



November 1st, 2019

Richard Dwyer
Manager of Licensing
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P.O. Box 119
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Re: Agnico Eagle's response to Meadowbank (2AM-MEA1526) and Whale Tail (2AM-WTP1826) 2018 Annual Report comments

Dear Richard Dwyer,

The following information are intended to address the regulator's comments regarding the Meadowbank (2AM-MEA1526) and Whale Tail (2AM-WTP1826) 2018 Annual Report:

- Crown-Indigenous Relations and Northern Affairs Canada – July 29, 2019: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) review of Type 'A' Water Licence 2018 Annual Report, 2AM-WTP1826, Whale Tail Pit Project – Agnico Eagle Mines Limited (AEM)
- Crown-Indigenous Relations and Northern Affairs Canada – July 29, 2019: Crown-Indigenous Relations and Northern Affairs Canada Technical Review Comments of the Meadowbank Gold Project 2018 Annual Report – under Agnico Eagle Mines Limited's Type "A" Water Licence No. 2AM-MEA1526
- Environment and Climate Change Canada – July 29, 2019: 2AM-MEA1526 – Agnico Eagle Mines Limited – Meadowbank and Whale Tail Gold Project – 2018 Annual Report

Should you have any questions or require further information, please do not hesitate to contact us at the below.

Regards,

Agnico Eagle Mines Limited – Meadowbank Division



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Table of Contents

1	Meadowbank Site – 2AM-MEA1526.....	5
1.1	Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC).....	5
1.1.1	Structure Integrity of Dikes and Dams and Central Dike Seepage.....	5
1.1.2	ARD/ML in Tailings Storage Facility and Central Dike Seepage Water Quality	5
1.1.3	Turn Lake Water Level Monitoring.....	7
1.1.4	Predicted vs Measured Water Quality.....	7
1.1.5	Freeze-back, Permafrost, Thermal Monitoring and Capping Thickness.....	8
1.1.6	Spill Management.....	10
1.1.7	Progressive Reclamation Update	10
1.2	Environment and Climate Change Canada (ECCC)	11
1.2.1	Monitoring at Lake NP-2	11
1.2.2	Tailings Deposition.....	12
1.2.3	Errata.....	13
1.2.4	Rock Garden.....	14
1.2.5	Control Strategies for Acid Rock Drainage – Cover Design.....	15
1.3	Nunavut Water Board (NWB).....	16
1.3.1	Operating Condition of Dike	16
1.3.2	CREMP.....	16
1.3.3	Drawings	16
1.3.4	Geotechnical inspections	16
1.3.5	Geotechnical inspections	17
2	Whale Tail – 2AM-WTP1826.....	18
2.1	Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC).....	18
2.1.1	Lake Level Monitoring	18
2.1.2	Quarry 1 Seepage Analysis.....	23
2.1.3	Seeps and Groundwater Monitoring.....	25
2.1.4	Hydraulic Conductivity	25
2.1.5	Horizontal Groundwater Flow.....	27
2.1.6	Before operations site photos.....	31



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2.1.7	Groundwater Monitoring Plan	31
2.1.8	Mitigation if arsenic concerns materialize	33
2.1.9	Geotechnical investigation reports.....	34
2.1.10	Field checks for engineering structures	34



1 Meadowbank Site – 2AM-MEA1526

1.1 Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

1.1.1 Structure Integrity of Dikes and Dams and Central Dike Seepage

References: Section 3.1, Meadowbank Gold Project 2018 Annual Report; Appendix 7, appendix 8, Appendix 17

Comment: High seepage rate through the bedrock foundation of the Central Dike of the Tailings Storage Facility (TSF), observed since 2014, persisted in 2018. The Second Portage Fault under the Central Dike was identified by AEM as a potential pathway for the seepage. Tension cracks have been observed along the Stormwater Dike of the TSF since 2016. These two issues have been flagged with yellow Trigger Action Response Plan (TARP) levels. In addition, in 2018, the Meadowbank Dikes Review Board noted the unusual linear settlement features in the tailings surface and determined that further study and explanation would be required.

CIRNAC notes the potential structure integrity concerns associated with the referenced issues and echoes the technical recommendations made in the 2018 Annual Geotechnical Inspection Report and the Meadowbank Dikes Review Board Report #24 on these issues.

Recommendation 1: CIRNAC recommends that the recommendations made in the 2018 Annual Geotechnical Inspection Report and the Meadowbank Dikes Review Board Report #24 be implemented and the results be reported and discussed in the 2019 Annual Report.

Agnico Eagle's Response:

Response to the MDRB #24 comments were provided to the MDRB and they were satisfied with Agnico's plan to address their recommendations. MDRB #25 is scheduled late November and an update on the situation will be presented to the MDRB. This information will be made available in the 2019 annual report.

1.1.2 ARD/ML in Tailings Storage Facility and Central Dike Seepage Water Quality

References: Section 3.1 and 5.1, Meadowbank Gold Project 2018 Annual Report; Appendix 1

Comment: The 2018 Annual Report stated *"In the summer of 2017 the water in the downstream pond became orange and this was associated with rapid temperature variation. This event was investigated by chemical analysis and was found to be caused by the precipitation of iron oxide from bacterial process. As predicted this event re-occurred in the summer of 2018."*



Monthly water quality monitoring data presented in Table 8.36 in Appendix 1 showed elevated sulfate and total iron concentrations in the Central Dike seepage. Since the seepage was believed to be originated from the TSF, these results would suggest iron sulfide mineral oxidation in the TSF. Both iron sulfide oxidation and ferric iron precipitation reactions produce acid and could result in the formation of acid rock drainage and metal leaching (ARD/ML) if the acid is not neutralized completely, which could happen if the neutralization potentials of the tailings and along the seepage pathways are low or become depleted.

Table 5.3 presented the results of four tests conducted in 2018 on the acid base accounting (ABA) and metal leaching of the tailings. Strong acidic condition was produced in all the tests (i.e, pH values ranged from 1.54 to 1.79). One test conducted in October 2018 resulted in an arsenic leaching concentration of 0.67 mg/L, exceeding the MDMER guideline limit. No leaching data on lead was provided.

Monthly tailings reclaim pond water quality monitoring results presented in Table 8.25 in Appendix 1 also showed elevated sulfate and total iron concentrations. All monthly copper concentrations, with the exception of December 2018, exceeded the MDMER guideline limit.

Given the above observations, CIRNAC considers that there exists a potential risk of deterioration in water quality of the Central Dike seepage in the future if no mitigation measure is taken.

Recommendation 2: CIRNAC recommends that the quantity and quality of the Central Dike seepage be closely monitored and that proactive measures be taken to mitigate ARD/ML formation in the TSF and to reduce or stop the Central Dike seepage.

Agnico Eagle's Response:

Water was tested in 2017 and 2018 and all parameters were confirming the hypothesis that the orange coloration was a bacterial process and not ARD/ML. No pH reduction was measured in the Central Dike seepage water. Testing of this water continues in 2019 with a similar program to continue to confirm the hypothesis of a bacterial process. The Central Dike seepage quantity and quality is monitored minimally on a monthly basis as per the requirement of the Water License 2AM-MEA1526 Part E Item 13. With the beginning of tailings deposition in Goose Pit, it is anticipated the South Cell will be emptied of standing water by the Fall 2020. Initial data suggests when this water level is kept as low as possible it results in a significant reduction in seepage through the dike. Update regarding the Central Dike Seepage will continue to be provided via the annual report along with the monitoring results required by the Water License.



Agnico will continue to perform, when possible, the progressive capping of the TSF which is a mitigation measure the ARD-ML formation in the TSF.

1.1.3 Turn Lake Water Level Monitoring

References: Section 4.2.1, Meadowbank Gold Project 2018 Annual Report

Comment: In the review of the 2017 Annual Report of the Meadowbank Gold Project, CIRNAC noted that no monitoring results on the water level of Turn Lake were presented and requested that the Proponent do so in its 2018 Annual Report.

Section 4.2.1 of the 2018 Annual Report indicated that Turn Lake water level monitoring would be initiated during the 2019 open water season and the results would be reported and compared to predictions in the next annual report.

Recommendation 3: CIRNAC recommends that AEM fulfil this commitment and present the results in the 2019 Annual Report.

Agnico Eagle's Response:

Agnico will provide Turn Lake water level monitoring in the 2019 Annual Report

1.1.4 Predicted vs Measured Water Quality

References: Section 4.4.3, Meadowbank Gold Project 2018 Annual Report; Appendix 15; Appendix C, Appendix 8

Comment: Water License 2AM-MEA1526 Part E, Item 9 states: *"The Licensee shall, on an annual basis during Operations, compare the predicted water quantity and quality within the pits, to the measured water quantity and quality. Should the difference between the predicted and measured values be 20% or greater, then the cause(s) of the difference(s) shall be identified and the implications of the difference shall be assessed and reported to the Board."*

Data presented in the 2018 Annual Report showed that for a number of parameters, the differences between the measured results and the predicted values, even those under the Probable Poor End scenario, were greater than 20%. Furthermore, the results of the current water quality model prediction indicated that the concentrations of some parameters (e.g., aluminium, arsenic, cadmium, chromium, copper, iron, nickel, selenium, fluoride, mercury, lead, etc.) of the pit water would exceed the CCME water quality guidelines or other site specific criteria and may require treatments prior to dike breaching. Given the inconsistencies observed between the measured and the predicted values, it is possible that pit water quality at closure could be even lower than currently predicted.



A brief discussion was provided in the 2018 Annual Report on the possible causes, the potential implications, and various mitigation measures and treatment options. However, given the significance of the differences and the potential implications (e.g., costly treatment of large quality of water in the pits in the closure and post-closure phases), CIRNAC considers it important that the model predictions be updated, and appropriate proactive mitigation measures be identified and implemented to prevent or reduce any adverse impact on water quality and/or avoid any prohibitive closure cost.

Recommendation 4: CIRNAC recommends that the water quality predictions be updated, that appropriate proactive mitigation measures be identified, and implemented by the Licensee, and that the results be discussed in the 2019 Annual Report.

Agnico Eagle's Response:

The comparison presented in Section 4.4.3 of the 2018 Annual Report compared the actual water volume and quality measurements against the prediction that was carried out at the start of the project back in 2008 (baseline), as per Water License 2AM-MEA1526 Part E, Item 9. Section 2.6 of the Meadowbank Water Quality Forecasting Update for the 2018 Water Management Plan (Appendix C of the 2018 Annual Report Appendix 8) presented key parameters that were measured over time and data were overlaid with the forecasted concentrations from the previous year's model. The model presented in the Water Quality Forecasting will continue to be updated on an annual basis. The 2019 water quality forecast will be an update of the "prediction" of what could be observed in the pit water at the end of deposition. In 2019, monitoring data will continue to be compared to the baseline prediction and the water quality prediction model. Agnico acknowledges CIRNAC's recommendation and will provide in the 2019 Annual Report a complete discussion on the comparison's finding for both the baseline and 2019 forecast model.

1.1.5 Freeze-back, Permafrost, Thermal Monitoring and Capping Thickness

References: Section 5.4, Meadowbank Gold Project 2018 Annual Report; Appendix 17; Appendix 7; Appendix 21

Comment: Thermal monitoring results presented in the 2018 Annual Report showed that the freeze-back of waste rocks and tailings was a complex process and the thickness of the thermal active layer varied from 1.5 to 4.0 meters at different locations. Although additional laboratory and field based collaborative studies (i.e., with the Research Institute in Mine and Environment) have been conducted since 2014, no information or result was provided in the 2018 Annual Report.



CIRNAC notes that promoting and maintaining permafrost condition has been the principle strategy for preventing or mitigating ARD/ML formation in the Waste Rock Storage Facilities (WRSF) and the TSF at Meadowbank. It involves thermal encapsulation of potentially acid generating (PAG) waste rocks or tailings with a cover of non-potential acid generating (Non-PAG) waste rocks. To be effective, the cover needs to be thicker than the thermal active layer so that a permafrost condition will be maintained below the cover. It is important that the maximum thickness of the thermal active layer be reliably obtained or predicted for the WRSF and the RSF where the thermal encapsulation strategy will be applied.

Given that the WRSF and a portion of the TSF at Meadowbank are in the closure phase, CIRNAC considers it important that AEM validate and update its thermal models with thermal monitoring data and when necessary, strengthen its thermal monitoring networks and/or update its Waste Rock and Tailings Management Plans.

Recommendation 5: CIRNAC recommends that AEM validate and update its thermal models with thermal monitoring data and present the results in the 2019 Annual Report.

Agnico Eagle's Response:

As mentioned in Section 8.2 of the Waste Rock and Tailings Management Plan the capping of the both cells of the Tailings Storage Facility (TSF) are currently active with ongoing tailings deposition. The current thermistors installed in the TSF allows the gathering of data on the thermal regime of the tailings during operation. Progressive capping is ongoing, but its surface area is limited and there are few thermistors installed within the capping. As a result, limited data is available on the tailings thermal regime when capped. A capping study will be undertaken to implement the CIRNAC recommendation at closure once more instruments will have been installed in the TSF capping. In the 2019 annual report a meaningful discussion on the thermal data during operation will be included and compared to the conceptual thermal modelling results.

As mentioned in Section 8.3 of the Waste Rock and Tailings Management Plan a study is ongoing with a consultant to calibrate the thermal model and develop an instrumentation plan to assess the cover performance of the Amaruq WRSF. This mandate is soon completed and Agnico will initiate in 2019 a similar approach at the Meadowbank Rock Storage Facility to review the available data, compare thermal results to FEIS prediction, identify data gap and propose new instruments location for closure. This mandate is expected to be recurrent over the years with the ultimate objective of updating the modelling supporting the conclusion that the cover design is effective to comply with the water quality objective of the project at closure. Initial data from this study should be available to be presented in the 2019 annual report.



1.1.6 Spill Management

References: Section 7, Meadowbank Gold Project 2018 Annual Report

Comment: Table 7.1 of the 2018 Annual Report indicates that 243 cases of spills were observed, including 26 cases of reportable spills, at Meadowbank in 2019. An examination of Tables 7.2 and 7.3 of the 2018 Annual Report shows that hydraulic oil leak due to hose/pipe failure or “O” ring failure occurred almost daily or once every few days in 2018. The volume of each hydraulic oil spill ranged from 4 to 600 liters, with most falling between 40 and 100 liters.

Although the cases of spills in 2018 were lower than in 2017 (i.e., 411 cases) and spills were contained and cleaned and contaminated material disposed to the appropriate area, CIRNAC believes that further improvement can and should be made.

Recommendation 6: CIRNAC recommends that AEM make further efforts to prevent spill or reduce the number and volume of spills and report such efforts in the 2019 Annual Report.

Agnico Eagle’s Response:

Agnico acknowledge CIRNAC’s recommendation and will include the requested information in the 2019 annual report.

1.1.7 Progressive Reclamation Update

References: Section 9.1.1, Meadowbank Gold Project 2018 Annual Report; Meadowbank Interim Closure and Reclamation Plan (ICRP) – Update 2018, Appendix 51

Comment: Progressive reclamation of various components or facilities (e.g., the open pits, the WRSFs, the TSF, and the water management infrastructures) was discussed in the 2018 Annual Report, and the Meadowbank Interim Closure and Reclamation Plan was updated in July 2018.

Amendment No.3 to Water License 2AM-MEA1526 for Meadowbank Gold Project was approved in March 2019, authorizing the disposal of tailings into the mined-out open pits at Meadowbank. This amendment would result in significant changes in the planned project activities and consequently, the current progressive reclamation plans for the open pits, the TSF, and certain water management infrastructures will need to be updated to reflect such changes.

Recommendation 7: CIRNAC recommends that AEM update the Meadowbank Interim Closure and Reclamation Plan in a timely manner so that appropriate progressive reclamation can be planned and implemented.



Agnico Eagle's Response:

Agnico Eagle submitted the Meadowbank Interim Closure and Reclamation Plan dated May 29, 2019 to CIRNAC on June 7, 2019 and on July 24, 2019 to the NWB. During the ICRP review process, Agnico has provided responses to CIRNAC's comments. On October 21, NWB provided to Agnico the approval for this management plan. Action items were identified by the NWB and an updated management plan will be submitted as part of the 2019 Annual Report.

1.2 Environment and Climate Change Canada (ECCC)

1.2.1 Monitoring at Lake NP-2

References: Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project – 2018 Annual Report, Section 8.5.3.1.7

Comment: The Proponent has been monitoring ST-16 and Lakes NP-2, NP-1 and Dogleg since migration of water from the North Cell was detected in 2013. Results are showing reductions in the concentrations of the parameters of concern, and it appears mitigation measures are effective.

As noted in the Annual Report,

"The KIA [Kivalliq Inuit Association] requested that Agnico [the Proponent] continue monitoring until there is a 5 year period of non-detect cyanide results. To date (5 previous year), the monitoring indicated that yearly average for CN levels does not exceed the CCME [Canadian Council of Ministers of the Environment] guideline, the MDMER [Metal and Diamond Mining Effluent Regulations] or Water License limit for effluent discharge into the environment for NP2, NP1 and downstream lakes, Dogleg and Second Portage. Thus, based on the analysis of the previous result, Agnico Eagle will suspend the current program in 2019" (Page 160).

ECCC notes that there have not been 5 years of non-detect Cyanide (CN) results; the annual average for total CN at ST-16 in 2017 was 0.0743 mg/L, which increased from 2015 and 2016. Winter concentrations in Lake NP-2 in 2017 were 0.008 mg/L total CN. While these levels are below guidelines and discharge criteria, they indicate that there is still measurable cyanide in Lake NP-2. Suspending the current program of monitoring is reasonable for the downstream lakes; however, periodic checks of water quality in Lake NP-2 would provide assurance that mitigation is effective.

Recommendation 1: ECCC recommends that the Proponent continue to monitor Lake NP-2 on a yearly basis for the same suite of parameters as have been measured since 2014.



Agnico Eagle's Response:

Agnico acknowledges ECCC's recommendation and will provide Lake NP-2 monitoring results in the 2019 annual report.

1.2.2 Tailings Deposition

References: Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project – 2018 Annual Report, Appendix 8: Meadowbank 2018 Water Management Report and Plan, Appendix C: Technical Note - Meadowbank Water Quality Forecasting Update for the 2018 Water Management Plan Section 3.0; Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project - 2018 Annual Report, Appendix 17: Meadowbank Gold Mine Waste Rock and Tailings Management Report & Plan, Section 6.3.

Comment: Section 3.1 of the Water Quality Forecasting Update states that, “deposition of Whale Tail pit tailings is forecast to start in July 2019 until December 2021. The tailings will be deposited in the North and South Cells TSF” (pdf Page 133).

Section 6.3 of the Mine Waste Rock and Tailings Management Report & Plan states:

“An updated version of the tailings deposition from 2019 until the end of mine life is presented in Appendix B. This updated tailings deposition plan considers modification to the LOM and tailings deposition parameters. The water management strategy related to this deposition plan is presented in the water management plan. This plan does not consider the in-pit amendment process, which would require an update to the tailings deposition strategy and plan” (Page 31).

At the time that the 2018 Annual Report was prepared, approval to deposit tailings into the mined-out Goose and Portage pits had not been received. The addition of tailings to the pits will represent a significant change to the water balance quality modeling predictions, and may have a bearing on the treatment strategy that will be required to reduce the identified parameters of concern (aluminium, arsenic, cadmium, chromium, copper, iron, mercury, nickel, lead, selenium, fluoride, and total ammonia may require treatment to reach CCME criteria). The Proponent has identified the need for treatment, and has outlined potential candidate treatment approaches, noting in the Annual Report (Page 59) that treatment could be undertaken at the South Cell Reclaim Pond prior to its transfer to Portage Pit.

Once the tailings management strategy changes to in-pit disposal, it will be necessary to re-visit the modeling and water balance/water quality predictions. It is not clear if there would be the opportunity to treat contaminants in waste streams prior to discharge into the pits, which would achieve the most efficient reductions, or if a post-flooding approach would be taken.



ECCC acknowledges that the 2018 Annual Report information is based on conditions at the time of preparation and submission of the report; however, the anticipated change in tailings disposal and associated effects on water management raises questions on the plans for treatment.

Recommendation 2: ECCC recommends that the Proponent clarify the approach to updating plans and identifying treatment options.

Agnico Eagle's Response:

Agnico has provided a Pore Water Quality Program, an updated Waste Rock and Tailings Management, a Groundwater Management Plan and an Interim Closure and Reclamation Plan (ICRP) in light of in-pit tailings disposal. These plans were approved by the NWB on October 21. In the approval letter, action items were identified and updated management plans will be submitted as part of the 2019 Annual Report. As per the NWB Reasons for Decision document related to the in-pit disposal approval, an updated Water Management Plan will be submitted as part of the 2019 Annual Report. This updated plan will include water quality forecast, water balance, and water treatment requirements at closure associated with the in-pit tailings deposition with a particular focus on total dissolved solids and high-sulphate wastewater. The Pore Water Quality Monitoring Program is also to be incorporated into the Water Management Plan, Water Quality and Flow Monitoring Plan, and Aquatic Effects Management Plan, whose updated versions are to be submitted with the subsequent annual report.

1.2.3 Errata

References: Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project – 2018 Annual Report, Figure 15; Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project – 2018 Annual Report, Appendix 8: Meadowbank 2018 Water Management Report and Plan, Section ## and Appendix C: Technical Note - Meadowbank Water Quality Forecasting Update for the 2018 Water Management Plan Section 3.0.

Comment: ECCC notes the following:

- Figure 15 (Page 86) in the Meadowbank Gold Project – 2018 Annual Report is very dark and provides no legible landmarks for orientation.
- Page 10 of the 2018 Water Management Report and Plan states that, “the long-term mean annual air temperature for Meadowbank is estimated to be approximately 11.1°C.” ECCC notes that the long-term mean annual air temperature for Baker Lake, which is within 0.6 °C of the mine site, is 11.3°C



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(http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?searchType=stnName&txtStationName=Baker+Lake&searchMethod=contains&txtCentralLatMin=0&txtCentralLatSec=0&txtCentralLongMin=0&txtCentralLongSec=0&stnID=1709&dispBack=1)

- ECCC notes that the MDMER numbers for CN and As in Table 2-2 (Page 8) of the Water Management Report and Plan, Appendix C: Technical Note - Meadowbank Water Quality Forecasting Update for the 2018 Water Management Plan, will be changing and the criteria shown for Ni of 0.025 mg/L should be corrected to 0.5 mg/L.

Recommendation 3: ECCC recommends that the Proponent correct the items mentioned above.

Agnico Eagle's Response:

Agnico acknowledges ECCC's recommendation and will ensure the errata found will be corrected in the 2019 Annual Report.

1.2.4 Rock Garden

References: Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project – 2018 Annual Report, Appendix 17: Meadowbank Gold Mine Waste Rock and Tailings Management Report & Plan, Table 5-1

Comment: Table 5.1 show that, 100% of waste rock type in the “Rock Garden” is 100% potentially acid generating (PAG) (“Rock Garden Waste Rock (about 100% of PAG) 0.3 Mt” [Page 24]).

Details regarding the “Rock Garden,” including the location, are unclear. If the “Rock Garden” is on the surface and contains 100% PAG rocks, there may be a potential for acid rock drainage (ARD).

Recommendation 4: ECCC recommends that the Proponent clarify what is meant by “Rock Garden” including where it is located, and if located on the surface, provide mitigation to manage any potential ARD.

Agnico Eagle's Response:

The rock garden is part of the closure and reclamation plan and is located in the Goose Pit vicinity. The construction of boulder garden, reef and shoal features within the dewatered basins were proposed to increase habitat value. Work will be required at closure to finalise the rock garden. There was a typo in the management plan as this material should have been indicated as being NAG and not PAG.



1.2.5 Control Strategies for Acid Rock Drainage – Cover Design

References: Agnico Eagle Mines Limited. 2019. Meadowbank Gold Project - 2018 Annual Report, Appendix 17: Meadowbank Gold Mine Waste Rock and Tailings Management Report & Plan, Section 7

Comment: The Proponent stated that the ARD control strategies retained at the Meadowbank Gold Mine are freeze control and climate control strategies. These strategies involve placing a sufficiently thick cover of non-potential acid generating (NAG) waste rock over the PAG material to provide an insulation protection so that the PAG material stays frozen while the active layer is maintained within the NAG material.

ECCC agrees that the placing of NAG rock cover over PAG rock will provide an insulating protection. However, the Proponent did not indicate the thickness of cover or the depth of the active layer and states that:

“In areas where the active layer extends into the tailings material, the thawed layer should be limited to the upper 30 cm of the tailings mass and saturation of the tailings should remain above 85% to limit oxidation of the tailings” (Page 39).

ECCC is of the view that if the NAG cover is thicker than the depth of active layer, then this would reduce or eliminate the chance of the thawed layer intruding into the tailings mass. With the uncertainty of climate change, saturation of the top layers of the tailings mass should not be relied on as a mitigation option.

Recommendation 5: ECCC recommends that the Proponent design the cover thickness such that it is thicker than the depth of active layer.

Agnico Eagle’s Response:

The Waste Rock and Tailings Management Report & Plan (July 2019) was provided for review to the NWB on July 26, 2019. The current recommendation from ECCC was addressed by Agnico during the current review process and thus we will refer ECCC to Agnico responses submitted to NWB on September 20 and October 8, 2019. The plan was approved by the NWB on October 21. In the approval letter, action items were identified and updated management plan will be submitted as part of the 2019 Annual Report.



1.3 Nunavut Water Board (NWB)

1.3.1 Operating Condition of Dike

Recommendation 1: Clarify how a “normal operating condition” is determined in Table 3.1. Operating Condition of Dike at Meadowbank of the 2018 Annual Report.

Agnico Eagle’s Response:

Normal operating condition for each structure are defined in the Operation, Maintenance and Surveillance (OMS) manual of the structure which is updated on an annual basis and submitted as part of the annual report (Appendix 51 of the 2018 Annual Report). Green level mean that the performance of the structure is per normal operating condition. This information can be found in Section 5 Operations of the manual in the Trigger Action Response Plan (TARP) Tables 5-4 to 5-8.

1.3.2 CREMP

Recommendation 2: Follow the recommendations outlined in section 8.12.3.1.1 Meadowbank CREMP of the 2018 Annual Report.

Agnico Eagle’s Response:

Agnico has followed all the recommendations outlined in Section 8.12.3.1.1 of the 2018 Annual Report. Results will be provided in 2019 Annual Report.

1.3.3 Drawings

Recommendation 3: Ensure all submitted drawings for engineered facilities are signed and sealed by an Engineer.

Agnico Eagle’s Response:

It is Agnico’s practices to ensure all design and construction drawings submitted are signed and sealed by a NAPEG Engineer as required by the Water License 2AM-MEA1526 and 2AM-WTP1826.

1.3.4 Geotechnical inspections

Recommendation 4: It is noted that the recommendations of the geotechnical inspections mainly include further monitoring of the structures. However, Table 5: Summary of Recommendations and Priority Levels from the 2018 Geotechnical Inspection assigns priority levels as high as P-2, which means “(i)f not corrected could likely result in structure safety issues leading to injury, environmental impact, or significant regulatory enforcement; or, a repetitive deficiency that



demonstrates a systematic breakdown of procedures”. Please clarify the discrepancy between the recommendations to monitor and assigned P-2 priority level to some structures.

Agnico Eagle’s Response:

The geotechnical inspector’s intent was to emphasise the importance of continuing the ongoing monitoring and inspection program. It is not implying that the current monitoring and inspection program need correction. This discrepancy between priority rating and intent of the recommendation will be fixed in the 2019 annual inspection report submitted with the annual report.

1.3.5 Geotechnical inspections

Recommendation 5: Provide the list and timeline for the follow-up actions addressing the deficiencies identified by the geotechnical inspection. The follow-up actions are to include relevant measures to correct deficiencies in facilities assigned the P-2 priority level.

Agnico Eagle’s Response:

Please find attached a list of follow-up action for P2 priority level as well as the action plan and the timeline regarding the 2018 recommendations identified by the geotechnical inspection. Similar table will be implemented in the 2019 annual report submission.



Location	Priority	Recommendation	Action Plan / Follow-up	Status	Due Date
Bay-Goose Dike	P2	Limited evidence of seepage is observed at the downstream toe of the North Channel, Channel 1, and Channel 3. The instrumentation data and field observations seem to indicate that seepage occurs at these locations but reports directly to the Pits instead of the downstream toe area. A 4 m rise in pore water pressure was observed in the vicinity of Channels 1 and 2 and this area needs to be closely monitored in the following years. The designer must be advised in the event of significant variations in accordance with the OMS manual.	This area was flagged in the data review. The designer will be informed of such events in the future.	Completed	-
Bay-Goose Dike	P2	The piezometers in the North Channel show a pressure build-up with the drilling operations associated with the freezing of the nearby pit wall, which needs to be closely monitored to verify the interpretation of the freeze-back. The designer must be advised in the event of significant variations in accordance with the OMS manual.	This area was flagged in the data review. The designer will be informed of such events in the future.	Completed	-
Central Dike	P2	It is recommended to clean the angular granular material in direct contact with the LLDPE liner along the deposition points at STA. 1+050 and 0+280 approximately before resuming the deposition activity within the South Cell, in order to avoid pushing the angular material into the LLDPE which could cause punctures. A procedure should be prepared, communicated to all concerned workers, and added to the OMS manual.	Tailings deposition has been resumed and these areas have been covered with tailings. The granular material was not removed at the time.	Closed	-
Escher #3	P2	The north access of Escher #3 is built on a steep slope that seems undercut at its toe. It is recommended to change the access, as this poses an important geotechnical risk.	This access was closed.	Completed	-
Baker Lake Fuel Farm	P2	A hole in the exposed geomembrane (300 mm diameter hole) was observed at Baker Lake on the south southwestern corner of Tank 3 at the top of the slope. The hole in the geomembrane should be repaired to ensure a good performance of the retention basin. It is also recommended to cover the exposed area with geotextile and fill material to re-establish the liner protection.	Fill material was added to re-establish the liner protection. The hole will be repaired in Spring 2020.	Ongoing	Spring 2020
Baker Lake Fuel Farm	P2	The bituminous geomembrane around the tanks of the 20 Jet A fuel tanks at Baker Lake is damaged by the jet A fuel (melting). It is recommended to remain vigilant during the freshet and throughout the year to manage water accumulated within the bermed area. It is recommended that AEM sample the liner for performance testing by a geosynthetics laboratory and take appropriate measures to protect the environment.	Water accumulation is monitored on a regular basis during freshet and pumped out in accordance with the Type A Water License 2AM-MEA-156.	Closed	-
Landfarm	P2	The landfarm lies over a natural steep slope covered by rockfill as a pad made to operate the landfarm. The slope is considered at risk for high deformation to slope failure. The risk will increase as the water level in the South Cell raises. Signs of superficial slope failure were observed during the inspection. It is recommended to watch out for signs of instability and to be prepared to close off the area if need be. Workers who access the area should be informed of the potential risk and be trained to recognize signs of instability.	The unstable areas were bermed off and are now inaccessible to workers.	Completed	-

2 Whale Tail – 2AM-WTP1826

2.1 Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

2.1.1 Lake Level Monitoring

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report. Section 4.2.2

Comment: Whale Tail Lake South Basin, Whale Tail Lake North Basin, and Mammoth Lake water levels were monitored on a weekly basis, during open water season and weather permitting. 2018 water level results were reported as a range and average for each lake.



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Recommendation 1: CIRNAC requests in the 2018 annual report, individual water level measurements are presented for each lake in tabular and graphical form for the NWB to review.

Agnico Eagle's Response:

Table and graphic below presented the water level for Whale Tail Lake North Basin, Whale Tail Lake South Basin and Mammoth Lake in 2018. Similar information will be provided in the 2019 Annual Report.

Date	Whale Tail Lake North Basin (masl)	Whale Tail Lake South Basin (masl)	Mammoth Lake (masl)
Code Identification	WTN-Survey	WTS-Survey	MAM-Survey
2018-05-24	152.58		
2018-05-27	152.64		
2018-05-28	152.65		
2018-05-29	152.66		
2018-05-30	152.66		
2018-06-01	152.68		
2018-06-02	152.71		
2018-06-04	152.65		
2018-06-06	152.53		
2018-06-08	152.63		
2018-06-09	152.65		
2018-06-11	152.71		
2018-06-12	152.89		
2018-06-13	152.72		
2018-06-16	153.03		
2018-06-16	153.03		152.88
2018-06-19	153.04		152.84
2018-06-20	153.01		
2018-06-21	153.02		
2018-06-22	153.01		152.78
2018-06-24	152.98		
2018-06-26	152.95		
2018-06-26	152.96		152.73
2018-06-29	152.93		152.71
2018-06-30	152.93		
2018-07-01	152.92		152.71
2018-07-02	152.91		
2018-07-03	152.89		152.65
2018-07-04	152.88		
2018-07-05	152.89		152.64



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2018-07-06	152.88		
2018-07-07	152.85		152.63
2018-07-08	152.89		
2018-07-09	152.86		152.63
2018-07-10	152.87		
2018-07-11	152.85		152.63
2018-07-13	152.83		
2018-07-14	152.82		152.56
2018-07-15	152.79		152.55
2018-07-16	152.79		
2018-07-17	152.80		152.56
2018-07-18	152.78		
2018-07-19	152.77		152.49
2018-07-20	152.77		
2018-07-21	152.76		152.45
2018-07-22	152.77		
2018-07-23	152.75		152.44
2018-07-24	152.75		
2018-07-25	152.74		152.44
2018-07-28	152.75		152.86
2018-07-29	152.73		
2018-07-30	152.73		152.39
2018-07-31	152.71		
2018-08-01	152.72		152.41
2018-08-03	152.71	152.72	152.37
2018-08-04	152.68	152.71	
2018-08-05	152.70	152.70	152.40
2018-08-06	152.69	152.68	
2018-08-07	152.68	152.68	152.33
2018-08-08	152.68	152.68	
2018-08-10	152.68	152.68	
2018-08-11	152.68	152.68	152.42
2018-08-12	152.70	152.71	
2018-08-14	152.69	152.71	152.38
2018-08-15	152.70	152.72	
2018-08-16	152.67	152.67	
2018-08-18	152.69	152.68	152.38
2018-08-20	152.62	152.70	
2018-08-21	152.68	152.69	
2018-08-22	152.67	152.71	152.39
2018-08-25	152.66	152.69	152.36
2018-08-26	152.67	152.68	
2018-08-28			152.36
2018-08-28	152.63	152.69	



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2018-08-29	152.64	152.70	
2018-08-30	152.64	152.68	
2018-08-31	152.63	152.69	152.34
2018-09-01	152.62	152.66	
2018-09-02	152.62	152.65	
2018-09-03	152.63	152.65	152.35
2018-09-08	152.68	152.67	
2018-09-11	152.67	152.74	
2018-09-12	152.70	152.76	
2018-09-15	152.71	152.77	
2018-09-16	152.68	152.75	
2018-09-18	152.72	152.72	
2018-09-19	152.73	152.72	
2018-09-21	152.74	152.77	152.37
2018-09-22	152.75	152.74	
2018-09-23	152.76	152.79	
2018-09-24	152.75	152.77	
2018-09-25	152.73	152.72	
2018-09-26	152.68	152.78	
2018-09-27	152.71	152.77	
2018-09-28	152.70	152.73	
2018-09-29	152.67	152.71	
2018-09-30	152.65	152.69	
2018-10-01	152.66	152.72	
2018-10-08	152.67	152.70	
2018-10-08	152.67	152.70	
2018-10-31	152.69	152.69	
2018-12-02	152.94	152.81	152.43
2018-12-08	152.94	152.78	
2018-12-17	152.72	152.60	152.40



2.1.2 Quarry 1 Seepage Analysis

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report. Section 8.5.8.2.5

Comment: In the 2018 Annual Report, AEM reported:

In 2018 water inflow from Whale Tail Lake into Quarry 1 was observed. This water was managed by pumping it into AP-5. A total of 232,870 m³ of seepage water was managed this way.

Analysis of Quarry 1 seepage was not reported in Section 8.5.8.2.5 of the 2018 Annual Report.

Recommendation 2: CIRNAC requests that the 2018 Quarry 1 seepage analysis be submitted to the NWB for review.

Agnico Eagle's Response:

Results of Quarry 1 were taken in 2018 and results are provided in the Table below. It should be noted that it was impossible to sample only the water seeping, assumed to be from the Whale Tail North lake, into Quarry 1 in 2018 due to the accessibility and safety concern. Water in Quarry 1 may also contain freshet water and surface runoff.



Parameter	Sample Date	21-08-2018	26-08-2018	30-08-2018	02-09-2018	04-09-2018	10-09-2018	16-09-2018	24-09-2018	01-10-2018	08-10-2018	15-10-2018	29-10-2018	05-11-2018
	Unit													
Field Measured														
pH	pH units	-	-	7.44	6.04	-	-	-	6.38	6.51	7.06	7.22	7.50	-
Turbidity	NTU	-	-	13.33	17.4	-	-	-	7.72	8.62	6.45	5.47	4.99	-
Conventional Parameters														
Hardness	mg CaCO ₃ /L	-	41	34	33	32	31	32	43	59	58	48	85	85
Nitrate	mg/L	-	0.63	0.13	0.14	0.34	0.34	0.63	0.93	1.14	0.34	0.48	3.65	0.98
Nitrite	mg/L	-	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	0.02	0.08	0.03
Total alkalinity	mg CaCO ₃ /L	-	10	12	12	11	15	15	15	16	14	15	30	23
Total ammonia	mg/L	0.28	0.29	0.03	0.02	0.09	0.41	0.34	0.46	0.53	0.19	0.23	3.63	0.82
Total dissolved solids	mg/L	58	72	57	53	63	68	69	84	95	82	94	128	105
Total suspended solids	mg/L	110	41	7	8	5	24	24	24	2	8	< 1	2	30
Major Ions														
Chloride	mg/L	12.9	11.9	11.8	12.2	15	15	16.3	23.9	30.5	29.1	34.6	39.8	38.6
Sulphate	mg/L	-	8	10.7	8.7	9.2	8.8	10.1	12.4	11.1	6.4	5.9	11.2	9.0
Total Metals														
Aluminum	mg/L	-	2.03	0.421	0.546	0.336	0.47	0.93	0.421	0.437	0.472	0.167	0.192	1.01
Arsenic	mg/L	0.0088	0.0151	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0034	0.0038	0.0035	< 0.0005	0.0019	0.0089
Barium	mg/L	-	0.0419	0.0215	0.0228	0.0215	0.0291	0.0347	0.0348	0.0383	0.0424	0.0317	0.0512	0.0481
Cadmium	mg/L	-	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00028	0.00002
Chromium	mg/L	-	0.0086	0.0039	0.0028	0.0017	0.0014	0.0039	0.002	0.0017	0.002	< 0.0006	< 0.0006	0.0033
Copper	mg/L	0.0089	0.0062	0.0016	0.0019	0.0019	0.0042	0.0016	0.0017	0.005	0.0017	0.0011	0.0026	0.0034
Iron	mg/L	-	4.25	0.6	0.63	0.52	1.02	3.11	0.82	0.48	0.87	0.24	0.33	2.26
Lead	mg/L	0.0021	0.0109	< 0.0003	0.0053	< 0.0003	< 0.0003	< 0.0003	0.0035	0.0009	0.0005	< 0.0003	< 0.0003	0.0065
Manganese	mg/L	-	0.0888	0.0721	0.059	0.0586	0.048	0.0539	0.0447	0.0511	0.0422	0.0299	0.0265	0.0455
Mercury	mg/L	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	-	0.0027	0.0014	0.0013	0.0017	0.0027	0.0095	0.0252	0.0073	0.0012	0.0006	0.1019	0.0234
Nickel	mg/L	0.0125	0.0063	0.0039	0.0044	0.0048	0.004	0.0044	0.0035	0.0043	0.0044	0.0031	0.0038	0.0037
Selenium	mg/L	-	< 0.0005	0.0011	0.0007	0.001	0.0007	0.001	< 0.0005	< 0.0005	< 0.0005	0.001	0.0017	< 0.0005
Silver	mg/L	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Zinc	mg/L	0.014	0.005	0.004	0.001	0.004	0.003	0.003	0.003	0.01	0.008	0.003	0.001	0.009



2.1.3 Seeps and Groundwater Monitoring

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report; Appendix 1 – Meadowbank and Whale Tail 2018 Annual Report Table

Comment: Construction activities commenced at the Whale Tail Site in 2018, including operations of the starter pit within the Whale Tail Pit footprint. Section I Items 15 and 16 of the water licence indicates “*Seepage at Pit Wall and Pit Wall Freeze/Thaw and Permafrost Aggradation*” shall be monitored quarterly. Schedule I Table 2 of the water licence states seeps are to be monitored monthly or as found; the results and interpretation of the seepage monitoring shall be submitted in the Annual Report. AEM reported that seep monitoring was “*not applicable for the 2018 Annual Report.*”

Groundwater wells are to be monitored annually and the results and interpretation provided in the Annual report, as per Schedule I Table 2 and Schedule B Item 15, respectively. AEM reported that “*groundwater monitoring in 2018 continued in the baseline phase.*”

Recommendation 3: CIRNAC requests the 2018 seepage and groundwater results, pursuant to the water licence, are submitted to the NWB for review

Agnico Eagle’s Response:

In 2018, water was only observed seeping from Quarry 1 as detailed in Section 2.1.2. Agnico also provided the Whale Tail Groundwater Management Monitoring Report in Appendix 38 of the 2018 Annual Report. Agnico will refer to this report which presented the 2018 monitoring result including the Westbay multi-level well system.

2.1.4 Hydraulic Conductivity

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report Section 8.7.2; Appendix 38 – Whale Tail 2018 Groundwater Management Monitoring report; Agnico Eagle Whale Tail Pit Project Groundwater Monitoring Plan Version 2.1, February 2019

Comment: Golder states in the Whale Tail 2018 Groundwater Management Monitoring report:

...A hydrogeological testing program was conducted between 7 and 9 of December 2018...The testing was conducted in deep bedrock in the subpermafrost zone over a depth interval of about 375 m to 626 m below ground surface. All three of these tests resulted in estimated hydraulic conductivities of less than 1×10^{-10} m/s... the one high value of hydraulic conductivity over a 30 m zone from a depth of about 436 m to 466 m in deep



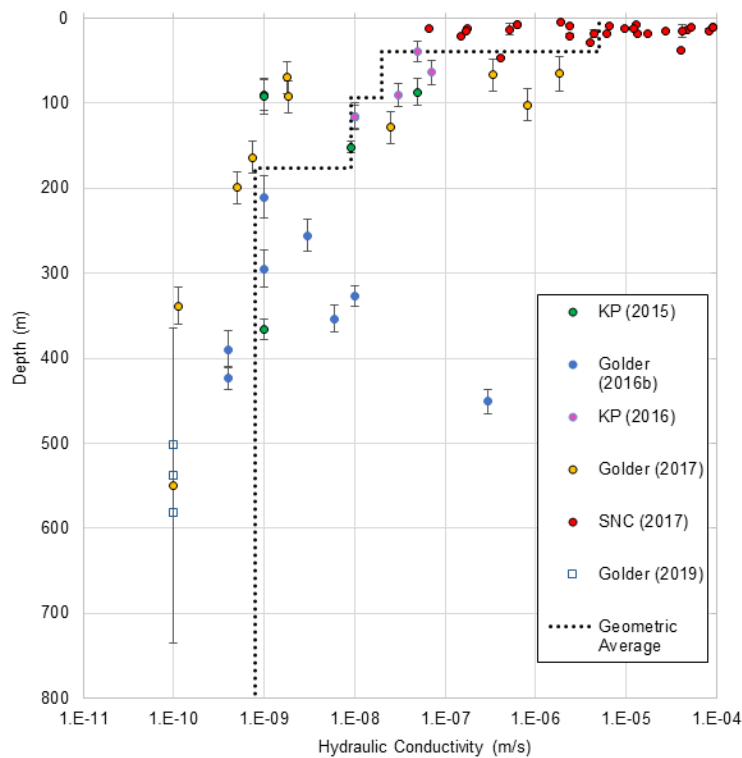
bedrock that was measured during the drilling of the borehole for the Westbay multi-level well is likely an isolated zone of jointing near the test interval...

The amount of jointing at the Whale Tail Site is unknown. Permafrost restricts groundwater flow. However, Groundwater Monitoring Plan Version 2.1 projects the majority of permafrost under the pit lake will thaw after closure.

Recommendation 4: CIRNAC therefore requests Whale Tail models use the measured higher hydraulic conductivity to account for the unknown amount of jointing at the Whale Tail Site

Agnico Eagle's Response:

Since submission of the FEIS for the Approved project, a significant number of additional measurements of bedrock hydraulic conductivity have been made to verify assumptions in the modelling and improve the accuracy of model predictions. Figure below presents a summary of measurements made to date, which includes 58 measurements in unfrozen rock between 2015 and 2019.



Summary of Hydraulic Conductivity Test Results



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The measurement of 1×10^{-7} m/s represents one test value in a larger data set used to characterize the representative hydraulic conductivity of the bedrock near the Whale Tail Pit. While additional data is available and used to confirm the bedrock conductivity, the single measurement of 1×10^{-7} m/s is still used in the assessment of hydraulic conductivity of bedrock (i.e., it was not superseded by the new data); however, the weight of any individual measurement (such as this one) decreases as the size of the data set used to assess the bedrock hydraulic conductivity increases. Wide distribution in hydraulic conductivity measurements are common in bedrock and reflect the natural local variability in bedrock nearby the test interval. Geometric averages were calculated from the test data to estimate the expected properties of the bedrock, and then, for the deeper bedrock, the averages were increased by a factor 3 to provide additional conservatism.

Application of the single measurement of 1×10^{-7} m/s to the entire bedrock unit would be a misrepresentation of the bedrock flow system, as at each of the other 13 measurements points for the bedrock below 200 metres depth the hydraulic conductivity test results were at least an order of magnitude lower (1×10^{-8} m/s or lower). Many of the test results were at the lower limit of the test methodology, meaning the actual hydraulic conductivity would be lower than the reported test value.

Although not considered to be realistic or appropriate given the larger data set now available, if a value of 1×10^{-7} m/s was assumed for the entire bedrock unit during post closure, the long-term post closure discharge from the pit lake would be expected to approximately 35 m³/day. This assumes a vertical hydraulic gradient of 0.008 m/m (maximum measured value from Westbay monitoring well) and an approximate flooded pit lake area of approximately 0.5 km². This flux remains negligible relative to the surface water exchange into post closure Whale Tail Lake.

2.1.5 Horizontal Groundwater Flow

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report Section 8.7.2; Appendix 38 – Whale Tail 2018 Groundwater Management Monitoring report; Agnico Eagle Whale Tail Pit Project Groundwater Monitoring Plan Version 2.1, February 2019; CIRNAC comments on Groundwater Monitoring Plan Version 2.1, March 1, 2019

Comment: Section 8.7.2 of the 2018 Annual Report states:

...horizontal groundwater flow below the active layer is restricted by permafrost in at least the upper 425 m.



Whale Tail site measurements in the 2018 Groundwater Management Monitoring report indicates:

...temperature profiles observed in thermistors between Nemo Lake and Whale Tail lake are showing signs of permafrost degradation below the active layer.

And that 212,580 m³ of water was recorded to flow:

...from Whale Tail Lake to Quarry 1 through non-cohesive overburden that was most likely fractured after blasting the Quarry 1 top benches.

The Groundwater Monitoring Plan Version 2.1 relies heavily on the assumption of continuous permafrost surrounding the Whale Tail Lake talik thereby impeding groundwater flow. However, 212,580 m³ of water was measured to flow horizontally from Whale Tail Lake to Quarry 1 through non-cohesive overburden. There are currently no groundwater wells installed nor monitored in the active layer between Nemo Lake and Whale Tail Pit.

Recommendation 5: CIRNAC recommends the thresholds for, and commitment to, installing groundwater monitoring wells in the active layer are specified in the groundwater adaptive management plan (Section 3.3) of the Groundwater Monitoring Plan

Agnico Eagle's Response:

Agnico Eagle agree with CIRNAC to add the installation of additional groundwater well in the Adaptive Management section of the Table 4: Groundwater Adaptive Management Plan but considers that the thresholds for the installation of additional monitoring is already part of the Groundwater Monitoring Plan. This threshold should be based on the temperature profile sentinel thermistors. In order to clarify threshold Agnico Eagle is proposed the following change to the plan.

Temperature profile observed in the sentinel thermistors (AMQ17-1233 and AMQ17-337) located between Nemo Lake and Whale Tail Lake are showing sign of permafrost degradation below the active layer.	<ul style="list-style-type: none"> Horizontal groundwater flow observed between Whale Tail Pit north wall and Nemo Lake. Potential for groundwater seepage to pit sump/pit lake. Increased water treatment requirement. 	Unlikely	<p>Assess situation by performing additional inspection, monitoring and field investigation;</p> <p>Review thermal model, hydrogeological model, Site-wide water balance and site-wide water quality forecast with updated data;</p> <p>Install new thermistor(s) to evaluate the extent of the permafrost degradation; and characterize groundwater quality if deemed required following the assessment of the situation</p> <p>Evaluate additional treatment and storage capacity required to manage flow in operation (e.g. storing water in the pit);</p> <p>Evaluate potential long-term mitigations as depressurization wells, grouting, thermosiphon</p> <p>Review water management strategy.</p>
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Based on these proposed changes to the plan, Agnico Eagle does not consider that the observation reported by CIRNAC triggers the requirement for additional instrumentation.

Permafrost degradation between Nemo Lake and Whale Tail Pit

Agnico Eagle was forecasting a limited degradation of the permafrost in this project area following the water elevation raising upstream of the North East Dike. Agnico Eagle would like to point out the thermistor profile is not suggesting any active flow between the Nemo Lake and the Whale Tail Pit as degradation is happening from the surface and is progressive and timing of the temperature rise is correlating with the raise of the water elevation upstream of the North East Dike.

Quarry 1 inflows

Agnico Eagle would like to clarify that the non-cohesive overburden described in the annual report could be defined as a mix of boulder, lake bed sediment and residual waste rock material from the surrounding blasting activity. The observed water flow was located in a small topographic depression between the Quarry 1 and the Whale Tail North Basin. This surface water movement should not be considered as a groundwater flow in any case. The following picture is showing the surface water flowing within the Quarry 1. The surface water flow was observed within the footprint of the future Whale Tail Pit and in a close distance from the Whale Tail Lake. Agnico Eagle does not consider that this event suggests the installation of any additional instrumentation as the Whale Tail Lake North Basin has been dewatered and the flow stopped since the water level of the Whale Tail Lake North Basin was below the elevation of the small depression by which the water was flowing in the Quarry 1.



Water flowing within the Quarry 1



With respect to thermal monitoring between Nemo Lake and Whale Tail Pit, Section 3.1 of Groundwater Monitoring Plan Version 2.1 states:

...thermal monitoring will continue at each of the installed thermistors to monitor the presence of permafrost below the active layer during construction and operations phases. The monitoring will continue until such time as a thermistor is destroyed by active mining. Two thermistors, AMQ17-1233 and AMQ17-1337, are located outside of the pit footprint and will be used to monitor permafrost conditions between Nemo Lake and Whale Tail Pit. The thermistor data will be used to verify the presence of permafrost and the restricted horizontal movement of groundwater below the active layer due to permafrost in the upper 425 to 495 m of bedrock.

CIRNAC understands that thermal monitoring will occur at each of the installed thermistors during construction and operation phases, and that thermistors AMQ17-1277A and AMQ15-452 will be destroyed during active mining as they are located within the Whale Tail Pit footprint. As thermistors AMQ17-1277A and AMQ15-452 are positioned to validate AEM's model of pit wall freeze/thaw and permafrost aggradation (Part I Item 15 of the 2AM-WTP1826 water licence) as it pertains to horizontal groundwater flow.

Recommendation 6: CIRNAC recommends replacement of thermistors AMQ17-1277A and AMQ15-452 in the vicinity of the Whale Tail Pit 'north wall' to detect pit wall freeze/thaw, and the proposed replacement thermistor locations and depths be specified in AEM's Groundwater Monitoring Plan as part of adaptive management.

Agnico Eagle's Response:

Agnico will consider this recommendation in the update of the Groundwater Monitoring Plan.

Relevant thermal monitoring during operations and closure is essential to validate groundwater assumptions at the Whale Tail Pit Project. CIRNAC appreciates the thermistor data to validate the horizontal hydrogeological profile assumptions that continuous permafrost surrounding the Whale Tail Lake talik negates horizontal hydrogeological flow, and to monitor changes in active layer depth. The thermistors are also used to monitor the potential horizontal groundwater flow pathway from Nemo Lake (of higher measured water level) to Whale Tail Pit (of lower measured water level) via the active layer – however only one of the four thermistors (AMQ17-1337) has temperature readings in the active layer.

Recommendation 7: CIRNAC recommends future thermistors are installed with temperature readings both within and below the active layer.



Agnico Eagle's Response:

Agnico will take into consideration CIRNAC's recommendation in the installation of future thermistors and assess feasibility within the project definition.

CIRNAC appreciates the addition of thermistors AMQ17-1337, AMQ17-1233, AMQ17-1277A and AMQ15-452, between Nemo Lake and Whale Tail Pit, to Groundwater Monitoring Plan Version 2.1.

Recommendation 8: CIRNAC recommends the Groundwater Monitoring Plan state the thermistors have, at minimum, a quarterly frequency of observations as per Part I Item 15 of the 2AM-WTP1826 water licence, and that the thermistor data is submitted in the Annual Report.

Agnico Eagle's Response:

Agnico acknowledges CIRNAC'S recommendation and will add the requested information in the next review of the Groundwater Monitoring Plan.

2.1.6 Before operations site photos

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report Section 9.1.2

Comment: Schedule B Item 17 of the water licence requires:

...photographic records of site conditions before and after completion of operations...

Recommendation 9: As construction activities at the Whale Tail site are currently underway, CIRNAC requests a summary document of before operations photos be compiled for each activity area of the Whale Tail site to inform closure and reclamation plans. The summary document should be submitted to the NWB for review.

Agnico Eagle's Response:

Agnico provided the requested information in the Construction Summary Report required by Part D Item 15 for each construction activity required by Part D Item 1 of the Water License 2AM-WTP1826.

2.1.7 Groundwater Monitoring Plan

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report; Agnico Eagle Whale Tail Pit Project Groundwater Monitoring Plan Version 2.1, February 2019



Comment: Due to AEM's high reliance on seeps to validate the horizontal and vertical groundwater flow models and inform the adaptive management plan, CIRNAC is adamant that the seep minimum frequency of observations and monitoring parameters adheres to Part I Item 15 and Schedule I Table 2 of the 2AM-WTP1826 water licence. Specifically that the minimum frequency of observation for seepage at the pit wall is quarterly, and that seeps shall be monitored monthly or as found during operations for Group 1 parameters.

Recommendation 10: Considering the uncertainties and risks around long term water treatment, CIRNAC also requests seeps in the vicinity of lithologies with high acid rock draining and metal leaching (ARD/ML) potential are highlighted in reporting tables.

Agnico Eagle's Response:

Agnico acknowledge CIRNAC's recommendation and will highlight the requested information in the next report.

CIRNAC acknowledges the 2016 Westbay Multiport Well System has been added to Groundwater Monitoring Plan Version 2.1, and that the well will be sampled and the hydraulic gradient monitored on an annual basis. CIRNAC would like to confirm that all 6 ports of the 2016 Westbay Multiport Well System will be sampled and the hydraulic gradient monitored annually.

Recommendation 11: CIRNAC would like to confirm that all 6 ports of the 2016 Westbay Multiport Well System will be sampled and the hydraulic gradient monitored annually.

Agnico Eagle's Response:

It is Agnico's intent to operate as per the approved Groundwater Management Plan Version 2.1. Thus, Agnico intends to complete annually the Westbay Multiport Well system sampling and monitor the hydraulic gradient. In 2019, only Port 2, 3, 4 and 6 were sampled. Port 1 was not sampled because of its elevated residual fluorescein and based on the limited development completed to date but field measurements of fluorescein content and electrical conductivity were recorded. Port 5 was meant to measure hydraulic pressure only, it was not intended for collection of groundwater samples. Result of the 2019 campaign will be provided in the 2019 Annual Report.

CIRNAC appreciates the thresholds and triggers that are included in Section 3.3 and Table 4 of Groundwater Monitoring Plan Version 2.1. CIRNAC is not comfortable with thresholds for groundwater quality parameters set by six-month averaging period of observations as gradual increases in parameter concentrations would not trigger adaptive management. CIRNAC also notes Groundwater Monitoring Plan Version 2.1 does not include a comparable threshold for arsenic concentrations. As arsenic is identified as an important element of concern, an arsenic



threshold would allow for the early identification of potential water quality issues that might arise during the closure and post-closure phases.

Recommendation 12: CIRNAC therefore recommends threshold and trigger values are fixed numbers as agreed upon by the NWB and interested parties, and that an arsenic concentration threshold and trigger be included in the plan.

Agnico Eagle's Response:

Agnico Eagle will refer CIRNAC to the NWB Approval Letter dated April 25, 2019 'Updated Groundwater Monitoring Plan; Type "A" Water Licence No. 2AM-WTP1826, Whale Tail Pit Project; Agnico Eagle Mines Limited'.

2.1.8 Mitigation if arsenic concerns materialize

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report

Comment: CIRNAC considers model updating and calibration insufficient mitigative actions when certain thresholds are exceeded, especially when addressing scenarios of Waste Rock Storage Facility (WRSF) water discharge or Whale Tail Pit water quality exceeding predictions and/or guidelines. In the October 17, 2018 meeting with AEM, it was agreed that AEM would provide options available for mitigation if arsenic concerns materialized and that AEM would incorporate these mitigation measures in the plans being submitted under Part B Item 15 of the 2AM-WTP1826 water licence. The current versions of the plans submitted to the NWB does not contain this information, including but not limited to the ARD-ML monitoring plan, Water Quality and Flow Monitoring Plan, Water Management Plan and Waste Management Plan.

Recommendation 13: CIRNAC recommends that AEM identify which plan(s) will contain the details of the adaptive management actions for Waste Rock Storage Facility (WRSF) water discharge, and that the plan(s) are submitted with the 2018 Annual Report to the NWB for review.

Agnico Eagle's Response:

Agnico Eagle proposed to CIRNAC to address this recommendation as part of the development of the Adaptive Management Plan related to the Whale Tail Expansion Project Water Licence Amendment Process. Agnico Eagle and CIRNAC are planning to hold a workshop with the other interveners, such as ECCC and KivA, to establish the framework of the application of the adaptive management on the Whale Tail project. Agnico Eagle believes it will be more efficient to address all recommendation from CIRNAC through this platform.



2.1.9 Geotechnical investigation reports

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report

Comment: CIRNAC recognizes 2018 was important in the construction of the Whale Tail Pit Project and thorough geotechnical investigations have been carried out during the period 2014 to 2018.

Recommendation 14: CIRNAC recommends that the results of the geotechnical investigation reports be made accessible.

Agnico Eagle's Response:

Agnico will refer to the detailed engineering report submitted as part of the 60 days notice required by Water License Part D Item 1.

2.1.10 Field checks for engineering structures

References: Nunavut Water Board Water Licence No. 2AM-WTP1826; Agnico Eagle Meadowbank Gold Project 2018 Annual Report

Comment: CIRNAC was unable to locate field check narratives in the 2018 Annual Report.

Recommendation 15: CIRNAC requests AEM submit adequate field checks, in accordance to Part D – Item 14 of the Water Licence to the NWB for review, for all engineered structures listed as being in the construction phase in the submitted 2018 Annual Report.

Agnico Eagle's Response:

The construction records of the structure including QA/QC information is included in each as-built report submissions made within 90 days of completion of the structures. This information was submitted for Mammoth Dike, North-East Dike and WRSF Dike.