



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Your file - Votre référence
2BB-MAE----

February 24, 2017

Our file - Notre référence
CIDM#1134472

Ida Porter
Licensing Administrator
Nunavut Water Board
Gjoa Haven, NU X0B 1J0

Re: Indigenous and Northern Affairs Canada's (INAC) comments on TMAC Resources Inc.'s response to questions from the Nunavut Water Board regarding their new application for water licence #2BB-MAE---- – Madrid Bulk Sample Project

Dear Ms. Porter,

Thank-you for the email notice received on February 9, 2017 regarding the above mentioned application.

INAC Water Resources Division reviewed the applicant's response and the results of our review are provided in the enclosed memorandum for the Board's consideration. Comments have been provided pursuant to the Department's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

Please do not hesitate to contact me at 867-975-3876 or sarah.forte@aandc-aadnc.gc.ca for any additional information.

Regards,

Sarah Forté
Water Management Coordinator

Technical Review Memorandum

To: Ida Porter, Licensing Administrator, NWB

From: Sarah Forté, Water Management Coordinator, INAC

Date: February 24, 2017

Re: Water Licence Application #2BB-MAE----

Licensee: TMAC Resources Inc.
Project: Madrid Bulk Sample Project
Region: Kitikmeot

A. BACKGROUND

In January 2015, TMAC Resources Inc. (TMAC) submitted a type B water licence application to the Nunavut Water Board (NWB) for their Madrid Bulk Sample Project. The project proposes work to take two 50 000 tonne bulk samples with underground installations from two separate locations called Madrid North and Madrid South. The proposed project relies heavily on infrastructure at the Doris North Mine, already licenced under water licence 2AM-DOH1323.

This project's review was not completed in 2015 because the amendment process for licence 2AM-DOH1323 was occurring concurrently. The latter process is now complete, so it is easier to determine how the work on the Madrid Bulk Sample would fit into the bigger picture. During the initial review, two technical review memoranda were provided by Indigenous and Northern Affairs Canada (INAC) in 2015 (May 8 and September 22).

On February 9, 2017, the NWB distributed TMAC's response to questions asked by the NWB in a letter dated January 20, 2017, asking interested parties to submit representations by February 24, 2017.

.

B. RESULTS OF REVIEW

On behalf of Indigenous and Northern Affairs Canada (INAC), the following comments and recommendations are provided:

1. Project milestones

Reference:

- Letter: Licence No. 2BB-MAE Application by TMAC Resources Inc. for the Madrid Poreject – Request for Information, Nunavut Water Board, January 20, 2017
- Memo: Responses to Technical Review Comments pertaining to TMAC's Madrid Bulk Sample, SRK Consulting (Canada) Inc., February 7, 2017
- Phase 2 of the Hope Bay Project, Draft Environmental Impact Statement, TMAC Resources Inc, December 2016, Executive Summary

Comment:

The NWB requested an update of project milestones. In SRK's memo submitted by TMAC, the following statement is made: *"In accordance with TMAC's overall development plan, as most recently presented in their December 2016 Phase 2 Draft Environmental Impact Statement (DEIS) mining at Madrid North is proposed for 2019, and mining at Madrid South would occur in later years."* The executive summary of the DEIS described mining at Madrid North between 2019 and 2031 and at Madrid South between 2029 and 2032.

TMAC expect that a proposed amendment to the *Metal Mining Effluent Regulations (MMER)* which would allow them to discharge to the marine environment should be in place by fall 2018. This is a critical part of their plan, which includes discharging impacted water from the Madrid project into Roberts Bay, after storage in the Doris North TIA, or possibly directly for groundwater.

Referring to the DEIS for timelines and milestones is confusing because the activities proposed in the Hope Bay phase 2 project are not the all same as those in the Madrid bulk sample project and some have different timelines than the original type B application.

Recommendation:

Given the applicant's reliance on discharging site contact water, tailings water and groundwater to the marine environment, should a licence be granted, the proponent should not be allowed to undertake activities until the *MMER* amendment allowing marine discharge is in place.

2. Water levels and water quality in the TIA

Reference:

- Letter: Licence No. 2BB-MAE Application by TMAC Resources Inc. for the Madrid Project – Request for Information, Nunavut Water Board, January 20, 2017
- Memo: Responses to Technical Review Comments pertaining to TMAC's Madrid Bulk Sample, SRK Consulting (Canada) Inc., February 7, 2017
- Madrid Advanced Exploration Program, Type B Water Licence Application Supplemental Information Report, TMAC Resources Inc., December 2014, Section 6.4
- Letter: 2BB-MAE--- Madrid Bulk Sample Type B Water Licence Application - Responses to Comments Received, TMAC Resources Inc., September 1, 2015

Comment:

The NWB requested further discussion on the impact of storing water from the Madrid project (groundwater, contact water, water from pollution control ponds) in the Doris North TIA. TMAC's response is that *"In accordance with the schedule outlined above, and ECCC's (Environment and Climate change Canada) schedule for amending the MMER, there is no instance where groundwater interaction from either the Madrid North or Madrid South bulk sample is expected that would require temporary storage within the TIA, and therefore no additional analysis is required with regard to the capacity of the TIA to manage such water both from a quantity or quality perspective"*.

This appears to be a change in strategy for managing Madrid groundwater. The site water management strategy proposed in Section 6.4 of the Water Licence Application Supplemental Information Report, which, when referring to excess water from the underground or the Pollution Control Ponds, stated *"If water quality exceeds threshold criteria, water will be trucked to the Doris North Project for disposal in the TIA."* If groundwater is to be disposed of directly into Roberts Bay, its characterization would be necessary to know if it will meet discharge criteria because the pollution control pond capacity design for Madrid South does not take into consideration storage of groundwater.

TMAC did provide some further information regarding the capacity of the Doris North TIA: *"The peak design capacity of both the Madrid North and Madrid South PCPs are about 15,000 m³, so assuming both ponds experience the peak design flood event every year, and requires drainage to the TIA, that would constitute 30,000 m³ in any given year. The average annual TIA inflow is 1.5 million m³, so this inflow from Madrid North and South would add 2% to the overall inflow which will not have any material impact on the TIA operation."* The Supplemental Information Report states that, in

addition to storing site runoff and some snow and rain, the pollution control ponds will also be used to store excess water from the underground workings and they will be pumped out regularly. This leads us to believe the volume transported to the Doris North TIA yearly may be greater than 30 000 m³. Since the Doris North mill will be used to process the Madrid bulk samples, an extra 120 000 tonnes of tailings will be stored in the TIA, which is a 5% increase above 2.5 million tonnes of the tailings storage used for the TIA in the Doris North amendment application. This could reduce the available storage area for water in the TIA. INAC is of the opinion these considerations warrant a discussion on water levels in the TIA.

TMAC's response that further discussion of the effects of Madrid site water on water quality in the Doris North TIA because Madrid groundwater would not be stored temporarily in the TIA does not address the possible effects of water from the pollution control ponds. Our understanding is that non-compliant water from Madrid pollution control ponds would still be trucked to the Doris North TIA and therefore predictions on the effects on water quality are still relevant.

Recommendations:

The applicant should clarify if they intend to discharge Madrid groundwater directly to the marine environment. If so, they should be required to demonstrate with test results that the water quality would meet criteria.

The applicant should provide the discussion on TIA water levels requested by the NWB.

The applicant should provide the discussion on TIA water quality predictions requested by the NWB.

3. Re-use of pollution control pond water for drilling

Reference:

- Letter: Licence No. 2BB-MAE Application by TMAC Resources Inc. for the Madrid Project – Request for Information, Nunavut Water Board, January 20, 2017
- Memo: Responses to Technical Review Comments pertaining to TMAC's Madrid Bulk Sample, SRK Consulting (Canada) Inc., February 7, 2017

Comment:

The NWB requested further discussion on measures to prevent contaminants from pollution control pond water from entering the environment when this water is used for drilling. TMAC's response is that the use of pollution control pond water will be limited to underground production drilling.

It is conceivable that when used for drilling underground, pollution control pond water could enter the environment if a high permeability zone were intersected whilst drilling in a talik such as at Madrid South.

Recommendation:

The applicant should provide the management practises and mitigation measures for avoiding or reducing contaminant introduction in the environment from use of pollution control pond water for drilling requested by the NWB.