPLEMENTATION OF CARIBOU MANAGEMENT INITIATIVES, INCLUDING DETAILS OF ANY MEMORANDUM OF UNDERSTANDING, COLLARING PROGRAM OR OTHER STEPS THEY HAVE TAKEN TO ADDRESS CARIBOU MANAGEMENT. AN UPDATE ON ACTIVITIES AND AN ANTICIPATED TIMELINE SHOULD BE PROVIDED BY TMAC AND THE GOVERNMENT OF NUNAVUT, EITHER SEPARATELY OR IN A COMBINED SUBMISSION, WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On January 7, 2014 TMAC responded to the NIRB's 2013 recommendations, noting that it would set up a meeting with the GN-DOE to discuss caribou monitoring research and TMAC's potential contribution to a suitable GN-led program. On February 12, 2014 the GN responded to the NIRB's recommendations 9 and 10 regarding the Wildlife Mitigation and Monitoring Program Report (WMMP), indicating an interest in discussing the Proponent's participation in caribou collaring programs and population surveys to partially satisfy their monitoring requirements.

On June 27, 2014 the GN noted in its comments submitted with regard to TMAC's 2013 Annual Report for Doris North Gold Mine Project, that no new design or implementation plan had been submitted for grizzly bear and wolverine. The GN also indicated that discussions were underway to finalize a memorandum of understanding with TMAC for caribou monitoring but that, no agreement for grizzly bear and wolverine monitoring had been initiated.

RECOMMENDATION 2

THE BOARD REQUESTS THAT TMAC PROVIDE A PLAN FOR PROGRESSIVE REVEGETATION AND RECLAMATION AT THOSE AREAS WHICH HAVE BEEN IMPACTED BY PREVIOUS ON-LAND TRIALS. THESE PLANS SHOULD BE PROVIDED WITHIN TMAC'S FUTURE ANNUAL REPORTING TO THE NIRB.

On April 30, 2014 TMAC submitted a Tundra Reclamation Work Plan to the NIRB which noted that track depression segments proposed for infilling would be marked during the summer of 2014 for restoration work during the winter, a time when it indicated, no further damage would occur to the tundra from the movement of equipment. TMAC also indicated that the remaining test plots would continue to be monitored seasonally through aerial photographs to ensure tundra deterioration could be identified and mitigated.

RECOMMENDATION 3 (RE: CONDITION 31)

THE BOARD REQUESTS THAT TMAC PROVIDE IT WITH AN UPDATED SET OF PLANS PREPARED TO DATE, AS WELL AS A TIMELINE FOR THE DEVELOPMENT AND SUBMISSION TO THE NIRB OF ANY OUTSTANDING PLANS NOT YET PROVIDED. THE REQUESTED SET OF PLANS AND ASSOCIATED TIMELINE SHOULD BE PROVIDED TO THE NIRB WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On January 27 and 28, 2014 the NIRB received TMAC's response to the Board's 2013 recommendations, including a number of plans such as: the Community Relations Management Program, NWB Hope Bay 2012 QA-QC Plan Revision 7.1, the 2010 Waste Rock Management Plan, the Updates to No Net Loss Plan for Tail Lake and the Updates to No Net Loss Plan for Tail Outflow. The response also indicated which plans had been previously submitted, which plans were undergoing revision, and which plans would not be submitted until such time as the Project moved out of care and maintenance.

RECOMMENDATION 4

THE BOARD REQUESTS THAT TMAC PROVIDE IT WITH A COMPREHENSIVE RESPONSE TO PARTIES' COMMENTS AS SUBMITTED TO THE NIRB WITH REGARD TO THE DORIS NORTH 2012 ANNUAL REPORT. THE RESPONSE FROM TMAC IS REQUESTED WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On January 27, 2014 the NIRB received TMAC's response to the Kitikmeot Inuit Association's comments on the NIRB's 2012-2013 Annual Monitoring Report. TMAC identified where information requests could either be located or where they would be included in the next round of reporting.

RECOMMENDATION 5

THE BOARD REQUESTS THAT TMAC PROVIDE A FULL DISCUSSION AND SUMMARY ON THE RESULTS OF ITS PEAMP FOR THE PROJECT AS REQUIRED BY APPENDIX D OF THE PROJECT CERTIFICATE [No. 003] (SECTION 1), AND THAT THIS DISCUSSION AND SUMMARY BE PROVIDED WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

In both TMAC's response to the NIRB's 2013 recommendations, submitted on January 27, 2014 and within TMAC's 2013 Annual Report submitted on May 1, 2014, it noted that the Project continues to operate in care and maintenance and that Project construction has not been completed. To date, no modifications to the PEAMP have been made, and any outstanding plans listed in Appendix D or the Project Certificate would be submitted 3 months prior to the start of operations. TMAC further indicated that a complete analysis of whether or not the Project is operating in accordance with the predicted impacts identified in the Final Environmental Impact Assessment (FEIS) or at the Final Hearing cannot be completed until production at Doris North begins, because the predicted impacts are based on the Project being in operation.

RECOMMENDATION 6

WHILE THE PROJECT REMAINS IN CARE AND MAINTENANCE, THE BOARD REQUIRES THAT TMAC'S ANNUAL REPORTING INCLUDE A DESCRIPTION AND PHOTOS (WHERE APPLICABLE) TO HELP EXPLAIN AND/OR SHOW HOW PROJECT INFRASTRUCTURE HAD BEEN PREPARED FOR SEASONAL CLOSURE.

In TMAC's 2013 Annual Report, care and maintenance inspection forms were included for the months of December 2012 through to March 2013; these included a detailed checklist and observation notes of site infrastructure, with accompanying photos. The Doris North site remained open throughout the winter of 2013 with a reduced staff for site maintenance and continued exploration and limited seasonal closure preparation was required.

RECOMMENDATION 7 (RE: CONDITION 25)

THE BOARD REQUESTS THAT TMAC PROVIDE AN INTERIM REPORT OF WILDLIFE SIGHTINGS AND OTHER DATA COLLECTED USING ON-SITE REMOTE INFRARED CAMERAS TO THE NIRB WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On April 28, 2014 the NIRB received TMAC's first quarter monitoring report which included information regarding wildlife incidents, wildlife counts and a list of wildlife mitigation measures undertaken at the Doris North site. TMAC indicated that with no more than 7 staff members on site between November 2013 and March 2014, wildlife observation numbers were limited. On September 9, 2014 TMAC submitted a second quarter monitoring report which in addition to wildlife counts and a list of wildlife mitigation measures undertaken at the Doris North site, also included a note about a deceased fox found inside the Doris North portal switchgear station. TMAC notified both the KIA and GN-DOE and sent the carcass to Kugluktuk for necropsy. As of September 9, 2014 no further results had been provided with respect to the deceased fox.

RECOMMENDATION 8

THE BOARD REQUESTS THAT TMAC'S 2013 ANNUAL REPORT INCLUDE DATA FROM THE REMOTE INFRARED CAMERAS AS WELL AS INFORMATION RECORDED BY THE HUNTERS AND TRAPPERS ORGANIZATION DURING ANY INSPECTIONS OR VISITS WHICH ARE UNDERTAKEN AT SITE OVER THE WINTER MONTHS.

TMAC's 2013 Wildlife Compliance Monitoring Report included infrared camera data which was used to monitor wildlife use of, and interaction with, the area immediately surrounding Project infrastructure. The program, initiated in 2012, was designed to document the species and number of individuals that interact with various Project facilities compared to control sites on the tundra. On July 7, 2014 the Government of Nunavut submitted comments pertinent to the methodological design and analysis of camera data presented in the 2013 Wildlife Compliance Monitoring Report. On September 9, 2014 the NIRB provided TMAC with an opportunity to respond to the comments, requesting that its submission be provided to the NIRB on or before September 23, 2014. On September 23, 2014 TMAC indicated that it would be in a position to provide a response on or before October 31, 2014.

RECOMMENDATION 9

THE BOARD REQUESTS THAT TMAC PROVIDE A RESPONSE TO PARTIES' INFORMATION REQUESTS AND TECHNICAL COMMENTS AS PROVIDED TO THE NIRB IN RELATION TO THE 2012 WILDLIFE MITIGATION AND MONITORING PROGRAM ANNUAL REPORT FOR DORIS NORTH. THE RESPONSE TO COMMENTS SHOULD BE PROVIDED WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On January 7, 2014 TMAC replied to comments received from the Kitikmeot Inuit Association and Environment Canada.

Kitikmeot Inuit Association (KIA)

The KIA requested further statistical procedures and modeling methodology as well as digital data for technical evaluation. TMAC responded with the required information.

They also suggested installing bear proof fencing surrounding camps as possible means of protecting humans and bears. TMAC responded with the belief that fencing was not required around camp infrastructure to protect humans and bears based on the 5 year occupation history of Doris North infrastructure during which time no bears have been destroyed in response to an unacceptable risk to humans. Following up from TMAC's response, the KIA submitted commentary on February 11, 2014 to clarify their suggestion. The KIA noted that it did not mean to imply that grizzly bear fencing should be placed around the entire perimeter of the project area; rather that small ancillary subcomponents that could attract grizzly bears be identified and fenced during the non-winter periods when bears are active. It further indicated that while KIA recognizes the efforts of the proponent to properly manage waste, site personnel is expected to increase by 360, once operational and these changes would increase the likelihood of human errors, which can create problem bears that may need to be destroyed. Effective mitigation needs to consider the long-term likelihood of human error occurring.

The KIA further suggested the marine environment and marine mammals and species of conservation concern are included in future WMMP reports. TMAC responded, noting the annual monitoring of the marine environment in Roberts Bay adjacent marine areas are conducted, in detail, as part of the Aquatic Effects Monitoring Program. Further, seabirds and marine mammals are included in the wildlife mitigation and monitoring program, although marine mammals are not a valued ecosystem component (VEC) as identified through the Doris North EA process. Following up from TMAC's response, the KIA submitted commentary on February 11, 2014 to express interest in being involved in discussions of modifications needed in the plan to improve the design, fill data gaps, and detect changes in the marine environment and associated islands. They noted, for Project liability reasons, it would be important that the marine program make sufficient efforts towards identifying the presence of marine species on Schedule 1 of the SARA, species on Schedule 2, as well as species of importance to Inuit hunters during baseline studies.

The KIA recommended TMAC calculate potential population declines for VECs where habitat or area-density relationships are known for comparison to previous EIS predictions and actual observations. TMAC noted the difference in analysis area used and will correct it for the 2013 WMMP Annual Report.

Furthermore, the KIA noted the need for clear photographs of all animals killed by industrial activity on the mine site so they can be identified to their species level by a biologist. TMAC noted whenever possible, they identify to the species level and will include methods used to identify wildlife in the 2013 WMMP Report and Plan.

The KIA recommended TMAC utilize Inuit Quajimajatuqangit (IQ)/ Inuit Traditional Knowledge (ITK) with the wildlife data collected to date to improve its WMMP. TMAC noted IQ/ITK has been included in its wildlife monitoring program through a community elder site visit in 2011, where environmental management plans were discussed and traditional knowledge about the land was shared, resulting in the identification of caribou crossings and placement of remote cameras. In 2012, TMAC also secured a licence to access the KIA Traditional Knowledge database, where analysis could inform future iterations of the WMMP Plan.

The KIA questioned whether there had been any observations of other wildlife using Tail Lake, for concern in terms of contaminant exposure. TMAC noted that as the Doris North project had never reached production and no tailings have been placed in the Lake, wildlife using this lake would have had no particular exposure to any contaminants at this point. Exposure risk to wildlife once Tail Lake is used for tailings was modeled as a part of the Doris North EIS and there was low predicted risk to wildlife.

The KIA requested further description of initiatives and contributions towards regional caribou monitoring initiatives, as circumvention of monitoring requirements by funding government programs may set a precedent for many projects in the Kitikmeot, and the KIA must ensure all monitoring efforts will protect their interest in caribou. TMAC noted its interest in contributing to a suitable Government of Nunavut-led program that could be supported by interested stakeholders in the region, including the KIA.

The KIA noted potential discrepancies with the collecting incidental observations for grizzly bear activity in 2012 and recommended that staff numbers be used in conjunction with grizzly bear observations for analysis. TMAC acknowledged that incidental observations are influenced by many factors, including the number of personnel on site, and would clarify the data in the 2013 WMMP.

The KIA noted in reviews of other related documents, the number of grizzly bears observed at Doris North implies a very high grizzly bear use for the central Arctic. As such, they suggested monitoring and mitigation efforts for this species should recognize the fact that this species appears to favour some attributes of the coastal area associated with the Project, which heightens the need for grizzly bear mitigation and monitoring programs, a species of Special Concern. TMAC challenged the rationale that a higher than expected number of grizzly bears indicated in this study necessitates a heightened scrutiny of the bears.

Environment Canada (EC)

EC noted an inaccuracy with the description of the Schedules of the Species at Risk Act. TMAC agreed and committed to update the description in the 2013 WMMP Annual Report with the Dolphin-Union population status.

EC also noted report detail insufficiencies for readers to properly interpret the data presented. TMAC confirmed it would incorporate changes and clarifications in the 2013 WMMP Annual Report.

RECOMMENDATION 10

THE BOARD REQUESTS THAT TMAC PROVIDE A RESPONSE TO PARTIES' INFORMATION REQUESTS AND TECHNICAL COMMENTS AS PROVIDED TO THE NIRB IN RELATION TO THE UPDATED WILDLIFE MITIGATION AND MONITORING PROGRAM FOR DORIS NORTH. THE RESPONSE TO COMMENTS SHOULD BE PROVIDED WITHIN 60 DAYS' RECEIPT OF THE BOARD'S RECOMMENDATIONS.

On January 7, 2014 TMAC replied to comments received from the Kitikmeot Inuit Association, the Government of Nunavut Department of Environment, and Environment Canada.

Kitikmeot Inuit Association (KIA)

The KIA questioned the statistical methodology and analysis used to determine whether a Zone of Influence (ZOI) could be detected with either a count or presence-absence data, as no consistent ZOI was found, and caribou numbers were too low to detect a ZOI. The KIA requested a detailed write up of statistical procedures and modeling methodology as well as digital data for technical evaluation. TMAC provided more background and re-analysis of data which included the inclusion of a summary of results, count modeling in the ZOI analysis, and a determination as to the possibility of detecting a ZOI analysis from the existing data. Following up on TMAC's response, the KIA submitted further commentary on February 11, 2014 noting that the response did not provide any more information on methodology and modeling methods.

The KIA noted the Wildlife Mitigation and Monitoring Program Plan is the result of a series of communications between the NIRB, GN DOE, and TMAC (then HBML) and questioned why others groups such as the KIA, Nunavut Wildlife Management Board and the hunters and trappers organizations and local elders were not included. TMAC responded with the acknowledgement of extensive consultation during the environmental assessment process for a proposed WMMP. They welcomed the KIA, Inuit Advisory Committee, pursuant to the IOL Commercial Lease, to review, comment or provide advice on any aspect of the WMMP.

The KIA noted its desire to be consulted on the proposed methodology, monetary contributions, personnel requirements, and Project-specific and regional objectives of the caribou radio-collaring program proposed by the Proponent and encouraged TMAC to involve locals in monitoring programs. TMAC noted in its response that it plans to set up a meeting with the GN DOE to discuss their caribou monitoring research and TMAC's potential contribution to a suitable GN-led program that is vetted and approved by interested stakeholders, including the KIA.

The KIA questioned the twice per year checking of cameras by on-site environmental technicians, noting that this frequency may not allow for adaptive management. TMAC noted data from multiple projects in Nunavut which does not support the suggestion of checking cameras every two weeks. TMAC also confirmed that its WMMP Plan is a living document based on adaptive management and noted that if future camera data suggest increasing frequency of checks is warranted, the WMMP Plan would be updated to reflect that need. Following up from TMAC's response, the KIA submitted

commentary on February 11, 2014 again questioning the infrequent camera check schedule, noting that the current schedule would not permit the use of data in a timely manner for adaptive management and to ensure camera functionality. The KIA noted that incidental observations by workers at sight seem to be the primary triggers for adaptive management, in which case the purpose and objectives of the motion triggered camera data are unclear and further suggested that the cameras would not be used for making short term decisions to mitigate on a twice yearly schedule, nor are they the most effective means for single species monitoring for changes in numbers.

The KIA requested further information on the methodology used for monitoring grizzly bears. TMAC provided the average cell size and rationale for not relocating traps, and noted that, should a decision be made that further monitoring is required for grizzly bears once the Project comes out of care and maintenance, the study is designed to monitor changes in relative abundance over time as opposed to absolute density, which is the basis for the Western Nunavut study. Following up from TMAC's response, the KIA submitted commentary on February 11, 2014 which noted the grid sizes used for grizzly bear DNA monitoring may lead to underestimates of grizzly bear population, and suggesting that mitigation should assume higher use under the precautionary principle.

The KIA noted no cameras appeared to be dedicated to monitoring the interactions of roads and traffic with wildlife. TMAC acknowledged it was a good suggestion and that this has been implemented at site.

Government of Nunavut Department of Environment (GN DOE)

The GN DOE noted that then-owner HBML had committed to the continued monitoring of the Ahiak and Dolphin-Union caribou herds via GN planned and implemented collaring programs. Monetary contributions and in-kind support were to be outlined between GN and HBML. GN noted that it was unclear if or how TMAC would meet this requirement. TMAC noted in its response an interest in contributing to regional monitoring programs should they be established, and indicated that it planned to contact the GN DOE to set up discussion meetings in early 2014.

The GN DOE questioned the methodology of initially setting up the cameras and their locations throughout the study area, criteria for repositioning, intended species observations and limitations of camera range. TMAC explained that cameras were not intended to monitor other wildlife species in the general study area, but confirmed that incidental camera image captures of other species would be recorded and reported in the WMMP. It also noted that camera placement design had been intended to capture wildlife interaction with project infrastructure and to record the presence of Dolphin-Union caribou and other wildlife within the WMMP study area.

The GN DOE noted the WMMP wording for reporting wildlife fatalities was confusing and requested clarification. TMAC replied noting that all wildlife mortalities are, and would continue to be, reported to the GN DOE Wildlife Officer in Cambridge Bay and in TMAC's annual reports. In addition, departmental personnel are and would continue to be contacted for advice and direction in the event of any ongoing wildlife issue at Hope Bay.

The GN DOE noted that both grizzly bear and wolverine DNA monitoring have been discontinued during the care and maintenance phase, and suggested that organizations involved in the discussion on

continuation of the DNA monitoring program be defined and notified as such. The GN also noted the unlikelihood that the remote cameras would be effective at providing anything other than incidental observations because the cameras are not positioned according to the fair snagging grid. TMAC responded with a list of organizations which would be involved in discussions, including: GN DOE, the Proponent, and the NIRB, as well as other potential organizations, including the KIA, elders, and local hunters and trappers organizations. TMAC explained that cameras are positioned to monitor wildlife activity around Project infrastructure and any movement corridors, and noted that one additional camera has been placed at the boulder garden outflow of Roberts Lake to monitor bear and wolf activity near the fish fence.

The GN DOE requested further clarification on when and how updates to methodology for bird monitoring would be discussed with stakeholders. TMAC noted that while it was not undertaking waterfowl and upland breeding bird monitoring during care and maintenance, it had conducted aerial waterfowl and upland breeding bird surveys during the 2013 exploration activities and presented the data in the 2013 Annual WMMP report. TMAC also confirmed that updates to methodology would be discussed with interested stakeholders if the current methodology is determined to be inadequate to meet the objectives set out in the WMMP Plan.

The GN DOE noted that muskoxen are not given a section within the Care and Maintenance portion of the WMMP Plan, and that TMAC's Annual Report indicated that muskox surveys are undertaken through incidental observations. The GN DOE expressed concern with the use of incidental observations being used to assess potential impacts or for baseline surveys, and suggested supporting the HTO and potentially GN Wildlife division in conducting surveys. In addition, the GN DOE noted that insufficient data is not grounds to discontinue investigation into a potential zone of influence for muskox. TMAC replied that based on a rigorous, multi-year Issue Scoping and VEC selection process that ended in June 2005 and included direct consultation with the GN DOE, muskox were not selected as a VEC for the Doris North Project. It also noted that muskoxen have not frequently been observed throughout the Project study area, either during the baseline data collection or during project construction periods. TMAC confirmed that incidental observations would continue to be recorded as made during caribou aerial surveys and included as additional information. TMAC also noted that at the current time, it has no plans to contribute to HTO or Wildlife Division surveys for muskox. Following up from TMAC's response, the GN DOE submitted commentary on February 12, 2014 which acknowledged that muskox was not initially designated as a VEC in 2005, but which further noted that incidental observations of muskox in the Project study area warrant further monitoring of this species, and that monitoring of muskoxen would be required to observe potential changes at the population level since 2005.

2.2.1.3 ITEMS FOR CONSIDERATION

On June 20, 2013 the NIRB issued correspondence indicating agreement with the Proponent's suggested approach to reporting air quality on an annual basis rather than every six months while the Project remains in care and maintenance and the camp remains seasonal. However, on December 3, 2013 TMAC notified the NIRB of its intentions to remain open through the winter. With TMAC's continued intentions to remain open again during the winter of 2014, the NIRB may look to revisit this position.

2.2.2 Compliance Monitoring by Authorizing Agencies

2.2.2.1 KITIKMEOT INUIT ASSOCIATION (KIA)

KIA conducted inspections of the Doris North project mine site in June and August of 2013 and noted that the reporting submitted by TMAC which explains how TMAC is carrying out the Project in relation to the Project Certificate is accurate. The KIA noted no violation of any licences, permits, or authorizations in TMAC's execution of submitted plans or activities carried out at site.

2.2.2.2 ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA (AANDC)

AANDC conducted one inspection during 2013 at the Doris North site for compliance with the Type A Water Licence (No. 2AM-DOH0713) as issued by the Nunavut Water Board. AANDC noted that most issues identified by the inspector had been addressed adequately and that these were noted in TMAC's 2013 Annual Report. An issue of non-compliance with regard to fuel tank proximity to a waterbody had been noted; however, AANDC further noted that the tank was removed and placed appropriately, and in accordance with the water licence requirements.

AANDC also confirmed that an inspector had carried out a water licence and Crown lease inspection on July 8 and 9 of 2013 with generally acceptable outcomes, noting two issues falling under General Conditions: Erosion at the toe of the Robert's Bay Jetty and waste along the shore.

2.2.2.3 ENVIRONMENT CANADA (EC)

No inspections of the Project were completed by Environment Canada during the 2013 calendar year, and no non-compliance with the Fisheries Act or with the Canadian Environmental Protection Act, 1999 were identified by information from other sources such as complaints or the NT/NU Spill Line.

2.2.2.4 TRANSPORT CANADA (TC)

Transport Canada reviewed TMAC's 2013 Annual Report and noted that the Proponent is currently up-to-date on all of its compliance requirements regarding the *Navigable Waters Protection Act* Approval. TC confirmed that the approval was transferred from HBML to TMAC in March of 2013, and noted that TMAC is in compliance with the requirement to ensure the use of containment booms and berms to control potential spills and the availability of spill kits at relevant locations. TMAC also has a Transport Canada approved Oil Pollution Prevention Plan/Oil Pollution Emergency Plan (OPPP/OPEP). TC reviewed the 2012 OPEP, and, as TMAC had advised TC there were no fuel transfer operations in 2013, TMAC will be providing TC with an updated 2014 OPEP for review.

2.3 Effects Monitoring

Effects monitoring can be described as an assessment of the measurable change to a particular environmental or socio-economic component, as compared to the potential effects that were predicted to result from a proposed development. In the case of Doris North, impact predictions and mitigation measures were outlined and developed throughout the environmental review of the Project, and were recorded and presented through the Proponent's Final Environmental Impact Statement (FEIS) and other related documents.

The following section provides a summary of the NIRB's review of the 2013 Annual Report and comments received from parties.

2.3.1 NIRB's Review of TMAC's 2013 Annual Report

Appendix D of the Project Certificate provides an outline of the requirements of what is expected within the Proponent's annual report for the Doris North project. Reporting should include a summary of the results from the post-environmental assessment monitoring program (PEAMP), including an analysis of the Project's impact to the environment with reference to the predictions and environmental and socio-economic indicators used throughout the FEIS and Final Hearing.

TMAC has noted this year, as with the previous year that a summary of results from the PEAMP would not be in effect until production at Doris North begins, i.e. when ore is processed through the mill. Further, it stated that Project activities have had less of an effect than what had been predicted in the Final Environmental Impact Statement (FEIS) due to the reduced activity on site.

TMAC also included a description of baseline and monitoring data that has been collected while the Project is in care and maintenance, and indicated that reports and plans have been submitted to various agencies to meet conditions in Appendix D and to maintain other licenses required for the site. The summary also included an update on TMAC's compliance status with all authorizations and applicable regulations and guidelines.

Finally, TMAC provided a summary of activities that took place on site and a summary of community consultations undertaken during 2013.

2.3.2 Effects Monitoring by Authorizing Agencies

As a part of its annual monitoring program, the NIRB requested that authorizing agencies with jurisdiction over project components or activities, or those with specific expertise, provide comment regarding the effects assessment associated with the Project.

2.3.2.1 KITIKMEOT INUIT ASSOCIATION (KIA)

The Kitikmeot Inuit Association (KIA) suggested the following improvements be implemented in future annual monitoring reports:

- Provide more thorough inspection forms with all required information completed;
- Inspection notes should be addressed in adaptive monitoring or adaptive management plans;
- Provide detailed inspection notes with supplemental photographs, if details cannot be described;
- Present WMMP data summaries consistently across species; and
- Provide a conclusions section.

The KIA commented on the overall cohesiveness and clarity of the 2013 Doris North Gold Mine Project Hydrology Compliance Report and also made note of the differences in report structure between the 2012 and 2013 report submissions. The KIA requested a number of changes be made to the report in

order to allow it and other regulatory bodies to easily identify work that is done on site in a given year, assess the maintenance of baseline conditions in the environment (e.g., compare assumptions from the FEIS) and ensure that appropriate actions are taken to correct changes in a timely manner.

2.3.2.2 Government of Nunavut (GN)

The Government of Nunavut (GN) reviewed the 2013 Socio-Economic Monitoring Report and had no outstanding issues or comments. They looked forward to continued collaboration with TMAC in monitoring the socio-economic impacts and benefits from the Doris North Project.

They further suggested the following improvements be implemented regarding Term and Condition 22 in future annual monitoring reports:

- Implement a plan to investigate the wolverine and grizzly bear population of the Hope Bay Belt region and to finalize an agreement with the GN for grizzly bear and wolverine monitoring; and
- Provide further planning, review and explanation of the Wildlife Monitoring Compliance Report, including; rationale for reducing the study area, wildlife observations and incident reporting, memorandum of understanding for caribou monitoring.

2.3.2.3 ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA

Aboriginal Affairs and Northern Development Canada (AANDC) noted that it had reviewed the socio-economic monitoring program report submitted by TMAC Resources and that it had no comment at the time, other than to note that the report had been discussed with the members of the Kitikmeot Socio-Economic Monitoring Committee in November 2013.

2.3.2.4 ENVIRONMENT CANADA

Environment Canada (EC) suggested the following improvements be implemented in future annual monitoring reports:

- Requested that clarification regarding the Hope Bay Seepage Monitoring Program be provided, specifically regarding treatment of the seepage prior to its entry into the environment; and
- Noted that as no information was presented on the methods and conclusions reached in obtaining results from the Aquatic Effects Monitoring Program, and that as such, an evaluation of the validity of conclusions and analysis of areas warranting further study or changes to the program was difficult to provide. EC requested that the Proponent provide comprehensive details from its AEMP along with the annual report for the Project in 2014.

2.3.3 Areas Requiring Further Study or Changes to the Monitoring Program

2.3.3.1 APPENDIX D AND THE ANNUAL REPORT

The 2013 Annual Report did not provide a discussion or summary regarding the PEAMP for the Project as required throughout the PC No. 003 and as outlined in Appendix D. Specifically, a discussion and summary should have been provided for the evaluation of the accuracy of impact predictions that were made in the FEIS, a summary of conclusions made throughout the reporting period, an evaluation of the effectiveness of mitigation measures employed, and a description of any impacts or effects resulting from exceeded thresholds. The NIRB is aware of the Proponent's position – notably that as limited activities are occurring on site, limited impacts can be expected; however without additional discussions, summaries, and actual quantifiable results of monitoring programs, it is difficult to ascertain whether or not impacts are being observed at site and to determine whether impacts and/or data are in line with the predictions provided within the FEIS.

2.4 Other Actionable Items

2.4.1 Project Certificate Reconsideration per NLCA 12.8.2

2.4.1.1 PROPOSED CHANGES TO THE DORIS NORTH PROJECT

As originally reviewed by the NIRB and approved under the PC No. 003, the Doris North project involved the development of an underground mine with a single adit (approach) and ramp access with an overall Project footprint of approximately 62 hectares. Ore would be stockpiled and processed through a crushing and milling plant with a capacity of 668 tonnes per day, and the gold product would be flown off site in the form of dore bars. The original Project was expected to operate for 24 months, processing a total of 458,000 tonnes of ore yielding approximately 306,830 ounces of gold.

A *summary* of the proposed modifications to the Doris North project as presented in TMAC's December 9, 2013 amendment application is as follows:

1. Extension to mine life by 2-4 additional years;
2. Increases to mining and milling rates (mining of 1,000-2,000 tonnes/day and milling of 800-1,800 tonnes/day);
3. Deposition of cyanide treated tailings at the tailings impoundment area (TIA);
4. Changes to TIA water management:
 - a. TIA water to be treated and discharged into Roberts Bay
 - b. Changes to inputs to TIA and water transfer system
 - c. Water treatment system
 - d. Pipelines laid overland to discharge treated TIA water into Roberts Bay
5. Reduction of water cover in TIA from a minimum coverage of 4 metres to 2.3 metres;
6. Construction of Doris central vent raise pad and road, and provisions for an additional vent raise as necessary;
7. Expansion of sewage treatment plant and camp capacity to accommodate 360 personnel;
8. Expansion to Pad U (waste rock storage area);

-
9. Expansion to Pad T (general laydown facility and ore storage area);
 10. Use of materials from quarries at Doris North; and
 11. Additional infrastructure at Roberts Bay including laydown, water intake, accommodation barges and over-wintering of fuel barges.

The Board has confirmed that these proposed Project amendments have not, to date, been subject to impact assessment by the NIRB as required by NLCA Article 12.

2.4.1.2 PROCEDURAL HISTORY

On November 7, 2011 the NIRB received the first summary application from Hope Bay Mining Ltd. (HBML) which outlined proposed amendments to the NIRB Project Certificate and the NWB Type “A” Water Licence (No. 2AM-DOH0713) for modifications to the Doris North Gold Mine Project (Doris North project or the Project). An amendment application package was received by the NIRB in hard copy on November 14, 2011.

On December 16, 2011 the NIRB invited interested parties and agencies with jurisdictional authority and/or licenses’ and approvals for the Project to provide comments with respect to the amendment application. Following the receipt of comments from interested parties, on January 31, 2012 the Proponent advised the NIRB that it had placed the Doris North project into care and maintenance. On February 23, 2012 the NIRB requested clarification from HBML regarding its plans for the Project and requested additional comments from the Government of Nunavut, Fisheries and Oceans Canada and Natural Resources Canada regarding HBML’s application. On March 1, 2012 the Proponent requested that the NIRB and NWB suspend consideration of the amendment application until further notice. On March 28, 2012 the NIRB had also received the additional comments requested from parties, and the Board subsequently suspended its consideration of HBML’s amendment application.

On November 6, 2013 TMAC notified the NIRB and NWB that it intended to re-engage the amendment process and would be filing a revised application with the NIRB and NWB. On December 9, 2013 the NIRB received TMAC’s application for amendment to the NIRB Project Certificate and NWB Water Licence for the Doris North project.

On December 19, 2013 the NIRB requested that parties review a description of TMAC’s proposed amendments to the Doris North project and provide comments to the NIRB by January 17, 2014 regarding the following:

- Whether the proposed modifications as presented in TMAC’s amendment application may trigger the requirement for reconsideration as set out in NLCA Sections 12.8.2 (a), (b), or (c) and, if so, which provisions would trigger reconsideration;
- Whether specific terms and conditions within the NIRB Project Certificate may need to be reconsidered pursuant to Section 12.8.2 of the NLCA and, if so, identifying the terms and conditions that should be reconsidered;
- Whether a reconsideration of the Project Certificate Terms and Conditions would be likely to arouse significant public concern, and if so, a description of the basis for the concern;

-
- Based on the proposed amendments and possible changes to specific terms and conditions, whether the reconsideration should include revisiting whether the potential adverse effects previously identified as mitigated in the original NIRB Review would continue to be considered mitigated if the proposed project modifications are implemented; and
 - Any matter of importance to the Party related to the request to reconsider the Terms and Conditions of the Project Certificate by the NIRB.

On or before January 20, 2014 the NIRB received comments from the following parties with respect to TMAC's proposal to amend the Project Certificate for the Doris North Project:

- Kitikmeot Inuit Association
- Government of Nunavut
- Aboriginal Affairs and Northern Development Canada
- Environment Canada
- Fisheries and Oceans Canada
- Natural Resources Canada
- Transport Canada

On February 18, 2014 an Information Request (IR) package was sent to TMAC for a response. On April 22, 2014 the NIRB received the IR response and TMAC gave notice that it planned to submit further amendments for their application. The NIRB continued with its planned Community Information Sessions between April 28 to May 2, 2014 in Kugluktuk, Cambridge Bay, Taloyoak, Kugaaruk, and Gjoa Haven (missed due to weather).

On April 30, 2014 the NIRB and NWB jointly suspended the reconsideration of PC No. 003 and Type A Water Licence 2AM-DOH0713 until such time when TMAC has submitted a complete scope of proposed modifications. At the time of this report, there have been no further submissions by TMAC.

3.0 SITE VISIT

As an integrated part of the NIRB's continuous monitoring of the Project, the Monitoring Officer and accompanying staff visited the Doris North site on September 3, 2014. The site visit included visual inspections of the entrance to the Doris North decline which remained barricaded at the entrance, vent raises, service road, laydown area, three cell landfarm, camp and administration facilities and the tailings impoundment area. The NIRB's Site Visit Report has been included as [Appendix A](#).

Observations made during the site visit indicate that all facilities which were in use and sites which remained in care and maintenance appear to be functioning within the approved plans and procedures as provided through the NIRB Project Certificate and as committed to by the Proponent in the FEIS and supporting documentation. It was noted that various environmental, health and safety measures appeared to be in place at the Project site to support care and maintenance activities as well as ongoing exploration activities.

4.0 SUMMARY

TMAC has been successful in moving the Project towards overall compliance with the requirements of the NIRB PC and is in compliance with the Terms and Conditions contained therein, except where such

may not be applicable to the current construction stage of Project development. However, certain items do require the Proponent's attention as provided through the Board's recommendations, included under separate cover.

As part of its efforts to maintain full compliance with regulatory requirements, TMAC has been diligent in reporting major Project changes to the NIRB and in obtaining the necessary approvals and licenses from authorizing agencies prior to the execution of Project activities. The objectives of TMAC's plans as indicated to the NIRB are to follow its Monitoring and Follow-up Plan which included the establishment of stable chemical and physical conditions that protect the environment and human health.

Monitoring and reporting programs during the undefined care and maintenance phase for the Project remain critical in assisting the NIRB in early identification of potential impacts that may need to be mitigated. A dormant project may have unforeseen potential impacts that were not modeled during the Project's environmental assessment. TMAC may encounter unique environmental challenges with this shift in project activities; the NIRB will continue to depend on TMAC's established procedures in openly engaging communication with the Board.

Pursuant to NLCA Sections 12.7.2 and 12.7.3, the NIRB will continue to work with TMAC and other agencies in order to provide the required evaluation of the monitoring efforts, results and compliance of this project-specific monitoring program in accordance with the requirements set out in the NIRB Project Certificate.

Prepared by:

Name: Kristina Benoit

Title: Technical Advisor

Date: October 28, 2014

Signature:



Name: Kelli Gillard

Title: Monitoring Officer

Date: October 28, 2014

Signature:



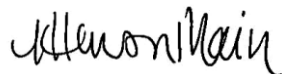
Reviewed by:

Name: Amanda Hanson Main

Title: Director, Technical Services

Date: October 29, 2014

Signature:



APPENDIX A: THE NIRB'S 2014 SITE VISIT REPORT



2014 Site Visit Report

for the NIRB's Monitoring of
TMAC Resources Inc.'s Doris North Gold Mine Project



Full Report Title: 2014 Site Visit Report for the Nunavut Impact Review Board's Monitoring of TMAC Resources Inc.'s Doris North Gold Mine Project (NIRB File No. 05MN047)

Project: Doris North Gold Mine Project
Project Location: Kitikmeot Region, Nunavut

Project Owner: TMAC Resources Inc.
40 King Street West Suite 2100
Toronto, ON M5H 3C2
Tel: (416)-628-0216

Proponent Contact: John Roberts, Vice President Environment Affairs

Proponent Personnel: Alex Buchan, Director of External and Community Relations
Claire Brown, Onsite Environmental Manager

Visit conducted by: Kelli Gillard, Monitoring Officer
Kristina Benoit, Technical Advisor

Site visit date: September 3, 2014
Last site visit: August 29, 2013

Photos by: NIRB Staff

Cover photos: 1) Aerial View of Doris North Camp Site
2) Aerial View of Robert's Bay Area

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Objectives & Purpose of Site Visit	1
1.2	Doris North Project History	1
1.3	Preparations for the Site Visit	2
2	SITE VISIT	3
3	GENERAL OBSERVATIONS.....	3
3.1	Roberts Bay Area	3
3.1.1	Roberts Bay Jetty	4
3.1.2	Fuel Storage Tanks and Spill Response.....	5
3.1.3	Waste Management Facilities	6
3.2	All-Weather Road and Airstrip	8
3.3	Quarry No. 2 and Sewage Discharge	8
3.4	Rimpull Trials	9
3.5	Open Burn Pan, Three Cell Landfarm and Core Storage and Laydown Area	10
3.6	Doris North Site and Mine Facilities.....	11
3.7	Overburden Pile.....	12
3.8	Helicopter Pad	12
3.9	Meteorological Station	12
3.10	Doris Creek	12
3.11	Tail Lake Dam Area	13
3.12	Care and Maintenance	13
4	SUMMARY	13

LIST OF PHOTOGRAPHS

Photo 1:	Float plane used to visit Doris North Gold Mine Project Site.....	3
Photo 2:	Rock armouring of the Roberts Bay jetty	4
Photo 3:	Geo-matting visible at Roberts Bay Jetty	4
Photo 4:	Diesel tank in use at the Roberts Bay area	5
Photo 5:	Jet B fuel barrels.....	6
Photo 6:	Segregated hazardous waste	7
Photo 7:	Incinerator.....	7
Photo 8:	Aerial view of all-weather road	8
Photo 9:	Finalized sewage discharge point	9
Photo 10:	Wildlife tampering along sewage pipeline	9
Photo 11:	Rimpull Rolygon	10
Photo 12:	Rimpull Rolygon tracks on a tundra test plot near all-weather road.....	10
Photo 13:	Portal entrance in 2014	11
Photo 14:	Temporary sedimentation on in 2013.....	11
Photo 15:	Reclamation of former temporary sedimentation pond in 2014.....	12

1 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the Nunavut Land Claims Agreement (NLCA) and is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the NLCA.

This report provides the findings that resulted from the NIRB's site visit of the Doris North Gold Mine Project that took place on September 3, 2014 as part of the NIRB's monitoring program.

1.1 Objectives & Purpose of Site Visit

Pursuant to Sections 12.7.1 and 12.7.2 of the NLCA, the NIRB is responsible for the post environmental assessment monitoring of the Project in accordance with the Doris North Project Certificate as issued by the NIRB in September 2006. The objectives of the NIRB's monitoring program as indicated in Section 12.7 of the NLCA include:

- a) is being carried out within the predetermined terms and conditions pursuant to 12.7.2(b) of NLCA; and
- b) provide the information for agencies to enforce the terms and conditions of land or resource use approvals pursuant to 12.7.2 (c) of NLCA.

1.2 Doris North Project History

The Doris North Gold Mine project (Doris North or the Project) is located in the west Kitikmeot region of Nunavut, approximately 125 km (km) southwest of Cambridge Bay and 150 km north of Umingmaktok (Bay Chimo). On September 15, 2006 the NIRB issued Project Certificate No. 003 to Miramar Hope Bay Mining Ltd. (Miramar), pursuant to Section 12.5.12 of Article 12 of the Nunavut Land Claims Agreement (NLCA).

In 2008, Newmont Mining Corporation (Newmont) completed acquisition of the Doris North/Hope Bay Belt property, and established Hope Bay Mining Ltd. (HBML) as a separate business entity to operate the Project. Following a suspension of the construction activities in 2008 and 2009 while it revisited the Doris North development plan, HBML resumed infrastructure construction in 2010 and into 2011, while also continuing with advanced exploration and construction. On January 31, 2012 Newmont announced its plan to put the Project into care and maintenance.

On April 11, 2013 the NIRB received notice that TMAC Resources Inc. (TMAC) had acquired the Project from HBML and that it would continue to operate the site under care and maintenance. On March 19, 2013 TMAC notified the NIRB that it intended to re-open the camp and to continue exploration while maintaining the site during care and maintenance.

Since the last site visit, TMAC has continued to operate the Project in care and maintenance while conducting minor repairs to infrastructure, undertaking required monitoring programs, and supporting the regional exploration drilling program.¹

¹ TMAC Resources, 2013 Annual Report for Doris North Gold Mine

1.3 Preparations for the Site Visit

In preparation for the Monitoring Officer's 2014 site visit, the following documents were reviewed:

- i. NIRB Project Certificate (September 2006);
- ii. NWB Water Licence No.: 2AM-DOH0713 (January 2012);
- iii. HBML Doris North Gold Mine Project 2013 Annual Report (April 2014);
- iv. NIRB's 2013 Annual Monitoring Report and Board Recommendations (File No. 05MN047, November 2013);
- v. TMAC's Response to Comments regarding NIRB's 2013 Annual Monitoring Report and Board Recommendations (File No. 05MN047, January 2014);
- vi. Tundra Reclamation Work Plan (April 2014);
- vii. HBML 2013 Wildlife Monitoring and Mitigation Annual Report (May 2014);
- viii. HBML Monitoring and Follow-up Plan; and
- ix. Other correspondence relating to the Doris North project.

Based upon a review of these documents, a listing of items to be considered during the 2014 site visit and meeting was prepared by the Monitoring Officer which included the following:

Site Components

- Aerial view of footprint, topography and watershed
- Roberts Bay area
 - Jetty;
 - Upper tank farm;
 - Second fuel tank containment facility; and
 - Waste and metal sorting facilities.
- All-weather road and airstrip area
 - Aircraft refuelling station;
 - Quarry No. 2;
 - Sewage outcrop and disposal area; and
 - Spill treatment facilities for soil, snow and water.
- Camp site and mine facilities area
 - Power plant;
 - Portal and shaft;
 - Ore stock and waste rock piles;
 - Power plant footprint & fuelling station;
 - Water diversion berm(s);
 - Mine site pollution and sedimentation ponds; and
 - Overburden stock pile.
- South site lakes area
 - North frozen core dam at Tail Lake; and
 - Water intake and meteorological station at Doris Lake.

2 SITE VISIT

The 2014 site visit was conducted by Kelli Gillard, NIRB Monitoring Officer and Kristina Benoit, NIRB Technical Advisor. On September 3, 2014 the NIRB staff flew from Cambridge Bay, Nunavut to Doris North Gold Mine Project site via a chartered float plane ([Photo 1](#)). There was a 3 hour delay in departure time due to foggy weather, which resulted in a shorter site visit than originally planned. Prior to landing, the float plane passed over the Project site for an aerial view of the Project footprint and opportunity to take photos. Once landed on Doris Lake, the NIRB staff were met by Alex Buchan, TMAC's Director of External and Community Relations, and Claire Brown, one of TMAC's onsite rotational Environmental Managers. The NIRB staff were first briefed on site Health, Safety and Environmental procedures pertinent to the site visit, and then led on a tour of the site infrastructure at surface. The tour included the Roberts Bay area, the all-weather road and airstrip, Doris North camp site, the north dam at Tail Lake and the water intake facility at Doris Lake. At the conclusion of the tour of the mine site, the NIRB staff met with Mr. Buchan, Ms. Brown, and Mr. Kelly Schwenning, Site Manager to discuss the site visit, next steps for the Doris North Project, and updates regarding the care and maintenance phase. Later that afternoon, the NIRB staff were driven back to the float plane to return to Cambridge Bay.



Photo 1: Float plane used to visit Doris North Gold Mine Project Site

3 GENERAL OBSERVATIONS

3.1 Roberts Bay Area

The Roberts Bay area serves as the Project's logistical hub and is linked to the main camp and mine site by a 4.8 kilometre (km) all-weather road. The area appeared to be used to stage equipment and materials for storage during ongoing care and maintenance. The major facilities at Roberts Bay included the Roberts Bay jetty, a three 5 million litre (ML) fuel tank tankfarm southeast of the jetty area, and a separate 5 ML empty fuel tank, a laydown area, waste management facilities and incinerator. TMAC indicated that fuel supplies are located at the

Roberts Bay area during care and maintenance, with approximately 1.7 ML of diesel in the fuel tank farm, at the time of the site visit.

During the site visit, TMAC staff indicated that the explosives storage area originally located to the northwest of the Roberts Bay jetty had been moved as per a request by the mine inspector. Last winter all lockers were moved to quarry B along Windy Road where TMAC staff noted that the explosives area continues to remain inactive while the Project is in ongoing care and maintenance.

3.1.1 Roberts Bay Jetty

During the site visit, NIRB staff inspected the jetty area to see how the upgraded structure did this year. TMAC indicated that during 2014 it had completed the final placement of the rock armouring and that the jetty was now complete as proposed in the 2005 Final Environmental Impact Statement (FEIS) ([Photo 2](#)) as per the emergency restructuring in August 2013. NIRB staff noted a small area where some geo-matting was visible out of the water ([Photo 3](#)).

Photo 2: Rock armouring of the Roberts Bay jetty

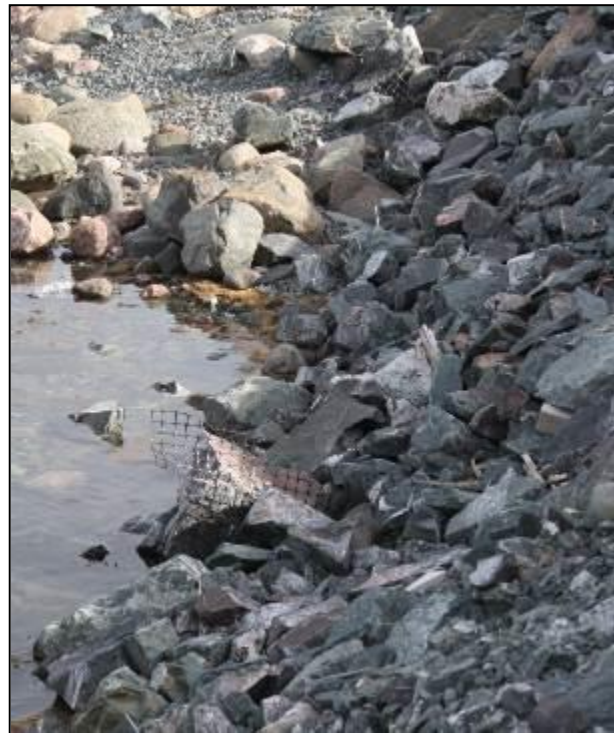


Photo 3: Geo-matting visible at Roberts Bay Jetty

3.1.2 Fuel Storage Tanks and Spill Response

NIRB Project Certificate Condition 20

“HBML shall ensure the use of containment booms and berms to control potential spills whenever fuel and or waste is transferred between a barge and the shore. HBML shall ensure spill kits are at hand at these locations at all times.”

NIRB Project Certificate Condition 33

“HBML shall ensure that areas used to store fuel or hazardous materials are contained using the safest methods practically available.”

During the site visit, one of the four 5.7 ML diesel tanks at the Roberts Bay area was in use and TMAC indicated that it would store approximately 2 ML on site for use throughout the year ([Photo 4](#)). The remaining fuel tanks were empty, with locking mechanisms in place to prevent tampering with valves. The construction of additional diesel and Jet A fuel tanks remains on hold, as the Project continues in care and maintenance status.



Photo 4: Diesel tank in use at the Roberts Bay area

The NIRB staff noted during the site visit, as it has since 2012, that the empty 5 ML fuel tank located within abandoned quarry #1 did not have a sufficient berm in place for that large a tank, as construction has been put on hold since the Project entered care and maintenance. The tank continues to not be commissioned though the bermed area was used for the storage of Jet B fuel barrels ([Photo 5](#)) for helicopters in order to support the exploration program. TMAC indicated that the barrels were accessed when required for refueling at the helipad, and that empty barrels were returned to the bermed area for storage until their eventual removal from site (e.g., barged out). The NIRB staff also noted that a number of seacans were also stored within and around the bermed area during the 2014 site visit.



Photo 5: Jet B fuel barrels

The NIRB staff observed spill prevention and response equipment located in seacans at the Roberts Bay landing site and at other designated areas around the site which were available for emergency circumstances.

3.1.3 Waste Management Facilities

NIRB Project Certificate Condition 30

“HBML will install and fund an atmospheric monitoring station. This station and its location shall be developed in consultation with EC and HC air quality officials and focus on particulates of concern generated at the mine site. The results of air-quality monitoring are to be reported every six (6) months to NIRB through the Monitoring Officer, and from there to all parties.

Commentary: NIRB expects the Canada Wide Standards for Dioxins and Furans and the Canada Wide Standards for Mercury will apply and should be followed including stack testing of incinerators”

The waste management facilities at Roberts Bay handle all combustible and non-combustible wastes from the Project and ongoing exploration activities throughout the Hope Bay Belt.

TMAC staff indicated that non-combustible wastes generated at the Doris North site would be transported to the waste management area for backhaul shipment once logged, segregated, sorted, labeled and repackaged if necessary.

During the site visit, hazardous wastes were observed to have been segregated and stored in designated containers both in the waste management building and at the outdoor storage area ([Photo 6](#)). TMAC’s staff indicated that all hazardous waste materials are regularly shipped off-site to approved waste disposal facilities in the Northwest Territories.

Combustible wastes, including food, generated at camp are transferred to the Roberts Bay waste management facility and are incinerated on a daily basis in batches. The incinerator was established at the Roberts Bay waste management area in 2009 ([Photo 7](#)).



Photo 6: Segregated hazardous waste



Photo 7: Incinerator

3.2 All-Weather Road and Airstrip

The combined all-weather road and airstrip was constructed and has been in use since 2008 ([Photo 8](#)). During the site visit, TMAC noted that it continues to operate in accordance with the filed Health Safety and Loss Plan (HSLP) for the Doris site, noting specifically that vehicles approaching the airstrip on the all-weather road must wait at either end of the airstrip during aircraft landing and take-off as indicated by existing signage and traffic arms that close off the road when applicable.



Photo 8: Aerial view of all-weather road

3.3 Quarry No. 2 and Sewage Discharge

Quarry No. 2 is adjacent to the all-weather access road and the sewage discharge outfall is approximately 60 meters west of the all-weather road and south of the Roberts Bay area. Quarry No. 2 was not in operation at the time of the site visit, however, prior to the Project entering into care and maintenance, stockpiles of materials were created to maintain the overall site.

At the time of the site visit, TMAC staff informed the NIRB staff that site sewage effluent was being discharged onto the rock outcrop as originally proposed, mentioning that this was a different alternative discharge point than was originally proposed in the water licence. TMAC noted that the alternative discharge point currently in use will be used as the permanent discharge location going forward ([Photo 9](#)). NIRB staff also noted evidence of wildlife tampering along the sewage pipeline ([Photo 10](#)).



Photo 9: Finalized sewage discharge point



Photo 10: Wildlife tampering along sewage pipeline

3.4 Rimpull Trials

The Proponent (then Newmont) conducted trials with two pieces of equipment called a Rimpull Rolygon ([Photo 11](#)) and snowcat to assess the impacts of these tracked machines on the tundra as an alternative to move exploration drilling equipment by helicopter. In 2012, the NIRB noted during its site visit that areas on the tundra continued to be rutted and requested that the Proponent submit information related to re-vegetation and reclamation of the disturbed areas from the trials as it appeared that the trials were complete. At the time of the site visit, TMAC staff noted no further disturbances; however no re-vegetation and reclamation efforts had taken place ([Photo 12](#)).



Photo 11: Rimpull Rolygon



Photo 12: Rimpull Rolygon tracks on a tundra test plot near all-weather road

3.5 Open Burn Pan, Three Cell Landfarm and Core Storage and Laydown Area

The open burn pan, three cell landfarm and core storage and laydown area are located north of the Doris North camps, on the west side of the all-weather road. The three cell landfarm remains operational during care and maintenance, and continues to be used for the treatment of contaminated soil and snow, though TMAC indicated that a minimum amount of soil has been remediated due to the reduced scope of site activity.

3.6 Doris North Site and Mine Facilities

The Doris North camp and mine site are located approximately 5 km south of Roberts Bay at the north shore of Doris Lake. In addition to the camp site which has been in full operation since 2008, the Doris North mine site hosts additional infrastructure which would be directly associated with future mine operations.

TMAC indicated to the NIRB staff that during the summer of 2014, the power plant had been commissioned and that the portal had been opened up to allow access to the shaft and air ducts for maintenance. It had been determined earlier this year that the portal was required to be opened for operation of the air circulation system, as the intake was beginning to ice up ([Photo 13](#)). A chain-link access gate complete with signage in English and Inuinnaqtun remain in place, prohibiting entry and warning of danger. TMAC staff noted that only select specially trained staff has been approved to go underground and this was solely to ensure that the air vent was clear of ice.



Photo 13: Portal entrance in 2014

TMAC indicated that it had encountered operational issues with one of the cells in its sewage treatment plant, and noted that a replacement cell was being shipped to site by barge.

During the 2013 site visit, TMAC staff pointed out a temporary sedimentation pond that was constructed along the west side of the pollution control pond; during the 2014 site visit, it was noted that the pond had been removed and the area was undergoing reclamation ([Photos 14](#) and [15](#)).



Photo 14: Temporary sedimentation on in 2013



Photo 15: Reclamation of former temporary sedimentation pond in 2014

3.7 Overburden Pile

During the 2014 surface tour of the Doris North site, NIRB staff observed the overburden storage pile which had not changed since last year's site visit.

As noted in previous site visit reports, diversion berms were constructed along the north side of the camp to divert water from the Doris North outcrop and other areas upslope from flowing through the camp and mine areas during spring freshet and large rainfall events. Water accumulating from the west side of the Doris North outcrop and camp had also been directed past the overburden pile and through the sedimentation area. TMAC indicated again during the site visit that this was successful in diverting non-contact water over the last monitoring period.

3.8 Helicopter Pad

NIRB staff observed helicopters flying to and from the camp; TMAC staff indicated that these were drill and equipment movements in support of exploration drill sites at other locations within the Hope Bay Belt.

3.9 Meteorological Station

During the site visit NIRB staff observed that the meteorological station remains in place on a hill near Doris Lake; TMAC staff confirmed that data continues to be collected from this station. A weather monitoring station was also installed at Doris Lake and according to TMAC staff, is used to collect evaporation data.

3.10 Doris Creek

NIRB Project Certificate Condition 15:

"MHBL shall not permit the water discharged into Doris Creek to exceed the criteria set by the NWB."

During the site tour, NIRB staff observed a hydrological station along Doris Creek; TMAC indicated that the station is in place to collect daily flow measurements as water leaves Doris Lake through Doris Creek on its way to Roberts Bay via Little Roberts Lake.

3.11 Tail Lake Dam Area

Tail Lake is located on the east side of Doris Lake and is the planned site for the tailings impoundment area facility (TIA). The TIA would be utilized during mine production, with a tailings transport pipeline planned for installation along the service road at the eastern shore of Tail Lake and which would connect the north dam with the south dam.

The group visited the frozen core dam and Ms. Brown indicated that water levels had declined from the previous year. TMAC noted that water levels had been lowered in Tail Lake due to the wet year that the Doris North site experienced, and indicated its desire to further lower water levels in the next year to ensure the frozen core dam maintains its structural integrity. Construction of the south dam and a connecting road from the north end of the TIA has not yet begun and according to TMAC staff, will not be undertaken while the Project remains in care and maintenance.

3.12 Care and Maintenance

During the site visit, TMAC indicated that the camp would remain open through the coming winter (2014-2015) with minimal staff as it had been the previous year (2013-2014). It also noted that buildings and facilities that are not required during the ongoing care and maintenance of Project, such as the administrative buildings, would remain secured and winterized as in previous years during the care and maintenance period.

TMAC indicated that it had opened portions of the site in order to prepare for active water management and related environmental monitoring activities, and that it would continue to manage water in compliance with all applicable water licensing over the summer months.

With respect to socioeconomic aspects of care and maintenance, TMAC staff indicated that the Doris North workforce is still small, with an average of 14% Inuit employed on site.

4 SUMMARY

Construction of the planned infrastructure for the Doris North Project was near completion prior to the decision to move the Project into care and maintenance. Key project elements including the portal and decline, vent raise, service road, laydown area, three cell landfarm and the tailings intake facility had been completed. The power plant has since been commissioned to aid in the care and maintenance of portal ventilation. Overall, from the NIRB's 2014 site visit, it appears that the Project Certificate Terms and Conditions have been generally complied with. The site remains in good condition, however, observations with regard to the exposure of jetty materials and wildlife action along the sewage pipeline may require further action by TMAC in the year to come.

As part of its efforts to maintain full compliance with regulatory requirements, TMAC continues to report Project changes to the NIRB. It has also obtained or maintained the necessary approvals and licenses from authorizing agencies in support of project activities.

The site visit discussion focused on TMAC's experience during the previous year of care and maintenance and also questions regarding TMAC's anticipated timing for re-engaging active mining.

Observations made during the site visit indicate that only those facilities required during care and maintenance and to conduct ongoing exploration at the northern half of the Hope Bay Belt remains operational.

Prepared by: Kelli Gillard
Title: Monitoring Officer
Date: November 17, 2014

Signature: 

And

Prepared by: Kristina Benoit
Title: Technical Advisor
Date: November 17, 2014

Signature: 

Reviewed by: Amanda Hanson Main
Title: Director, Technical Services
Date: November 17, 2014

Signature: 
