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Your file - Votre référence
03MN107
Our file - Notre référence
5510-5-3-9

June 6, 2016

Sophia Granchinho
Monitoring Officer
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU, X0B 0C0
Via electronic mail to: info@nirb.ca

Re: Comment Request for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project 2015 Annual Report

Dear Ms. Granchinho,

On May 6, 2016, as per Appendix D of the Meadowbank Gold Mine Project Certificate [No. 004], the Nunavut Impact Review Board (NIRB) requested parties to review the Meadowbank 2015 Annual Report with respect to effects and compliance monitoring. Indigenous and Northern Affairs Canada (INAC) has conducted a review in areas under our mandate as they pertain to compliance monitoring and INAC's responsibilities for the Type "A" Water Licence and land use authorizations. We would like to provide comments for NIRB's consideration as follows:

1) Effects Monitoring

- a. Whether the conclusions reached by AEM in the 2015 Annual Report are valid;***
- b. Any areas of significance requiring further studies; and***
- c. Changes to the monitoring program which may be required.***

INAC would like to provide comments related to Agnico Eagle Mines Ltd.'s (AEM) evaluation of effects monitoring and impact predictions for the NIRB's consideration as follows:

- AEM provides supplementary documentation as part of its annual report. Included in the documentation provided are an annual geotechnical inspection report (produced by Golder Associés Ltée or Golder) and reports produced from meetings held by the Meadowbank Dike Review Board (MDRB). This supplementary documentation often contains recommendations to the operator to help improve site management. However, during our review of the materials



provided, we were not always able to determine if these recommendations were implemented. It would be beneficial if AEM developed, and included in its annual report, a tracking table that captures recommendations from all parties and reported on the implementation of these recommendations. The table could include information regarding whether a recommendation was adopted, how it was implemented and/or the rationale as to why a recommendation was not considered. A few examples of recommendations that could not be tracked include the following:

2015 Annual Geotechnical Inspection Report by Golder (Appendix B1, Annual Report)

- Recommendation to replace the safety berm on several areas of Bay-Goose Dike.
- Recommendation to puncture and repair a balloon filled with water that is present in the geomembrane liner installed on the Stormwater Dike.
- Recommendation to monitor the water quality of the ponding occurring at the Stormwater Dike and to provide the information to the engineering department so it can be determined whether or not the water is seepage from the North Cell.
- Recommendation to repair the geomembrane liner between Tanks 1 and 2 and at the south side of Tank 2 and 3 at the Baker Lake fuel tank farm and re-cover the liner with fill.
- Recommendation to repair two small channels of erosion and control the erosion of the foundation pad at the Meadowbank Main Camp fuel tank area.
- Recommendation to flag the piezometers that recorded data below 0°C in the past and to be very careful when interpreting their data as they might be broken.

Meadowbank Dike Review Board Reports (Appendix B4, Annual Report)

- Recommendation relating to the installation of equipment used to monitor temperature in the proposed cover of the Tailings Storage Facility with a suggestion to consider the approach used at the Diavik site.
- Recommendations relating to confirming the findings of the Willowstick survey which used electro-magnetic geophysical surveys to assist in identifying the potential pathways of seepage occurring at the Central Dike.

The above list is not inclusive of all recommendations that could not be tracked. INAC also recommends that this tracking carry over from year-to-year, so that any recommendations deferred to be completed in subsequent years, will be addressed in the following year's Annual Report.



- The water licence issued for the Meadowbank project requires the generation of a report regarding the operator's Seepage Monitoring Program (2AM-MEA1525 Part I, Item 14). INAC is of the opinion that AEM should be reporting all on-site seepage, including where there is an indication of potential seepage. An example was provided in the *2015 Annual Geotechnical Inspection Report* by Golder (Appendix B1, Annual Report) which stated that ponding was observed at Saddle Dam 2, and recommended follow-up actions to determine whether it was seepage from the Tailings Storage Facility.
- AEM uses piezometers to collect data relating to groundwater flow, which assists in monitoring the integrity of dikes and dams. INAC made note of references to piezometer freeze up within the Annual Report and supporting documentation. It is important to record occurrences of piezometer freeze-up as data generated from a frozen piezometer is not reliable. INAC recommends that AEM report data gaps generated by frozen or malfunctioning piezometers or any other monitoring equipment, and propose mechanisms to replace faulty equipment or prevent future damage to these instruments. Additionally, AEM should discuss the implications of incomplete or inaccurate data on monitoring programs.
- Beginning in 2003, Golder's annual geotechnical inspection reports have reported on the condition of water management infrastructure installed on the road to the vault pit and have reported blockages in many culverts during freshet. Again, the *2015 Geotechnical Inspection Report* noted damage to culverts, including one that had an entirely obstructed inlet due to rockfill and a broken outlet. It is unclear whether repairs have been performed each year and the new culverts damaged again, or if these culverts have remained unrepaired since 2003. INAC recommends that AEM report on repairs made to drainage infrastructure and remain diligent in ensuring adequate site water management.
- AEM currently provides a comparison of predicted water quality and quantity values, and the actual values recorded during their annual reporting cycle. INAC is of the opinion that a comparison of originally predicted values and year-over-year water quantity and quality values would provide for a more robust analysis and would assist with identifying trends. The identification of trends could assist in identifying problem areas in terms of water quality and quantity prior to the occurrence of issues such as water licence exceedances.

2) Compliance Monitoring

- a. Provide any compliance monitoring and/or site inspection reports to the NIRB including the following information:***
 - i. How the authorizing agency has incorporated the terms and conditions from the Project Certificate into their permits,***



certificates, licences or other government approvals, where applicable;

INAC is responsible for inspecting and enforcing terms and conditions (T&C) contained within water licences issued in Nunavut. However, the decision to implement the T&C's of a project certificate, from the perspective of inland water management, rests with the Nunavut Water Board (NWB). Although INAC is not responsible for incorporating terms and conditions into a water licence, we have provided the NIRB with an analysis of which T&C's from Project Certificate #004 (PC) were incorporated into the Type 'A' Water Licence (2AM-MEA0815) associated with the Meadowbank project. Further details on the incorporation of the PC's T&C's can be found in Appendix A.

In January 2007, the crown Land Lease No. 66A/8-71-2 was obtained for the Meadowbank mine in order to build the portions of the all-weather access road located on crown land. The crown Land Lease No. 66A/8-72-2 was also obtained in January 2007 for the Meadowbank mine in order to construct quarries on the associated parcels of land. Further details on how the land leases incorporate the PC's T&C's can also be found in Appendix A.

With regards to socio-economic Terms and Conditions #63 and #64, INAC has worked with AEM and the Government of Nunavut (GN) on the regional Kivalliq Socio-Economic Monitoring Committee (SEMC). In 2015, INAC met with the Proponent, the Government of Nunavut and the Kivalliq Inuit Association on several occasions to share data and information to work towards a comprehensive socio-economic monitoring report for the Meadowbank project. The Meadowbank 2015 Socio-Economic Monitoring Report was finalized in 2015, and in INAC's opinion, meets the requirements of condition #64. The report contains a comprehensive set of indicators that serve to verify the impact predictions outlined in the Meadowbank Final Environmental Impact Statement. It is INAC's assumption that this report will be updated annually by AEM, with input from members of the Meadowbank Socio-Economic Monitoring Committee.

As per Term and Condition #65, AEM has reported on community of origin of hired employees since project commencement, and as per Term and Condition #68, AEM has incorporated Inuit societal values into mining operations. Both of these conditions have been incorporated into the Meadowbank 2015 Socio-Economic Monitoring Program.

ii. A summary of any inspections conducted during the 2015 reporting period, and the results of these inspections; and

As discussed in section 11.4 of the Annual Report, INAC's Water Resource Officer (WRO) performed three inspections during 2015, March 22-24, July 24 and October 21. Overall there were no issues with non-compliance identified during the 2015 reporting period; however, a few minor items were noted for AEM.



During the March site visit, an inspection of the camp, roads/hauling, mining and reclamation activities was conducted. In the inspection report the WRO reminded AEM that they are required to provide a North West Contact Water Collection System summary report, pursuant to their licence.

The July site visit included the inspection of camp, roads/hauling, water management, water discharge, mining, construction, spills and reclamation activities. The WRO included a note regarding the removal of a rock barrier, and that this may be a reason for concern relating to contaminated water due to the proximity to Third Portage Lake. The Inspection Report also included a minor note on garbage within the contaminated soil at the landfarm.

During the final 2015 site visit, the WRO inspected water management, water discharge, mining, construction, spills and reclamation activities. The inspection report contains a suggestion for a minor update to the Freshet Action Plan. INAC notes that the suggestion was incorporated into the Freshet Action Plan included with the Annual Report. The WRO also made an observation regarding a small contact water collection pond constructed on the North East side of the Non-Potentially Acid Generating waste rock extension pile of the Waste Rock Storage Facility. A request for AEM to provide the WRO and the NWB with more information regarding the contact water collection pond by February 2016 was made.

For further detail, the inspection reports can be accessed through the NWB Public Registry:

[ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA1525%20Agnico/3%20TECH/0%20SCOPE%20ENFORCE%20\(A\)/1%20INSPECTION/2015/](ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA1525%20Agnico/3%20TECH/0%20SCOPE%20ENFORCE%20(A)/1%20INSPECTION/2015/)

iii. A summary of AEM's compliance status with regard to authorizations that have been issued for the project.

AEM carried out works to ensure they were complying with the measures identified within the 2013 Inspector's Direction regarding seepage from the tailing storage facility sump (ST-16) into NP-2 Lake. The actions performed included conducting an internal investigation into the release of waste from ST-16 to NP-2 Lake, working with engineers to investigate the possible failure of the Waste Rock Plug, developing a plan to immediately stop the release of waste, and lastly, developing a long-term plan to secure the waste from ST-16 into NP-2 and counteract and/or remediate the affected area. Further details can be found in the Inspector's Direction which can be accessed at the NWB public registry website (link provided above). It should be noted that from AEM's efforts in 2014 resulted in the revocation of the Inspector's Direction on March 12th, 2015.



Indigenous and
Northern Affairs Canada

Affaires autochtones
et du Nord Canada

INAC appreciates the opportunity to work with the NIRB throughout the monitoring of the Meadowbank project. Should you have any questions, please do not hesitate to contact Laura Harris at (867) 975-4567 or by e-mail at [Laura.Harris@aadnc-gc.ca](mailto:Laura.Harris@aadnc.gc.ca).

Sincerely,

[Original signed by]

James Neary
Manager, Impact Assessment



Appendix A: Terms and Conditions (T&C) carried over from the Project Certificate.

T&C	Description	Implemented in Licences or Permits?
5	Cumberland shall meet with respective licensing authorities prior to the commencement of construction to discuss the posting of adequate performance bonding. Licensing authorities are encouraged to take every measure to require that sufficient security is posted before construction begins. This bonding should not duplicate other amounts of security required (eg. the NWB).	Yes, all of Part C within the water licence (2AM-MEA1525). Part 16 -19 of Lease No. 66A/81-71-2 (covers the sections of the all-weather access road (AWAR) located on crown land). Part 34-37 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
8	Cumberland shall, within 30 days of re-opening of the camp, re-sample existing groundwater monitoring wells and combining the sampling data with existing rounds of groundwater sampling data, re-evaluate the salinity, major ion concentrations, and dissolved metal load of groundwater flowing to the mine pits and incorporate the results into the water quality monitoring and treatment program. At the time samples are taken Cumberland shall also assess the condition of existing groundwater monitoring wells and replace any defective wells. Cumberland shall continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection. Cumberland shall report the results of each re-evaluation to NIRB's Monitoring Officer, INAC and EC, and incorporate the results of the additional data into the water license application to the NWB.	No, but Part J, Item 5 relates to monitoring plans while under care in maintenance.
9	Cumberland shall provide detailed plans for water treatment for the tailings (reclaim pond) discharge, and on a contingency basis for the attenuation pond discharge(s) and for the pits, including estimates of treatment efficiency for each parameter of concern and the description of pH adjustments in the water license application to the NWB.	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).
10	Cumberland shall provide details of the camp sewage treatment, including the type of treatment to be used and the expected treatment capabilities, in the water license application to the NWB.	No, this was not captured within the water licence as it was already completed prior to licence approval.
11	Cumberland shall provide details regarding the effluent outfall configuration, including discharge	No, this was not captured within the water licence as it was already completed prior



	characteristics, the likely behavior of the plume(s), and bathymetric information for Wally Lake in the water license application to the NWB.	to licence approval.
12	Cumberland shall provide details of a comprehensive water use and water management plan for the Baker Lake marshalling area, including monitoring of the discharge from the marshalling area sump, in the water license application to the NWB.	No, this was not captured within the water licence as it was already completed prior to licence approval.
13	Cumberland shall not permit the water discharged into Wally Lake and Third Portage Lake to exceed receiving environment discharge criteria established by the NWB or as otherwise required by law.	Partially, the portion referring to criteria established by the NWB is found in Part F, Items 3 and 4 within their water licence (2AM-MEA1525).
14	Cumberland shall not remove dewatering dikes until the quality of water contained within them is of sufficient quality to meet receiving environment discharge criteria established by the NWB or as otherwise required by law.	Yes, Part E, Item 7 within their water licence (2AM-MEA1525).
15	Cumberland shall within two (2) years of commencing operations re-evaluate the characterization of mine waste materials, including the Vault area, for acid generating potential, metal leaching and non metal constituents to confirm FEIS predictions, and re-evaluate rock disposal practices by conducting systematic sampling of the waste rock and tailings in order to incorporate preventive and control measures into the Waste Management Plan to enhance tailing management during operations and closure. The results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer.	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).
17	Cumberland shall undertake a detailed technical review of all dike and pitwall designs at the final design stage, and submit the final dike designs for water depths of greater than 10 metres for an expert analysis and Cumberland shall include the detailed technical review and the expert analysis in the application to the NWB for a water license.	No, this was not captured within the water licence as it was already completed prior to licence approval.
18	Cumberland shall commit to a pro-active tailings management strategy through active monitoring, inspection, and mitigation. The tailings management strategy will include the review and evaluation of any future changes to the rate of global warming, compliance with regulatory changes, and the ongoing review and evaluation of	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).



	relevant technology developments, and will respond to studies conducted during the mine operation.	
19	Cumberland shall provide for a minimum of two (2) metres cover of tailings at closure, and shall install thermistor cables, temperature loggers, and core sampling technology as required to monitor tailing freezeback efficiency. Cumberland shall report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.	Yes, Schedule B, Item 18 and Part B Item 13 within their water licence (2AM-MEA1525).
20	Prior to construction, Cumberland shall identify mitigation measures that can be taken if groundwater monitoring around the tailings facility demonstrates that contamination from tailings has occurred through the fault. Upon drawdown of the North arm of Second Portage Lake, Cumberland shall conduct further tests to assess the permeability of any faults and provide the results to regulators. If doubt remains Cumberland shall seal the fault and conduct further permeability testing and monitoring.	Yes, Part B Item 13 within their water licence (2AM-MEA1525).
21	Cumberland shall fund and install a weather station at the mine site to collect atmospheric data, including air temperature and precipitation.	No.
22	Prior to the commencement of the Project, Cumberland shall fund and install an on site lab that has the capability to monitor parameters at a type and at a frequency acceptable to the NWB and EC at all site discharge points. The results of these analyses, as well as any other water quality monitoring required by regulatory authorities shall be used in the submission of a receiving water assimilative capacity water quality assessment study of concern to regulators. The lab shall be certified for environmental water quality analysis purposes with standards to include the calibration of water quality monitoring instruments. Cumberland shall file proof of application to become accredited upon the request of the NWB.	Partially, Part I, Item 16, 17, 18, 19 and 20 of their water licence (2AM-MEA1525) relate to this condition, but not the installation of an on-site lab prior to construction.
23	For the purposes of monitoring quality assurance and quality control ("QA/QC"), Cumberland shall ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent	Yes, Part I, Item 16 within their water licence (2AM-MEA1525).



	accredited lab for analysis, on a type and frequency basis as determined by the NWB. Results of analysis shall be provided to the NWB and NIRB's Monitoring Officer.	
24	Cumberland shall identify an area and design for a landfill for disposal of operational and closure non-salvageable materials, including a list of any nonsalvageable materials, and a procedural manual for preparation of location and placements of these materials, and incorporate the design into the final Waste Management Plan as instructed by the NWB.	Yes, Part B, Item 13 within their water licence (2AM-MEA1525).
25	Cumberland shall manage and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors. Cumberland shall employ legal deterrents to carnivores and/or raptors at all landfill and waste storage areas. The deterrents are to be developed taking into consideration Traditional Knowledge and in consultation with the HTO, EC and INAC and incorporated into the final Waste Management Plan prior to filing the Plan with the NWB.	Partially, this was not captured within the water licence as it was already completed prior to licence approval. AEM's water licence (2AM-MEA1525) does however, require adherence to the Waste Management Plan under Part B, Item 13.
26	Cumberland shall ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris.	Yes, Part H, Items 1 and 2 within their water licence (2AM-MEA1525). Partially, Condition 45-47 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Condition 51 and 55 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
27	Cumberland shall ensure that the areas used to store fuel or hazardous materials are contained using safe, environmentally protective methods based on practical, best engineering practices.	Yes, Part H, Item 3 within their water licence (2AM-MEA1525). Partially, Condition 45-47 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Condition 53-57 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
28	Cumberland shall become a signatory to the International Cyanide Management Code, communicate this to shippers, and do so prior to Cumberland storing or handling cyanide for the Project.	Not incorporated into an authorization, but INAC verified that AEM is a signatory company.



29	Cumberland shall report to NIRB if and when Cumberland develops plans for an expansion of the Meadowbank Gold Mine, and in particular if those plans affect the selection of Second Portage Lake as the preferred alternative for tailings management.	Not incorporated into an authorization.
30	Cumberland shall meet with EC and the DFO to ensure that the information required for the application to add the northwest arm of Second Portage Lake as a tailings impoundment area under Schedule 2 of the Metal Mining Effluent Regulations, including the No Net Loss Plan to offset losses expected as a result of all other Project infrastructure, is complete and the application can be processed according to law.	Not incorporated into an authorization as this is already a requirement under Metal Mining Effluent Regulations.
33	Cumberland shall update the Access and Air Traffic Management Plan to: 1. include an All-weather Private Access Road Management Plan, including a right-of-way policy developed in consultation with the KivIA, GN, INAC and the Hamlet of Baker Lake, for the safe operation of the all-weather private access road; and 2. to facilitate monitoring of the environmental and socio-economic impacts of the private road and undertake adaptive management practices as required, including responding to any concerns regarding the locked gates.	Partially, item 1 is addressed under condition 54 of Lease No. 66A/8-71-2 (covers the sections of the AWAR located on crown land).
35	Cumberland shall reclaim the all-weather private access road at the end of the mine life to prevent any future use of the road, including scarification of the road and restoration of the natural hydrology, topography, and vegetation, subject only to Cumberland and/or its successor seeking NIRB Article 12 approval for the road to be maintained and operated beyond the life of the mine.	Partially, Condition 12 and 15 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land).
78	Cumberland shall file a complete Closure and Reclamation Plan developed to comply with INAC's policy of full cost of restoration and any related NWB requirements such that the Inuit and taxpayers are not liable for any cost associated with the cleanup, modification, decommission, or abandonment.	Partially, Part B, Item 13 within their water licence (2AM-MEA1525). Partially, Condition 12, 15, 16-19, 26 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Condition 14, 17, 26, 37 of



		Lease No. 66A/8-72-2 (covers the quarries on crown land).
79	<p>79. In addition to the NWB's requirements, the final Closure and Reclamation Plan shall require Cumberland to:</p> <p>a. Ensure that mine facilities and infrastructure are abandoned in such a manner that:</p> <p>i. The Project site is physically stable and any requirements for long term maintenance and monitoring are minimized;</p> <p>ii. Threats to public safety and wildlife are eliminated; and</p> <p>iii. Affected areas are returned to the original undisturbed conditions to the fullest extent possible.</p> <p>b. Prevent continuing impacts from contaminants and wastes on the environment including those associated with acid rock drainage;</p> <p>c. Remove all hazardous materials and waste and as much salvageable waste as practicable from the Project area; and</p> <p>d. Enter into written arrangements with its abandonment and reclamation contractors to ensure all site debris is cleaned up off the lands, including wind-blown debris.</p>	<p>Partially, Part B, Item 13 within their water licence (2AM-MEA1525).</p> <p>Partially, Condition 12, 15, 16-19, 26 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land).</p> <p>Partially, Condition 14, 17, 26, 37 of Lease No. 66A/8-72-2 (covers the quarries on crown land).</p>
80	<p>Cumberland shall file annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, INAC, and/or the NWB.</p>	<p>Does not incorporate filing to the NIRB's Monitoring Officer, but does speak to reporting on progressive reclamation and security:</p> <p>Partially, Condition 19 (bi-annual reporting requirement), 20, and 33 (covers the sections of the AWAR located on crown land).</p> <p>Partially, Condition 24 and 38 of Lease No. 66A/8-72-2 (covers the quarries on crown land).</p>