



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-MEA1530/2AM-WTP1830
Our file - Notre référence
GCDocs#104600296

August 2, 2022

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's) Review of the 2021 Annual Report for Meadowbank and Whale Tail Gold Mine Projects, Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830

Dear Mr. Dwyer,

Thank you for your May 10, 2022 invitation to review the 2021 Annual Report for the Meadowbank and Whale Tail Gold Mine Projects, submitted by Agnico Eagle Mines Limited, for Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830 respectively.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the Report and its attachments pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum for the Nunavut Water Board's consideration.

CIRNAC appreciates the opportunity to participate in this review. If there are any questions, please contact John Onita at john.onita@rcaanc-cirnac.gc.ca; or (867) 975-3876 or Andrew Keim at (867) 975-4550 or andrew.keim@rcaanc-cirnac.gc.ca

Sincerely,

John Onita
Regional Water Coordinator, CIRNAC



Technical Review Memorandum

Date: August 2, 2022

To: Richard Dwyer – Manager of Licensing, Nunavut Water Board

From: John Onita – Regional Water Coordinator, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's)
Review of the 2021 Annual Report for Meadowbank and Whale Tail Gold
Mine Projects, Type A Water Licence Nos. 2AM-MEA1530 and 2AM-
WTP1830

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

Meadowbank Gold Mine Project

The Meadowbank Gold Mine is located approximately 110 kilometres by road north of Baker Lake in the Kivalliq region of Nunavut, Canada. The complex consists of the Meadowbank mine and mill, and the Whale Tail (Amaruq) satellite deposit, which is located 50 kilometres northwest of the Meadowbank mine. The project was first licensed by the Nunavut Water Board (NWB) in 2008 and the processing plant achieved commercial production in March 2010. The project involved the construction, operation, maintenance, reclamation, closure and monitoring of an open pit gold mine and milling facility. The original licence was subsequently renewed by the NWB in August 2015 and was amended in July 2018 to reflect changes to the Project to allow for additional tailings deposition and associated ore processing at the Meadowbank mine site from AEM's mining operations at the Whale Tail Pit site. The Project is governed by the current Type A Water Licence No. 2AM-MEA1530 (the Licence) and Nunavut Impact Review Board (NIRB) Project Certificate 004. Multiple amendments have been issued under Project Certificate 004 including: Amendment 001 (Nov 20, 2009) to reflect modifications associated with the all-weather access road and Proponent Project Name Change; Amendment 002 (Aug 12, 2016) to reflect development of Vault Pit Expansion Project, remove Term and Condition #48, and update Terms and Conditions #49 and 53; and Amendment 003 (21 Dec 2019) to reflect modifications of in-pit tailings disposal, new commentary to Terms and Conditions #9, 19, and 20 and addition of Term and Condition #87.

At present, the project components included in the scope of the Meadowbank Gold Mine include a Marshalling Facility at Baker Lake, and a 110-kilometre All-Weather Access Road (AWAR) between Baker Lake and the Meadowbank Gold Mine site. There are also water retention dikes constructed from mined waste rock to allow for the mining of ore beneath shallow dewatered lakes and a tailings storage facility (Second Portage Lake's northwest dewatered arm), where tailings have been deposited sub-aerially as slurry and water from



the ponds reclaimed during operation. No mining at Meadowbank occurred in 2021 since the mineral reserves were exhausted in 2019. Amaruq ore continued to be processed at the Meadowbank mill in 2020. As approved by the Water License, in-pit tailings disposal began in Goose Pit on 5 July 2019 and in Portage Pit E on 20 August 2020.

In the full year 2021, gold production increased when compared to the prior year primarily due to higher throughput resulting from improved operational performance, optimization of the processing facility and higher gold grades with deepening of the pit and the contribution from the IVR open pit.

Whale Tail Pit Project

In 2016, AEM proposed to develop the Whale Tail Pit Project to continue mine operations and milling at the Meadowbank mine. AEM initially requested that the Whale Tail Pit Project be regulated as an amendment to the Meadowbank Gold Mine Project. However, the NIRB determined that the proposed Whale Tail Pit project proposal had not been assessed as part of the original Meadowbank Gold Mine Project and, due to its location outside of the original Meadowbank Gold Mine Project footprint, the Project would require a separate screening assessment. Upon completion of the screening assessment, the NIRB determined that the Project required further assessment best facilitated through a full environmental review. The environmental review concluded on 15 March 2018 with the issuance of Project Certificate No. 008.

Additional infrastructure to support the Whale Tail Pit Project was built at the Amaruq site (truck shop/warehouse, fuel storage and an additional camp facility) and the Amaruq satellite deposit was mined as an open pit with commercial production beginning in September 2019. Amaruq ore is transported using long haul off-road type trucks to the mill at the Meadowbank site for processing. All tailings generated from Amaruq ore are also deposited at the Meadowbank site.

The Amaruq Phase 2 expansion started in October 2018 with an application to the Nunavut Planning Commission (NPC). Following public hearings on the proposed expansion in August 2019, the NIRB concluded that the proposed amendment to the Whale Tail Pit Project could proceed to the Type A Water License amendment phase with the NWB. The Minister of Northern Affairs approved the amended Project Certificate Report from the NIRB (18 October decision) on 20 January 2020, completing the NIRB process. The Project Certificate 008 amendment No. 1 was issued by NIRB on 19 February 2020 to reflect significant modifications to the Whale Tail Pit Project as proposed in the Whale Tail Pit Expansion Project (i.e., revisions to Terms and Conditions #1, 27, 28, 30, 46 and 51; new Terms and Conditions #65 to 68).

Since existing gold processing and accommodations infrastructure at the Meadowbank Gold Mine site are required to support mining operations at the Whale Tail Pit, NIRB identified existing terms and conditions in the amended Project Certificate No. 004 that will continue to apply to the Whale Tail Pit project infrastructure associated with the Meadowbank Gold



Mine site, even after the closure and reclamation of the developed pits at the Meadowbank Gold Mine site.

The NWB Water License amendment process for the Whale Tail Pit Expansion Project was completed on 12 May 2020 and the Water License Amendment No. 2AM-WTP1830 was issued. Commercial production under the Whale Tail Pit Expansion Project was achieved on 31 December 2020.

In 2021, AEM proposed a modification to the Whale Tail Pit Project; specifically, the IVR Pushback and Whale Tail Pushback. On 20 April 2021, the NPC determined that the proposed Modification was exempt from screening by the NIRB, as the Whale Tail and IVR Pushbacks did not change the general scope or previously amended activities. The NWB provided its approval of the modification for the Whale Tail and IVR Pushbacks on 3 August 2021 indicating the modification proposed is consistent with the scope of activities considered under Type A Water Licence 2AM-WTP1830.

CIRNAC provides the following comments and recommendations pertaining to the 2021 Meadowbank and Whale Tail Gold Mine Projects' Annual Report. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.

Table 1: Summary of Recommendations

Recommendation Number	Subject
R-01	Whale Tail Project Post-Closure Water Quality
R-02	Fuel Storage Facility Management
R-03	Reporting Improvements – Spill Management, Plan Updates, Inspections

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
AEM 2021 Annual Report & Appendices	
Meadowbank Complex - 2021 Annual Report	AEM, 15 April 2022
Appendix 1: Meadowbank and Whale Tail Commitments	AEM
Appendix 2: Meadowbank KVPL08D280 2022 Mine Plan	AEM, January 2022
Appendix 3: Whale Tail KVPL17D01 2022 Mine Plan	AEM, December 2021
Appendix 4: Whale Tail Haul Road KVRW15F01 2022 Work Plan	AEM, December 2021



Document Title	Author, File No., Rev., Date
Appendix 5: Whale Tail KVCA15Q01 2022 Work Plan	AEM, December 2021
Appendix 6: Whale Tail KVCA15Q02 2022 Work Plan	AEM, December 2021
Appendix 7: Whale Tail KVCA18Q01 2022 Work Plan	AEM, December 2021
Appendix 8: Meadowbank KVCA06Q11 2022 Work Plan	AEM, December 2021
Appendix 9: Meadowbank and Whale Tail 2021 Annual Geotechnical Inspection	Golder, 11 February 2022
Appendix 10: Meadowbank - 2021 Annual Open Pit Geomechanical Inspection	Knight Piésold, 2 March 2022
Appendix 11: Whale Tail - 2021 Annual Open Pit Geomechanical Inspection	Knight Piésold, 4 March 2022
Appendix 12: Meadowbank 2021 Water Management Plan Version 10	AEM, March 2022, V10
Appendix 13: Whale Tail 2021 Water Management Plan Version 9	AEM, March 2022, V9
Appendix 14: Meadowbank and Whale Tail MDRB Report No.29	MDRB, 18 December 2021
Appendix 15: Meadowbank and Whale Tail 2021 Geotechnical Inspection Implementation Plan	AEM
Appendix 16: Meadowbank and Whale Tail 2021 Geomechanical Inspection Implementation Plans	AEM
Appendix 17: Baker Lake Bulk Fuel Storage Facility Environmental Performance Monitoring Plan Version 6.1	AEM, March 2022, V6.1
Appendix 18: Meadowbank 2021 Quarry 22 Report	AEM, March 2022
Appendix 19: Baker Lake 2021 Bathymetric Survey	Trout Hydrography, 14 July 2021
Appendix 20: Meadowbank Predicted Water Quantity and Quality (2012-2021)	AEM
Appendix 21: Ammonia Management Plan Version 4	AEM, December 2021, V4
Appendix 22: Meadowbank Mine Waste Rock and Tailings Management Plan Version 12	AEM, March 2022, V12
Appendix 23: Whale Tail Waste Rock Management Plan Version 9	AEM, March 2022, V9
Appendix 24: Meadowbank Thermal Monitoring Report 2021	AEM, March 2022, V3
Appendix 25: Whale Tail Thermal Monitoring Report 2021	AEM, March 2022
Appendix 26: 2021 Hazardous and Non-Hazardous Waste Transport Manifest	
Appendix 27: Meadowbank and Whale Tail Spill Contingency Plan Version 16	AEM, April 2022, V16
Appendix 28: Meadowbank 2021 GN Spill Reports	
Appendix 29: Whale Tail 2021 GN Spill Reports	
Appendix 30: Meadowbank 2021 Landfarm Report	AEM, March 2022
Appendix 31: Meadowbank and Whale Tail Emergency Response Plan Version 17	AEM, October 2021, V17
Appendix 32: Meadowbank OPEP and OPPP Version 15	AEM, March 2022, V15
Appendix 33: Meadowbank and Whale Tail 2021 CREMP Report	AZIMUTH, March 2022
Appendix 34: Meadowbank EEM Cycle 4 Interpretive Report June 2021	Portt, Kilgour, June 2021
Appendix 35: Whale Tail EEM Cycle 1 Interpretive Report July 2021	Portt, Kilgour, July 2021



Document Title	Author, File No., Rev., Date
Appendix 36: Meadowbank 2022 Freshet Action Plan	AEM, March 2022, Rev10
Appendix 37: Whale Tail 2022 Freshet Action Plan	AEM, March 2022, V4
Appendix 38: Whale Tail 2021 Report on the Implementation of Measures to Avoid and Mitigates Serious Harm	AEM, March 2022
Appendix 39: Whale Tail 2021 Thermal Monitoring Plan Version 4	AEM, March 2022, V4
Appendix 40: Meadowbank and Whale Tail Blast Monitoring Program Version 7	AEM, January 2022, V7
Appendix 41: Meadowbank and Whale Tail 2021 Blast Monitoring Report	AEM
Appendix 42: Meadowbank 2021 Groundwater Monitoring Report	Golder, March 2022, Rev0
Appendix 43: Whale Tail 2021 Groundwater Monitoring Report	Golder, 28 March 2022
Appendix 44: Whale Tail 2021 Fish Habitat Offsets Monitoring Report	AEM, March 2022
Appendix 45: Meadowbank 2021 Habitat Compensation Monitoring Report	AEM, March 2022
Appendix 46: 2021 Wildlife and Country Foods Screening Level Risk Assessment	AEM, March 2022
Appendix 47: Meadowbank and Whale Tail 2021 Wildlife Monitoring Summary Report	Golder, 5 April 2022, Rev2
Appendix 48: Meadowbank and Whale Tail Wildlife and HHRA Screening Level Risk Assessment Plan	AEM, April 2022, V6
Appendix 49: Meadowbank and Whale Tail 2021 Noise Monitoring Report	AEM, March 2022
Appendix 50: Meadowbank and Whale Tail 2021 Air Quality and Dustfall Monitoring Report	AEM, March 2022
Appendix 51: Meadowbank and Whale Tail Air Quality and Dustfall Monitoring Plan Version 6	AEM, March 2022, V6
Appendix 52: Meadowbank 2021 Source Emission Survey Report	Bureau Veritas, 24 March 2022
Appendix 53: Whale Tail 2021 Mercury Monitoring Program Report	AZIMUTH, March 2022
Appendix 54: Meadowbank and Whale Tail Quality Assurance/Quality Control (QA/QC) Plan Version 7	AEM, March 2022, V7
Appendix 55: Meadowbank and Whale Tail Hazardous Materials Management Plan Version 7	AEM, March 2022, V7
Appendix 56: Shipping Management Plan Version 4	AEM, April 2022, V4
Appendix 57: Meadowbank and Whale Tail 2021 Marine Mammal and Seabird Report	ERM, March 2022
Appendix 58: Meadowbank Complex AEMP	AZIMUTH, 11 April 2022
Appendix 59: Agnico Eagle Kivalliq Projects Socio-Economic Monitoring Program Report	
Appendix 60: Meadowbank and Whale Tail 2021 Public Consultations	
Appendix 61: 2021 Kivalliq Inuit Elders Advisory Committee Report	KIEAC, 23 November 2021
Appendix 62: Agnico Kivalliq Projects Socio-Economic Monitoring Program 2022	Stratos, March 2022, V4



Document Title	Author, File No., Rev., Date
Appendix 63: Agnico Eagle's Training Management System and Learning Management System Reports	
Appendix 64: 2021 Kivalliq Labour Market Analysis	Aglu, Stratos and Impact Economics, 5 November 2021
Appendix 65: Meadowbank Incinerator Waste Management Plan Version 9	AEM, March 2022, V9
Appendix 66: Meadowbank Dewatering Dikes OMS Version 9	AEM, November 2021, V9
Appendix 67: Meadowbank Tailings Storage Facility OMS Version 10	AEM, July 2021, V10
Appendix 68: Whale Tail Water Management Infrastructure OMS Version 2	AEM, November 2021, V2
Appendix 69: 2021 Annual Report NIRB 11EN010	AEM, March 2022
Appendix 70: AWAR Transportation Management Plan	AEM, June 2021, V5
Appendix 71: Meadowbank and Whale Tail Executive Summary Translation	
Appendix 72: Update on Implementation of Commitments	
Other Reports	
NWB Amended Water Licence No: 2AM-MEA1530 (Meadowbank Gold Mine)	NWB, 23 July 2015
NWB Amended Water Licence No: 2AM-WTP1830 (Whale Tail Pit Project)	NWB, 29 May 2018



C. RESULTS OF REVIEW

1. Whale Tail Project Post-Closure Water Quality

Comment:

Annual Report Sections of Reference:	<ul style="list-style-type: none">• 2021 Annual Report: Section 8.5.3.2; Appendix 13 – 2021 Water Management Plan, Version 9• Expansion Project FEIS: Appendix 6H
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Arsenic is the primary contaminant of concern at the Whale Tail site. The FEIS for the Expansion Project predicted that arsenic in water collected from the IVR-pit during operations would have a maximum concentration of 0.66 mg/L in 2021. In contrast, the Annual Report indicates that the maximum measured arsenic concentration in 2021 within the IVR-pit was 5.18 mg/L. The measured concentration is therefore eight times greater than the predicted value and more than 200 times greater than the 0.025 mg/L Site Specific Water Quality Objective (SSWQO) for arsenic.

In addition to some parameters having higher than predicted concentrations, the volume of water requiring management has been higher than predicted in some instances. Notably, the volume of water flowing into the Whale Tail Pit is roughly 50% greater than predicted in the FEIS.

Increased concentrations of some parameters (e.g., arsenic) and increased water volumes should, in theory, result in higher contaminant loadings to surface water receivers. While this is effectively managed by AEM during operations, higher loadings during the post-closure phase have the potential to result in adverse impacts to surface water receivers. Nonetheless, CIRNAC notes that AEM's updated water quality predictions (as presented in Appendix 13) are generally similar to those presented in the FEIS for the Expansion Project. Specifically, as illustrated in the following figure, average arsenic concentrations in Mammoth Lake during the post-closure phase are currently predicted to slightly exceed the arsenic SSWQO for several years. That prediction is generally similar to estimates that were presented in the FEIS for the Expansion Project.

CIRNAC is concerned why the increased arsenic loadings that have been observed during the operational phase (as indicated by pit sump water monitoring data) are not resulting in post-closure water quality predictions that are worse than predicted in the FEIS for the Expansion Project. Additional information is required on any adjustments AEM has made to the water quality prediction model.



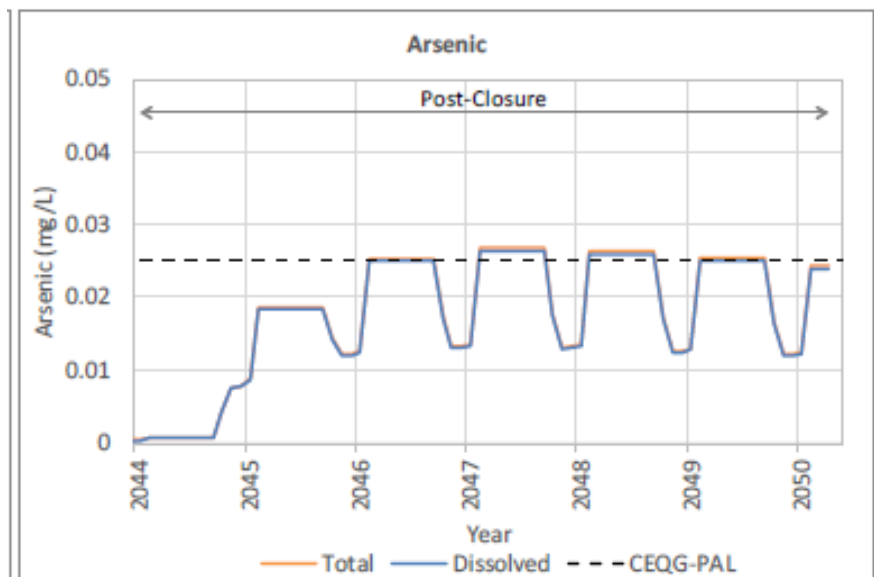
CIRNAC also notes that AEM continues to indicate that water quality predictions are accurate within one order of magnitude. On this basis, it is CIRNAC's understanding that post-closure arsenic concentrations within Mammoth Lake could be up to ten times higher than currently predicted. Given that current predictions already slightly exceed the SSWQO for arsenic, average post-closure arsenic concentrations is the primary contaminant of concern at the Whale Tail site. More so, the average post-closure arsenic concentrations in Mammoth Lake could be ten times greater than the SSWQO and still remain within the FEIS predictions.

The FEIS for the Expansion Project predicted that arsenic in water collected from the IVR-pit during operations would have a maximum concentration of 0.66 mg/L in 2021. In contrast, the Annual Report indicates that the maximum measured arsenic concentration in 2021 within the IVR-pit was 5.18 mg/L. The measured concentration is therefore eight times greater than the predicted value and more than 200 times greater than the 0.025 mg/L Site Specific Water Quality Objective (SSWQO) for arsenic.

In addition to some parameters having higher than predicted concentrations, the volume of water requiring management has been higher than predicted in some instances. Notably, the volume of water flowing into the Whale Tail Pit is roughly 50% greater than predicted in the FEIS.

Increased concentrations of some parameters (e.g., arsenic) and increased water volumes should, in theory, result in higher contaminant loadings to surface water receivers. While this is effectively managed by AEM during operations, higher loadings during the post-closure phase have the potential to result in adverse impacts to surface water receivers. Nonetheless, CIRNAC notes that AEM's updated water quality predictions (as presented in Appendix 13) are generally similar to those presented in the FEIS for the Expansion Project. Specifically, as illustrated in the following figure, average arsenic concentrations in Mammoth Lake during the post-closure phase are currently predicted to slightly exceed the arsenic SSWQO for several years. That prediction is generally similar to estimates that were presented in the FEIS for the Expansion Project.

Lastly, CIRNAC notes that the predictions provided in Appendix 13 to the 2021 Annual Report represent average concentrations within a fully mixed water body. In general, it should be expected that spatial heterogeneity will result in concentrations being higher than average at some locations within the lake (e.g., in the vicinity of the flooded pits and/or passive discharges of seepage from the Waste Rock Storage Facilities (WRSFs). Given the limited "margin of error" between the predicted average concentrations and the SSWQO for arsenic, it is possible that some areas within Mammoth Lake will have arsenic concentrations that are well above the SSWQO. Additional details on this spatial heterogeneity are required.



(Figure extracted from Figure 7 of: Whale Tail Project – 2021 Annual Report – Closure and Post-Closure Water Quality Predictions (Golder, March 2022) as presented in Appendix D of Appendix 13 to AEM's 2021 Annual Report)

Recommendation:

(R-01) CIRNAC recommends that AEM address the following in the next iteration of the Whale Tail Interim Closure and Reclamation Plan (ICRP):

- Clearly indicate which modelling parameters have been adjusted since the last modelling run. In situations where the level of conservatism has been reduced relative to FEIS predictions, appropriate justification should be provided.
- Future modelling results should explicitly and quantitatively report the range of predicted modelling outcomes based on AEM's assumptions regarding model prediction accuracy (i.e., +/- one order of magnitude). Any required mitigations should be based on a reasonable worst-case scenario. For example, what actions would be required if post-closure arsenic concentrations in Mammoth Lake are at the upper end of the potential prediction range (i.e., ten times the SSWQO)?
- Water quality predictions should clearly indicate the spatial extent of post-closure water quality exceedances within surface water receivers.



2. Fuel Storage Facility Management

Comment:

Annual Report Sections of Reference:	<ul style="list-style-type: none">• 2021 Annual Report: Section 7.1.1, Appendix 28 – 2021 GN Spill Reports• 2021 Annual Report: Section 8.5.5.2, Appendix 9 and 15 – Meadowbank and Whale Tails 2021 Annual Geotechnical Inspections
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Proper operation care and maintenance of fuel storage facilities is critical to ensuring potential impacts to the environment are prevented. In this regard, AEM has an extensive program to address tanks, piping and related fuel handling and storage components. For the most part, these components are all within secondary containment designed to ensure that releases to the environment are prevented.

AEM notes that monthly inspections of the facilities are conducted that assess tank and piping condition, secondary containment berm structure and integrity, indicators of liner damage, precipitation/run-off accumulation, evidence of tampering or misuse, any structural abnormalities and visible sheens on contact water pools and crush material inside the secondary containment.

Review of the 2021 Annual Report indicates that there are ongoing issues with fuel management facilities, such as; (a) water management within the various fuel storage facilities; (b) minor to moderate issues related to the integrity of facility civil works for secondary containment as identified in the 2021 geotechnical inspections, and; (c) spills related to fuel storage facility operations including for example exposed and ripped geomembranes, animal burrowing near the south side of tanks 3 and 4, and the ongoing presence of ponded water within secondary containment areas. Some of these issues are outstanding since the 2020 inspection (e.g., issues “a and b” as identified), whereas some are recurring (e.g., issue “c” as identified).

In addition to physical aspects, the 2021 Annual Report in Table 7-2 notes that on 10 September, 2021, there was an accidental discharge of 280 m³ of water from secondary containment that was potentially contaminated with petroleum hydrocarbons. As indicated in Table 7-2 of the 2021 Annual Report, AEM initiated an internal investigation to assess the accidental discharge.



Recommendation:

(R-02) CIRNAC recommends that AEM:

- a) Provide the results of its internal investigation into the cause of the 10 September 2021 release.
- b) Carry out a review as to why there are year over year repeated observations of secondary containment concerns related to both liner integrity and water ponding within the secondary containment systems.
- c) Address any findings and recommendations of the review to ensure environmental risks are mitigated through compliance and due diligence.

3. Reporting Improvements – Spill Management, Plan Updates, Inspections

Comment:

Annual Report Sections of Reference:	<ul style="list-style-type: none">• 2021 Annual Report, Sections 7.1.1 and 7.1.2, 10.2, 11.5• Appendix 22 – Meadowbank Mine Waste and Management Plan, Version 12• Appendix 36 – Meadowbank Freshet Action Plan, Version 10• Appendix 37 – Whale Tail Freshet Action Plan, Version 4• Appendix 68 – Whale Tail Water Management OMS, Version 2
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Spill Management

In Sections 7.1.1 and 7.1.2 information is provided with respect to the number of non-reportable spills related to Meadowbank and Whale Tail projects and related activities and facilities. Tables 7-3 and 7-5 respectively provide the complete listing of all 196 (48 Meadowbank, 148 Whale Tail) non-reportable spills including their location, cause and clean up action taken.

CIRNAC applauds and appreciates the thoroughness of the information provided and would like this information be used to do a forward-looking assessment based on the analysis of the nature, location, type and cause of spills so as to assist in improving education, training, maintenance and operation practices. Such assessment may help reduce both non-reportable and reportable spills going forward.



Plan Updates

As per Meadowbank Water Licence 2AM-MEA1530, Schedule B, Item 21 and Whale Tail Water Licence 2AM-WTP1830, Schedule B, Item 24, AEM is required to update Plans, Reports and Manuals as needed with an indication of where changes/updates have been made. Each updated management that was submitted with the 2021 Annual Report includes a document control table at the beginning which provides information on the major revisions made during each Plan update. In many cases the revision descriptions are very generic and vague and not very informative. For example, the document control table of the Whale Tail Freshet Action Plan, Version 4 (Appendix 37), indicates that revisions made for Version 4 consisted of a "Comprehensive update from 2021 plan". Such vague comments make it difficult for reviewers to understand what changes were made to the Plan in order to focus their review.

Inspection and Compliance Reports

Section 11.5 provides brief information on inspections carried out in 2021. No appendix information is included that provided supporting details by third party reviewers. Provision of such data would provide a complete record and allow for a more fulsome review.

Recommendation:

(R-03) CIRNAC recommends that AEM:

- a) Assess and summarize non-reportable spills by their nature, location, etc. for the annual report and use that information to improve spill prevention and management.
- b) Provide more detailed information in the document control table of each management plan describing the changes that were made to each revision of the Plan or come up with an alternate system to improve the traceability of changes, e.g., tracked or highlighted changes.
- c) Provide an appendix that includes Inspection Reports and Responses for any Inspection Requirements.



D. REFERENCES

- Agnico Eagle Mines (2022), Meadowbank Complex - 2021 Annual Report, 15 April 2022
- Agnico Eagle Mines (2022), Appendix 1: Meadowbank and Whale Tail Commitments
- Agnico Eagle Mines (2022), Appendix 2: Meadowbank KVPL08D280 2022 Mine Plan, January 2022
- Agnico Eagle Mines (2022), Appendix 3: Whale Tail KVPL17D01 2022 Mine Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 4: Whale Tail Haul Road KVRW15F01 2022 Work Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 5: Whale Tail KVCA15Q01 2022 Work Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 6: Whale Tail KVCA15Q02 2022 Work Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 7: Whale Tail KVCA18Q01 2022 Work Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 8: Meadowbank KVCA06Q11 2022 Work Plan, December 2021
- Agnico Eagle Mines (2021), Appendix 9: Meadowbank and Whale Tail 2021 Annual Geotechnical Inspection, Golder, 11 February 2022
- Agnico Eagle Mines (2022), Appendix 10: Meadowbank - 2021 Annual Open Pit Geomechanical Inspection, Knight Piésold, 2 March 2022
- Agnico Eagle Mines (2022), Appendix 11: Whale Tail - 2021 Annual Open Pit Geomechanical Inspection, Knight Piésold, 4 March 2022
- Agnico Eagle Mines (2022), Appendix 12: Meadowbank 2021 Water Management Plan Version 10, AEM, March 2022, V10
- Agnico Eagle Mines (2022), Appendix 13: Whale Tail 2021 Water Management Plan Version 9, AEM, March 2022, V9
- Agnico Eagle Mines (2022), Appendix 14: Meadowbank and Whale Tail MDRB Report No.29, MDRB, 18 December 2021
- Agnico Eagle Mines (2022), Appendix 15: Meadowbank and Whale Tail 2021 Geotechnical Inspection Implementation Plan, AEM
- Agnico Eagle Mines (2022), Appendix 16: Meadowbank and Whale Tail 2021 Geomechanical Inspection Implementation Plans, AEM
- Agnico Eagle Mines (2022), Appendix 17: Baker Lake Bulk Fuel Storage Facility Environmental Performance Monitoring Plan Version 6.1, AEM, March 2022, V6.1
- Agnico Eagle Mines (2022), Appendix 18: Meadowbank 2021 Quarry 22 Report, AEM, March 2022
- Agnico Eagle Mines (2022), Appendix 19: Baker Lake 2021 Bathymetric Survey, Trout Hydrography, 14 July 2021
- Agnico Eagle Mines (2022), Appendix 20: Meadowbank Predicted Water Quantity and Quality (2012-2021), AEM



Agnico Eagle Mines (2022), Appendix 21: Ammonia Management Plan Version 4, AEM, December 2021, V4

Agnico Eagle Mines (2022), Appendix 22: Meadowbank Mine Waste Rock and Tailings Management Plan Version 12, AEM, March 2022, V12

Agnico Eagle Mines (2022), Appendix 23: Whale Tail Waste Rock Management Plan Version 9, AEM, March 2022, V9

Agnico Eagle Mines (2022), Appendix 24: Meadowbank Thermal Monitoring Report 2021, AEM, March 2022, V3

Agnico Eagle Mines (2022), Appendix 25: Whale Tail Thermal Monitoring Report 2021, AEM, March 2022

Agnico Eagle Mines (2022), Appendix 26: 2021 Hazardous and Non-Hazardous Waste Transport Manifest

Agnico Eagle Mines (2022), Appendix 27: Meadowbank and Whale Tail Spill Contingency Plan Version 16, AEM, April 2022, V16

Agnico Eagle Mines (2022), Appendix 28: Meadowbank 2021 GN Spill Reports

Agnico Eagle Mines (2022), Appendix 29: Whale Tail 2021 GN Spill Reports

Agnico Eagle Mines (2022), Appendix 30: Meadowbank 2021 Landfarm Report, AEM, March 2022

Agnico Eagle Mines (2022), Appendix 31: Meadowbank and Whale Tail Emergency Response Plan Version 17, AEM, October 2021, V17

Agnico Eagle Mines (2022), Appendix 32: Meadowbank OPEP and OPPP Version 15, AEM, March 2022, V15

Agnico Eagle Mines (2022), Appendix 33: Meadowbank and Whale Tail 2021 CREMP Report, AZIMUTH, March 2022

Agnico Eagle Mines (2022), Appendix 34: Meadowbank EEM Cycle 4 Interpretive Report June 2021, Portt, Kilgour, June 2021

Agnico Eagle Mines (2022), Appendix 35: Whale Tail EEM Cycle 1 Interpretive Report July 2021, Portt, Kilgour, July 2021

Agnico Eagle Mines (2022), Appendix 36: Meadowbank 2022 Freshet Action Plan, AEM, March 2022, Rev10

Agnico Eagle Mines (2022), Appendix 37: Whale Tail 2022 Freshet Action Plan, AEM, March 2022, V4

Agnico Eagle Mines (2022), Appendix 38: Whale Tail 2021 Report on the Implementation of Measures to Avoid and Mitigates Serious Harm, AEM, March 2022

Agnico Eagle Mines (2022), Appendix 39: Whale Tail 2021 Thermal Monitoring Plan Version 4, AEM, March 2022, V4

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