



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

Your file - Votre référence
2BE-MEA1318

September 24, 2015

Our file - Notre référence
IQALUIT #942541

Robin Ikkutisluk
Licence Administrator
Nunavut Water Board
Gjoa Haven, NU X0E 1J0

**Re: Aboriginal Affairs and Northern Development Canada's (AANDC) Review of
Agnico Eagles Mines Limited's Amendment Application for Water Licence
#2BE-MEA1318 – Meadowbank Exploration Project**

Dear Ms. Ikkutisluk,

Thank-you for the email notice received on August 24, 2015 regarding the above mentioned application.

AANDC reviewed the application and the results of our review are provided in the enclosed memorandum for the Nunavut Water 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 David Abernethy at 867-975-4555 or David.Abernethy@aandc-aadnc.gc.ca for any additional information.

Regards,

Sarah Forté
Water Management Coordinator

c.c.: David Abernethy, Regional Coordinator, AANDC Nunavut
Karen Costello, Director of Resource Management, AANDC Nunavut
Andrew Keim, Acting Manager of Water Resources, AANDC Nunavut
Erik Allain, Manager of Field Operations, AANDC Nunavut

Technical Review Memorandum

To: Robin Ikkutisluuk –Licence Administrator, Nunavut Water Board

From: Sarah Forté – Water Management Coordinator, AANDC
David Abernethy – Regional Coordinator, AANDC

Date: September 24, 2015

Re: Amendment application for Water Licence #2BE-MEA1318

Licensee: Agnico Eagle Mines Ltd.
Project: Meadowbank exploration project
Region: Kivalliq

A. BACKGROUND INFORMATION

On August 24, 2015 the Nunavut Water Board provided notification to interested parties that Agnico Eagle Mines Ltd. (the licensee) had submitted an application to amend their Type 'B' water licence, #2BE-MEA1318.

The licence was granted for mineral exploration at the Meadowbank site. The licence was amended a first time, in July 2014 to include a camp and drilling on the IVR or Amaruq property. The second amendment, in February 2015, increased the authorized water use and transferred the domestic water use from the Meadowbank exploration camp to the Amaruq camp.

This third amendment application requests authorization for the following activities:

- Drilling on two lakes using a diamond drill based on a barge.
- Installation of 17 double walled 50 000 L fuel tanks.
- Transferring 12 m³/day of water attribution between domestic and drilling authorizations, so that they would be 31 m³/day and 268 m³/day respectively.
- Installation of an additional 40' Kodiak Bionest waste water treatment unit.
- Addition of new rooms to the camp so it could accommodate 200 people.
- Expansion of the project area.

Email exchanges between David Frenette of Agnico Eagle and Karén Kharatyan of the Nunavut Water Board were provided with the application and they include requests for changes to the following licence terms and conditions: Part D Item 11, Part D Item 13, Part J Item 12 and Part I Item 10.

Interested parties were requested to review the information and provide comments by September 24, 2015.

B. RESULTS OF REVIEW

Aboriginal Affairs and Northern Development Canada (AANDC) considers this amendment application acceptable with consideration of the recommendations presented in this memorandum and the Nunavut Impact Review Board's pending decision on whether a screening determination is required for the proposed activities.

On behalf of AANDC, the following comments and recommendations are submitted to the Nunavut Water Board for consideration:

1. Drilling from a barge

Authorization is requested to drill from a barge on Whale and Mammoth Lakes. Details of precautionary measures are provided in the non-technical project summary and the Waste Management Plan Addendum.

Presently there is no Waste Management Plan associated to the licence so it is not clear how an addendum can be added.

Fuel on the barge is to be stored in double walled tanks placed in a retention basin according to the summary. No detail is provided as to how fuel will be transferred to the barge, an operation which must be planned with care in order to prevent potential spills into the lake water. The risk of this operation is underlined by section 2.2 of the Spill Contingency Plan (February 2015) which states:

Refuelling must not take place below the high water mark of any water body and shall be done in such a manner as to prevent any hydrocarbon from entering any water body.

No information has been provided on the transport of the barge to the lakes or its transfer between lakes. These operations can potentially damage the shorelines, which may result in erosion and degrading the lakes' water quality with increased total suspended sediment.

Recommendation

AANDC recommends that the licence make explicit reference to the Waste Management Plan for drilling on a barge. Additionally, we recommend the licensee be required to:

- Provide details on how they propose to safely transfer fuel to the barge

- Provide details on how they propose to get the barge to the lakes without impacting the lakes' water quality.

2. Installation of additional fuel tanks

The application requests authorization to install 17 double walled 50 000 L fuel tanks and provides drawings 61 417 230 201 and 61 417 230 202. Secondary containment measures in place for product transfer areas are not visible on these drawings, however during a phone conversation on September 18th, 2015, David Frenette informed AANDC staff that pumps would be placed in bermed areas or temporary berms during refuelling.

Recommendation

AANDC recommends that the licensee be required to update their Spill Contingency Plan to state all fuel transfer areas will be bermed and describe how contact water from these areas will be handled.

Criteria for discharging contact water from bermed areas would be appropriate and we recommend they include pH, total suspended solids, total oil and grease, total lead, benzene, toluene and ethylbenzene.

3. Installation of a water crossing

The application includes plans for a water crossing as shown on drawings 61 417 230 201 and 61 417 230 203. No information was provided on the water course being crossed, in particular whether it is fish bearing. The July 22nd 2015 Water Licence Inspection Report makes reference to an authorization from the Department of Fisheries and Oceans for a culvert installation between Quarry #7 and Amaruq, which may be the culvert in question.

From the drawings provided, it seems as if the culverts cover only approximately one third of the width of the water course to be crossed. AANDC recognises that the river is braided so its footprint on the map is relatively large, but has concerns over the water crossing's potential impact on water flow during freshet.

Recommendation

AANDC recommends the licensee confirm that flows expected during freshet and major precipitation events have been considered in designing the water crossing. We recommend the licensee be required to provide information on the water course and evidence of appropriate authorization from the Department of Fisheries and Oceans.

4. Redistribution of water attribution between domestic and drilling

The application requests the transfer of 12 m³/day of water presently attributed to drilling towards domestic use. The distribution of the total 299 m³/day authorized water use would be 31 m³/day and 268 m³/day for domestic and drilling purposes respectively, instead of the 19 m³/day and 280 m³/day presently in the licence.

Comment

AANDC has no issue with the Licensee's request to redistribute the existing daily water consumption allowance. Compliance with existing terms and conditions (Part C, Items 2 and 3 of the licence) should prevent any drawdown of source water bodies.

5. Installation of additional of a 40' Kodiak Bionest

AANDC notes that the licensee has not submitted a Wastewater Treatment System Operation and Maintenance Plan as required by amendment 2 of the water licence. A document, entitled Wastewater Plant Commissioning Procedure, was provided but it does not cover operation or maintenance outside the commissioning period.

Another document entitled Waste Water Treatment Plant Situation Report, included in the application, describing how the present wastewater treatment system, which consists of a 20' Bionest and a 40' Bionest, was not working properly and presented an action plan to resolve the situation (report dated July 30, 2015). More than three months after the system was started, effluent quality did not meet discharge standards.

The licensee requests authorization to install an additional 40' Kodiak Bionest to increase wastewater treatment capacity.

AANDC is concerned with improperly treated effluent contaminating water. The Situation Report makes no mention of what was done with the effluent that did not meet discharge criteria. The Water Resources Officer that visited the site on July 22nd 2015 reported that it was being released onto the land. Since then, the situation has been resolved.

Recommendation

AANDC recommends that the licensee be required to construct a containment system for treated wastewater effluent that does not meet discharge criteria or provide alternative contingency measures that will ensure such effluent is not discharged onto the land. The licensee should also provide the Wastewater Treatment System Operations and Maintenance Plan requested by the licence.

We do not have issue with the licensee installing another 40' Bionest.

6. Modification of licence condition for effluent release

Part D Item 11 – *The Licensee shall provide at least ten (10) days notification to an Inspector, prior to initiating the release of effluent from any facilities in this Part. The notice shall include water quality results, an estimate of volume and the proposed receiving location.*

The licensee requests that this condition be modified for the Bionest treated wastewater effluent. Since the discharge is continuous, it is difficult to submit a notice with water quality results prior to release.

As written above under point 5, AANDC is concerned about improperly treated effluent discharge. Before discharging treated wastewater effluent continuously, the licensee should be required to demonstrate that their sewage treatment facility is functioning properly.

Recommendation

AANDC recommends that the licensee be allowed to continually discharge treated wastewater effluent only if discharge criteria are satisfied. Weekly testing should be required until sampling results demonstrate discharge criteria have been met for nine consecutive weeks. Thereafter, effluent quality should be tested at least monthly. The licensee should be required to start holding the effluent immediately if it does not meet discharge criteria.

7. Modification of monitoring station names

Part D Item 13 – *All Wastewater effluent discharged from the Wastewater Treatment System “Bionest” Amendment No. 2 Licence No. 2BE-MEA1318 (WWTS), at Monitoring Program Station MEA-1 shall not exceed the following Effluent quality limits:*

<i>Parameter</i>	<i>Maximum Concentration of any Grab Sample</i>
<i>pH</i>	<i>6.0 to 9.5</i>
<i>Biochemical Oxygen Demand (BOD₅)</i>	<i>80 mg/L</i>
<i>Total Suspended Solids (TSS)</i>	<i>100 mg/L</i>
<i>Fecal Coliforms</i>	<i>1000 CFU/100mL</i>
<i>Oil and Grease</i>	<i>5 mg/L & No visible sheen</i>

and Part J Item 12 – The Licensee shall, at a minimum, maintain Monitoring Stations at the following locations:

<i>Monitoring Station</i>	<i>Description</i>	<i>Status</i>
MEA-1	Wastewater Effluent discharged from the Wastewater Treatment System “Bionest” (WWTS)	New – Volume and Effluent Quality

The licensee requests that Monitoring Program Station MEA-1 be renamed MEA-2 and that the MEA-1 station name be assigned to the camp water intake volume.

Comment

AANDC supports the requested monitoring station name change.

8. Modification of licence condition for restoration of drill holes

Part I Item 10 – The Licensee shall restore all drill holes, trenches and disturbed areas to natural conditions immediately upon completion of the drilling or trenching. The restoration of drill holes must include the removal of any drill casing materials and if having encountered artesian flow, the capping of holes with a permanent seal.

The licensee requests two changes: (1) authorization for the drill casings to be cut at ground level if they are stuck and cannot be removed from the hole; and (2) removal of the term “immediately” from the obligation to restore all drill holes, trenches and disturbed areas to allow the licensee to return to site and drill in the same casing. Marking would be added to casings left on site.

AANDC agrees that marking should be added to secure the area around a temporarily vacated drill hole and would add that the casing should be temporarily capped to prevent water from entering the ground. However, modifications for the second request do not seem necessary. Part I Item 10 does not require the licensee to restore the area until completion of drilling which should be sufficient if they intend to reoccupy a drill site.

Recommendation

AANDC supports the first change, authorization to cut the drill casings at ground level if they are stuck and cannot be removed from the hole, and recommends that term include capping the casing in these cases.

Though we do not support removing the term “immediately” as requested for the second change, we do recommend adding to the amended licence that if a drill site is to be temporarily vacated, the licensee be required to temporarily cap the casing,

add markers to secure the area, and clean up the site of any debris. AANDC also recommends modifying the reporting requirements to clarify which drill holes will be revisited.

Presently, Part J Item 4 of the licence requires the licensee to “*provide GPS coordinates of all locations where wastes associated with camp operations and exploration activities are deposited.*” This should include a list of sump locations associated with each drill hole and AANDC suggests that a note be added to those locations that were not restored because they will be revisited. The locations of casings left as stuck and cut off should also be included in this list as they constitute waste left behind.

AANDC notes that drilling location coordinates were not provided in either the 2013 or 2014 annual report submissions. Part J Item 3 of both reports states “*all the wastes were brought and managed at the Meadowbank mine site*”, contradicting Part B2b of the reports, which state “*the drill cuttings were disposed of near the drill*”.

9. Security

AANDC does not presently hold security on this type B licence. Given the reclamation costs, securing the environmental liability posed by the exploration camps and activities that may impact water seems appropriate. An updated cost estimate would be required.

A shortcoming noted in the estimate provided in the *Conceptual Closure and Reclamation Plan & RECLAIM Estimates, version 4* (January 2015) is that the closure will be planned so that all mobile equipment and excess fuel will have been removed from site. This is a reasonable reclamation plan but the estimate to be provided is for the case the company should abandon site, which would be unplanned.

In such a case some mobile equipment and fuel would be present on site. A more realistic scenario would be to assume fuel tanks were at 50% capacity on abandonment and the fuel not used for reclamation work has to be shipped off site.

Additionally, Agnico Eagle’s port facility and lay down area in Baker Lake is considered as the end point of all equipment and material demobilisation. It is unlikely that Baker Lake would have facilities to dispose of all equipment and material so the cost of shipping most of it to the south for disposal should be included.

Other details which would benefit from clarification are:

Amaruq Exploration Camp

- Worker accommodations: Even if existing infrastructure is used to accommodate workers, there are still costs associated with running a camp including heating and operating a kitchen.
- Worker mobilisation/demobilisation: Assuming a sufficient number of workers with all necessary qualifications can be found in Baker Lake may be overly optimistic. Using the same ratio of local to southern workers as during operations would be more realistic.
- Fuel tanks: Number needs to be updated to include tanks requested in this amendment.

Meadowbank Exploration Camp

- Worker accommodations: Accommodations in Baker Lake would have to be paid for all workers not from the community.
- Worker mobilisation/demobilisation: Same comment as above.

Recommendation

AANDC recommends that the licensee be requested to submit an updated reclamation cost estimate and that the amended licence include a security requirement.