



## MEMORANDUM

TO Jamie Quesnel

DATE September 25, 2017

CC Ryan Vanengen, Lasha Young, Jen Range

FROM Colleen Prather, Dionne Filiatrault

REFERENCE No. 1658927\_141\_MEM\_RevE

RE: WATER MONITORING REDUCTION FRAMEWORK

### 1.0 INTRODUCTION

Agnico Eagle is committed to operating the Whale Tail Pit in an environmentally, socially, and economically responsible manner. Agnico Eagle is committed to conduct regular water quality monitoring (both on-site and in the receiving environment) consistent with the general and aquatic effects monitoring requirement of a Type A Water Licence and to increase monitoring through the adaptive management process, if warranted. Following a similar process, Agnico Eagle is proposing a framework for a reduction in monitoring and associated security, if warranted, specifically for the Post-closure phase and once multiple years of data have been collected. The purpose of this document is to outline a process whereby Agnico Eagle may submit a request for reduction in monitoring and reduction in security associated monitoring costs.

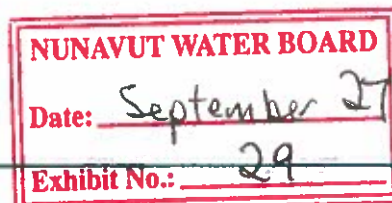
The initial security estimate for the Project covers the closure and reclamation of all Project facilities as described in the Interim Closure and Reclamation Plan developed for the Project and takes into account uncertainties around water quality, the potential for long-term treatment, and the associated long-term monitoring (i.e., up to 22 years after Closure). Agnico Eagle understands that any material change to Project Infrastructure would require an amendment to the security of the Water Licence; however, with respect to water monitoring, reductions in security<sup>1</sup> may be processed at the discretion of the Board following consultation with the parties.

### 1.1 Background

The phases of the Project were defined in the Whale Tail Pit Final Environmental Impact Statement (Volume 1, Section 1.2.2.1; Volume 8, Appendix 8-B.2 [Water Management Plan]) as follows:

- Construction Phase
  - Construction of surface facilities, including the start of dike construction, and pending regulatory approval
- Operations Phase
  - Extraction of ore and waste material, and milling of ore
- Closure Phase
  - Less than 25% mill through-put of ore; removal of non-essential site infrastructure, flooding of the mined-out open pit, and re-establishment of the natural elevation of Whale Tail Lake

<sup>1</sup> General Conditions for 2AM-MEL1631, Part C, Items 8 and 9





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- Monitoring of Whale Tail Lake and breaching of the Whale Tail Dike and Mammoth Dike when water quality meets discharge criteria
- Essential infrastructure related to water treatment, and facilities to support treatment (part of the camp, security, site roads), will remain
- Post-closure Phase
  - Treatment of water in the Whale Tail Waste Rock Storage Facility (WRSF) Pond and discharge to Mammoth Lake
  - Breaching of the Whale Tail WRSF Dike once it is demonstrated that water quality in the WRSF Pond meets regulatory closure objectives
  - Based on the Interim Closure and Reclamation Plan, Agnico Eagle proposed Post-closure to end by 2035
  - Based on uncertainty with respect to long-term water quality coming from seeps in the WRSF (Arcadis 2017<sup>2</sup>), INAC requested that Post-closure and associated monitoring extend to 2046

### 1.2 Water Quality Related Monitoring

Agnico Eagle is applying for a Type A Water Licence with a term from 2018 to 2026. Water quality related monitoring plans developed for the Whale Tail Project that covers this term include:

- Mine Waste Rock and Tailings Management Plan
- Water Quality Monitoring and Management for Dike Construction Dewatering
- Water Quality and Flow Monitoring Plan
- Aquatic Effects Management Program
- Core Receiving Environment Monitoring Program
- Groundwater Monitoring Plan
- Operational Acid Rock Drainage – Metal Leaching Sampling and Testing Plan
- Quality Assurance and Quality Control Plan

Agnico Eagle will conduct monitoring following these plans during the Construction to early Closure phases. These plans can also be carried forward into late Closure and Post-closure, but Agnico Eagle is proposing this Monitoring Reduction Framework for consideration if there is sufficient evidence to reduce monitoring, and associated security, during the Post-closure phase.

<sup>2</sup> Arcadis 2017, Reclaim Estimate for Whale Tail Pit Project, Prepared for Indigenous and Northern Affairs Canada, Revision 6, 11 September 2017.



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Assuming the Type A Water Licence application for 2018 to 2026 (covering Construction through early Closure) is accepted, an application for renewal will then be made one year prior to its expiry to extend the length of the licence. It is anticipated that the period of the renewal licence will cover the remainder of Closure and Post-closure. As part of the renewal licence application, Agnico Eagle will provide a multi-year analysis of data collected as compared the predictive models to support the future monitoring plans.

The following sections provide a framework for reduced monitoring and security.

## 2.0 PROPOSED FRAMEWORK TO REDUCE MONITORING REQUIREMENTS AND SECURITY FOR POST-CLOSURE

Requests under this framework for reduction in monitoring and associated security will be evidence based and submitted for consideration by the Board and regulatory authorities. This framework describes approved processes outside of the Type A Water Licence; however, the reduction for monitoring and associated security could also be addressed under the Type A Water Licence.

### 2.1 Monitoring Reduction Process

A final Closure and Reclamation Plan will be issued for review by the Board and regulatory parties one year prior to expiry of the Whale Tail Type A Water Licence (assuming the Board issues a Type A Water Licence). At that time, any updates to the plans listed in Section 1.2, if they are applicable to future monitoring, will also be issued. Also included with the final Closure and Reclamation Plan will be a stand-alone, multi-year analysis of water quality data collected to date, comparison of those data to the predictions, and proposed reductions to monitoring (if appropriate).

Agnico Eagle proposes a clause similar to a clause in the Meliadine Water Licence (2AM-MEL-1631) be included in the Whale Tail Water Licence. This clause states:

The Board can modify the Monitoring Program for all phases of mining as set out in Schedule I [Conditions Applying to General and Aquatic Effects Monitoring] without a public hearing. Requests for changes to the Program should be forwarded to the Board in writing and should include justification for the change<sup>3</sup>.

This framework applies to verification and general monitoring<sup>4</sup>. It should be noted that all proposed stations currently fit within the general monitoring category.

<sup>3</sup> Conditions Applying to General and Aquatic Effects Monitoring for 2AM-MEL1631, Part I, Item 21.

<sup>4</sup> Monitoring is defined as:

- **Regulated discharge monitoring** occurs at monitoring points specified in licenses or regulations. It includes discharge limits that must be achieved to maintain compliance with an authorization (i.e., Type A Water Licence or Site-specific Water Quality Objectives) or regulation (i.e., Metal Mining Effluent Regulations or Canadian Council of Ministers of the Environment). Enforcement action may be taken if discharge limits are exceeded for a parameter.
- **Verification monitoring** is carried out for operational and management purposes by Agnico. This type of monitoring provides data for decision making and builds confidence in the success of processes being used. There is no obligation to report verification monitoring results, although some monitoring locations and these results can be mentioned in environmental management plans (i.e., sampling to verify soil remediation in the landfarm, pit sump water quality testing).
- **General monitoring** is commonly included in a Water Licence specifying what is to be monitored according to a schedule<sup>4</sup>. It covers all types of monitoring (i.e., geotechnical, lake levels, etc.). This monitoring is subject to compliance assessment to confirm sampling was carried out using established protocols, included quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licensee, subject to approval by the NWB.



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For consideration by the Board and other interested parties, Agnico Eagle is proposing a framework by which the Licensee can make application for consideration for a reduction in water quality monitoring. The reduction in monitoring may include removal of parameters, reduction in frequency, and/or removal of a water quality monitoring station. It is anticipated that reduction in monitoring would not be made until there is sufficient evidence to evaluate the request; thus, reductions during Operations are not anticipated.

The rationale to determine when a reduction in monitoring could be applied will be based on critical review of the monitoring data. The suggested triggers to initiate this change, consistent with the *Metal Mining Effluent Regulations* (MMER)<sup>5</sup>, for consideration are as follows:

### 1. Removal of a Monitoring Parameter:

- 1.1. If that parameter is not used in the operations process, or if the operations do not influence that parameter then it should not be included as part of the regular laboratory monitoring package and should be removed from general monitoring at selected locations. An example of this could include monitoring of fecal or total coliform at select locations only and not routinely across all stations.
- 1.2. If a parameter result is consistently (e.g., in four or more consecutive samples [Northwest Territories Water Board 1992<sup>6</sup>] or in 12 or more consecutive samples [Government of Canada 2002]) less than the analytical detection limit (using appropriate detection limit), the parameter may be removed from general monitoring.
- 1.3. Following approval of a Licence, if a monitoring and/or management plan has been approved by the Board, and the plan has predefined triggers for the removal or reduction of a parameter, the monitoring/management plan triggers apply.

### 2. Removal of a Monitoring Station:

- 2.1. If all results from the station are consistently less than the analytical detection limits (using detection limits appropriate for the station), and it has been determined that the station is appropriately placed for the designated purpose, the station should may be removed from regular monitoring.
- 2.2. If results collected are consistently at less than 10% of predictions, and it has been determined that the station is appropriately placed for the purpose, and monitoring of the station is not required under other regulations (e.g., *Metal Mining Effluent Regulations*) the station may be removed from regular monitoring.

### 3. Reduction in Frequency of Monitoring a Station:

- 3.1. If analysis of all data collected to date from the particular station show no increasing or decreasing trend, and the station is considered appropriately placed for the designated purpose, the monitoring frequency may be reduced.
- 3.2. If analysis of all data collected to date from the particular station are as predicted (or consistently less than predicted), and the station is considered appropriately placed for the designated purpose, the monitoring frequency may be reduced.

<sup>5</sup> Government of Canada. 2002. *Metal Mining Effluent Regulations*. SOR/2002-222, current to November 18, 2012.

<sup>6</sup> Northwest Territories Water Board. 1992. *Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories*.





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- 3.3. If analysis of all data collected to date from the particular station show that results are consistently less than the guidelines, and the station is considered appropriately placed for the designated purpose, the monitoring frequency may be reduced.

For changes related to reduction of monitoring requirements (i.e., removal of parameter, removal of a monitoring station or reduction in frequency of a monitoring station), Agnico Eagle would provide the written submission to the NWB as part of the Annual Report or in a stand-alone report and would include rationale and evidence for any of the proposed changes and proposed revisions, if appropriate.

This approach is consistent with typical licence conditions whereby Agnico Eagle would be required to review the Plans and Manuals in a Licence [including, monitoring plans, AEMP, and Closure and Reclamation Plan, etc.] as required by changes in operation and/or technology and modify the Plans or Manuals accordingly. Revisions to the Plans or Manuals should incorporate design changes and adaptive engineering required and implemented during Construction [and Operations] and on the basis of actual site conditions and monitoring results over the life of the Project. [The revisions] are to be submitted in the form of an addendum to be included with the Annual Report required under the Licence and include a revisions list detailing where significant content changes are made<sup>7</sup>. In the case of monitoring reduction for Post-closure, this recommendation would come from evidence produced in the stand-alone multi-year report to be submitted with the Final Closure and Reclamation Plan.

Agnico Eagle believes the Water Licence terms and condition provides for the Board and Licensee the framework to modify monitoring requirements without the need for a public hearing in relation to a Type A Water Licence.

If in agreement with the Board and interested parties, the next step for Agnico Eagle would be to develop a detailed response plan around how data would be analyzed and the process to determine when a reduction in monitoring may occur. Following development of the details, Agnico Eagle would present and discuss with the interested parties.

## 2.2 Security Reduction as Related to Monitoring Requirements

Consistent with typical Annual Reporting requirements, Agnico Eagle would provide an updated estimate of the current restoration liability based on Project development monitoring, results of restoration research and any changes or modification to the Undertaking.<sup>8</sup>

When Agnico Eagle provides evidence to reduce the uncertainty associated with water quality, and provides a request to reduce monitoring (as described in Section 2.1), Agnico Eagle will also submit a request to reduce security associated with monitoring, including the length of time for long-term monitoring; this information may be submitted in the form of an updated security cost estimate. This evidence and updated cost estimate can be used by the Board.<sup>9</sup>

<sup>7</sup> General Conditions for 2AM-MEL1631, Part B, Item 15 and similarly Re: Conditions Applying to Abandonment, Reclamation and Closure for 2AM-MEL1631, Part J, Item 7.

<sup>8</sup> General Conditions for 2AM-MEL1631, Schedule B, Item 17.

<sup>9</sup> Conditions Applying to Security for 2AM-MEL1631, Part C, Item 8.



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Agnico Eagle proposes a condition applying to security for consideration in the Type A Water Licence. This condition is similar to practices under the Board's mandate and (as an example) a condition in the Mary River Water Licence (2AM-MRY-1325)<sup>10,11</sup>. The condition related to security reduction is as follows:

Upon receiving an updated reclamation cost estimate, the Board may on its own initiative, or upon application of the Licensee, the Minister and/or Kivalliq Inuit Association [KIA], conduct a periodic review of the outstanding reclamation liability associated with the Undertaking and may, as the Board considers appropriate, amend the amount of security held.

The Licensee may, at any time, submit to the Board for consideration and approval, a request to change the amount of security outlined in Part C, Item 1. The submission shall include supporting evidence to justify the request, and the Minister and the Kivalliq Inuit Association will be consulted by the Board during the Board's consideration of this request.

In addition, Agnico Eagle acknowledges that consistent with typical water security conditions, if the Board determines it to be necessary, or upon the request of the Licensee, the Minister and or the KIA, the board may issue further direction with respect to the process for the Board's conduct of periodic reviews of security and associated amendments to the amount of security to be furnished and maintained under the Licence.<sup>12</sup>

Also, Agnico Eagle acknowledges that at least (90) days written notice prior to any material change to any security management agreement that may affect the amount of security required by the Board would be provided to the NWB.<sup>13</sup>

### Closure

We trust the above meets your needs, if you have any questions or concerns please contact the undersigned.

**GOLDER ASSOCIATES LTD.**

**DRAFT**

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<sup>10</sup> Conditions Applying to Security for 2AM-MRY1325, Part C, Item 3

<sup>11</sup> Note – Agnico Eagle is not requesting that an annual Security review be established for the Whale Tail Pit Project.

<sup>12</sup> Conditions Applying to Security for 2AM-MEL1631, Part C, Item 9.

<sup>13</sup> Conditions Applying to Security for 2AM-MEL1631, Part C, Item 5.



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Associate, Project Director

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