Appendix J3

Report: NIRB Inspection Report and Board Recommnedation + AEM response

2013 – 2014 Annual Monitoring Report

for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
November 2014

Report Title:	The Nunavut Impact Review Board's 2013-2014 Annual Monitoring Report for the Meadowbank Gold Project (NIRB File No. 03MN107)
Project:	Meadowbank Gold Project
Project Location:	Kivalliq Region, Nunavut
Project Owner:	Agnico Eagle Mines Ltd. PO Box 540 Baker Lake, NU X0C 0A0
Monitoring Officer:	Heather Rasmussen, M.Env-EIA
Monitoring Period:	October 2013 – September 2014
Date Issued:	November 2014
Cover photos:	1) Haul trucks 2) Dumping of waste rock at the Vault Waste Rock Storage Facility 3) Jet-A pad at the Baker Lake storage facility 4) All-weather access road on the way to the Meadowbank site

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LIST OF ACRONYMS

AANDC	Aboriginal Affairs and Northern Development Canada
AEM	Agnico Eagle Mines Ltd.
AEMP	Aquatic Effects Management Program
AWAR	All-weather private access road
CaCl	Calcium chloride
CCME	Canadian Council of Ministers of the Environment
CN	Cyanide
CREMP	Core Receiving Environment Monitoring Program
dBA	A-weighted decibels
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EC	Environment Canada
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
GN	Government of Nunavut
GN-DoE	Government of Nunavut, Department of Environment
HC	Health Canada
INAC	Indian and Northern Affairs Canada
KIA	Kivalliq Inuit Association
km	Kilometre
MMER	Metal Mining Effluent Regulations
ML	Million litre
MW	Monitoring well
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NWB	Nunavut Water Board
PEAMP	Post-environmental assessment monitoring program
PM	Particulate matter
QAQC	Quality Assurance/Quality Control
RPD	Relative percent difference
TC	Transport Canada
TSP	Total suspended particulates

1.0 INTRODUCTION

On December 30, 2006, pursuant to Section 12.5.12 of the Nunavut Land Claims Agreement (NLCA), the Nunavut Impact Review Board (NIRB or Board) issued Project Certificate No. 004 (Project Certificate) for the Meadowbank Gold Project (the Project), allowing the Project to proceed in accordance with the Terms and Conditions issued therein. The NIRB is responsible for the monitoring of this Project as per Sections 12.7.1 and 12.7.2 of the NLCA, and the Project Certificate. In November 2009 the NIRB formally amended the Project Certificate to include an amendment to Condition 32 pursuant to NLCA 12.8.2 and an approval to change the name of the assignee from Cumberland Resources Ltd. to Agnico Eagle Mines Ltd. (NIRB, 2009).

This report provides findings that resulted from the Board's monitoring program for this Project from October 2013 to September 2014.

1.1. PROJECT HISTORY AND CURRENT STATUS

In early 2007, Agnico Eagle Mines Ltd. – Meadowbank Division (AEM or the Proponent) acquired Cumberland Resources Ltd.'s assets which included the Meadowbank Gold Mine. Construction of an all-weather private access road (AWAR) from the hamlet of Baker Lake to the Meadowbank mine site was completed in 2008 and the road opened to mine-related transportation in March 2008. The Meadowbank Gold Mine entered the operations phase of the project in February 2010 and is currently entering its fifth year of operations. During 2013, the Meadowbank mine reportedly produced 430,613 ounces of gold, an increase from 2011 and 2012 in which the mine reportedly produced 270,801 and 366,030 ounces of gold respectively (AEM 2013, 2014g).

The Type A Water Licence (2AM-MEA0815) required for the Project was issued by the Nunavut Water Board (NWB) in June of 2008. This licence was amended in May 2010 to allow for an expansion to the Baker Lake fuel tank farm facility which included 2 additional 10 million litre (ML) fuel tanks to a combined total of six 10 ML fuel tanks.

In 2008 the NIRB received a request by the Hamlet and Hunters and Trappers Organization of Baker Lake and the Proponent to allow public usage of the AWAR. Following a technical review of the request and a public hearing, the NIRB formally approved the amendment to the project in November 2009 and issued an amended Meadowbank Gold Mine Project Certificate (NIRB, 2009).

An expansion to the Meadowbank airstrip was screened by the NIRB in September 2010 with the NIRB having issued a 12.4.4(a) recommendation to the then-Minister of Indian and Northern Affairs Canada (INAC, now Aboriginal Affairs and Northern Development Canada or AANDC) indicating that the proposed project could proceed subject to additional project specific terms and conditions, and additionally, that the NIRB would expand its Part 7 NLCA monitoring program for the Meadowbank Project to apply to the airstrip expansion (NIRB File No. 10XN039). On January 27, 2013 AEM submitted an application to the NWB to allow for the expanded airstrip. The request indicated a revision to the original 2010 request (NIRB File

No. 10XN039) which substantially reduced the impact to Third Portage Lake and included construction of the expansion during the winter season. On April 4, 2013 NWB approved the proposed modification and the airport extension was completed April 6, 2013 (AEM, 2014f).

On July 14, 2011 the NIRB issued *Appendix D – Meadowbank Monitoring Program* to AEM in accordance with the Project Certificate (NIRB, 2011). The Meadowbank monitoring program includes responsibilities for AEM, the NIRB, and several authorizing agencies and government departments.

During the 2013 year, AEM continued pit operations in the Portage and Bay Goose pits; completed the construction of Vault dike; dewatered (discharged to Wally Lake as effluent) and conducted a fish-out program of Vault Lake; commenced pit operations of Vault pit; completed the Stormwater Dike with a final elevation of 150 metres (m); continued work on the Central Dike; completed containment of the North Cell Tailings Storage Facility; raised the main rockfill embankment to 120 m; and completed the airstrip expansion (AEM, 2014f).

On April 23, 2013 AEM applied for an amendment to its Type A Water Licence (No. 2AM-MEA0815) with the NWB to increase the amount of freshwater drawdown and use from the Third Portage Lake from the originally permitted amount of 700,000 cubic metres per year (m^3/year) to a total of 1,870,000 m^3/year in 2013; and to 1,150,000 m^3/year for each year thereafter until 2018. The NIRB considered two alternatives under the NLCA to determine the impact assessment requirements applicable to AEM's amendment application, and following the receipt of comments from interested parties, issued correspondence on October 1, 2013 indicating that it had determined no further assessment was required. On June 30, 2014 the NWB issued the Licence Amendment No. 2 for No. 2AM-MEA0815.

In July 2013 AEM applied for amendments to its existing *Fisheries Act* Authorizations No. NU-03-0190 – AWAR and No. NU-03-0191.3 with Fisheries and Oceans Canada (DFO). AEM requested an amendment to the monitoring frequency and a reduction to the amount of the existing letters of credit from $25.675 Million to $8.6 Million. This request for amendment is further discussed in Section 2.2.4.

In July 2014 AEM applied to DFO for a *Paragraph 35(2) (b) Fisheries Act Authorization (Normal Circumstances)*. AEM proposed to expand its current Vault pit operations into Phaser Lake, with a closure date in 2017. The NIRB continues to assess the application for an expansion to the Vault pit.

In August 2014 AEM applied for a renewal to its Type A Water Licence (No. 2AM-MEA0815) with the NWB for a period of 10 years, as well as an increase to the permitted water usage from 1.15 million cubic metres per year (m^3/y) to 9,119,652m^3/y in 2018 to facilitate pit re-flooding. The NIRB considered two avenues under the NLCA to determine the impact assessment requirements applicable to AEM's renewal application, and on September 30, 2014 issued correspondence indicating that it had determined no further assessment was required. This renewal request is further discussed in Section 2.2.4.

During the afternoon of September 4, 2014 the NIRB staff held a community information session and open house at the Community Hall in Baker Lake to update, discuss with, and receive feedback from community members on the NIRB's monitoring program for the Meadowbank Gold Mine. Approximately 17 community members, project representatives, and media attended the session. This is further discussion in Appendix II.

1.2. PROJECT COMPONENTS

The Meadowbank Gold Project as operated by AEM consists of an open pit gold mine located approximately 70 kilometres (km) north of the hamlet of Baker Lake on Inuit-owned surface lands. The mine site is comprised of: camp facilities; active mine areas including Bay-Goose pit, Portage pits and Vault pit; waste rock facility; landfarm; landfill remediation site; tailings storage facility and Portage attenuation pond; airstrip; waste and hazardous materials storage area; incinerator; fuel storage area; air monitoring station; dust monitoring station and weather station. In addition to mining infrastructure and activities, ancillary Project infrastructure is located approximately 2 km east of the hamlet of Baker Lake and consists of barge unloading facilities, a laydown storage and marshalling area, a 60 million litre (ML) fuel tank farm, associated interconnecting roads and a 110 km AWAR from the Hamlet of Baker Lake to the Meadowbank mine site. Supplies are shipped from locations within Canada via sealift to Baker Lake where they are offloaded at AEM's marshalling area and transported to the Meadowbank site via haul trucks along the 110 km AWAR (AEM 2014g).

The original Project proponent and owner, Cumberland Resources Inc., estimated in 2006 that the Meadowbank project comprised of a total proven and probable gold reserves of 2.7 million ounces (NIRB, 2006). In its 2013 Mineral Reserve and Resource Data report, AEM indicated that Meadowbank had proven and probable gold reserves of 1.75 million ounces (AEM, 2013b). AEM provided a revised mine plan to the Kivalliq Inuit Association (KIA) in 2013 and in its 2013 Annual Report, indicated that its Meadowbank operations were scheduled to be completed by 2017 with reflooding of mine pits to be completed by 2025 (AEM, 2014f).

2.0 MONITORING ACTIVITIES

2.1. REPORTING REQUIREMENTS

2.1.1. General Reporting Requirements

During the 2013 – 2014 monitoring period, the Proponent demonstrated a general compliance with reporting requirements imposed through commitments resulting from the NIRB's Review of the Project, including those contained in related reports, plans, and the NIRB's Project Certificate. The Proponent has provided the following items as required by the terms and conditions contained within the Project Certificate for the current monitoring period of October 2013 through September 2014:

- AEM's 2013 Annual Report to the NWB, NIRB, DFO, AANDC and KIA which included:
  - Updated Mine Waste Rock and Tailings Management Plan, version 3 (2013)
  - Final Core Receiving Environmental Monitoring Program (CREMP) (2013)

- Landfarm Design and Management Plan, version 3 (2013)
- Air Quality and Dustfall Monitoring Plan, version 2 (2013)
- Meteorological Monitoring Plan, version 1 (2013)
- Noise Monitoring and Abatement Plan, version 2 (2014)
- Groundwater Monitoring Plan, version 4 (2014)
- Vault Lake Fishout Work Plan, version 1 (2013)
- Emergency Response Plan, version 6 (2013)
- Hazardous Materials Management Plan, version 3 (2013)
- Oil Pollution Emergency Response Plan, version 6 (2013)
- Spill Contingency Plan, version 4 (2013)
- Operational ARD/ML Testing and Sampling Plan, version 2 (2013)
- Landfill Design and Management Plan, version 2 (2013)
- Wildlife Protection and Response Plan, version 3 (2013)
- Ammonia Management Plan, version 1 (2013)
- Operation and Maintenance Manual: Sewage Treatment Plant, version 4 (2013)
- Operation, Maintenance and Surveillance Manual: Tailings Storage Facility, version 3 (2013)
- Operation, Maintenance and Surveillance Manual: Dewatering Dikes, version 3 (2013)
- All Weather Private Access Road Transportation Management Plan, version 3 (2014)
- Oil Handling Facility Oil Pollution Emergency Plan, version 3 (2014)
- Blast Monitoring Report for the Protection of Nearby Fish Habitat (2013)
- Water Management Report and Plan (2013)
- Reference to the Incinerator Waste Management Plan, version 4 (2012)
- Aquatic Effects Management Program (AEMP), version 3 (2013)
- Interim Closure and Reclamation Plan (2014)
- Updated Habitat Compensation Monitoring Plan submitted in response to comments on the 2013 Annual Report on August 15, 2014, version 3 (2014)

The NIRB has not received the following report, which remains outstanding:

- Updated Access and Air Traffic Management Plan (last version provided in 2005) – no updated version for mine site access and/or air traffic provided since 2005

2.1.2. Annual Report as per Project Certificate Appendix D

Appendix D of the Project Certificate is designed to provide direction to the Proponent, the NIRB's Monitoring Officer, government departments and authorizing agencies with regard to the monitoring program established for the project pursuant to Section 12.7 of the NLCA. Appendix D also outlines the Proponent's responsibilities to establish a monitoring program, the requirement of the NIRB's Monitoring Officer to support the production and interpretation of various monitoring reports, and also outlines the NIRB's requirements of various authorizing agencies in reporting compliance monitoring activities. As outlined in Appendix D, the Proponent is required to submit an annual report that provides an updated status of Project operations, an overview of the site and its operation during the reporting period, as well as a

discussion of the observations made as a result of, or illustrated through, the monitoring program (NIRB, 2011).

On April 15, 2014 the NIRB received AEM's *Meadowbank Gold Project 2013 Annual Report* (2013 Annual Report) (AEM, 2014f). On April 25, 2014 the NIRB distributed the report to interested parties with a request that they provide comments relating to effects and compliance monitoring as well as other areas of expertise or mandated responsibility. On or before June 9, 2014 the NIRB received comments from the following parties:

- Government of Nunavut
- Aboriginal Affairs and Northern Development Canada
- Environment Canada
- Fisheries and Oceans Canada
- Health Canada
- Transport Canada

Comments received by parties identified specific areas that may require further attention and/or discussion; these are addressed throughout the remainder of this report and are considered in the recommendations set forth by the Board under separate cover, for subsequent action, attention, or remedial activity by the Proponent.

2.2. COMPLIANCE MONITORING

Compliance monitoring involves an assessment undertaken by regulators and other agencies to establish whether or not a project is being carried out within the legislation, regulations, instruments, commitments and agreements as such are applicable to certain project activities, and further, is a requirement of the NIRB's Appendix D to the Meadowbank Project Certificate.

2.2.1. Compliance with the NIRB Screening Decision Reports

2.2.1.1. Screening Decision Report 10XN039

One of the requirements in the Board's Screening Decision Report for NIRB File No. 10XN039 related to the expansion of the Meadowbank airstrip was for AEM to undertake efforts to communicate its plans to expand the airstrip with the community of Baker Lake. As previously stated, the airstrip expansion was completed April 6, 2013. This is discussed further in Section 2.2.2.2.

2.2.1.2. Screening Decision Report 11EN010

One of the recommendations of the NIRB's April 21, 2011 Screening Decision Report for AEM's "Pipe Dream Winter Road and Mining Exploration" project (File No. 11EN010) is that AEM include a summary of activities undertaken within its annual report for the Meadowbank Gold Project (File No. 03MN107). On May 8, 2014 AEM submitted its 2013 Annual Report for this file as an addendum to the Meadowbank Gold Project 2013 Annual Report.

2.2.2. Compliance with the NIRB Project Certificate

Within its 2013 Annual Report, AEM provided a summary of exploration activities undertaken as permitted by the Board within its final hearing report.

2.2.2.1. Compliance Achievements

Permafrost - Condition 19

> *19 "Cumberland shall provide for a minimum of two (2) metres cover of tailings at closure, and shall install thermistor cables, temperature loggers, and core sampling technology as required to monitor tailings freezeback efficiency. Cumberland shall report to the NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness."*

In its 2013 Annual Report, AEM provided an overview and discussion of its monitoring of freezeback in the tailings reclamation pond and the Portage waste rock storage facility through the use of thermistors. Furthermore, AEM addressed the Board's 2013 request for information on permafrost monitoring of Second Portage Lake, Portage pit and Bay Goose pit by including these details within its 2013 Annual Report. AEM provided an update on its action plan and monitoring program for the Lake and pits, which included 2013 data (AEM, 2014f) and responded to specific questions related to its monitoring of the freezeback of the talik as raised by AANDC (this is discussed further in Section 2.4.1.2).

2.2.2.2. AEM Responses to the Board's 2013 Recommendations

On November 27, 2013 the Board made a number of recommendations as a result of its 2012 – 2013 monitoring efforts including the 2013 site visit. The following provides an overview of AEM's responses to the Board's recommendations as provided to the NIRB on January 7, 2014.

a. Meadowbank Airstrip Expansion Screening Decision Report (File No. 10XN039)

The Board requested that AEM provide a summary of discussions held with the Baker Lake community members regarding its airstrip expansion as was required by the NIRB's Screening Decision Report (File No. 10XN039). AEM responded that it had engaged in afternoon and evening community meetings with Baker Lake residents on May 16, 2011 and that it had presented annual wildlife and fisheries monitoring information and conceptual fish habitat compensation plans, as well as answered questions related to the Meadowbank fire and the proposed airstrip. AEM indicated that it hosted the Board Members of the Hunters and Trappers Organization at the Meadowbank site on February 23, 2012 for a visit to review annual fisheries and wildlife monitoring results and the changes to the proposed airstrip extension (AEM, 2014a). Furthermore, AEM noted that the public was consulted on the final design through the NWB process for this file and on February 15, 2013 the NWB distributed AEM's amendment submission to interested parties for review and comment.

b. Appendix D and the Annual Report

Following the NIRB's review of AEM's 2012 Annual Report it was noted that AEM again did not provide a full discussion and summary on the post-environmental assessment

monitoring program (PEAMP) for the Project as required. The Board required in 2013 that AEM provide a full discussion and summary on the PEAMP for the Project in accordance with commitments made within the FEIS, during the Final Hearing, and as required throughout the Project Certificate (including Appendix D). The Board clarified that AEM's response must include a discussion that references the baseline and previous years' monitoring data and indicates whether any trends have been observed at the mine site (NIRB 2013a). In its response, AEM expressed its position that the PEAMP information submitted as part of its 2012 Annual Report met the requirements of Appendix D and noted that through its interpretation of Appendix D, a trends analysis is not required, but instead, it required "an analysis of the project's impacts to the environment … with reference to baseline and monitoring data used to support impact predictions and effects conclusions" (AEM, 2014a). AEM further noted that it would be amenable to discussing the presentation of information within the PEAMP and specified that through its interpretation the PEAMP is intended to be a high level review of annual monitoring results as compared to the final environmental impact predictions and should not duplicate information presented in other sections of the report (AEM, 2014a). Further discussion on AEM's response and conclusions concerning its PEAMP from the 2013 Annual Report is available in Section 2.3.3.1.

c. Compliance with licences and authorizations

The Board requested that AEM provide a discussion and explanation of the total oil and grease values taken from the secondary containment areas of the bulk fuel storage tanks, noting from its reported values that these exceeded the water quality allowable limits of 5 milligrams per litre (mg/L) in the 2012-2013 reporting period. The Board also requested that AEM provide a discussion of any steps taken to ensure levels remain within limits in future years (NIRB, 2013b). AEM responded that it found discrepancies in its quality assurance/quality control (QAQC) reporting on oil and grease levels and concluded that its 2012 water samples with total oil and grease detected at 7 mg/L was likely the result of some type of sampling error, whether lab or person. Furthermore, AEM noted that, as indicated within its 2013 Annual Report, the water samples with elevated oil and grease levels were not pumped out of the containment areas and that 2013 oil and grease levels were less than 1 mg/L. AEM further noted that it had reinforced sampling protocols with its own Environmental Department staff (AEM, 2014a). The NIRB is satisfied with this response.

d. Water Quality

In its 2012 Annual Report, AEM indicated that predictions in the FEIS did not adequately predict water quality in the pits. The Board requested that AEM provide further discussion on predictions made in the FEIS regarding the water quality in the pits and whether or not those predictions would be updated as required by the PEAMP (NIRB, 2013b).

In its response, AEM agreed that it had not provided sufficient detail regarding the comparison of the FEIS water quality predictions of the pit water with results in its 2012 Annual Report and noted that the differences between the predicted and actual water quality results collected in the 2012 testing year was unclear. AEM suggested that differences could be attributable to the quality of the input data used in the original model (i.e., natural and geochemical variability was not captured), and noted that it continued to meet its

licence requirements prior to discharging regardless of the natural variability. AEM noted that although pit water quality exceeded the predicted values in the FEIS, key parameters including TDS, sulfate, ammonia and iron for the South Portage pit had shown a general decline since 2010 and that parameters in Goose pit had been relatively consistent since operations commenced in 2012. AEM committed to annually update its water quality model in anticipation of reflooding to ensure it meets CCME limits to protect aquatic biota prior to breaching the dikes, as well as to update its pit quality water predictions and site wide water balance in its annual reporting (AEM, 2014a). The NIRB is satisfied with this response and notes that this information was updated in AEM's 2013 Annual Report.

e. Groundwater monitoring wells – Condition 8

8. "…At the time samples are taken Cumberland shall also assess the condition of existing groundwater monitoring wells and replace any defective wells. Cumberland shall continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection…"

Similar to the Board's 2012 recommendations, in 2013 it again recommended that AEM consider developing alternative approaches to sampling and analysis to obtain groundwater chemistry and flow data which would inform operational water management and provide information for closure. The Board clarified that AEM's Groundwater Plan should include consideration of alternative approaches as outlined (NIRB, 2013b). In response to the Board's recommendations, AEM submitted an updated Groundwater Monitoring Plan on January 27, 2014 that discussed the implementation of alternatives to the traditional method of monitoring groundwater using wells, including sampling pit wall seeps and production holes (AEM, 2014a). The NIRB's assessment of the alternative sampling measures, as reported in AEM's 2013 Annual report, is discussed in Section 2.3.1.1 of this report.

f. Noise Quality Monitoring

Noise quality monitoring occurred at only three of the five previously identified monitoring locations at Meadowbank in 2012 owing to malfunctions and/or difficulties with noise monitoring software. AEM's 2012 Noise Monitoring Report indicated that noise levels were higher in 2012 at two stations (R1 and R5) for calculated daytime and night-time values as compared to previous monitoring years. Furthermore, it is noted that three of the five daytime results and three of the five night-time results exceeded the calculated permissible sound level (PSL) of 55 A-weighted decibels (dBA) for the site (AEM, 2009). It was noted by AEM that if these sound levels were sustained over time, additional mitigation measures may be recommended in the future. No clear link was provided between the potential effects of noise on wildlife or on how habitat effectiveness may have been affected by these noise levels. No discussion on the potential effects of noise to human health was included (AEM, 2013a).

In 2013, the Board required that AEM discuss the linkages between the potential effects of noise on wildlife and habitat effectiveness and provide further discussion of its conclusion that noise values detected above the calculated PSL at the site were not affecting wildlife (both terrestrial and birds). Furthermore, it was requested that AEM provide a discussion regarding the potential impacts of noise to human health at site (NIRB, 2013b).

AEM responded with a detailed summary of the Meadowbank noise monitoring program and the linkages to monitored noise levels for each receptor of concern: people off-site, on-site workers, and wildlife. Regarding offsite human receptors, AEM noted that at the time of its response, no cabins had been built or noise-related complaints received from residents of the area. Furthermore, it noted that all monitoring stations with levels exceeding the PSL were located within 500 metres of the Meadowbank facilities, and that it was unlikely that a cabin would be built in that proximity to the site. AEM anticipated that project-related noise levels would decrease the further one was from those stations, and noted that it would continue to conduct annual monitoring at stations located at various distances from the mine footprint. AEM noted that noise related health impacts on onsite workers would be under the purview of the Health and Safety department and should not be discussed under the environmental monitoring program. AEM did note that Nunavut's maximum permitted occupational exposure level for eight hours is 85 dBA and that there were no recorded values approaching that level in 2012 (AEM, 2014a).

AEM noted that quantitative noise limits (such as PSL) which may potentially cause disturbance are not readily available in terms of effects on wildlife, and that there is little, and often inconclusive, research on noise related effects on wildlife. It further noted that terrestrial wildlife activities are monitored as part of the Terrestrial Ecosystem Management Plan (TEMP), per Condition 54 of the Project Certificate, and are compared against acceptable levels for various types of impacts that were established in the FEIS. AEM concluded that as monitoring has occurred as planned, no thresholds of predicted impacts to wildlife have been exceeded and noise is not causing unpredicted impacts to wildlife (AEM, 2014a).

AEM noted that, as indicated in its Noise Monitoring and Abatement Plan, PSL levels would occasionally be exceeded regardless of the receptor type and that through monitoring, the source would be identified and mitigated wherever possible. AEM noted that the activities contributing to the excess sound levels in 2012 were generally temporary and that its monitoring in 2013 was increased to four days at all sites to obtain more representative data (AEM, 2014a). The NIRB acknowledges AEM's response to this recommendation and finds it satisfactory.

g. <u>All weather private access road – Condition 32(items e through g)</u>

32(e) "Prior to opening of the road, and annually thereafter, advertise and hold at least one community meeting in the Hamlet of Baker Lake to explain to the community that the road is a private road with non-mine use of the road limited to approved, safe and controlled use by all-terrain-vehicles for the purpose of carrying out traditional Inuit activities.

32(f) Place notices at least quarterly on the radio and television to explain to the community that the road is a private road with non-mine use of road limited to authorized, safe and controlled use by all-terrain-vehicles for the purpose of carrying out traditional Inuit activities.

32(g) Record all authorized non-mine use of the road, and require all mine personnel using the road to monitor and report unauthorized non-mine use of the road, and collect and report this data to NIRB one (1) year after the road is opened and annually thereafter; and

32(h) Report all accidents or other safety incidents on the road, to the GN, KivIA, and the Hamlet immediately, and to NIRB annually."

In 2012, the Board noted that AEM was not in compliance with Condition 32(e) as it did not conduct consultations in the community of Baker Lake to discuss the private nature of the AWAR. The Board requested that AEM hold public meetings as set out in Condition 32, and that it report on this information within its 2013 Annual Report (NIRB, 2013b). AEM responded that it held a public meeting with the community of Baker Lake on May 30, 2013 (AEM, 2014a) and would include the minutes and presentation from the meeting in its 2013 Annual Report. The NIRB is satisfied with the meeting minutes provided to it as part of AEM's 2013 Annual Report (AEM, 2014c).

h. Gathering of Traditional Knowledge – Condition 40

40. "Cumberland shall gather Traditional Knowledge from the local HTOs and conduct a minimum of a one-day workshop with residents of Chesterfield Inlet to more fully gather Traditional Knowledge about the marine mammals, cabins, hunting, and other local activities in the Inlet. Cumberland shall report to KivIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop."

The Board found that as Condition 40 requires that the Proponent collect and report annually to the KIA and the NIRB on Traditional Knowledge (TK) gathered, AEM was not in compliance with this condition and requested that AEM report on further TK gathered in its future annual reporting as submitted to the NIRB (NIRB, 2013b). AEM responded that it held an Inuit Qaujimajatuqangit (IQ) workshop in Chesterfield Inlet on January 26 and 27, 2010. The workshop was reportedly focused on gathering information on traditional use and traditional environmental knowledge of Chesterfield Inlet residents, as well as project-specific effects and mitigation recommendations including search and rescue operations and safety. AEM added that there was no change in the TK reported to AEM during meetings held in 2012 and that as a result it concluded that no operational changes were necessary (AEM, 2014a). As AEM did not provide specific TK collected during the 2012 meetings, it is difficult for the NIRB to assess the soundness of AEM's conclusion that operational changes were not necessary. This is further discussed in Section 2.2.2.4 of this report.

i. Monitoring of country foods – Condition 67

67. "Cumberland shall develop and implement a program to monitor contaminant levels in country foods in consultation with HC…"

In 2012, the Board invited Health Canada (HC) to provide comments on AEM's wildlife screening level risk assessment (WSLRA) and preliminary quantitative risk assessment (PQRA) report prepared by AEM in order to meet the requirements of Condition 67, and to indicate whether or not further information may be required with respect to the monitoring program. With respect to the PQRA report, HC indicated that it would require additional information to provide comments on the human health assessment that was completed by AEM; AEM provided the information as requested by HC. The Board invited HC to provide comments on the additional information provided by AEM with respect to the PQRA report and to indicate whether or not further information may be required with

respect to the monitoring program as outlined in Condition 67. Follow-up from HC is further discussed in Section 2.2.2.3.

j. On-site incinerators – Condition 72

72. On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canada-wide Standards for mercury emissions, and Cumberland shall conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC and NIRB's Monitoring Officer.

Upon review of AEM's available 2012 Incinerator Daily Report Logbook, the NIRB noted that the incinerator temperature in the secondary chamber was below the recommended 1000 ºC minimum temperature on several occasions. It has been previously noted by Environment Canada (EC) that the incinerator temperatures in the secondary chamber should be above 1000 ºC to ensure complete combustion and to minimize the formation and release of contaminants. The Board requested that AEM provide an explanation for the incinerator having not achieved recommended temperatures in the secondary chamber on various occasions in 2012. Furthermore, it was recommended that AEM describe any corrective measures employed at the incinerator (NIRB, 2013b).

AEM indicated in its response to the NIRB that instances whereby the secondary chamber did not reach the recommended temperatures were generally attributable to mechanical issues with burners not working properly. Further, it added that maintenance by its site services department was performed when the burners do not function properly and that emission testing by its offsite consultant indicated that AEM met EC Guidelines. AEM also noted that it planned to conduct further emission testing in 2014 (AEM, 2014a). Further discussion on AEM's on-site incinerators is available in Section 2.2.2.4 of this report.

k. Suppression of surface dust – Condition 74

74. "Cumberland shall employ environmentally protective techniques to suppress any surface dust."

This condition has been included as a recommendation by the Board in each of its annually issued recommendations to the Proponent since 2008. During each of the NIRB's site visits from 2011-2013 the Monitoring Officer noted that no dust suppressant techniques were being applied to the AWAR from Baker Lake (gatehouse) to the Meadowbank site, but that AEM did use calcium chloride (CaCl) and water as a dust suppressant at the mine site itself. In 2013 the Board requested that AEM provide a discussion of its plans to address dust control for the AWAR and to provide the Board with a summary of the outcome of any related studies that have been completed to date, including any resulting potential adaptive management strategies (NIRB, 2013b).

In response to the Board's recommendations, AEM indicated that as of 2011 it had conducted and reported on annual dustfall and air quality monitoring around the Project site. AEM noted that the results from its preliminary study of dustfall along the AWAR and at the Project site indicated that the maximum observed dustfall rates at the AWAR locations

without dust suppressants were more than four times lower than dustfall rates observed on the Ekati Diamond Mine haul roads after dust suppressants had been applied. AEM noted that study results found that there was no measurable effect of dust on birds along the Ekati Diamond Mine haul roads. AEM concluded that based on the results of this study and that dust related impacts along the AWAR were less than predicted in the Final Environmental Impact Statement, it would not apply dust suppressants along the AWAR from Baker Lake to the Meadowbank exploration camp. AEM further noted that while it had conducted a 'more robust' dustfall study in 2013, the results had been compromised resulting from disturbance to sampling canisters. AEM followed up with its 2013 Air Quality and Dustfall Monitoring Report in its 2013 Annual Report. AEM further noted that it would improve upon this dustfall monitoring study in 2014 by using an ecological screening level risk assessment approach to analyze the impacts of road dust. AEM indicated that it would continue to apply dust suppressants in the 'highest traffic zones' (e.g., haul roads along the mine site, and between the Meadowbank and exploration camp) (AEM, 2014a). AEM has not indicated any further commitment to apply dust suppressant to the AWAR in the future. Further discussion on AEM's conclusions concerning the suppression of surface dust is available in Section 2.2.2.4 of this report.

l. Harmful Alteration, Disruption or Destruction Crossings along the Access Road

AEM indicated in its 2012 Annual Report that based on the water quality monitoring results from 2012 and previous years that had been collected along the harmful alteration, disruption or destruction (HADD) crossings per the *Fisheries Act*, it was not planning to conduct any surface water chemistry sampling in 2013 unless turbidity was observed at these crossings. The Board requested that AEM work with the appropriate authorizing agencies to ensure that any changes to its monitoring programs, specifically the HADD monitoring programs, meet the approval of the authorizing bodies, and that any changes be communicated to the NIRB (NIRB, 2013b). AEM responded that it had worked extensively with DFO and the Baker Lake HTO since March 2011 with regards to the revisions of DFO authorizations and in developing associated monitoring programs. AEM further noted that pursuant to these authorizations it was required to revise its Habitat Compensation Monitoring Plan, and did so in consultation with DFO (AEM, 2014a). The NIRB is satisfied with this response.

m. Permafrost

AEM indicated that in 2012, no monitoring of permafrost aggradation in taliks for Second Portage Lake, Portage pit or Bay Goose pit were conducted to verify the predictions made within the FEIS. AEM also indicated that no instruments were in place to collect this data and that permafrost monitoring was only conducted for the dike and tailings storage facility. The Board requested that AEM provide a plan of action and a discussion on its permafrost monitoring program that would include Second Portage Lake, Portage pit and Bay Goose pit as outlined in the FEIS (NIRB, 2013). AEM responded that to monitor the permafrost aggradation and talik beneath Second Portage Lake it had installed thermistors at various locations in the North Cell Tailings Storage Facility in 2012, including at the downstream toe of Stormwater Dike. Reported results of the thermistors indicated that the tailings were either continually frozen or had a 'frozen crust' that remained frozen during the summer of 2012. AEM noted that it planned to install new thermistors between the Central Dike and the Portage pit in 2013 and that it would monitor all thermistors on a regular basis. AEM

noted that while it did not install any thermistors in Portage pit due to the ongoing mining activities, it was monitoring permafrost aggradation through the thermistors installed in East Dike, Central Dike and between the Central Dike and Portage pit. AEM noted that it used the thermistors located on the South Camp Dike to monitor the permafrost in Bay-Goose pit and that it had installed 33 thermistors between Bay Goose Dike and Bay Goose pit (AEM, 2014a). As previously indicated, AEM responded to specific questions related to its monitoring of the talik as raised by AANDC (for more information please see Section 2.4.1.2).

n. *NWB Water Licence Amendment*

AEM's amendment application and Water Management Plan 2012 submitted to the NWB in 2013 included a reference to potentially extending Vault pit into Phaser Lake in 2016, which would require dewatering of Phaser Lake and undertaking of a fish-out program. The Board requested that AEM provide information regarding the potential dewatering of Phaser Lake, including detailed consideration of potential effects of the proposed expansion and dewatering to wildlife, water quality, and closure methods. It further requested that AEM provide any additional plans as needed related to the potential future dewatering of Phaser Lake, including an indication of authorizations required, plans to engage the NIRB's assessment process, and a timeline for these submissions (NIRB, 2013). AEM responded on January 7, 2014 that at present it did not intend to mine Phaser pit nor dewater Phaser Lake (AEM, 2014a).[1]

2.2.2.3. Authorizing Agency Responses to the Board's 2012 Recommendations

a) Monitoring of country foods – Condition 67

67. "Cumberland shall develop and implement a program to monitor contaminant levels in country foods in consultation with HC…"

In 2012, the Board invited Health Canada (HC) to provide comments on the wildlife screening level risk assessment (WSLRA) and the preliminary quantitative risk assessment (PQRA) reports prepared by AEM in order to meet the requirements of Condition 67, and to indicate whether or not additional information may be required with respect to the monitoring program.[2] HC indicated that it was unable to provide comments on the WSLRA report as it did not possess the relevant expertise in the areas of modeling emissions and deposition, environmental transport, fate and/or contaminant uptake by plants or wildlife (country foods) and suggested that another department may have the expertise necessary to review the WSLRA (HC, 2013). With respect to the PQRA report, HC indicated that it required the following additional information to provide comments on AEM's human health assessment: tin (Sn) species assessed in country foods; raw occurrence data for lead (Pb) in country foods; raw occurrence data for

[1] As previously mentioned in Section 1.1 AEM applied in July, 2014 for *Paragraph 35(2) (b) Fisheries Act Authorization (Normal Circumstances)* with the DFO and proposed to expand the current Vault pit operations into Phaser Lake.

[2] For extensive correspondence between the NIRB, HC and AEM regarding this request, please see the following folders on the NIRB's online public registry: http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/01-NIRB/2012/2-CORRESPONDENCE/; and http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/01-NIRB/2013/02-CORRESPONDENCE/

arsenic (As) in country foods; raw data for cadmium (Cd); and migration of fish from lakes onsite (with potential higher mercury content) to waterbodies where fishing occurs.

On April 10, 2013 AEM provided the requested information to HC. On January 27, 2014 HC responded that overall it was satisfied with AEM's response but was concerned about the consumption of country foods obtained from the project site (and the external reference sites) as the predicted Pb values in country foods were high and exceeded values that are observed as moderate consumption by other populations (general Canadian population and First Nations). HC noted that given the uncertainties observed in the predicted Pb levels at the site and at the reference sites, it suggested that AEM sample caribou kidney, caribou liver and Canada goose muscle at both onsite and external reference locations to establish the current Pb levels in these country foods.

On April 16, 2014 AEM responded to HC and agreed with most of its evaluations and noted that it would be conducting a follow-up screening level risk assessment (SLRA) in August, 2014. In response to elevated Pb values, AEM noted that predicted concentrations of Pb in caribou organs and muscle as well as Canada goose muscle for the Meadowbank area were lower than, or similar to, many values measured in caribou and waterfowl throughout northern regions. AEM has also noted that it uses an algorithm based on measured concentrations of Pb in plant, soil and water samples to predict the levels of Pb (and other toxic elements) in animal and bird tissue. AEM has noted that as wildlife, particularly caribou, and waterfowl can migrate vast distances, the use of tissue samples alone would likely not pinpoint the source of toxins to obtain Meadowbank specific data. Within its comment submission on AEM's 2013 Annual Report, HC noted that based on its review of AEM's response on April 16, 2014 it accepts AEM's rationale for not testing animal tissue samples and had no further questions regarding the modelling of Pb values. HC further noted that dietary exposure to lead should be as low as reasonably achievable (ALARA principle).

In correspondence to the NIRB dated July 15, 2014 the Government of Nunavut – Health clarified that while it does not object to AEM's planned scope for its 2014 SLRA the GN is not responsible for undertaking animal tissue sampling. The NIRB appreciates the comprehensive responses from, and correspondence between, HC, AEM and the GN on the PQRA.

<u>Spill at Baker Lake Marshalling Area – Condition 37 and 82 and Commitments 34, 35 and 38</u>

37. *"Cumberland will contract only Transport Canada certified shippers to carry cargo for the Project, and will require shippers transporting cargo through Chesterfield Inlet to carry the most up-to-date emergency response/spill handling equipment as recommended and accepted by the Government of Canada with the crew trained to deploy the equipment, including practice drills deploying spill equipment in remote locations within the Inlet."*

82. *Cumberland shall monitor the ingress/egress of ship cargo at Baker Lake and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer annually*

As previously reported, on August 9, 2012 an accidental spill of approximately 200 litres of diesel fuel occurred in Baker Lake at AEM's marshalling facility (NIRB, 2013).[3] According to AEM's reporting of the incident, the crew of the vessel (MT Dorsch) immediately started the clean-up of the area with assistance from AEM employees. AEM used additional equipment from the Canadian Coast Guard sea-can located in Baker Lake in order to clean up the spill as the ship did not contain sufficient material to complete the clean-up. The spill was reported to authorities including AANDC, EC, Transport Canada (TC) and the GN Spill Line. The NIRB was informed of this spill by the GN-Department of Environment on August 9, 2012.

On August 14, 2012 the NIRB contacted TC requesting information on the spill, including the legislation that would apply and any follow-up required by AEM or the shipping company, Woodward. In October 2012, TC's Marine Safety department confirmed that it was still investigating the incident for possible contraventions of the *Canada Shipping Act, 2001*. TC further indicated that both the vessel and the Oil Handling Facility (owned by AEM) were responsible for the clean-up of the spill.

On November 27, 2014 the Board requested that TC provide information on the conclusions of the investigation related to the fuel spill and any outcomes that might have resulted from the investigation of the incident. On March 4, 2014 TC responded to the Board's recommendation and noted that it had concluded its investigation into the pollution incident involving the M.T. Dorsch at Baker Lake. TC noted that it had investigated the incident to verify compliance with the *Canada Shipping Act, 2001* and had fined Coastal Shipping Ltd., the owner of the M.T. Dorsch, an Administrative Monetary Penalty of $6,000 under section 187 of the *Act*, which prohibits any deposit of fuel in Canadian Waters. The incident report prepared by TC is protected under the *Privacy Act* and as such, the NIRB was not permitted to access the report. The NIRB appreciates the correspondence from TC regarding its request.

2.2.2.4. Conditions Requiring Attention

The NIRB notes that AEM is not in full compliance with the following Terms and Conditions of the Meadowbank Project Certificate, and that recommendations from the Board have been provided to the Proponent under separate cover.

a) Acid rock drainage/metal leaching – Condition 15

15. "Cumberland shall within two (2) years of commencing operations re-evaluate the characterization of mine waste materials, including the Vault area, for acid generating potential, metal leaching and non metal constituents to confirm FEIS predictions, and re-evaluate rock disposal practices by conducting systematic sampling of the waste rock and tailings in order to incorporate preventive and control measures into the Waste Management Plan to enhance tailing management

[3] For correspondence between the NIRB and TC, please see the following folder on the NIRB's online public registry: ftp://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/01-NIRB/2013/02-CORRESPONDENCE/.

during operations and closure. The results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer."

Within its 2013 Annual Report, AEM provided a description of its sampling of blast holes for sulphur and carbon to differentiate non-potentially acid generating materials from those that are potentially acid generating as well as its testing methods for metal leaching. It appeared that no discussion had been provided regarding a comparison between predictions made in the FEIS and results of AEM's sampling. Furthermore, it was unclear how the results of the tailings sampling were used to re-evaluate rock disposal practices in order to incorporate preventative and control measures into the Waste Management Plan. There was also no discussion on how systematic sampling of the waste rock was incorporated into the Plan. The NIRB does note that AEM provided an updated Mine Waste Rock and Tailings Management Plan within its 2013 Annual Report.

b) Traditional Knowledge and Consultation – Conditions 39 & 40

39. "Within three (3) months of contracting with a shipping company to transport cargo to the Project through Chesterfield Inlet and prior to the commencement of shipping, Cumberland shall advertise and hold a community information meeting in Chesterfield Inlet to fully discuss the shipping program for the Project. Thereafter, Cumberland shall annually advertise and hold a community information meeting in Chesterfield Inlet to report on the Project and to hear from Chesterfield Inlet residents and respond to concerns. A consultation report shall be submitted to NIRB's Monitoring Officer within one month of the meeting."

40. "*Cumberland shall gather Traditional Knowledge from the local HTOs and conduct a minimum of a one-day workshop with residents of Chesterfield Inlet to more fully gather Traditional Knowledge about the marine mammals, cabins, hunting, and other local activities in the Inlet. Cumberland shall report to KivIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop."*

AEM noted in its 2013 Annual Report that it held meetings in the community of Chesterfield Inlet in 2013 to discuss different topics within the community including shipping (AEM, 2014f). Furthermore, while a summary of a meeting held on May 8, 2013 with AEM and the Hamlet and HTO of Chesterfield Inlet was provided, no indication of a wider community-level meeting was held (AEM, 2014g).

Condition 40 requires that AEM report annually to the NIRB and the KIA on Traditional Knowledge (TK) gathered from local Hunters and Trappers Organizations and workshops held in Chesterfield Inlet. In its 2013 Annual Report, AEM noted that there was no change in the information reported to AEM in 2012 from that collected during an IQ workshop held in 2010, however the NIRB found no information was provided in AEM's 2012 or 2013 Annual Reports regarding any additional TK collected from residents of Chesterfield Inlet on marine mammals, cabins, hunting and other local activities in the Inlet (NIRB, 2013a). While the NIRB acknowledges that within the May 8, 2013 meeting minutes there was discussion about the future development of a hunter harvest study with collaboration between AEM and the Chesterfield HTO, the NIRB notes that TK may change and evolve

over time and that as such , it is important that AEM continue to collect and report on TK regarding wildlife and local activities to accurately understand traditional land use and potential impacts of the project on various components of the environment. Considering that the Project is now well into its operations phase and that marine mammals, hunting, and other local activities may have changed throughout the Project life thus far, determining changes to local knowledge and concerns is essential.

c) Provision of Updated Information – Condition 56

56. Cumberland shall plan, construct, and operate the mine in such a way that caribou migration paths through the Project, including in the narrows west of Helicopter Island, are protected. Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and upgraded as new information on corridors becomes available. Information on caribou migration corridors shall be reported to the GN, KivIA and NIRB's Monitoring Officer annually.

During the NIRB's 2014 site visit to the Meadowbank site, the Monitoring Officer observed only one map outlining caribou migration corridors on one bulletin board (near the door to the gymnasium). NIRB staff did not observe maps posted in higher traffic areas such as the bulletin board outside of the check-in office where maps had been posted in previous years. The map posted at site was dated 2011, with data on 2010 caribou migration paths, however the NIRB notes that two maps showing caribou migration routes provided in AEM's 2013 Annual Report were dated 2014 and that the data presented was collected up to 2011. Furthermore, it is unclear whether or how information collected from consultation with Elders and local HTOs had been incorporated into the development of the maps as the data source on the maps themselves is noted as being based on satellite and GPS survey data (AEM, 2014d).

d) Air Quality Monitoring – Condition 71

71. "Cumberland shall, in consultation with EC, install and fund an atmospheric monitoring station to focus on particulates of concern generated at the mine site. The results of air quality monitoring are to be reported annually to NIRB."

Within its 2013 Annual Report, AEM noted that from August 10 to September 11, 2013 it conducted its second study of dustfall along the AWAR to determine whether impacts predicted in the Final Environmental Impact Statement were being exceeded. AEM used 35 sampling canisters in two duplicate transects from both the east and west sides of the road at kilometres 78 and 18 as well as locations nearer to Baker Lake and to the Meadowbank site (AEM, 2014f). AEM explained that data from only seven of the 35 canisters (plus four duplicates) could be collected and analyzed as the other 28 had been knocked over during the data collection (AEM, 2014b). Although AEM noted that it would conduct a third dustfall sampling program in 2014, after addressing the support system of the canisters, it did report that data collected along the AWAR and nearer to the Meadowbank site were within range of the commercial/industrial levels pursuant to Alberta Environment's ambient air quality guideline. AEM also noted that dustfall samples collected along kilometre 78 and in the middle of the AWAR were higher than those collected at the Emulsion Plant and Vault road, at the same distance from the road (AEM, 2014b). AEM again noted that

although some of the successful results of the dustfall study indicated levels that exceeded some of the nuisance guidelines published by Alberta Environment along the AWAR and at the mine site, total dustfall rates were generally less than those measured at the Ekati Diamond Mine, where no change in vegetative communities was reported. AEM also noted that there were no observed impacts to water quality along the AWAR. While the NIRB acknowledges that AEM is working towards a successful dustfall sampling program, without ongoing and successful sampling protocols in place to provide results for analysis, the NIRB is hesitant to confirm with confidence, the results and conclusions of the program. The NIRB looks forward to the results of sampling from future years and to AEM's assessment against initial impact predictions.

e) On-site incinerators – Condition 72

72. On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canada-wide Standards for mercury emissions, and Cumberland shall conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC and NIRB's Monitoring Officer.

In its 2013 Annual Report, AEM indicated that the Daily Report Logbook entries for the incinerator operation were available for every month in 2013 with the exception of August, in which data for the majority of the days was missing. AEM noted that the Environmental Department had addressed this by advising the responsible department on the maintenance of a monthly record (AEM, 2014f).

In the review of the available 2013 Incinerator Daily Report Logbook (AEM, 2014e), the NIRB notes that the incinerator temperature in the secondary chamber was below the recommended 1000 ºC temperature on several occasions. It is calculated that of the 318 recorded burn cycles, there were 91 burn cycles where the secondary chamber was less than 1000 ºC, 34 burn cycles where the secondary chamber was less than 900 ºC and 1 burn cycle where the secondary chamber was less than 200 ºC. It was previously noted by EC that the incinerator temperatures in the secondary chamber should be above 1000 ºC to ensure complete combustion and to minimize the formation and release of contaminants. [4]

AEM noted that per its discussions with EC, incinerator stack testing would be undertaken every two years, and that it would conduct stack testing in 2014 (AEM, 2014f).

f) Suppression of surface dust – Condition 74

74. "Cumberland shall employ environmentally protective techniques to suppress any surface dust."

As noted previously and within the NIRB's 2014 Site Visit Report (see Appendix I) and AEM's 2013 Annual Report, to date, dust suppression techniques have not been applied to manage dust along the AWAR between Baker Lake and Meadowbank, and have been

[4] Environment Canada letter to Nunavut Impact Review Board, Re: *Comments related to Agnico-Eagle Mine Ltd.'s Meadowbank Gold Project 2010 Annual Report*, November 2, 2011.

limited to haul roads at the mine site, between the Meadowbank gatehouse and Exploration Camp site, and the airstrip. Dust suppression measures employed by AEM at these areas were noted to include the use of liquid calcium chloride between the Meadowbank gatehouse and Exploration Camp site and water applied to the mine site roads (including Vault road) and the airstrip.

g) Accidents and Malfunctions – Condition 75

75. "Cumberland shall provide a complete list of possible accidents and malfunctions for the Project. It must consider the all-weather road, shipping spills, cyanide and other hazardous material spills, and pitwall/dikes/dam failure, and include an assessment of the accident risk and mitigation developed in consultation with Elders and potentially affected communities."

While the NIRB acknowledges that AEM has complied with most of Condition 75, including providing a list of possible accidents and malfunctions, it is unclear in the submitted management plans whether, and how, these were developed in consultation with Elders and potentially affected communities.

2.2.3. Compliance Monitoring by Authorizing Agencies

On April 25, 2014 the NIRB requested that authorizing agencies with a mandate or jurisdictional responsibility for the Meadowbank project review AEM's 2013 Annual Report and provide comments and information with respect to compliance monitoring for the 2013 – 2014 reporting period as required in Part D of Appendix D of the Meadowbank Project Certificate (NIRB, 2011). Specifically, comments were requested regarding the following:

a) How the authorizing agency has incorporated the terms and conditions from the Project Certificate into their permits, certificates, licences or other government approvals, where applicable;
b) A summary of any inspections conducted during the 2013 reporting period, and the results of these inspections; and
c) A summary of AEM's compliance status with regard to authorizations that have been issued for the Project.

The following is a *summary* of the comments received from parties regarding compliance monitoring.

2.2.3.1. Government of Nunavut (GN)

In regards to AEM's 2013 archaeological impact assessment study, the GN noted that while it found AEM to be in compliance with the legislated requirements, it required geo-spatial clarification of additional areas surveyed, which were north, west, and east of the Priority Areas (Areas 1 and 2).

The GN also commented on socio-economic monitoring and Condition 64 of the Project Certificate and noted that the Kivalliq SEMC reports do not include comprehensive project-specific data to be able to monitor the predictions made in the Final Environmental Impact

Statement. The GN disagreed with AEM's conclusion that its participation in the Kivalliq Regional SEMC would satisfy its socioeconomic reporting requirements and noted Kivalliq SEMC reports should not qualify as the submission of monitoring results for the Meadowbank socio-economic monitoring program. The GN concluded that when the Meadowbank socio-economic monitoring program is established, not only could Condition 64 be met, but that the Kivalliq SEMC reports could "become an acceptable channel to report monitoring results".

2.2.3.2. Aboriginal Affairs and Northern Development Canada (AANDC)

AANDC's Water Resource Officers conducted two inspections in 2013 for compliance with the Type A Water Licence as issued by the NWB (Licence No. 2AM-MEA0815). AANDC noted that AEM had clarified, mitigated, or is in the process of mitigating, the majority of issues noted during the site inspections and noted the following outstanding issues in its comment submission:

- Exceedance of total allowable water usage limit of 700,000 m^3 per year as stipulated in the water licence;
- Unacceptable material found in the landfill;
- Lack of signage at sampling locations;
- Use of Quarry 23 to store broken/burnt equipment, hydrocarbon staining, batteries, etc.
- Seepage of contact water into fish-bearing NP-2 Lake from the Portage waste rock storage facility; vegetation around the lake brown in colour and appeared to be dead.

AANDC noted that following the inspections, AEM had clarified, mitigated or otherwise rectified, or that it was in the process of rectifying, the majority of the issues noted. AANDC issued an Inspector's Direction on November 8, 2013 to AEM regarding the deposition of waste in contravention of the *Nunavut Waters and Nunavut Rights Tribunal Act*, section 12(1) with regard to the seepage into NP-2 Lake. AANDC further noted that an investigation into the seepage was currently ongoing. In response to AANDC's Inspector's Direction regarding the Portage waste rock storage facility seep, AEM conducted an investigation into the seepage and developed an additional report on the issue which it included within its 2013 Annual Report.

AANDC also commented on socio-economic monitoring and acknowledged that AEM has worked with AANDC and the GN on the Kivalliq SEMC, in which AEM has provided Meadowbank specific socio-economic indicators, and collaborated with the two parties to develop a Meadowbank socio-economic monitoring program. AANDC also noted that although, through its understanding, AEM has not currently met Condition 64, it anticipated that with continued collaboration with the GN and AANDC in working towards establishing a Meadowbank socio-economic monitoring program, Condition 64 would be met.

2.2.3.3. Environment Canada

Within it comment submission, EC reported that it did not identify any non-compliance issues through its assessment of four quarterly reports required under Section 21 of the Metal Mining Effluent Regulations (MMER) and AEM's 2012 Annual Report. On August 27, 2013 EC

Enforcement Officers and AANDC Inspectors completed a joint inspection in follow-up to AANDC's July 30, 2013 visit. This visit was specifically in response to results of sampling of the Portage waste rock storage facility seepage into NP-2 Lake. In response to sampling results, EC initiated an on-going investigation under the *Fisheries Act* in November 2013. EC clarified within its response to the NIRB's request for comment that in terms of compliance monitoring it would comment on AEM's 2013 Annual Report during the next reporting season, and as EC's 2014 inspection program was based on the results of the 2013 Annual Report, results of this program would be available during the subsequent reporting season.

2.2.3.4. Fisheries and Oceans Canada (DFO)

DFO conducted a site visit from August 7-9, 2013 resulting in its conclusion that AEM was not in compliance with all of its monitoring requirements pursuant to its *Fisheries Act* Authorizations (Nos. NU-03-0191.4 and NU-03-0191.3). DFO noted that its officer and AEM staff discussed mortality rates associated with gill nets, which were used as part of AEM's fishout program at Vault Lake, as well as less lethal alternatives (No. NU-03-0191.4). DFO noted that the seepage at the Portage waste rock storage facility into NP-2 Lake was in contravention of *Fisheries Act* Authorization No. NU-03-0191.3. It further noted that pursuant to Section 30 of the *Fisheries Act*, AEM is required to notify DFO when unauthorized serious harm to fish occurs or is in danger of occurring, and specified that AEM should have contacted DFO when it first identified the leak of waste water from the Portage waste rock storage facility into the fish bearing NP-2 Lake.

DFO noted the following additional potential non-compliance with regards to DFO authorizations and requested follow-up from AEM regarding:

- Lack of photographic records provided in 2013, which is to be provided every other year (No. NU-03-0190– All Weather Access Road);
- Absence of the Western Channel Crossing Monitoring report in regards to monitoring of habitat shoal (No. NU-08-0013 Western Channel Crossing);
- Requested clarification on whether any construction took place in 2013 to which mitigation measures apply and absence of ongoing basin habitat improvements (No. NU-03-0191.3-Portage and Bay Goose pits);
- The exceedance of the blast limit on lakes near the mine on 12 occasions during egg incubation period (No. NU-03-0191.3-Portage and Bay Goose pits);

DFO noted that in follow-up with AEM, AEM agreed to follow the condition for monitoring the AWAR every other year, as required under *Fisheries Act* Authorization No. NU-03-0190.

2.2.3.5. Transport Canada (TC)

TC noted that in response to the coming into force of the *Navigation Protection Act* (NPA), it had conducted a navigability assessment of Second Portage, Third Portage, and Vault Lakes and determined that the lakes were not 'navigable waters' pursuant to the NPA.

TC noted that information displayed on AEM's Hazardous Waste Shipping Manifest Movement Documents did not comply with all of the regulations as required by Part 3 of the Transportation of Dangerous Goods Documentation. TC further reminded AEM of the requirements of the Transportation of Dangerous Goods (TDG) Regulations and that TC requires a 30-day follow-up report to be submitted for the quantities of dangerous goods displaced within the TDG Regulations. TC noted that it would follow-up with AEM with specific recommendations to address the non-compliances.

2.2.4. Compliance with Instruments

2.2.4.1. Nunavut Water Board Licence

In August, 2014 AEM applied for a renewal to its Type A Water Licence (No. 2AM-MEA0815) with the NWB for a period of 10 years and would also involve an increase to the permitted water usage from 1.15 million cubic metres per year (m^3/y) to 9,119,652m^3/y in 2018 to facilitate pit re-flooding. The NIRB considered two avenues under the NLCA (Sections 12.4.3 and 12.8.2) to determine the impact assessment requirements applicable to AEM's renewal application. On September 30, 2014 the NIRB issued correspondence indicating that the application to renew the NWB Type A Water Licence would not change the general scope of the Meadowbank Gold Project as previously reviewed by the Board, and that the exceptions noted in NLCA 12.4.3 (a) and (b) did not apply. The renewal application was exempt from the requirement for screening pursuant to Section 12.4.3 of the NLCA and the renewal activities would remain subject to the terms and conditions of the NIRB Project Certificate as issued on December 31, 2006.

2.2.4.2. *Fisheries Act* Authorization

As described earlier in this report, in July 2013 AEM applied to DFO for amendments to its existing *Fisheries Act* Authorizations No. NU-03-0190 – AWPAR and No. NU-03-0191.3. AEM requested an amendment to the monitoring frequency as required by its *Fisheries Act* Authorization No. NU-03-0190 and a reduction to the existing letters of credit held by the Government of Canada from the currently held $25.675 million to $8.6 million as required by its *Fisheries Act* Authorization No. NU-03-0191.3. The NIRB received additional clarification from AEM regarding the amendments requested on September 6, 2013.

On September 26, 2013 the NIRB notified AEM that it would consider two avenues under Sections 12.4.3 and 12.8.2 of the NLCA to determine the impact assessment requirements applicable to its applications to amend its *Fisheries Act* authorizations. The NIRB invited interested parties and agencies with jurisdictional authority and/or licences and approvals associated with the Meadowbank Gold Project to provide their comments to the Board with respect to AEM's proposed amendments to its *Fisheries Act* Authorizations (No. NU-03-0190 – AWPAR and No. NU-03-0191.3) on or before October 10, 2013. The NIRB also requested that DFO provide comments with respect to the requested amendments.

On or before October 15, 2013 the NIRB received comments from the KIA, and DFO. Based on the comments received and a thorough assessment of all materials provided to the Board, the NIRB issued correspondence on October 21, 2013 indicating that the proposed amendment

applications by AEM did not change the general scope of the Meadowbank Gold Project as previously reviewed by the Board, and the exceptions noted in NLCA 12.4.3(a) and (b) do not apply. However, the NIRB did provide suggested wording for the amendments and requested clarification from DFO on a number of items.[5] On November 28, 2013 DFO responded to the NIRB's letter with additional clarification and comments regarding the suggested edits to the amendments. On March 12, 2014 AEM submitted a letter to the DFO withdrawing amendment requests applied for under *Fisheries Act* Authorization NU-03-0190 (Condition 5.2) and *Fisheries Act* Authorization NU-03-0191.3.

2.2.4.3. Compliance with other licenses and authorizations as described in the 2013 Annual Report

Within its 2013 Annual Report, AEM noted that samples taken in the secondary containment areas of the bulk fuel storage tanks at the Baker Lake marshalling facility contained elevated levels of lead that exceeded the water quality limit of 0.001 milligrams per litre as stipulated in the NWB Type A Water Licence (No. 2AM-MEA0815). While AEM noted that water with parameters exceeding the water quality limit was not discharged to the land, there was no discussion provided as to why this value exceeded the limit or what steps it would take to mitigate elevated lead levels for Tanks 1 to 4 in the future.

2.3. EFFECTS MONITORING

Effects monitoring can be described as an assessment of the measurable change to a particular environmental or socio-economic component, as compared to the potential effects that were predicted to result from a proposed development. In the case of Meadowbank, impact predictions and mitigation measures were outlined and developed throughout the environmental review of the Project, and were recorded and presented through the Proponent's Final Environmental Impact Statement (FEIS) and other related documents.

On April 25, 2014 the NIRB also requested that authorizing agencies with a mandate or jurisdictional responsibility for the Meadowbank project review AEM's 2013 Annual Report and provide comments and information with respect to effects monitoring as required in Part D of Appendix D of the Meadowbank Project Certificate (NIRB, 2011). Specifically, comments were requested regarding the following:

a) Whether the conclusions reached by AEM in its 2013 Annual Report are valid;
b) Any areas of significance requiring further studies; and,
c) Changes to the monitoring program which may be required.

The following section provides the NIRB's review of the 2013 Annual Report and a *summary* of the comments received from parties.

[5] NIRB Letter to Elizabeth Patreau, DFO Re: "*Application Exempt from the Requirement for Screening pursuant to Section 12.4.3 of the NLCA: Agnico-Eagle Mines Ltd.'s Application to Amend its Fisheries Act Authorizations Nos. NU-03-0190 and NU-03-0191.3 for the Meadowbank Gold Project, Kivalliq Region*", October 21, 2013

2.3.1. NIRB's Review of AEM's 2013 Annual Report

Appendix D of the Project Certificate provides an outline of the requirements for the Proponent's annual report for the Meadowbank Project. Particularly, the annual report should include a summary of the results from the post-environmental assessment monitoring program (PEAMP), including an analysis of the Project's impact upon the environment with reference to the predictions and environmental and socio-economic indicators referenced throughout the FEIS and the Final Hearing. AEM provided a summary of the monitoring that was completed in 2013 for the following requirements:

- Aquatic monitoring
- Noise monitoring
- Air quality monitoring
- Wildlife monitoring
- Country food
- Archaeology

As part of its post-environmental assessment program, AEM provided a summary on how the current environmental and socio-economic effects of the Meadowbank mine site compare to the impacts as predicted in the FEIS for the following:

- Aquatic environment
- Terrestrial and wildlife environment
- Noise quality
- Air quality
- Permafrost
- Socio-economics

The NIRB reviewed these items as presented in AEM's 2013 Annual Report summarized as follows:

2.3.1.1. Aquatic Environment

Groundwater monitoring program

The groundwater monitoring program was conducted from August to October, 2013 with samples successfully collected at only two monitoring wells (MW 08-02 and 08-03). AEM noted that one well (MW 11-02) had become obstructed due to melted tubing used to remove melt water and was therefore unable to be sampled during the 2012 groundwater monitoring program (AEM, 2013a), was still obstructed and would be replaced in 2014 (AEM, 2014f).

The issue of defective wells at the Meadowbank mine site has been an ongoing issue since the commencement of the groundwater monitoring program in 2008. This may be due, as indicated by AEM, to the fragility of the wells and their operating within an arctic environment. As recommended by the Board on November 27, 2013 AEM attempted alternative groundwater sampling to supplement the monitoring data via a pit wall seep and via production drill holes. AEM noted within its 2013 Annual Report that while it had successfully sampled one pit wall seep in the Bay-Goose pit, there was insufficient inflow of groundwater and freshwater which

was not impacted by the drilling process in the production drill holes to conduct monitoring at these sites. AEM committed to collecting samples from the above noted pit wall seep in 2014 if the seepage persists, as well as to sample from additional seeps observed in 2014. AEM submitted a Groundwater Monitoring Report in support of its Groundwater Monitoring Plan, the former which explained the different groundwater sampling process/methodologies used.

2.3.1.2. Noise Quality Monitoring

In its 2013 Annual Report, AEM indicated that during 2013 it had conducted noise monitoring at four of the five previously determined monitoring locations that were also reported on in the 2011 Annual Report (AEM, 2014f). The NIRB noted potential discrepancies and ambiguity within AEM's 2013 Annual Report as to which of the four monitoring locations were used for sampling. For instance, in Table 8.37 of the 2013 Annual Report, results were provided from monitoring stations R2, R3, R4, and R5 while in the Post Environmental Assessment Monitoring (PEAMP), AEM discussed sound levels relating to monitoring stations R1, R2, R3, and R5.

AEM noted that it again experienced equipment malfunction, difficulties with software and filtering of the data recorded outside optimal weather conditions. AEM reported that no equivalent sound levels (Leq) exceeded day-time or night-time target sound levels. AEM concluded that because no Leqs were elevated due to mine activity, it did not recommend additional mitigation measures or propose any changes to its noise monitoring program (AEM, 2014f). Although based on the data provided, it is unclear to the NIRB why the 2013 reported sound levels are so much lower than those reported in 2012, AEM noted in its January 7, 2014 response to Board recommendations that the activities contributing to the excess sound levels in 2012 were generally temporary and that its monitoring in 2013 was increased to four days at all sites to obtain more representative data (AEM, 2014a). Furthermore, as previously discussed, previously recorded sound levels indicated elevated levels at monitoring station R1 (AEM, 2013a), which was not functioning during the 2013 sampling year.

2.3.1.3. Wildlife Monitoring

<u>Participation in Surveys – Conditions 51 & 54</u>

> *51 "Cumberland shall engage the HTOs in the development, implementation and reporting of creel surveys within waterbodies affected by the Project to the GN, DFO and local HTO."*
>
> *54 "Cumberland shall provide an updated Terrestrial Ecosystem Management Plan to the GN, EC and INAC, within three (3) months of the issuance of the Project Certificate including: e. Details of a comprehensive hunter harvest survey to determine the effect on ungulate populations resulting from increased human access caused by the all-weather private access road, including establishing preconstruction baseline harvesting data, to be developed in consultation with local HTOs, the GN-DOE and the Nunavut Wildlife Management Board…"*

AEM noted that there were 49 participants in its 2013 Hunter Harvest Study as compared to 62 in 2012 and that the recorded harvest was less than had been indicated by the last four years of

collected data. Furthermore, AEM noted that while there were less reported total caribou harvested in 2013 than in previous years, 43 percent of participants' total harvest was within 5 kilometres (km) of the AWAR, compared to 18 percent historically. AEM suggested that the lower total reported harvest numbers of caribou within five km of the AWAR could be a result of participant fatigue and a decrease in participant response rate rather than a decrease in wildlife abundance, and it was unsure how the decline in participants was affecting the results of its study.

In addition, AEM's results of creel surveys as presented within its 2013 Annual Report indicated that study participants were less willing to travel long distances to catch fish, regardless of AWAR access (AEM, 2014f, p. 54). AEM also noted that "based on the number of reported trips in the 2013 creel survey, it appears that fishing effort is decreasing, or, as observed with the hunter harvest study, study participation and reporting rates could be on the decline" (AEM, 2014f, p. 54).

2.3.1.4. Socio-economics

While the NIRB acknowledges that AEM provided a fairly comprehensive analysis of data collected through its project specific socio-economic monitoring, it notes that AEM's analysis would benefit from a project specific socio-economic monitoring program. Similarly, the NIRB notes that additional clarification and detail would contribute toward not only AEM's analysis, but would further inform other parties' review of socio-economic considerations as well, including:

- While AEM provided a breakdown of the types of job positions held by Inuit and Nunavummiut at the Meadowbank site, it was unclear how many of those positions were held by NLCA beneficiaries.
- While AEM noted that it utilized exit interviews and focus group meetings to determine the most common reasons for voluntary terminations, the percentages of these reasons was not included.
- While AEM reported that it delivered a pre-apprenticeship program in Baker Lake in 2013, there were few details provided with respect to the program enrollment, completion, and subsequent rates of employment.

2.3.1.5. General

Reported Spills

In its reporting of spills in Table 7.1, AEM did not include the unit numbers for quantities of spills which makes it difficult to provide consideration of these incidents.

2.3.2. Effects Monitoring by Authorizing Agencies

2.3.2.1. Aboriginal Affairs and Northern Development Canada (AANDC)

Within its comment submission, AANDC noted that it was generally unclear how observed impacts as reported on in the 2013 Annual Report compare to predictions made in the Final Environmental Impact Statement (FEIS). AANDC made recommendations on how this could be addressed in future reports, and also requested clarification as to why the applicable monitoring measures in 2013 was different than the monitoring proposed in the FEIS.

AANDC commented on AEM's observation of poor water quality in areas of NP-2 Lake and its conclusion that this had no observed impact, noting that water quality is a valued ecosystemic component and requested that AEM provide further explanation on how poor water quality had no observed impacts.

AANDC also commented on AEM's proposed monitoring for tailings contamination of groundwater through taliks and requested that AEM describe how its current monitoring program is sufficient to capture potential contaminants flowing through the underlying talik into groundwater, where permafrost has not fully developed.

Finally, AANDC commented on the reported caribou fatalities resulting from a vehicle collision and recommended that AEM clarify whether it had implemented any additional measures in 2014 to reduce future collisions.

2.3.2.2. Government of Nunavut (GN)

Within its submission, the GN commented on mine related effects to wildlife, specifically regarding caribou and whether AEM had met or exceeded the thresholds it set in its Terrestrial Ecosystem Management Plan (TEMP). The GN disagreed with AEM's conclusion that the Project did not exceed the threshold in Section 4.4.2.2 of the TEMP, specifically that mine related activities will not preclude caribou and muskoxen from using suitable habitats beyond 500 m of mine buildings, facilities and roads. The GN noted that the presence of caribou within this 500 m buffer is not indicative of the Project having no noise-related effect on wildlife. The GN further noted that the results of satellite-collaring of caribou herds presented in the Annual Report indicate that caribou entering the regional study area (outside of this 500 m buffer) divert their route away from mine operations which suggests that caribou may be affected by noise disturbance over distances greater than 500 m. The GN added that Project related effects in addition to exclusion from suitable habitat include health related impacts, such as increased energy expenditure. The GN recommended further investigation into mine related disturbance.

The GN also noted that the reported death of five caribou resulting from a collision with a grader is in contravention with Section 4.4.2.3 of the TEMP, that caribou and muskoxen will not be killed or injured by vehicle collisions, and requested that AEM provide information on new mitigation measures.

The GN commented on AEM's 2013 Hunter Harvest Study and noted that the caribou harvest levels within 5 km of the AWAR in 2013 have more than doubled (from 18 to 43 percent) since the construction of the road, and that this exceeds threshold levels as set by the Proponent and requested that AEM provide further mitigation measures. Furthermore, the GN recommended that AEM extend the area of its hunter harvest study to 15km off the AWAR to better demonstrate the impact of the AWAR on harvest activities. The GN also requested clarification from AEM on the extent of the no shooting zone from the AWAR and its suitability for mitigating impacts on hunting activities. In response to AEM identifying two collared caribou within the local and regional study areas during calving season, the GN recommended that further mitigation measures be developed to minimize impacts to caribou during calving season.

2.3.2.3. Environment Canada (EC)

Within its submission, EC commented on the seepage at the Portage waste rock storage facility and recommended that AEM undertake ongoing follow-up monitoring of NP-2 Lake as well as conduct a water quality and biological survey in 2014 to evaluate the fish population status. EC further commented on the thresholds and trigger values in AEM's 2013 Core Receiving Environment Monitoring Program and recommended that cyanide should be added to routine analyses in exposure and reference lakes and that a trigger level should be developed. EC commented on issues that AEM has encountered regarding groundwater sampling and the resulting lack of comprehensive data. EC agreed with AEM's plans to address well failures. EC also requested clarification on different parameters analysed regarding water quality and quantity, and on the reported drop in cyanide concentrations in the tailings reclamation pond between June and July, 2013.

2.3.2.4. Health Canada (HC)

Within its submission, HC commented on information provided by AEM throughout 2014 with regards to its wildlife screening level risk assessment (WSLRA). HC noted that if AEM's predicted levels of lead (Pb) in caribou and goose tissues and muscles are accurate, this may represent a safety concern regarding human consumption. In its review of AEM's reporting on country food, HC recommended that the GN sample animal tissues onsite and offsite if the results of AEM's proposed 2014 SLRA indicate similar (high) levels of Pb as previously predicted. HC further noted that if Pb levels in country foods are high in Nunavut, then it may be appropriate for the GN to consider risk management options.

2.3.2.5. Fisheries and Oceans Canada (DFO)

DFO compared information within the 2013 Annual Report to information provided pursuant to conditions within AEM's *Fisheries Act* Authorizations (Nos. NU-03-0191.3-Portage Pit and Bay-Goose Pit, NU-03-0191.4-Vault Lake and NU-03-0190-AWAR). While DFO generally did not express concern with regards to AEM's conclusions, it did ask AEM to clarify activities undertaken to more fully determine if compliance was met and if it agreed with AEM's conclusions. DFO noted that no further studies in addition to those already required in AEM's *Fisheries Act* Authorizations for the Meadowbank project were necessary.

In regards to AEM's monitoring program itself, DFO requested clarification regarding AEM's Habitat Compensation Monitoring Plan and No Net Loss Implementation Cost Estimate and Construction Schedule documents, and also asked that it provide additional information on its proposed monitoring schedule, particularly as it relates to reflooding and monitoring interstitial water quality, periphyton, fish use, and structure for the east dike, Bay Goose dike and finger dikes, and how AEM planned to successfully meet habitat compensation requirements. Similarly, DFO commented on an estimated dike breach in 2025 and AEM's proposed sampling in 2025 and 2030 for fish use, which DFO noted would leave only one season to monitor fish use following the breach. DFO requested that AEM elaborate on how it would monitor fish use after reflooding of the mine pits, what parameters would be established, and why it had only proposed to monitor fish use and presence for one season after reflooding.

2.3.3. Areas Requiring Further Study or Changes to the Monitoring Program

2.3.3.1. Appendix D and the Annual Report

The NIRB notes that AEM's 2013 Annual Report provided a detailed analysis of results from its 2013 monitoring program and that it compared observed impacts to predictions made within the FEIS. AEM's evaluation focused on the VECs that had been identified in the FEIS, including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. The NIRB acknowledges that AEM has worked to improve upon its reporting of findings within its PEAMP and notes the general clarity of the presentation of information in its tables of potential impacts, causes, proposed monitoring, applicable monitoring and observed impacts. However, the NIRB found that the discussion and analysis within the PEAMP could be expanded upon, particularly as it related to observed effects, accuracy of predictions, and monitoring and mitigation protocol. The overall lack of reference to baseline data or to data from previous years makes it difficult to quantify or measure the relevant effects of the project. While comparison between monitoring as proposed in the FEIS and monitoring undertaken in 2013 was helpful, rationale for why these were different was not always clearly presented. The NIRB also found that not all relevant data was included in the PEAMP; for example, in its recommendations for additional mitigation or adaptive management with regards to terrestrial impacts, AEM did not discuss proposed mitigation measures in response to the threshold for harvesting within 5 kilometres of the AWAR being exceeded. Furthermore, as noted in its analysis of AEM's noise quality monitoring, the NIRB found that some of the sections within the PEAMP provided more clarity than others; a consistent approach across VECs would be helpful in future annual reporting.

2.4. OTHER ACTIONABLE ITEMS

2.4.1. Summary of AEM's response to comments

On August 15, 2014 AEM provided the NIRB with a response to Parties' comments on the 2013 Annual Report summarized as follows:

2.4.1.1. Compliance Monitoring

Government of Nunavut (GN)
In its response to the GN's comments, AEM provided a map clearly depicting the location of the five proposed drill sites and the delineation of Areas 1 and 2 of its 2013 archaeological impact assessment study. AEM further explained that its archaeologists extended the study area beyond the Priority Areas to prevent future disruption and did not identify any archaeological sites. AEM acknowledged the GN's comments and conclusions with regards to socio-economic monitoring and noted that it anticipates developing the monitoring program to satisfy NIRB Condition 64.

Aboriginal Affairs and Northern Development Canada (AANDC)

AEM acknowledged AANDC's comments and conclusions with regards to socio-economic monitoring and noted that it anticipates developing the monitoring program in collaboration with AANDC and the GN to satisfy NIRB Condition 64.

Fisheries and Oceans Canada (DFO)
AEM provided photographs taken during the summer of 2013 of the stream crossing at R02 along the AWAR which included compensation features and larval drift traps to satisfy *Fisheries Act* Authorization NU-03-0190-All Weather Private Access Road. AEM explained that it did not provide a Western Channel Crossing Monitoring report as a result of discussions with DFO that resulted in the Western Channel Crossing authorization not being valid and being incorporated into NU-03.0191.3-Portage Pit and accounted for in the revised No Net Loss Plan. AEM clarified that no construction took place in 2013 under *Fisheries Act* Authorization NU-03-191.3 and that the basin habitat improvements were completed sooner than anticipated in 2012 and that no new basin construction was completed in 2013. AEM added that habitat construction was focused on the backfilling of the Central Portage pit in 2013.

In regards to DFO's comment on the exceedance of blast limits during egg incubation periods, AEM indicated that four exceedances occurred in Vault Laker from November to December 2013 after fishout was completed and further noted that the exceedance would not impact egg incubation. AEM also noted that the other eight exceedances occurred at Bay-Goose pit and South Portage pit and were close to 13 millimetres per second (mm/s) and not expected to result in any effects on egg incubation. In response to DFO's comments on notifying the department when unauthorized serious harm to fish occurs or is in danger of occurring, AEM noted that it would take the necessary actions to notify DFO if a similar situation occurred in the future.

Transport Canada (TC)
AEM responded to TC's comments and noted that it had hired a qualified hazardous waste disposal contractor and that in 2014 AEM and its contractors underwent training regarding the transportation of dangerous goods.

2.4.1.2. Effects Monitoring

Government of Nunavut
AEM responded to the GN's comments on noise related effects on wildlife and noted that its noise target levels are based on recommendations made by EC's "Environmental Code of Practice for Metal Mines". It further noted that as no equilibrium sound pressure levels (Leq) in 2013 exceeded target sound levels of 55 decibels (dBA) during the daytime and 45 dBA during the nighttime, that mine activities did not preclude caribou from using suitable habitat near the mine site.

In response to the GN and AANDC's comments regarding the reported caribou fatalities resulting from a vehicle collision, AEM noted that its mitigation measures include:

- Advising all drivers to use extra caution during adverse weather conditions and to reduce speeds if the weather deteriorates;
- Weekly monitoring by trained wildlife observers from Baker Lake and incidental report of wildlife by road operators;
- Increase of AWAR wildlife surveys from weekly to biweekly or even triweekly frequency during caribou migration between October and December;
- Collaboration with GN wildlife EIS technicians who provide real-time telemetry data on approaching caribou, which allows AEM to send proactive reminders and notices to all AEM staff and contractors in advance of large herds migrating near the road; and
- Convoys or road closures if high numbers of caribou are using the road.

In response to the GN's comments on its 2013 Hunter Harvest Study, AEM noted that the 5 kilometre corridor was established in collaboration with GN wildlife biologists during the development of the 2005 Environmental Impact Statement. AEM further noted that while it would be amendable to discussing the expansion of the study area, this could compromise the comparison between future and historical data. AEM committed to working with the GN and HTO to discuss implementation of further mitigation measures along the AWAR as well as collaborating with the GN regarding strategies in response to caribou entering the local and regional study areas during calving season. Through its review of both the GN's comments and AEM's response, the NIRB is hesitant to recommend that the survey area for the Hunter Harvest Study be extended, since changing such a central parameter could pose a risk of obscuring study results.

Aboriginal Affairs and Northern Development Canada
Within its response to comments, AEM noted that it focused on reducing redundancies in its reporting and that where it had interpreted the intention of the PEAMP as being a high level overview, it had provided detailed descriptions within other sections of the annual report. In response to AANDC's request for clarification on why the applicable monitoring in 2013 was different than the monitoring proposed in the FEIS, AEM noted that this is not one of the objectives of the PEAMP as outlined in the NIRB Project Certificate Appendix D. AEM further noted that it had worked with applicable agencies and reviewers to develop monitoring

plans that are reflective of mine planning and meet the conditions of its authorizations, licences and permits.

AEM noted that its conclusion that there was no observed impact from the seepage from the Portage waste rock storage facility into NP-2 Lake was based on its determination that the magnitude and duration of the water quality changes was not significant and that there were no known impacts to the receiving environment and aside from water quality, no other impacts were observed.

AEM provided clarification and detail on its monitoring of the freezeback of the talik through thermistor and groundwater monitoring data collection to ensure that no groundwater is contaminated by tailings through the talik.

Environment Canada (EC)
Within its response submission, AEM noted that it would continue to monitor water quality in NP-2 Lake and that it had committed to conducting monthly open water sampling in downstream NP-1, Dogleg and Second Portage Lakes. AEM provided further information regarding its monitoring of NP-2 Lake and noted that in consultation with EC it would conduct additional biological surveys in 2015 if needed, and dependent on water quality findings and toxicological testing. AEM noted that while it would not undertake follow-up biological field surveys, it would undertake follow-up laboratory toxicity testing. AEM further noted that it had added Total and Free Cyanide analysis to its 2014 Core Receiving Environment Monitoring Program (CREMP) and would develop appropriate trigger levels based on applicable threshold limits. AEM provided clarification on the requested parameters analyzed regarding water quality and quantity. AEM noted that the reported drop in cyanide concentrations in the tailings reclamation pond between June and July 2013, which had been observed in previous years, was a result of a combination of the following factors: optimisation of the cyanide destruction system; the volume of freshet water inflow into the tailings storage facility; and, predominantly, due to the increase of ultra violet destruction of cyanide as ice cover thawed and daylight hours being at a maximum.

Fisheries and Oceans Canada (DFO)
Within its response submission, AEM elaborated on its Habitat Compensation Monitoring Plan and the purposes therein and noted that it intends to complete a total of 6 monitoring events of the East Dike and Bay Goose Dike and 5 monitoring events of the Finger Dikes.

In response to DFO's specific comments on monitoring, including the monitoring schedule of the pits after reflooding, AEM noted that it would consult with DFO to ensure the constructed habitat structures complied with the No Net Loss Plan and that it would monitor all reflooded structures to determine if all fish habitat compensatory works were completed and functioning in 2025 and 2030 and compare those results to its broader dataset. AEM further noted that water quality monitoring of the reflooded pits would occur during open water season according the CREMP and would continue until 2040.

2.5. SITE VISIT

Based on the observations made during this site visit, all facilities which are in operation and all sites currently under construction continue to appear to be well managed, and generally are maintained with adequate environmental protection measures and procedures in place. Details provided by AEM during the site visit provided the Monitoring Officer with additional information regarding the company's ongoing efforts to address ongoing water and waste management issues observed at the site.

As with years past, the Proponent appears to be in compliance with a majority of the terms and conditions contained within the Meadowbank Project Certificate; however, there may be certain situations in which the Proponent has not yet fully met the requirements of the Meadowbank Project Certificate and which require further consideration and attention.

The Monitoring Officer noted potential water issues in the Bay-Goose, South and Central Portage pits, including pit-wall seepage, wet rock and standing water, which may indicate the need for analysis, and based on the results, potential mitigation and water treatment measures.

The Monitoring Officer also notes that the third year of the pilot remediation program undertaken at the Meadowbank mine site appeared to have worked well and is now being used to treat all of AEM's hydrocarbon contaminated soils at the Meadowbank site.

Regarding Condition 8, only two groundwater wells appeared to have been operational during the 2014 site visit and AEM was able to sample a pit wall seep in the Bay-Goose pit. AEM indicated that further re-evaluation of the groundwater well monitoring program would be conducted. AEM was unable to use production wells instead of groundwater wells to assess the existing groundwater conditions, which was previously proposed as an alternative.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site. AEM noted that wildlife (including muskox, caribou and birds) had been observed around the site, and that wildlife tracks were evident in the tailings storage facility.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. Some instances of wind-blown debris scattered around the site were noted during the 2014 site visit.

Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer noted that the fuel storage facilities appeared to be well contained and properly set up for the re-fuelling of vehicles, but also noted that spill pads or drip pans were not utilized at re-fuelling stations. The Monitoring Officer further noted the introduction of owl decoys on the bulk fuel tanks at the Baker Lake fuel storage facility as a means to deter birds from nesting. The Monitoring Officer observed the instances of seepage containing potentially hazardous compounds occurring at the Portage waste rock storage facility and at the Assay lab, and also noted that AEM had implemented mitigation measures to contain and treat the water seepage.

As required by Condition 32, the Proponent had placed required signage at most locations along the AWAR, however signage was not observed on the sea-can at kilometre 23. Furthermore, the Monitoring Officer noted that the gatehouse at kilometre 5 was unmanned during the evening upon returning from the site visit.

Condition 59 requires that the Proponent consult with Elders and the HTOs to design and implement deterrence measures to impede caribou from tailings ponds. While the wildlife tracks noted by the Monitoring Officer at the tailings storage facility did not appear to be those of caribou, the tracks did provide evidence that wildlife are accessing the tailings storage facility.

The Proponent has not fully met the requirements of Condition 74, as dust suppression techniques had been applied at the Meadowbank site but were not being applied along the AWAR from Baker Lake to site.

3.0 SUMMARY

The Meadowbank Gold mine began commercial production in March 2010 and is now in its fourth year of operations. The Proponent appears to be in compliance with the majority of the terms and conditions contained within the Meadowbank Project Certificate, and is generally meeting the objectives of monitoring and mitigation plans and procedures put in place for the Project. However, certain outstanding issues will require the Proponent's attention as discussed throughout this report. These items are addressed in the Board's recommendations provided to the Proponent under separate cover.

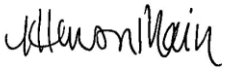
Pursuant to NLCA Sections 12.7.2 and 12.7.3, the NIRB will continue to work with AEM and other agencies in order to provide the required evaluation of monitoring efforts, results and compliance as outlined within the Board's project-specific monitoring program and in accordance with the requirements set out in the Meadowbank Project Certificate.

Prepared by: Heather Rasmussen, M.ENV-EIA
Title: Monitoring Officer
Date: October 23, 2014

Signature: 

Reviewed by: Amanda Hanson Main
Title: Director, Technical Services

Date: October 23, 2014

Signature: 

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Appendix I:
The NIRB's 2014 Meadowbank Site Visit Report

2014 Site Visit Report

for the NIRB's Monitoring of

Agnico Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107

Full Report Title:	2014 Site Visit Report for the Nunavut Impact Review Board's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Project (NIRB File No. 03MN107)
Project:	Meadowbank Gold Project
Project Location:	Kivalliq Region, Nunavut
Project Owner:	Agnico Eagle Mines Ltd. P.O. Box 540 Baker Lake, NU X0C 0A0
Proponent Contact:	Stéphane Robert, Manager Regulatory Affairs
Telephone:	(819) 759-3700, ext. 5188
Visit conducted by:	Heather Rasmussen, Monitoring Officer Tara Arko, Technical Advisor
Contact:	Phone: (867) 983-4606; Email: hrasmussen@nirb.ca
Site visit date:	September 5, 2014
Last site visit:	September 13, 2013
Report prepared by:	Heather Rasmussen, Monitoring Officer
Photos by:	Heather Rasmussen and Tara Arko, Nunavut Impact Review Board
Cover photos:	View of the Meadowbank site with the Portage waste rock storage facility.

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1 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the Nunavut Land Claims Agreement (NLCA) and is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the NLCA.

This report provides the findings that resulted from the NIRB's site visit of the Meadowbank Gold Project that took place on September 5, 2014 as part of the NIRB's monitoring program.

1.1 Objectives & Purpose of Site Visit

On December 30, 2006, pursuant to Section 12.5.12 of the NLCA, the NIRB issued Project Certificate No. 004 for the Meadowbank Gold Project (the Project), allowing the Project to proceed in accordance with the Terms and Conditions issued therein. In November 2009, the NIRB formally amended the Project Certificate (Project Certificate) to include an amendment to Condition 32 pursuant to NLCA 12.8.2 to change the name of the assignee from Cumberland Resources Ltd. to Agnico Eagle Mines Ltd. (NIRB, 2009).

The Board is responsible for the monitoring of this Project as per Sections 12.7.1 and 12.7.2 of the NLCA. The objective of the NIRB's site visit was to determine whether, and to what extent, the land or resource use in question is being carried out within the predetermined terms and conditions of the NIRB's Meadowbank Gold Project Certificate (Section 12.7.2(b) of the NLCA).

The observations resulting from this site visit shall, wherever possible, be incorporated into the measurement of the relevant effects of the project, provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals, and will further be used to assess the accuracy of the predictions contained in the project impact statements in accordance with Section 12.7.2 of the NLCA.

1.2 Meadowbank Project Description

The Project involves the construction and operation of an open pit gold mine located in the Kivalliq Region of Nunavut, approximately 70 kilometres (km) north of the hamlet of Baker Lake on Inuit-owned surface lands. In its 2013 Mineral Reserve and Resource Data report, AEM indicated that Meadowbank had proven and probable gold reserves of 1.75 million ounces (AEM, 2013). AEM provided a revised mine plan to the Kivalliq Inuit Association (KIA) in 2013 and in its 2013 Annual Report indicated that its Meadowbank operations were scheduled to be completed by 2017 with reflooding of mine pits to be completed by 2025 (AEM, 2014).

The mine site is comprised of a camp, airstrip, associated mining infrastructure and three active open pits: the Portage, Bay Goose and Vault pits. In addition to the mining infrastructure and activities, ancillary Project infrastructure is located approximately 2 km east of the hamlet of Baker Lake and consists of barge unloading facilities, a laydown storage and marshalling area, a 60 million litre (ML) fuel tank farm, associated interconnecting roads and a 110 km all-weather private access road (AWAR) from the hamlet of Baker Lake to the Meadowbank mine site. Supplies are shipped from locations within Canada via sealift to Baker Lake where they are

offloaded at AEM's marshalling area and transported to the Meadowbank site via truck haul along the 110 km AWAR.

1.3 Preparations for the Site Visit

The Monitoring Officer reviewed the following items to prepare for the site visit: Meadowbank Project Certificate, previous Site Visit Reports, AEM's 2013 Annual Report and associated appendices, and follow-up correspondence from the NIRB's 2013 site visit.

2 SITE VISIT

The 2014 site visit was conducted by Heather Rasmussen, NIRB Monitoring Officer for the Meadowbank Project and Tara Arko, NIRB Technical Advisor. On the morning of September 5, 2014 the NIRB staff were met by Stéphane Robert, Manager of Regulatory Affairs with AEM, and driven first to the ancillary Project infrastructure, the Baker Lake bulk fuel storage facility/marshalling area, and then to the Meadowbank mine site via the AWAR. During the drive to the Project site, the NIRB staff viewed two quarries, including Quarry 5, as well as the bridge at kilometre 23 and dust sampling canisters. Mr. Robert and the NIRB staff also discussed the Meadowbank Project in general and specific items related to the Project Certificate. Once on-site, the NIRB staff and Mr. Robert were met by Jeff Pratt, Environmental Coordinator. Throughout the morning and afternoon, Mr. Robert, and through part of the tour Mr. Pratt, led a tour of the site which included the camp facilities; active mine areas including Bay-Goose pit, Portage pits and Vault pit; waste rock storage facility; landfarm; landfill remediation site; tailings storage facility and Portage attenuation pond; airstrip; waste and hazardous materials storage area; incinerator; fuel storage area; air monitoring station; dust monitoring station and weather station. In the evening of September 5, 2014 the NIRB staff and Mr. Robert discussed the site visit and specific items related to the Meadowbank Project and then Mr. Robert drove the NIRB staff back to Baker Lake.

The site visit provided the Monitoring Officer with a tour of all major project components as well as an opportunity for the Monitoring Officer and AEM staff to discuss relevant issues and items related to the Project.

2.1 General Observations

The following are general observations made during the site visit and do not pertain specifically to any particular terms or conditions of the Project Certificate:

a. The Monitoring Officer noted that the environmental emergency sea-cans containing booms, shovels, absorbent pads, and other miscellaneous spill response equipment were located at the Baker Lake laydown facility (see Photo 1). At the time of the site visit, an oil tanker was delivering AEM's annual supply of fuel; the emergency response boat was docked at the spud barge as a safety precaution (See Photo 2).

Photo 1: Environmental emergency sea-can located at the Baker Lake laydown facility and in close proximity to the fuel barge.

Photo 2: Emergency boat with motor docked at the Baker Lake barge.

b. The Monitoring Officer observed owl decoys located on the tops of the bulk fuel tanks at the Baker Lake fuel storage facility (see Photo 3). Mr. Robert explained that the decoys, installed throughout 2012 and 2013, were successful in deterring birds from nesting. Mr. Robert noted that similar decoys had not been deemed necessary for use at the Meadowbank site as nesting was not found to be an issue.

Photo 3: Owl decoy on the top of the bulk fuel storage fuel tank at the Baker Lake fuel storage facility.

c. Environmental emergency sea-cans were located at all bridge crossings, and the Monitoring Officer noted that some sea-cans were located closer to bridge crossings than others, depending on the availability of space. The Monitoring Officer also noted that there was no sign on the environmental emergency sea-can at kilometre 23 (third bridge from Baker Lake to Meadowbank) (see Photo 4).

Photo 4: Environmental emergency sea-cans at kilometre 23 with no signs.

d. While travelling along the AWAR road to and from the Meadowbank site and the hamlet of Baker Lake, the Monitoring Officer observed several species of wildlife, including one fox, flocking geese, and two cranes (Photo 5). It was noted by AEM staff that muskox were observed occasionally along the AWAR.

Photo 5: Fox along the AWAR on the way to the Meadowbank Mine site.

e. While no blasting was conducted on the day of the site visit, active blasting and drilling were ongoing at the Bay-Goose, South Portage, and Vault pits, and as Mr. Robert indicated, would also resume at North Portage pit in the future (Photos 6-9, 16 and 17).

The Monitoring Officer also noted that AEM had begun to refill Central portage pit with waste rock (see Photo 10).

Photo 6: Drills, loaders and shovel in the South Portage pit (also identified as pit E), with drill hole pattern visible in front.

Photo 7: South Portage pit.

Photo 8: Bay-Goose pit.

f. The Monitoring Officer observed water concerns in the Bay-Goose and Central Portage pits as well as East Dike. Significant seepage was noted through the south, west, and north walls of the Bay-Goose pit (see Photos 9 and 30). This is discussed further in Section 2.2.1 of this report regarding ground water sampling.

Photo 9: Moisture along southern wall of Bay-Goose pit.

Photo 10: Green standing water in the basin of the Central Portage pit (location of sump st-19). Pit fill can be seen in the south end of the pit.

The Monitoring Officer also observed wet spots on the South Portage pit walls, and noted that standing water had begun to collect in Central Portage pit (see Photos 10 and 11).

Photo 11: Moisture moving between the rock layers of the west wall of the South Portage pit

Photo 12: Slumping observed as water from Second Portage Lake seeps through the East dike.

AEM staff discussed seepage issues at the East dike (ST-S-1) (see Photo 12), noting that seepage water was being pumped from ST-S-1 via sump and tested pursuant to Metal Mining Effluent Regulations requirements (see Photo 13) and then pumped back to Second Portage Lake (see Photo 14). Mr. Pratt explained that the diffuser on the end of the discharge pipe is 'U' shaped to mitigate potential effects on the benthic environment in Second Portage Lake. The Monitoring Officer noted that, as can be seen in Photo 14, the shore line at the output location has a steep drop-off.

Photo 13: Testing of water before it is pumped back to Second Portage Lake.

Photo 14: Outflow pipe into Second Portage Lake.

a. AEM staff noted that construction of the Vault Dike had been completed in 2013 (see Photo 15), and that Vault Lake was dewatered with fish then transferred to Wally Lake.

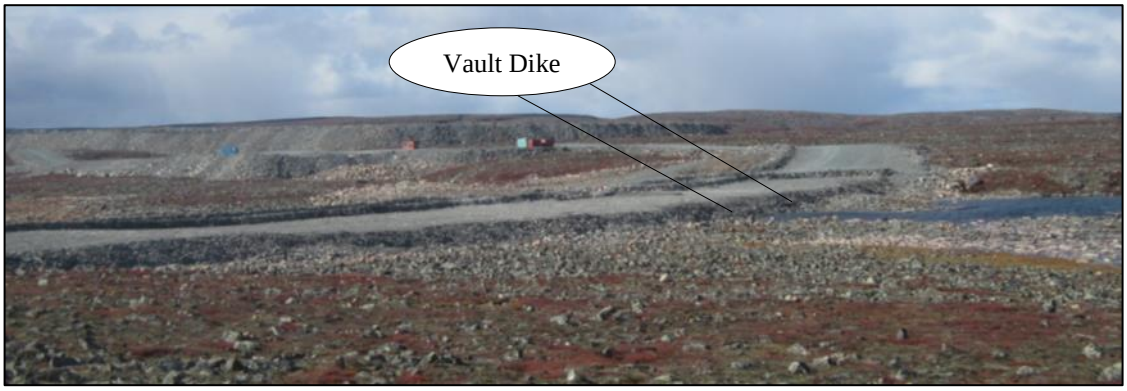


Photo 15: Vault Dike with Wally Lake on the right.

b. AEM staff also noted that during 2014, the Proponent commenced mining of Vault pit with active blasting and drilling occurring at different locations throughout the pit (see Photos 16 and 17).

Photo 16: Overturned pylons denoting drill locations.

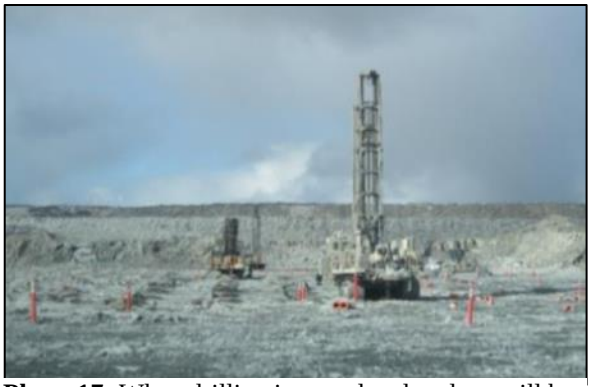


Photo 17: When drilling is completed, pylons will be overturned and placed in the holes.

c. Waste rock from Vault pit was stored in the Vault waste rock storage facility (see Photo 18). AEM staff noted that waste rock from the Vault pit is generally not expected to be potentially acid forming (non PAG rock), but that potentially acid forming rock would be placed in the middle of the rock pile. Non PAG gravel is stored in the Vault marginal stockpile (see Photo 19) to be re-used on-site, including on top of explosives as a cap to ensure the explosives stay in the hole to produce the desired effect, as well as for road maintenance, especially during the winter.

Photo 18: Dumping of waste rock to build the steps in the Vault pit waste rock storage facility.

Photo 19: Gravel stored in the Vault marginal stockpile.

Photo 20: View of Vault pit from the road seperating it and Phaser Lake.

d. The water treatment facility was not in use and was relocated to Vault Lake in anticipation of potential future needs (see Photo 21). The secondary camp, located on the Vault Road and near the Vault fuel farm, contains a secondary kitchen and would act as an emergency shelter for personnel working near the Vault pit infrastructure (see Photo 22).

Photo 21: Water treatment facility not in use, currently located near Vault pit.

Photo 22: Emergency camp near Vault pit.

e. In July, 2014 the NIRB received a project proposal from AEM outlining its proposed expansion of Vault pit into Phaser Lake, which, as currently proposed, would extend the life of mine (see Photo 23).

Photo 23: Area of proposed Vault pit expansion.

f. The Monitoring Officer observed the airstrip extension which was screened and approved pursuant to NIRB File No. 10XN039, and which was completed by AEM in April 2013 (see Photo 24).

Photo 24: The western tip of the airstrip extending into Third Portage Lake.

g. While at the landfarm site, Mr. Pratt described AEM's pilot remediation program which has continued into its third year. The remediation program at the Meadowbank site uses on-site nutrients (sewage sludge) to initiate biodegradation of all contaminated hydrocarbon soil on site (see Photos 25 and 26).

Photo 25: Contaminated soil storage/pilot remediation site.

Photo 26: Berm around the landfarm site.

h. During the site visit, the Monitoring Officer noted that AEM had segregated all domestic, hazardous, and combustible wastes in marked sea-cans in an area where they would be stored prior to being incinerated or shipped to approved off-site disposal facilities (see Photo 27). AEM staff noted that in 2014 it had transported 127 sea-cans of hazardous materials via barge to a recycling facility in southern Canada. AEM staff also pointed out the barcodes on some of the sea-cans in the storage area, explaining that since 2012 barcodes had progressively been added to the sea-cans as an organizational tool. To reduce waste, AEM initiated its "pallet program"; AEM staff explained that wooden

pallets that are still in-tact are donated to community members in Baker Lake to repurpose.

Photo 27: Sea-cans used for waste segregation and storage area.

Photo 28: On-site country foods kitchen.

i. The Monitoring Officer viewed the on-site country foods kitchen, where employees can store and prepare the country foods they bring to site themselves (see Photo 28).

2.2 Observations based on NIRB's Project Certificate

Sections 3.2.1 through 3.2.5 relate to those sections of the Meadowbank Project Certificate as indicated, with specific terms and conditions providing a basis for the noted observations.

2.2.1 Water Quality and Waste Management

Condition 8

"…At the time samples are taken Cumberland shall also assess the condition of existing groundwater monitoring wells and replace any defective wells. Cumberland shall continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection…"

At the time of the site visit, only two groundwater monitoring wells were operational: well numbers MW 08-02 (see Photo 29) and MW 08-03. AEM reported that well number MW 11-02 was obstructed during the 2012 groundwater monitoring program due to melted tubing used to remove melt water, and noted that it is expected to be replaced in 2014. Due to low water flow, AEM staff noted that they were unable to obtain groundwater samples via the production drill holes, although sampling from the pit wall seep in Bay-Goose pit was successful (see Photo 30).

Photo 29: Groundwater monitoring well MW-08-02 is protected by a wooden enclosure (not pictured).

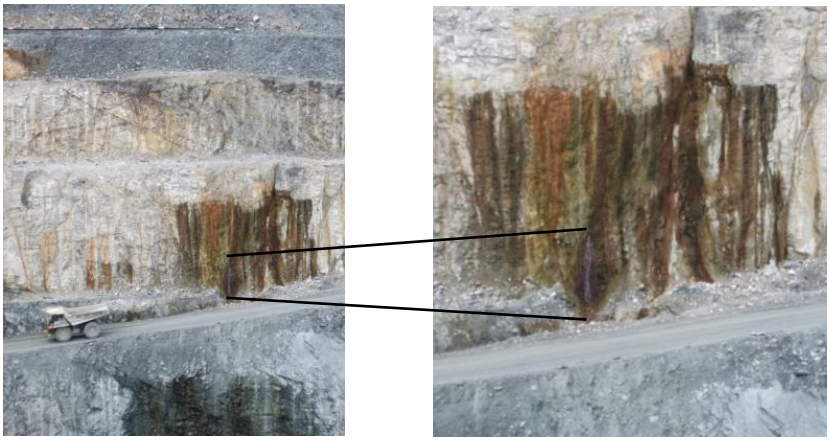


Photo 30: Seepage in the south wall of the Bay-Goose pit.

Condition 18

> *"Cumberland shall commit to a pro-active tailings management strategy through active monitoring, inspection, and mitigation. The tailings management strategy will include the review and evaluation of any future changes to the rate of global warming, compliance with regulatory changes, and the ongoing review and evaluation of relevant technology developments, and will respond to studies conducted during mine operation."*

When viewing the tailings storage facility, the NIRB staff observed the thermistors installed in 2012 to measure freezeback (see Photo 31) and did not observe any apparent rips in the exposed lining of Saddle dams 1 and 2 (see Photo 32).

Photo 31: Thermistors installed in the tailings storage facility to measure freeze back.

Photo 32: Saddle dam 1.

The NIRB staff also observed a test pad in the tailings storage facility wherein AEM is assessing the thickness of non-potentially acid generating (NPAG) material required to confine the potentially acid generating (PAG) material within the tailings storage facility (please see Photo 33). AEM staff explained that the mitigation strategy for PAG material is to keep it frozen by containing it within NPAG material (waste rock); this is done in the waste rock storage facility as well as the tailings storage facility. Thermistors are used to test freeze back of the material.

Photo 33: Test pads in the tailings storage facility for closure capping.

Condition 25

> *"Cumberland shall manage and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors. Cumberland shall employ legal deterrents to carnivores and/or raptors at all landfill and waste storage areas…incorporated into the final Waste Management Plan."*

The Monitoring Officer observed one fox in the landfill, and AEM staff noted that although stationary deterrents are largely ineffective in discouraging wildlife and birds, the landfill is frequently inspected by employees to ward off any wildlife present (see Photo 34).

Photo 34: Fox in the landfill.

Condition 26

> *"Cumberland shall ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris."*

During the 2014 visit to the Meadowbank site, the Monitoring Officer noted that all areas were kept in a clean state, with no obvious spills. There were a few instances of wind-blown material observed at the ancillary facilities in Baker Lake, which may have been due to a rain storm the morning of the site visit and previous evening.

AEM staff had previously noted that clean-up of the fuel spill that occurred into a watercourse near kilometre 22 of the AWAR in October 2010 was complete and that the booms previously deployed in the watercourse had been removed in July 2013.

Condition 27

> *"Cumberland shall ensure that the areas used to store fuel or hazardous materials are contained using safe, environmentally protective methods based on practical, best engineering practices."*

During the 2014 site visit, the Monitoring Officer observed that the fuel and hazardous materials associated with AEM's Meadowbank project appeared to be stored in a safe and environmentally protective manner (see Photos 35-39). The Monitoring Officer noticed turbid water in the containment berm of the Jet-A pad at the Baker Lake storage facility (see Photo 36), however did not observe any noticeable sheen on water in any of the berms or discernable hydrocarbon odours at either of the Baker Lake facility or the Meadowbank site. The Monitoring Officer observed exposed liner-type material at the Meadowbank fuel tank farm (see Photo 37). AEM staff noted that this was likely not the liner itself but the material layer above the liner.

Photo 35: Bulk fuel tanks Baker Lake bulk fuel facility.

Photo 36: Turbid water in the containment berm at the Jet-A pad Baker Lake storage facility.

Photo 37: Lining at the bulk fuel tank Meadowbank site.

The fuel transfer stations on site (see Photo 38) and at the Baker Lake bulk fuel storage facility appeared to be well contained and properly set up for the re-fuelling of vehicles. The Monitoring Officer observed that spill pads or drip pans were not in use during refueling of vehicles the Meadowbank site; AEM staff noted that the area around the fuel tank farm was lined and that AEM intended to dispose of all materials during the mine closure.

Photo 38: Refueling at the Meadowbank mine site.

Photo 39: Treatment of cyanide tailings.

AEM reported two significant seepage incidents concerning hazardous substances that occurred during 2013/2014 (see Photos 40-43). In 2013, AEM noted seepage from the Portage waste rock storage facility for potentially acid generating rock (which has a high sulphur content, heavy metals and other contaminants) at a location near the south shore of a fish bearing lake (referred to as North Pole 2 or NP-2 lake) (see Photos 40 and 41). AEM staff noted that seepage near the lake would be monitored during the open water season.

Photo 40: Seepage from the Portage waste rock storage facility

Photo 41: View of NP-2 Lake and the point of seepage at the Portage waste rock storage facility.

The Monitoring Officer observed water seeping through the road in front of the Assay lab, where cyanide destruction in tailings occurs before it is discharged into the tailings storage facility (see

Photos 42 and 43). AEM noted that when water was discovered seeping through the road in front of the lab, test results indicated levels of cyanide, iron and copper. AEM staff indicated that it was able to determine that the Assay lab was the source of the seep, and that the water was being piped back to the tailings pond and is prevented from entering Third Portage Lake.

Photo 42: View of seepage water being pumped back up the road to the tailings storage facility.

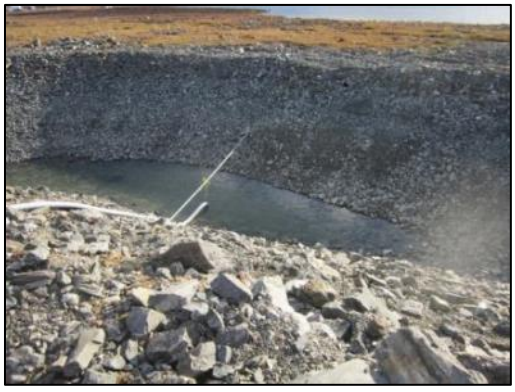


Photo 43: Point of seepage through the road at the Assay lab, located to the bottom right of Photo 42.

2.2.2 All-Weather Private Access Road (AWPAR)

Condition 32

"AEM shall operate the all-weather road as a private access road, and implement all such measures necessary to limit non-mine use of the road to authorized, safe and controlled use by all-terrain vehicles for the purpose of carrying out traditional Inuit activities. The measures AEM shall undertake include, but are not limited to:

a. Maintaining a gate and manned gatehouse at kilometre 5 of the Private Access Road;

b. In consultation with the Hamlet of Baker Lake, the local HTO, and the KivIA, update the All-Weather Private Access Road Management Plan to set out the criteria and processes to authorize and ensure safe and controlled non-mine use of the road by all-terrain vehicles for the purpose of carrying out traditional Inuit activities, and measure to limit all other non-mine use of the road. The updated Plan is to be submitted to the GN, INAC, and KivIA for approval no later than one (1) month after the approval of revised Condition 32;

c. The posting of signs in English and Inuktitut at the gate, each major bridge crossing, and each 10 kilometres of road, stating that unauthorized public use of the road is prohibited;

d. The posting of signs in English and Inuktitut along the road route to identify when entering or leaving crown land;

e. …

f. …

g. …"

AEM maintains one gatehouse at kilometre 5 of the AWAR (see Photo 44), and another gatehouse close to the entrance to the mine site and camp at Meadowbank. AEM staff noted that both gatehouses are manned by guards who monitor the safety and security of all personnel using the road, and that all traffic is required to check in (via radio or in person) with the employee at the gatehouse prior to proceeding past either gatehouse along the road. The Monitoring Officer noted that the AEM employee manning the kilometre 5 gatehouse maintained a daily logbook of all persons travelling the AWAR for non-mine use and that members of the public travelling along the road are required to sign-off an indication of having read AEM's *All Weather Private Access Road Safety Rules & Procedures for Road Access* policy prior to being granted access to the road. The Monitoring Officer noted that the gatehouse at kilometre 5 of the AWAR (nearest to Baker Lake) was unmanned at approximately 9:00 pm on the evening of September 5, 2014. Mr. Robert indicated that the guard had likely driven into Baker Lake and was likely in the vehicle observed driving towards the guard house as the NIRB staff passed by.

Photo 44: Gatehouse at kilometre 5 of the AWAR.

Photo 45: Example of the signs all along the AWAR indicating Inuit and Federally Owned Lands.

The signs as required per Condition 32(c) were posted in both English and Inuktitut at the gatehouse (see Photo 44), at each major bridge crossing (on the side of the environmental emergency sea-cans) and at every at 10 kilometre intervals along the road (except, as previously noted in Section 2.1(c), at the sea-can at kilometre 23).

2.2.3 Wildlife and Terrestrial

Condition 56

> *"Cumberland shall plan, construct, and operate the mine in such a way that caribou migration paths through the Project, including the narrows west of Helicopter Island are protected. Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and upgraded as new information on corridors becomes available. Information on caribou*

migration corridors shall be reported to the GN, KivIA and NIRB's Monitoring Officer annually."

Condition 59

"Cumberland shall, in consultation with Elders and the HTOs, design and implement means of deterring caribou from the tailing ponds, such as temporary ribbon placement or Inukshuks, with such designs not to include the use of fencing."

The Monitoring Officer observed a map outlining caribou migration corridors posted on a bulletin board at the main camp (near the door to the gym). The Monitoring Officer and Mr. Robert observed that the map was dated 2011.

The Monitoring Officer observed wildlife tracks near the outflow of tailings into the tailings storage facility (see Photos 46 and 47). AEM staff discussed the use of "scare cannons" when spring bird migration commences and noted that these are then removed when no longer required, usually when birds begin their fall migration. In addition, AEM staff explained that stationary deterrents had been ineffective in deterring birds and that the "scare cannons" are repositioned every few days.

Photo 46: Outflow pipe at the tailings storage facility.

Photo 47: Wildlife tracks observed at the outlflow pipe at the tailings storage facility.

2.2.4 Noise

Condition 62

"Cumberland shall develop and implement a noise abatement plan…will be developed in consultation with Elders, GN, HC, and EC and include:

a. The use of sound meters to monitor sound levels in and around the mine site, including workers' on-site living/sleeping quarters and any summer camps adjacent to the site, and in the local study area, with the locations and design of the sound meters selected in consultation with HC and EC. Sound meters are to be set up immediately upon issuance of the Project Certificate for the purpose of obtaining baseline data, and monitoring during and after operations;

b. …

c. Restrictions on blasting and drilling when migrating caribou, or sensitive local carnivores or birds may be affected;
d. …
e. …"

AEM staff provided the Monitoring Officer with a map showing the location of five current noise monitoring stations (dated March 2013). No equipment was located at these stations at the time of the visit and the stations were located too far away from the road or other Project infrastructure on the tundra for the Monitoring Officer to view. Mr. Robert noted that noise monitoring stations were used every summer for two to three days for 24 hours at a time when weather conditions (particularly wind) were favourable, as well as while site activities that have the potential to generate significant amounts of noise vibration, such as blasting, were being undertaken.

AEM staff noted that that the use of sound meters to monitor sound levels in and around the mine site was under the purview of the Health and Safety department.

2.2.5 Air Quality

Condition 71

"Cumberland shall, in consultation with EC, install and fund an atmospheric monitoring station to focus on particulates of concern generated at the mine site. The results of air-quality monitoring are to be reported annually to NIRB."

When the NIRB staff viewed the air monitoring and partisol sampling stations AEM staff noted that both dustfall and partisol monitoring occurs year round (see Photos 48 and 49).

Photo 48: Dustfall sampling occurs every six days.

Photo 49: Station for the sampling of total suspended solids in air.

Condition 72

"On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canda-wide Standards for mercury emissions, and Cumberland shall conduct annual stack testing to demonstrate that the on-site incinerators are

operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC, and NIRB's Monitoring Officer."

The Meadowbank site dual chamber forced air incinerator remains in service for the combustion of all non-hazardous, combustible materials at the site (see Photo 50).

Photo 50: Meadowbank dual chamber incinerator, with secondary chamber on the left side.

Condition 74

"Cumberland shall employ environmentally protective techniques to suppress any surface dust."

AEM staff noted that dust sampling stations were placed along the AWAR for 30 days between August and September at various distances from both the east and west sides the road in two duplicate transects (see Photo 51). AEM staff also indicated that calcium chloride and water are administered on the roads to suppress dust around the Meadowbank site and from the Baker Lake dock facility to the gatehouse. During the site visit, AEM confirmed that no dust suppressants are currently in use along the AWAR.

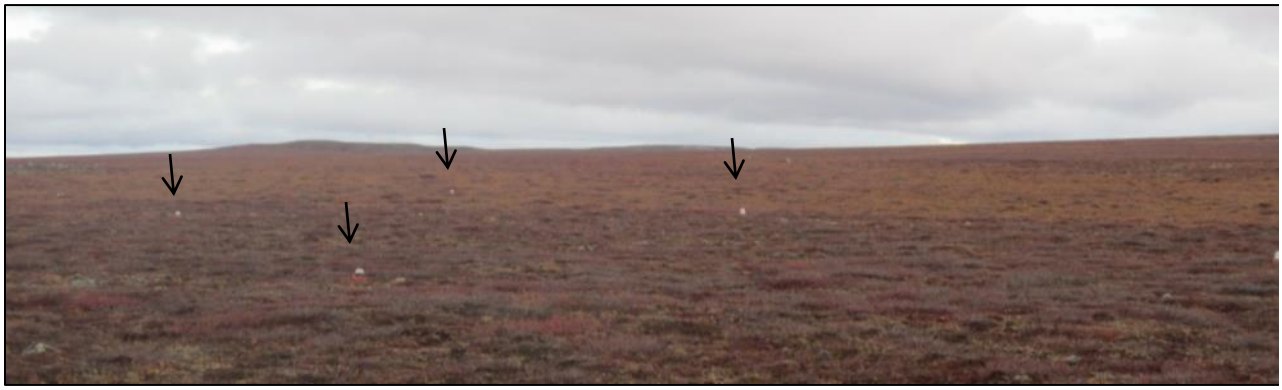


Photo 51: Dust sampling stations along the AWAR.

2.2.6 Other

Condition 81

> *"Beginning with mobilization, and for the life of the Project, Cumberland shall provide full 24 hour security, including surveillance cameras and a security office at the Baker Lake storage facility/marshalling area, and take all necessary steps to ensure the safe and secure storage of any hazardous or explosive components within the Hamlet of Baker Lake boundaries."*

During the visit to the Baker Lake bulk fuel storage facility/marshalling area, the Monitoring Officer noted that a security office was located near the shore at the facility, and that AEM employees were on site.

3 FINDINGS AND SUMMARY

Based on the observations made during this site visit, all facilities which are in operation and all sites currently under construction continue to appear to be well managed, and generally are maintained with adequate environmental protection measures and procedures in place. Details provided by AEM during the site visit provided the Monitoring Officer with additional information regarding the company's ongoing efforts to address ongoing water and waste management issues observed at the site.

As with years past, the Proponent appears to be in compliance with a majority of the terms and conditions contained within the Meadowbank Project Certificate; however, there may be certain situations in which the Proponent has not yet fully met the requirements of the Meadowbank Project Certificate and which require further consideration and attention.

The Monitoring Officer noted potential water issues in the Bay-Goose, South and Central Portage pits, including pit-wall seepage, wet rock and standing water, which may indicate the need for analysis, and based on the results, potential mitigation and water treatment measures.

The Monitoring Officer also notes that the third year of the pilot remediation program undertaken at the Meadowbank mine site appeared to have worked well and is now being used to treat all of AEM's hydrocarbon contaminated soils at the Meadowbank site.

Regarding Condition 8, only two groundwater wells appeared to have been operational during the 2014 site visit and AEM was able to sample a pit wall seep in the Bay-Goose pit. AEM indicated that further re-evaluation of the groundwater well monitoring program would be conducted. AEM was unable to use production wells instead of groundwater wells to assess the existing groundwater conditions, which was previously proposed as an alternative.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site. AEM noted that wildlife (including muskox, caribou and birds) had been observed around the site, and that wildlife tracks were evident in the tailings storage facility.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. Some instances of wind-blown debris scattered around the site were noted during the 2014 site visit.

Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer noted that the fuel storage facilities appeared to be well contained and properly set up for the re-fuelling of vehicles, but also noted that spill pads or drip pans were not utilized at re-fuelling stations. The Monitoring Officer further noted the introduction of owl decoys on the bulk fuel tanks at the Baker Lake fuel storage facility as a means to deter birds from nesting. The Monitoring Officer observed the instances of seepage containing potentially hazardous compounds occurring at the Portage waste rock storage facility and at the Assay lab, and also noted that AEM had implemented mitigation measures to contain and treat the water seepage.

As required by Condition 32, the Proponent had placed required signage at most locations along the AWAR, however signage was not observed on the sea-can at kilometre 23. Furthermore, the Monitoring Officer noted that the gatehouse at kilometre 5 was unmanned during the evening upon returning from the site visit.

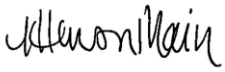
Condition 59 requires that the Proponent consult with Elders and the HTOs to design and implement deterrence measures to impede caribou from tailings ponds. While the wildlife tracks noted by the Monitoring Officer at the tailings storage facility did not appear to be those of caribou, the tracks did provide evidence that wildlife are accessing the tailings storage facility.

The Proponent has not fully met the requirements of Condition 74, as dust suppression techniques had been applied at the Meadowbank site but were not being applied along the AWAR from Baker Lake to site.

Prepared by: Heather Rasmussen
Title: Technical Advisor/Monitoring Officer
Date: October 21, 2014

Signature: 

Reviewed by: Amanda Hanson Main
Title: Director, Technical Services
Date: October 21, 2014

Signature: 

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Appendix II:

Public Information Meeting Summary Report September 4, 2014 for the NIRB's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Mine Project

Public Information Meeting Summary Report
September 4, 2014

For the NIRB's Monitoring of
Agnico Eagle Mines Ltd.'s Meadowbank Gold Mine Project
(NIRB No. 03MN107)

Report Title: Public Information Meeting Summary Report September 4, 2014 for the NIRB's monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Project (NIRB File No. 03MN107).

Report prepared by: Heather Rasmussen, Monitoring Officer

Photos by: Heather Rasmussen and Tara Arko, Technical Advisor

Cover photo: Community information session at Baker Lake, September 4, 2014 and the Meadowbank Gold Mine site

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NIRB PUBLIC INFORMATION SESSION

To ensure ongoing awareness of the Nunavut Impact Review (NIRB) process and to encourage effective participation throughout the monitoring process, the NIRB staff hosted a community open house and information session in Baker Lake on September 4, 2014. Through this information session an overview of the NIRB's monitoring programs pursuant to Section 12.7.2 of the Nunavut Land Claims Agreement was provided, as well as an update on the NIRB's Meadowbank Gold Project (the Project) monitoring program and the ways in which the public can participate within the NIRB's monitoring process. A summary of the comments and concerns related to the Project that were received from community members and collected and categorized by the NIRB is available in Section 2 of this report. In addition to the NIRB staff, media and industry representatives, including a representative from Agnico Eagle Mines Ltd. (AEM), were also in attendance.

1.1 Setup of NIRB Public Information Meetings

The community information session was open to all members of the public with refreshments provided and door prizes raffled at the end of the meeting. All in attendance, including industry representatives and media, were asked to sign in and identify the community or organization they represented. The NIRB began the meeting with a PowerPoint presentation that included a discussion of the NIRB process, with a focus on the NIRB's monitoring programs, an update on the Meadowbank Gold Mine, including an overview of Project activities and key components, and events and/or issues identified through the project specific monitoring program. The presentation concluded with a discussion as to how interested parties and community members could participate in the NIRB's monitoring process. The presentation was delivered in English, with consecutive interpretation provided in Inuktitut. The public was encouraged to comment and ask questions relating to the NIRB's process, activities undertaken, project effects, and any concerns related to the Project. Both written and verbal comments were accepted at the public information meeting, and verbal comments were recorded by the NIRB staff members, representatives from other agencies, and the Proponent.

The NIRB also presented large scale diagrams of its monitoring process in English and Inuktitut posted on the walls at the meeting venue, and AEM provided up-to-date maps of the project, including key components.

1.2 Meeting Materials

At the public meeting, the following materials were provided by the NIRB:

- The NIRB's PowerPoint presentation (in English and Inuktitut)
- The Nunavut Land Claims Agreement (in English)
- NIRB Environment Assessment Brochures (in English and Inuktitut)
- The NIRB's 2012-2013 Annual Monitoring Report for AEM's Meadowbank Gold Project (in English)
- Meadowbank Gold Mine Project Certificate (in English)
- AEM's Meadowbank Gold Project 2013 Annual Report (in English)
- Comment Forms (in English and Inuktitut)

Copies of consultation materials, including the presentation, advertisements and sign-in sheet, can be obtained from the NIRB's online public registry at: http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/08-COMMUNITY%20CONSULTATIONS/.

1.3 Advertisements

The NIRB utilized the following public notification methods to advertise the public information meetings and facilitate effective consultation:

Radio
A public service announcement in English and Inuktitut was distributed to the radio station in Baker Lake, Nunavut with instructions to air from August 25, 2014 to September 4, 2014.

Flyers
Prior to the NIRB visiting Baker Lake flyers were placed (in English and Inuktitut) in high traffic locations within the community.

Cable
During the week prior to the meeting, cable television advertisements were aired in both English and Inuktitut advertising the information session in Baker Lake.

2.0 MEETING NOTES FROM THE NIRB'S PUBLIC INFORMATION MEETING

The following is a list of the comments and concerns that were raised verbally at the community information session for the monitoring of the Meadowbank Gold project (no written comments were received). These comments will help to identify items that need to be addressed or considered throughout the monitoring process.

Please note that all comments have been grouped by topic.

<u>Public Participation and Capacity</u>

Many community members in Baker Lake discussed the importance of community consultation undertaken by government agencies and regulatory authorities, and noted a general overall lack of consultation by regional and federal agencies and Designated Inuit Organizations. Community members commented on the role of decision making regarding environmental management, and one community member noted that Baker Lake was the only inland community in Nunavut and argued that most of the decisions regarding environmental management were made by individuals in coastal communities who did not necessarily take the history or perspective of Baker Lake into account. Many community members discussed the all-weather private access road and inquired as to whether it could remain after the Meadowbank Mine closed to facilitate community access. A summary of comments from participants is as follows:

- I'm pleased that you are here and have a real meeting because there is not much time for us to see reports and understand them. If there could be more people who come to the community and let us know, that would be great. Because when you are just an ordinary person that doesn't have any real role within an establishment, such as KIA, and when they have a responsibility to the people, and they don't let us know what happens, we don't know what goes on and don't feel that we have a say. So it's maybe not just KIA doing things on their own and other agencies even in town such as the HTO, you don't know what's going on. Meetings like this make a difference. Even with our association with the KIA, and there are millions of dollars involved, we don't know when we will see any of this. So when you are just an ordinary person and you see all of these things like roads being built, changes to areas, you hear about the good things, but then you think – do we have any way of getting involved in case that there are changes. So we really appreciate you coming here and letting us know what's going on.
- Are there any other monitoring agencies besides the NIRB, Kivalliq Inuit Association and the Federal agents? Are they going to come into the community to discuss the results of their testing, and will they hold similar information sessions?
- From the perspective from being an inland community, it seems that all the decision makers are in the sea communities and sea-faring people, and they are making all the decisions, so I feel isolated being land based on my history. We need to keep in mind our children so that they don't feel isolated from decisions. Our lives have changed so much, but I can remember when we were living normal lives before our community was so affected by outside development. People who used to call themselves normal upstanding citizens are being pulled into different businesses, and it is because of our belief in Christianity that we have been able to make a stand now and then, though even church has changed from the influence of other denominations, so our life is changing and being affected.
- The people know that there is an agreement in place for removal of the road and recovery of the site, is there a way that you can really know that this is the will of the people? I conducted a study in Baker Lake because I was told that the hamlet made a request to Agnico Eagle to keep the road after the project is done. This is an example of differences between the intentions of the road and the will of the people.
- On the health committee in general, no one comes to us anymore, and there is a God so that things will be watched, but our qablunaq overlords have changed and they aren't worried about us anymore, but are just going on to do their own thing.
- Is it possible to order Friends of the Earth Committee to check the Meadowbank Mine and how much damage that they have done, along with the elders and the people who know the land? And in the beginning before we had these big meetings, we had a big meeting where AEM promised that they would give something to the people that used to live up there, but we've seen nothing. You lied.

Wildlife

Multiple community members discussed the eco-systemic effect of the Project, particularly with regards to environmental monitoring. Questions were raised and suggestions made regarding general and Project specific monitoring of wildlife, specifically of caribou. A summary of comments from participants is as follows:

- I think what needs to come out in relation to AEM is references to caribou monitoring and it is preferable that there be specific persons or departments that would do monitoring of caribou and lead testing and fish with water seepage.
- I am just making general reference to mining in general, not AEM specifically, that there are a lot of things that should be watched and checked especially with regards to monitoring of wildlife. Over the years there have been many situations where caribou have been affected and with mining in general there should be someone watching these changes.
- Is Health Canada going to require the caribou to be tested, and are they testing them now?

Post-Closure

One community member from Baker Lake asked about AEM's long-term monitoring plans, requesting clarification as to whether the Proponent would remain on site after it is closed to continue with monitoring activities.

3.0 SUMMARY AND CONCLUSION

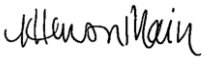
Community members from Baker Lake who attended the afternoon information session raised questions, provided concerns and comments, and had general discussions regarding public participation and capacity, ecosystemic effects and post-closure monitoring as was related to the Meadowbank Gold Project. Concerns were also raised regarding the perceived lack of community consultation by other regulatory and administrative departments and agencies. In addition, individuals commented on the lack of information available in relation to the Meadowbank Project specifically, and industrial projects in general, once approval had been granted. There was a general appreciation of the NIRB's process and numerous community members noted that they appreciated the NIRB's presence within the communities and the public consultation practices.

The comments and concerns raised during the public information meetings will aid in the identification of items that need to be addressed or considered throughout the Meadowbank Gold Project monitoring program and through the NIRB's impact assessment of similar projects in Nunavut.

Prepared by: Heather Rasmussen
Title: Technical Advisor/Monitoring Officer
Date: November 19, 2014

Signature: 

Reviewed by: Amanda Hanson Main
Title: Director, Technical Services
Date: November 19, 2014

Signature: 

NIRB File No.: 03MN107
NWB File No.: 2AM-MEA0815

November 19, 2014

Ryan Vanengen
Environment Superintendent
Agnico Eagle Mines Ltd. – Meadowbank Division
P.O. Box 540
Baker Lake, NU X0C 0A0

Sent via email: ryan.vanengen@agnicoeagle.com

Re: The Nunavut Impact Review Board's *2013-2014 Annual Monitoring Report for the Meadowbank Gold Project* and Board's Recommendations

Dear Ryan Vanengen:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its 2013-2014 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s (AEM) Meadowbank Gold Project (Monitoring Report) along with the 2014 Site Visit Report for the NIRB's monitoring of the Meadowbank Gold Project (NIRB File No. 03MN107) (included as Appendix I to the Monitoring Report). The enclosed Monitoring Report is based on the NIRB's monitoring activities as set out within the Meadowbank Gold Mine Project Certificate and Sections 12.7.1 and 12.7.2 of the Nunavut Land Claims Agreement. This report provides findings that resulted from monitoring of this Project that took place from October 2013 to September 2014.

By way of a motion carried during its regular meeting held in October 2014 the Board has issued the following recommendations to assist AEM in achieving compliance with the Meadowbank Gold Mine Project Certificate and to ensure that the NIRB has all information necessary to adequately discharge its mandate with respect to provisions within section 12.7 of the NLCA as such pertain to the Meadowbank Gold Project.

Acid rock drainage/metal leaching – Project Certificate Condition 15

Condition 15 requires that AEM re-evaluate the characterization of mine waste materials to confirm FEIS predictions and to re-evaluate rock disposal practices. Within its 2013 Annual Report, AEM provided a description of its sampling of blast holes for sulphur and carbon to differentiate non-potentially acid generating materials from those that are potentially acid generating as well as its testing methods for metal leaching. It appeared that no discussion had been provided comparing predictions made in the FEIS and the results of AEM's current sampling. Furthermore, it was unclear how the results of the tailings sampling were used to re-evaluate rock disposal practices in order to incorporate preventative and control measures into

the Waste Management Plan. There was also no discussion on how systematic sampling of waste rock was incorporated into the Plan.

Recommendation 1: Recognizing that AEM has re-evaluated the characterization of mine waste materials, the Board now requires that it provide a comparison of its results with the FEIS predictions and an explanation of how it re-evaluated rock disposal practices in order to incorporate preventative and control measures into the Waste Management Plan. It is requested that this information be provided to the NIRB within AEM's 2014 Annual Report.

Spills – Project Certificate Condition 26

Condition 26 requires that AEM ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris. As reported in the 2014 Site Visit Report, the Monitoring Officer observed that spill pads and drip pans were not in use during refueling of vehicles. AEM staff informed the NIRB that the re-fuelling area was lined and that materials therein would be disposed of during reclamation and closure.

Recommendation 2: The Board recommends that in addition to the standard spill kits (barrels) AEM has available on site, it also employ the use of additional standard spill containment equipment such as drip pans at all re-fuelling stations. It is requested that a response outlining AEM's plan of action to address this recommendation be provided within 30 days of receiving this correspondence.

Gathering of Traditional Knowledge – Conditions 39 & 40

Condition 39 requires that AEM hold annual community information meetings in Chesterfield Inlet and respond to concerns. AEM noted in its 2013 Annual Report that it held meetings in the community of Chesterfield Inlet in 2013 to discuss different topics including shipping. Furthermore, while a summary of a meeting held on May 8, 2013 with AEM and the Hamlet and HTO of Chesterfield Inlet was provided, no indication of a wider community-level meeting was provided. Also pursuant to Condition 39, while consultation reporting is to be provided to the NIRB's Monitoring Officer within one month of any such meeting; no reporting outside of AEM's Annual Report (received in April 2014) has been received in respect of this Condition and pertaining to community meetings in 2013.

Condition 40 requires that AEM report annually to the NIRB and the Kivalliq Inuit Association on traditional knowledge (TK) gathered from local Hunters and Trappers Organizations and workshops held in Chesterfield Inlet. Following the 2012-2013 monitoring period, the Board found that AEM was not in compliance with Condition 40 and on November 27, 2013 requested that it report on further Traditional Knowledge gathered in its future annual reporting as submitted to the NIRB. In AEM's January 7, 2014 response to the Board, and in its 2013 Annual Report submitted in April 2014, AEM indicated that it held an IQ workshop in Chesterfield Inlet in 2010 and that there was no change in the TK reported to AEM during meetings held in 2012 and that as a result it concluded that no operational changes were necessary. However the NIRB found no information was provided in AEM's 2012 or 2013 Annual Reports regarding any additional TK collected from residents of Chesterfield Inlet on marine mammals, cabins, hunting and other local activities in the Inlet. While the NIRB acknowledges that within the May 8, 2013 meeting minutes there was discussion about the future development of a hunter harvest study with collaboration between AEM and the Chesterfield

Inlet Hunters and Trappers Organization, the Board also notes that TK may change and evolve over time and that as such, it is important that AEM continue to collect and report on TK regarding wildlife and local activities to accurately understand traditional land use and potential impacts of the project on various components of the environment. Considering that the Project is now well into its operations phase and that marine mammals, hunting, and other local activities may have changed throughout the Project life thus far, determining changes to local knowledge and concerns is essential.

Recommendation 3: The Board strongly encourages AEM to undertake additional workshops in Chesterfield Inlet and Baker Lake to annually gather Traditional Knowledge at both the community level and from the Chesterfield Inlet and Baker Lake HTOs. It is requested that a response be provided to the NIRB within 30 days of receiving this correspondence, and that applicable follow-up be included within AEM's 2014 Annual Report to the Board.

Participation in Surveys – Conditions 51 & 54

AEM noted that there were less participants in its 2013 Hunter Harvest Study as compared to the 2012 study, and that the recorded caribou harvest was less than had been indicated by the last four years of collected data. AEM suggested that the lower reported harvest numbers of caribou within five kilometres of the AWAR collected through its 2013 Hunter Harvest Study could be attributed to participant fatigue and a decrease in participant response rate rather than a decrease in wildlife abundance, although it was unsure how the decline in participants had affected the results. In addition, AEM's results of creel surveys as presented within its 2013 Annual Report indicated that study participants were less willing to travel long distances to catch fish, regardless of AWAR access. AEM noted that "based on the number of reported trips in the 2013 creel survey, it appears that fishing effort is decreasing, or, as observed with the hunter harvest study, study participation and reporting rates could be on the decline". The NIRB appreciates AEM's efforts to engage local harvesters and encourages it to continue this work, however notes that additional measures may be needed to better understand caribou and creel populations within the LSA.

Recommendation 4: The Board recommends that AEM consider increasing its efforts to participate in other regional population level studies carried out by the HTO, GN or other agencies to better understand Project-related effects on caribou and creel populations around the Local and Regional Study Areas. It is requested that additional information regarding its efforts and relevant results of further studies be provided within AEM's 2014 Annual Report.

Provision of Updated Information – Condition 56

Condition 56 requires that AEM place maps of updated caribou migration paths in site offices and upgrade these as new information on corridors becomes available. During the NIRB's 2014 site visit to the Meadowbank site, it was noted that while a map of caribou migration routes was posted at site, the site mapping was based on 2010 migration paths and had been previously submitted as part of AEM's 2011 Annual Report. Furthermore, it remains unclear whether or how information collected from consultation with Elders and local HTOs had been incorporated into the development of the mapping, as data sources were noted as being based on satellite and GPS survey data.

Recommendation 5: The Board requests that updated maps as presented within AEM's 2013 Annual Report be posted at site and that AEM provide details to clarify whether and how information collected from consultation with Elders and local HTOs has been incorporated into the updated mapping. It is requested that a response be provided to the NIRB within 30 days of receiving this correspondence.

Socio-economic Monitoring – Condition 64

Condition 64 requires that the Proponent develop a Meadowbank socio-economic program. Both the GN and AANDC acknowledged AEM's participation within the Kivalliq Socio-Economic Monitoring Committee (SEMC) within their respective review of AEM's 2013 Annual Report, but indicated that this may not fulfill the requirements of Condition 64. The NIRB notes that AEM could provide more comprehensive project-specific data with the development of a project specific monitoring program as envisioned by this Condition.

Recommendation 6: The Board requests that AEM provide the NIRB with its progress to date in developing a project-specific socio-economic monitoring program, and that this is provided within 30 days of receiving this correspondence.

Recommendation 7: The Board requests that future reporting on socio-economic data include a breakdown of the types of positions held by Inuit beneficiaries and non-Inuit Nunavummiut at the Meadowbank site. It is requested that information be provided in AEM's 2014 Annual Report.

Recommendation 8: The Board requests that future reporting on socio-economic data in AEM's post-environmental assessment monitoring program include percentages of the most common reasons reported for employee voluntary termination. It is requested that information be provided in AEM's 2014 Annual Report.

Recommendation 9: The Board requests that AEM report on its pre-apprenticeship program, including: enrollment numbers; successful completion rates; and how many successful participants found employment with AEM or, if known, other opportunities. Each of these details should include a breakdown of Inuit beneficiaries and non-Inuit Nunavummiut. It is requested that information be provided in AEM's 2014 Annual Report.

Monitoring of Country Foods – Condition 67

Condition 67 requires that the Proponent monitor contaminant levels in country foods in consultation with Health Canada (HC). In 2012, the Board invited HC to provide comments on the wildlife screening level risk assessment (WSLRA) and the preliminary quantitative risk assessment reports prepared by AEM in order to meet the requirements of Condition 67, and to indicate whether or not additional information may be required with respect to the monitoring program. HC indicated that it was unable to provide comments on the WSLRA report as it did not possess the relevant expertise in the areas of modeling emissions and deposition, environmental transport, fate and/or contaminant uptake by plants or wildlife (country foods) and suggested that another department may have the expertise necessary to review the WSLRA.

Recommendation 10: The Board requests that AEM and authorizing agencies, including the Government of Nunavut, Environment Canada, and Health Canada, confirm whether

each has the necessary expertise and/or jurisdiction to comment on AEM's wildlife screening level risk assessment. It is requested that this information be provided within 30 days of receiving this correspondence.[1]

Air Quality Monitoring – Condition 71

Condition 71 requires that the Proponent conduct annual air quality monitoring and report its results to the NIRB. AEM conducted its second study of dustfall along the AWAR to determine whether impacts predicted in the Final Environmental Impact Statement were being exceeded. AEM noted that while it had conducted a 'more robust' dustfall study in 2013, the results had been compromised as a result of disturbance to sampling canisters. AEM explained that data from only seven of the 35 canisters (plus four duplicates) could be collected and analyzed as the other 28 had been knocked over during the data collection. Although AEM noted that it would conduct a third dustfall sampling program in 2014, after addressing the support system of the canisters, it did report that data collected along the AWAR and nearer to the Meadowbank site were at levels within range of the commercial/industrial levels pursuant to Alberta Environment's ambient air quality guideline. AEM again noted that although some of the successful results of the dustfall study indicated levels that exceeded some of the nuisance guidelines published by Alberta Environment along the AWAR and at the mine site, total dustfall rates were generally less than those measured at the Ekati Diamond Mine, where no change in vegetative communities was reported. AEM also noted that there were no observed impacts to water quality along the AWAR. The NIRB notes AEM's conclusion that there is less dust present along the AWAR than predicted in the FEIS, however is hesitant to accept this conclusion with confidence, given the limitations to sample collection as reported by AEM, noting that of 35 canisters set out to sample, only 7 were fit for analysis.

Recommendation 11: The Board requests that AEM provide study results which corroborate its conclusions, and that it undertake additional sampling in the 2014 year and run additional analyses with the data collected. It is requested that AEM provide study results corroborating conclusions within the 2013 Annual Report within 30 days of receiving this correspondence and that it report on additional sampling in the 2014 year within its 2014 Annual Report.

On-site Incinerators – Condition 72

Condition 72 requires that the Proponent conduct annual stack testing of the on-site incinerators to demonstrate that they are operating in compliance with the required standards. Similar to the NIRB's review of AEM's 2012 Annual Report, upon review of the available 2013 Incinerator Daily Report Logbook, the NIRB notes that the incinerator temperature in the secondary chamber was below the recommended 1000 ºC temperature on several occasions. It was previously noted by EC that the incinerator temperatures in the secondary chamber should be above 1000 ºC to ensure complete combustion and to minimize the formation and release of contaminants. A number of entries into its Daily Report Logbook were also missing, with no data entered as to burn temperatures recorded. AEM noted within its 2013 Annual Report that per its discussions with EC, incinerator stack testing would be undertaken every two years, and that it would conduct stack testing again in 2014.

[1] Note that AEM is not responsible for a response to this recommendation.

Recommendation 12: The Board requests that AEM provide an explanation for the incinerator having not achieved recommended temperatures in the secondary chamber on multiple occasions in 2012, and that it provide a note of any discussions it has had with Environment Canada or other regulators regarding these occasions. It is requested that this be provided within 30 days of receiving this correspondence.

Recommendation 13: The Board requests that Environment Canada provide comments on the information contained within AEM's 2013 Incinerator Daily Report Logbook, including whether it agrees to the continuation of biennial incinerator stack testing, given the reported instances of lower than optimal secondary chamber burn temperatures and the number of daily log insertions that were missed within its 2013 Incinerator Daily Report Logbook. It is requested that this be provided within 30 days of receiving this correspondence.[2]

Suppression of surface dust – Condition 74

Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the 2014 site visit, AEM confirmed that no dust suppressants were currently in use along the all-weather access road (AWAR). AEM noted in its 2013 Annual Report that dust suppression techniques have been limited to haul roads at the mine site, and between the Meadowbank and Exploration Camp sites. Dust suppression measures in use by AEM at these areas were noted to include liquid calcium chloride at the onsite roads and water along the airstrip. The NIRB recognizes the efforts made by AEM to suppress dust around the Meadowbank and Exploration Camp sites, however reminds AEM of commitments made during the NIRB's Review of the Meadowbank project and furthermore, of condition 74 of the Project Certificate which requires the application of dust suppression measures along project roads. The NIRB notes that AEM has been in non-compliance with this condition since the Project entered operations, as no dust suppression measures are employed along the AWAR from Baker Lake to the site.

Recommendation 14: The Board reminds AEM that its Access and Air Traffic Management Plan (2005) indicated that dust control measures on the roads, including the AWAR, would include regularly watering during the dry periods and the application of calcium chloride if necessary. The Board requests that AEM provide a plan of action for dust suppression along the AWAR during dry periods to be undertaken during 2014 and all remaining years of Project life. It is requested that a response be provided within 30 days of receiving this correspondence.

Accidents and Malfunctions – Condition 75

Condition 75 requires that the Proponent provide a complete list of possible accidents and malfunctions for various Project components which includes an assessment of the accident risk and mitigation developed in consultation with Elders and potentially affected communities. In its 2013 Annual Report, AEM complied with most of this condition, including the provision of a list of possible accidents and malfunctions, although it is unclear in the submitted management

[2] Note that the Board will be inviting Environment Canada to comment on this matter under separate cover, and that AEM is not responsible for a response to this recommendation. It has been included here for information only.

plans whether and how these were developed in consultation with Elders and potentially affected communities.

Recommendation 15: The Board requests that AEM provide within its 2014 annual reporting, further discussion as to how various management plans relating to accident risk and mitigation have been developed in consultation with Elders and potentially affected communities.

Appendix D and the Annual Report

Within its 2013 Annual Report, AEM provided a detailed analysis of results from its 2013 monitoring program and compared observed impacts to predictions made within the FEIS. AEM's evaluation focused on the valued ecosystemic components (VECs) that had been identified in the FEIS, including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. The NIRB acknowledges that AEM has worked to improve upon its reporting of findings within its post-environmental assessment monitoring program (PEAMP). The NIRB appreciates the general clarity of the presentation of information in AEM's tables, but found that the discussion and analysis within the PEAMP could have been more comprehensive, particularly as related to observed effects, accuracy of predictions and monitoring protocol and mitigation measures. Furthermore, given the current presentation of data, it was difficult for the NIRB to ascertain whether trends of effects over time may be resulting from, or associated with, the Meadowbank Project.

Recommendation 16: The Board clarifies for AEM that as a part of its reporting on the post-environmental assessment monitoring program (PEAMP), references are to be made with respect to observed impacts over time, and furthermore, the Board requests that the Proponent include in future reporting, a measurement of the effects of the project as well as information used to reach any relevant conclusions.

Recommendation 17: The Board requests that the Proponent continue to provide tables as presented in its 2013 discussion of the PEAMP and that it further include columns identifying project-related effects or measurement values as predicted within the FEIS for each VEC or VSEC, as well as observed measurement values and/or effects as noted in the previous and current monitoring years (e.g., in its 2014 Annual Report, AEM should include data on effects observed and/or measured values in 2013 and 2014 in addition to values and effects as predicted within the FEIS).

Recommendation 18: The Board requests that the Proponent provide a summary description of any changes between proposed monitoring measures as included within its FEIS and the measures it has actually employed within its evaluation of the effectiveness of project monitoring procedures and plans.

Noise Quality Monitoring

In 2013, the Board requested that AEM provide a discussion regarding the potential impacts of noise to human health at site. AEM anticipated that project-related noise levels would decrease with increasing distance from noise monitoring stations at site, and noted that it would continue to conduct annual monitoring at stations located at various distances from the mine footprint area. Within its 2013 Annual Report AEM noted that noise related health impacts to on-site

workers would be under the purview of the Health and Safety department and should not be discussed under the environmental monitoring program.

Within its comment submission regarding AEM's 2013 Annual Report, the Government of Nunavut (GN) noted that it disagreed with AEM's conclusion that the Project did not exceed the threshold in Section 4.4.2.2 of the Terrestrial Ecosystem Management Plan (TEMP), specifically that mine related activities would not preclude caribou and muskoxen from using suitable habitats beyond 500 metres (m) of mine buildings, facilities and roads. The GN further noted that the presence of caribou within this 500 m buffer is not indicative of the Project having had no noise-related effect on wildlife and recommended that AEM further investigate mine related disturbance. AEM responded to the GN's comments on noise related effects on wildlife and noted that its noise target levels are based on recommendations made by Environment Canada's "Environmental Code of Practice for Metal Mines". It further noted that as no equilibrium sound pressure levels (Leq) in 2013 exceeded target sound levels of 55 decibels (dBA) during the daytime and 45 dBA during the nighttime, that mine activities did not preclude caribou from using suitable habitat near the mine site.

Recommendation 19: The Board requests that AEM confirm which agency or government department oversees its noise related health impacts on-site, particularly as related to Condition 62 of the NIRB Project Certificate, and what, if any, monitoring and reporting of these impacts are required. It is requested that this information be provided within 30 days of receiving this correspondence.

Recommendation 20: The Board encourages AEM and the Government of Nunavut to work together to investigate mine related disturbance on caribou and wildlife and report back to the NIRB on the progress of these discussions. It is requested that a response be provided within 90 days of receiving this recommendation. The Proponent is expected to include any further investigation into noise monitoring within its annual reporting to the NIRB.

General Clarification

In Table 7.1 of its 2013 Annual Report regarding spills, AEM did not include the unit numbers for quantities of spills which makes it difficult to provide consideration of these incidents.

Furthermore, the NIRB noted potential discrepancies and ambiguity within AEM's 2013 Annual Report as to which of the four monitoring locations were used for noise sampling. For instance, in Table 8.37, results were provided from monitoring stations R2, R3, R4, and R5 while in the discussion of its Post Environmental Assessment Monitoring Program, AEM discussed sound levels relating to monitoring stations R1, R2, R3, and R5.

Relating to the AWAR, Condition 32 (c) of the Project Certificate requires that the Proponent post signs in English and Inuktitut at the gate, each major bridge crossing, and at every 10 kilometres along the road, stating that unauthorized public use of the road is prohibited. The Monitoring Officer observed that no signage was present on the sea-can at the bridge crossing located at approximately kilometre 23.

Recommendation 21: The Board requests that AEM provide a revised Table 7.1 from its 2013 Annual Report which includes units of each spill incident. It is requested that this revised table be provided within 30 days of receiving this correspondence, and that in future years, AEM ensure that similar tables presented within its annual reporting include

quantitative measurements or other essential details to enable clear understanding of materials presented.

Recommendation 22: The Board requests that AEM clarify within its future annual reporting which sampling sites are included as reference sites only, which are active sampling sites, and which were not included in data collection. Discussion within its post environmental assessment monitoring program (PEAMP) should also provide a clear description of results, ensuring that any anomalies or changes to the monitoring program are identified.

Recommendation 23: The Board reminds the Proponent to ensure that signs are posted at each major bridge crossing, in both English and Inuktitut, and that the sea can at kilometre 23 be outfitted with appropriate signage. It is requested that a response outlining action taken by AEM with respect to this recommendation be provided within 30 days of receiving this correspondence.

The Board respectfully requests that for items requiring follow-up action by AEM that a response be provided within the timeline as requested for each of the recommendations.

Should you have any questions or require further clarification regarding this request or related to the NIRB's monitoring program for the Meadowbank Gold Mine Project, please contact me directly at (867) 983-4606 or hrasmussen@nirb.ca.

Sincerely,

Heather Rasmussen, M.Env-EIA
Meadowbank Gold Project Monitoring Officer
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico Eagle Mines Ltd.
Meadowbank Gold Distribution List

Enclosure: The Nunavut Impact Review Board's 2013-2014 Annual Monitoring Report for the Meadowbank Gold Project

December 18th, 2014

Heather Rasmussen
Technical Advisor
Nunavut Impact Review Board
29 Mitik, PO Box 1360
Cambridge Bay, NU
X0B 0C0

Re: File 03MN107 - Response to recommendations in NIRB's 2013-2014 Annual Monitoring Report for the Meadowbank Gold Project and Board's Recommendation

Dear Ms. Rasmussen,

As requested, the following information and comments are intended to address the recommendations outlined in response to the NIRB report dated November 19th, 2014 title '*The Nunavut Impact Review Board's 2013 – 2014 Annual Monitoring Report for the Meadowbank Gold Project and Board's Recommendations'* made in accordance with the conditions of Project Certificate No.004.

Should you have any questions or require further information, please contact Stephane Robert, Ryan Vanengen or Marie-Pier Marcil at marie-pier.marcil@agnicoeagle.com.

Regards,

Agnico Eagle Mines Limited – Meadowbank Division

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AGNICO EAGLE

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1.0 Acid Rock Drainage/Metal Leaching - Project Certificate Condition 15

Summary of NIRB Concern: Condition 15 requires that AEM re-evaluate the characterization of mine waste materials to confirm FEIS predictions and to re-evaluate rock disposal practices.

NIRB Recommendation 1: Recognizing that AEM has re-evaluated the characterization of mine waste materials, the Board now requires that it provide a comparison of its results with the FEIS predictions and an explanation of how it re-evaluated rock disposal practices in order to incorporate preventative and control measures into the Waste Management Plan. It is requested that this information be provided to the NIRB within AEM's 2014 Annual Report.

> ***AEM Response:*** *AEM will provide the requested description and information in the 2014 annual report.*

2.0 Spills - Project Certificate Condition 26

Summary of NIRB Concern: Condition 26 requires that AEM ensure that spills are cleaned up immediately. As reported in the 2014 Site Visit Report, the Monitoring Officer observed that spill pads and drip pans were not in use during refueling of vehicles. AEM staff informed the NIRB that the re-fuelling area was lined and that materials therein would be disposed of during reclamation and closure.

NIRB Recommendation 2: The Board recommends that in addition to the standard spill kits (barrels) AEM has available on site, it also employ the use of additional standard spill containment equipment such as drip pans at all re-fuelling stations. It is requested that a response outlining AEM's plan of action to address this recommendation be provided within 30 days of receiving this correspondence.

> ***AEM Response:*** *In accordance with the Type A license, AEM has a board approved Spill Contingency Plan. One of the main principles in the spill contingency plan is to take the necessary action to prevent spills from occurring. Transport, transfer and storage of materials are performed by trained personnel using secondary containment, with well-maintained equipment and containers. Refueling stations in Baker Lake and at the mine site are equipped with HDPE lined areas to contain any leaks or spills while refueling and there are specialized fittings for bulk fuel transfer to avoid large spills. All spills (regardless of their quantity or location) on the site are reported via our internal reporting system; this surpasses regulatory requirements. Transfer of fuel from tanks to tanker trucks are performed with the aid of fuel pumps and a secondary containment is used at each connection. AEM takes note of the comments from NIRB regarding the use of secondary containment (half barrel) and will continue to adhere to the practices outlined in the Spill Contingency Plan. In addition, AEM enforces a high standard of housekeeping practices for site personnel and contractors, especially in areas such as storage facilities, loading and unloading zones. Site orientations are conducted with all employees and spill prevention and response is discussed in detail. Regular worksite inspections are conducted and the Environmental Department conducts audits of facilities handling or storing hazardous materials to identify measures to minimize the risk of spills according to the approved plan. All personnel are trained to be aware of the potential hazards associated with the fuel/chemicals with which they are assigned to work.*

3.0 Gathering of Traditional Knowledge – Project Certificate Conditions 39 & 40

Summary of NIRB Concern: Pursuant to Condition 39, NIRB is concerned that AEM did not report within one month on the consultation held with the Hamlet and HTO of Chesterfield Inlet in May, 2013, and that AEM did not hold a wider community-level meeting in Chesterfield Inlet in 2013. Pursuant to Condition 40, NIRB is concerned that AEM has not reported any TK collection from Chesterfield Inlet residents since 2010, other than minimal discussion of a hunter harvest survey during May, 2013 consultations.

NIRB Recommendation 3: The Board strongly encourages AEM to undertake additional workshops in Chesterfield Inlet and Baker Lake to annually gather Traditional Knowledge at both the community level and from the Chesterfield Inlet and Baker Lake HTOs. It is requested that a response be provided to the NIRB within 30 days of receiving this correspondence, and that applicable follow-up be included within AEM's 2014 Annual Report to the Board.

> ***AEM Response:*** *AEM held an Inuit Qaujimajatunqagit (IQ) workshop in Chesterfield Inlet for two days on January 26 and 27, 2010. This workshop was focused on gathering information on traditional use and traditional environmental knowledge of Chesterfiled Inlet residents, as well as project-specific effects and mitigation recommendations including search and rescue operations and safety. The second part of the condition 40 is to report to KivIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop. Following meetings with Chesterfield residents in 2013, no change in the TK gathered was report to AEM and no operational changes were necessary. AEM believes this complies with the condition 40. AEM will request a discussion with NIRB, at their convenience, to clarify the interpretation of Condition 40.*

4.0 Participation in Surveys – Project Certificate Conditions 51 & 54

Summary of NIRB Concern: NIRB is concerned about the declines in participation reported in hunter harvest and creel surveys in 2013. The NIRB appreciates AEM's efforts to engage local harvesters and encourages it to continue this work, however notes that additional measures may be needed to better understand caribou and creel populations within the LSA.

NIRB Recommendation 4: The Board recommends that AEM consider increasing its efforts to participate in other regional population level studies carried out by the HTO, GN or other agencies to better understand Project-related effects on caribou and creel populations around the Local and Regional Study Areas. It is requested that additional information regarding its efforts and relevant results of further studies be provided within AEM's 2014 Annual Report.

> ***AEM Response:*** *AEM will continue to work with hunters and increase its communication with the HTO related to the Hunter Harvest Study. In 2013, AEM finalized discussions with the GN and entered into a new Memorandum of Understanding (MOU) to commit to another long term (3 year) contribution in support of the regional GN caribou monitoring program. This agreement will*

continue to assist the GN- DOE- Wildlife branch in directing the implementation, data analysis and management of caribou populations in the Kivalliq region. AEM generous contribution to the regional population level studies carried out by the GN demonstrates our commitment to regional studies. We continue to work closely with the GN and other academic researchers to ensure the data that we collect is relevant, that it continues to contribute to the regional understanding of wildlife, and informs wildlife managers. AEM will present relevant and available regional information to regulators in the 2014 annual report; however, it is important to note that in some cases, other agencies and academic institutions have different timelines for publications, which may not coincide with AEM's reporting timelines.

5.0 Provision of Updated Information – Project Certificate Condition 56

Summary of NIRB Concern: NIRB is concerned that maps of caribou migration paths posted in AEM offices are outdated (2010) and do not include information collected from consultation with Elders and local HTOs.

NIRB Recommendation 5: The Board requests that updated maps as presented within AEM's 2013 Annual Report be posted at site and that AEM provide details to clarify whether and how information collected from consultation with Elders and local HTOs has been incorporated into the updated mapping. It is requested that a response be provided to the NIRB within 30 days of receiving this correspondence.

AEM Response: *The updated maps will be posted on the site. AEM continues to meet with the HTO on an annual basis for a site visit at which time we review site wide monitoring. During this review, AEM presents the updated caribou migration maps to the HTO for discussion. Any information that is collected in these meetings is passed on to the GIS consultants who work with the GN Wildlife Biologist to construct and finalize the migration maps. Furthermore, the GN biologist independently consults with hunters and elders to develop the migration maps. AEM will discuss the recommendations of the NIRB with the GN to determine the best path forward to ensure that caribou migration maps continue to integrate elders and local HTO input, that the GN works with AEM to meet our reporting deadlines, and that the maps are to the satisfaction of the NIRB.*

6.0 Socio-economic Monitoring – Project Certificate Condition 64

Summary of NIRB Concern: GN and AANDC acknowledge AEM's participation on the Kivalliq Socio-Economic Monitoring Committee, but indicated this may not fulfill requirements of Condition 64. The NIRB notes that AEM could provide more comprehensive project-specific data with the development of a project specific monitoring program as envisioned by this Condition.

NIRB Recommendation 6: The Board requests that AEM provide the NIRB with its progress to date in developing a project-specific socio-economic monitoring program, and that this is provided within 30 days of receiving this correspondence.

AEM Response: *In 2014, AEM has made progress on developing a socio-economic monitoring program, as per Condition 64. In September 2014, the Socio-Economic Monitoring*

Committee, GN and AEM officials submitted a draft monitoring plan for consideration of the full SEMC. There is a conference call planned in January 2015 to review and approved the draft. AEM is presently collecting AEM's data towards the report (beginning in the year of operations). Once AEM has approval from the SEMC, we intended to communicate with NIRB to advise them of the program, along with a copy of a completed report.

NIRB Recommendation 7: The Board requests that future reporting on socio-economic data include a breakdown of the types of positions held by Inuit beneficiaries and non-Inuit Nunavummiut at the Meadowbank site. It is requested that information be provided in AEM's 2014 Annual Report.

AEM Response: *AEM will provide the requested information in the 2014 annual report.*

NIRB Recommendation 8: The Board requests that future reporting on socio-economic data in AEM's post-environmental assessment monitoring program include percentages of the most common reasons reported for employee voluntary termination. It is requested that information be provided in AEM's 2014 Annual Report.

AEM Response: *AEM will provide the requested information in the 2014 annual report.*

NIRB Recommendation 9: The Board requests that AEM report on its pre-apprenticeship program, including: enrollment numbers; successful completion rates; and how many successful participants found employment with AEM or, if known, other opportunities. Each of these details should include a breakdown of Inuit beneficiaries and non-Inuit Nunavummiut. It is requested that information be provided in AEM's 2014 Annual Report.

AEM Response: *AEM will provide the requested information in the 2014 annual report.*

7.0 Monitoring of Country Foods – Project Certificate Condition 67

Summary of NIRB Concern: In 2012 NIRB invited HC to provide comments on AEM's Wildlife Screening Level Risk Assessment, but HC indicated it did not possess the relevant expertise.

NIRB Recommendation 10: The Board requests that AEM and authorizing agencies, including the Government of Nunavut, Environment Canada, and Health Canada, confirm whether each has the necessary expertise and/or jurisdiction to comment on AEM's wildlife screening level risk assessment. It is requested that this information be provided within 30 days of receiving this correspondence. Note that AEM is not responsible for a response to this recommendation.

8.0 Air Quality Monitoring – Project Certificate Condition 71

Summary of NIRB Concern: The NIRB notes AEM's conclusion in the 2013 AWAR Dustfall Study Report that there is less dust present along the AWAR than predicted in the FEIS, however is hesitant to accept this conclusion with confidence, given the limitations to sample collection as reported by AEM, noting that of 35 canisters set out to sample, only 7 were fit for analysis.

NIRB Recommendation 11: The Board requests that AEM provide study results which corroborate its conclusions, and that it undertake additional sampling in the 2014 year and run additional analyses

with the data collected. It is requested that AEM provide study results corroborating conclusions within the 2013 Annual Report within 30 days of receiving this correspondence and that it report on additional sampling in the 2014 year within its 2014 Annual Report.

> ***AEM Response:*** *As discussed with the NIRB, AEM completed a full dustfall monitoring study in 2014. It is important to note that since the majority of samples collected in 2013 were compromised due to adverse field conditions, AEM did not make any conclusions about dustfall in the 2013 AWAR Dustfall Study Report, but rather indicated that the study would be repeated using more robust sampling techniques. In 2014 the AWAR dustfall study was completed successfully and all 41 canisters deployed were analyzed.*
>
> *Although the project FEIS does not make quantitative predictions with respect to dustfall specifically, it is stated that "Results from modeling, air monitoring, and snow surveys indicate that most dust particles will settle out within 100 m of the source (BHP, 2000)". Results of the 2014 study indicate that there is approximately a 2x reduction in dustfall from 50 m to 100 m on the downwind (most impacted) side of the road, from an average of 0.94 mg/cm^2/30d to 0.46 mg/cm^2/30d, indicating that the majority of dustfall does settle within the predicted 100 m zone. At distances greater than 100 m from the AWAR, most of the samples were less than the Alberta Environment's recreational area guideline for dustfall (0.53 mg/cm^2/30d). Furthermore, rates of dustfall in 2014 were lower than those reported in 2012 or 2013 for repeat locations. Overall, the results of the dustfall study in 2014 corroborate with the findings in 2012 and 2013; more detailed results will be provided to NIRB in the 2014 annual report.*
>
> *The FEIS identified a 100 m zone of influence (ZOI) for Small Mammals and Other Breeding Birds, beyond which impacts of dustfall on habitat were not expected to be significant (< 1% change from baseline). Preliminary statistical analyses of the data collected from 2 duplicated transects and a reference location indicate that total dustfall rates were only significantly different from background at a distance of 50 or 100 m from the road, depending on location (km 18 or 78). Although studies at Ekati Diamond Mine (Male and Nol, 2005) have identified no effects of haul roads on breeding birds (Lapland longspurs) at higher levels of dustfall, little information is available on deposition rates required to impact Arctic vegetation or wildlife. Therefore, AEM proposes to continue to conduct further dustfall studies, as well as breeding bird surveys in 2015 to increase precision and to determine whether the observed dust deposition rates are within the predicted FEIS levels.*

9.0 On-site Incinerators – Project Certificate Condition 72

Summary of NIRB Concern: The NIRB notes that the incinerator temperature in the secondary chamber was below the recommended 1000 ºC temperature on several occasions, and that a number of entries into the Daily Report Logbook were missing.

NIRB Recommendation 12: The Board requests that AEM provide an explanation for the incinerator having not achieved recommended temperatures in the secondary chamber on multiple occasions in 2012, and that it provide a note of any discussions it has had with Environment Canada or other regulators regarding these occasions. It is requested that this be provided within 30 days of receiving this correspondence.

AEM Response: *AEM recommends the NIRB refer to the document "File 03MN107 - AEM Response to the Nunavut Impact Review Board's 2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project and Board Recommendations" sent on January 7th, 2013 for the response regarding the 2012 incinerator result. Regarding the 2013 results, AEM had several mechanical issues with the secondary chamber; this altered the operational procedure and resulted in the operators not recording data on a few occasions. This gap in information was brought to the attention of the site services department and AEM has addressed this problem and will improve this in the future. After several attempts to repair and adjust the burner, AEM requested a representative of the burner manufacturer to come on site during the 2014 summer to provide training to the operators and sites services department to complete some maintenance and adjustment on the burner. Further to the training received, AEM will put in place some correctives action: the temperature set point in the secondary chamber will be increase to make sure that the recommended temperature average was always reached and an alarm on the sites services computer will be set up when the temperature of the secondary chamber was below 1000°C. This alarm will allow AEM to accurately verify the system on time and do maintenance or repairs if needed. AEM is confident that with the new measures put in place, the majority of the burn will reach the recommended temperature.*

In 2012, AEM provided responses to Environment Canada regarding some of the incinerator comments. They are presented in the "Meadowbank Mine: NIRB 03MN107 Comments on Agnico-Eagle Mines Ltd.'s (AEM) Meadowbank Gold Project 2012 Annual Report" submitted to NIRB on July 19th, 2013. AEM encourages NIRB to refer to this document for further details. Due to the operational nature of the problems, AEM continued to work with the manufacturer and their representatives in 2013 and 2014 to solve the problems.

NIRB Recommendation 13: The Board requests that Environment Canada provide comments on the information contained within AEM's 2013 Incinerator Daily Report Logbook, including whether it agrees to the continuation of biennial incinerator stack testing, given the reported instances of lower than optimal secondary chamber burn temperatures and the number of daily log insertions that were missed within its 2013 Incinerator Daily Report Logbook. It is requested that this be provided within 30 days of receiving this correspondence. Note that the Board will be inviting Environment Canada to comment on this matter under separate cover, and that AEM is not responsible for a response to this recommendation. It has been included here for information only.

10.0 Suppression of Surface Dust – Project Certificate Condition 74

Summary of NIRB Concern: Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the 2014 site visit, AEM confirmed that no dust suppressants were currently in use along the all-weather access road (AWAR). The NIRB recognizes the efforts made by AEM to suppress dust around the Meadowbank and Exploration Camp sites, however reminds AEM of commitments made during the NIRB's Review of the Meadowbank project and furthermore, of condition 74 of the Project Certificate which requires the application of dust suppression measures along project roads. The NIRB notes that AEM has been in non-compliance with this condition since the Project entered operations.

NIRB Recommendation 14: The Board reminds AEM that its Access and Air Traffic Management Plan (2005) indicated that dust control measures on the roads, including the AWAR, would include

regularly watering during the dry periods and the application of calcium chloride if necessary. The Board requests that AEM provide a plan of action for dust suppression along the AWAR during dry periods to be undertaken during 2014 and all remaining years of Project life. It is requested that a response be provided within 30 days of receiving this correspondence.

> ***AEM Response:*** *In accordance with Condition 74 (not specified in the "All Weather Road" section of the Project Certificate), AEM has applied environmentally protective techniques including the enforcement of speed limits along the AWAR, and the routine use of water trucks, calcium chloride and other dust suppressants around the mine site (specifically on the Vault haul road), as well as on sections of the AWAR where the heaviest traffic occurs (i.e. between the exploration camp and the mine site). Air quality modelling in the FEIS identified concerns of increased fugitive dust that could potentially impact areas nearest to haul roads or the mine site; these impacts were not predicted along the AWAR. Furthermore, the Access and Air Traffic Management Plan (2005) indicates that "Dust control on the roads will be achieved through regular watering during the dry periods…" AEM believes that this general description was intended to apply to on-site haul and service roads, as indicated in the Air Quality and Noise Management Plan, which states: "To mitigate potential atmospheric impacts of the proposed project during operation, the following measures will be considered: …Apply dust suppressants (water, calcium chloride) to haul and service roads during dry weather to mitigate fugitive dust."*
>
> *Nevertheless, to date, AEM has completed a series of dustfall studies (described in Section 8.0 of this document) to quantitatively assess the accuracy of FEIS predictions regarding impacts of dust on wildlife and wildlife habitat around the mine site and along the AWAR. As previously described, to date, the results of the dustfall study are consistent with the FEIS predictions. AEM will continue to conduct these monitoring studies to inform future decisions regarding dust suppression along the AWAR.*

11.0 Accidents and Malfunctions – Project Certificate Condition 75

Summary of NIRB Concern: Condition 75 requires that the Proponent provide a complete list of possible accidents and malfunctions for various Project components which includes an assessment of the accident risk and mitigation developed in consultation with Elders and potentially affected communities. In its 2013 Annual Report, AEM complied with most of this condition, including the provision of a list of possible accidents and malfunctions, although it is unclear in the submitted management plans whether and how these were developed in consultation with Elders and potentially affected communities.

NIRB Recommendation 15: The Board requests that AEM provide within its 2014 annual reporting, further discussion as to how various management plans relating to accident risk and mitigation have been developed in consultation with Elders and potentially affected communities.

> ***AEM Response:*** *AEM will provide the requested information in the 2014 annual report.*

12.0 Appendix D and the Annual Report (PEAMP)

Summary of NIRB Concern: The NIRB found that the discussion and analysis within the PEAMP could have been more comprehensive, particularly as related to observed effects, accuracy of

predictions and monitoring protocol and mitigation measures. Furthermore, given the current presentation of data, it was difficult for the NIRB to ascertain whether trends of effects over time may be resulting from, or associated with, the Meadowbank Project.

NIRB Recommendation 16: The Board clarifies for AEM that as a part of its reporting on the post-environmental assessment monitoring program (PEAMP), references are to be made with respect to observed impacts over time, and furthermore, the Board requests that the Proponent include in future reporting, a measurement of the effects of the project as well as information used to reach any relevant conclusions.

> ***AEM Response:*** *AEM believes this is accomplished in the PEAMP and that the objectives of the NIRB Project Certificate Appendix D have been met. In all cases a detailed description of monitoring and measurements of effects overtime are provided in other sections of the annual report. AEM takes note of NIRB's recommendations and will discuss ways to improve the presentation of information, without creating redundancy in the annual report.*

NIRB Recommendation 17: The Board requests that the Proponent continue to provide tables as presented in its 2013 discussion of the PEAMP and that it further include columns identifying project-related effects or measurement values as predicted within the FEIS for each VEC or VSEC, as well as observed measurement values and/or effects as noted in the previous and current monitoring years (e.g., in its 2014 Annual Report, AEM should include data on effects observed and/or measured values in 2013 and 2014 in addition to values and effects as predicted within the FEIS).

> ***AEM Response:*** *AEM believes this is accomplished in the PEAMP and that the objectives of the Project Certificate Appendix D are met. AEM takes note of NIRB's recommendations and will discuss ways to improve the presentation of information, without creating redundancy in the annual report.*

NIRB Recommendation 18: The Board requests that the Proponent provide a summary description of any changes between proposed monitoring measures as included within its FEIS and the measures it has actually employed within its evaluation of the effectiveness of project monitoring procedures and plans.

> ***AEM Response:*** *AEM notes NIRB's recommendation. AEM will continue to work closely with applicable agencies and reviewers to develop and update monitoring plans that reflect changes to the mine planning, are effective and meet the conditions of our authorizations, licenses and permits. The rationale for improvements and changes in monitoring procedures and plans are discussed with the relevant regulatory bodies (i.e. reviewed by the NWB as a condition of the Type A License and is a condition of the DFO authorizations) and the changes made to monitoring plans are described in the document control section of the revised plans.*

13.0 Noise Quality Monitoring

Summary of NIRB Concern: In 2013, the Board requested that AEM provide a discussion regarding the potential impacts of noise to human health at site. AEM anticipated that project-related noise levels would decrease with increasing distance from noise monitoring stations at site, and noted that it would continue to conduct annual monitoring at stations located at various distances from the mine

footprint area. Within its 2013 Annual Report AEM noted that noise related health impacts to on-site workers would be under the purview of the Health and Safety department and should not be discussed under the environmental monitoring program.

Within its comment submission regarding AEM's 2013 Annual Report, the Government of Nunavut (GN) noted that it disagreed with AEM's conclusion that the Project did not exceed the threshold in Section 4.4.2.2 of the Terrestrial Ecosystem Management Plan (TEMP), specifically that mine related activities would not preclude caribou and muskoxen from using suitable habitats beyond 500 metres (m) of mine buildings, facilities and roads. The GN further noted that the presence of caribou within this 500 m buffer is not indicative of the Project having had no noise-related effect on wildlife and recommended that AEM further investigate mine related disturbance. AEM responded to the GN's comments on noise related effects on wildlife and noted that its noise target levels are based on recommendations made by Environment Canada's "Environmental Code of Practice for Metal Mines". It further noted that as no equilibrium sound pressure levels (Leq) in 2013 exceeded target sound levels of 55 decibels (dBA) during the daytime and 45 dBA during the nighttime, that mine activities did not preclude caribou from using suitable habitat near the mine site.

NIRB Recommendation 19: The Board requests that AEM confirm which agency or government department oversees its noise related health impacts on-site, particularly as related to Condition 62 of the NIRB Project Certificate, and what, if any, monitoring and reporting of these impacts are required. It is requested that this information be provided within 30 days of receiving this correspondence.

> ***AEM Response:*** *AEM is required to comply with two sets of regulations "General Safety Regulations (RRNWT 1990, c. S-1) Section 30 and 31, Schedule A" and the "Mine Health and Safety Regulations, R-125-95 Section 9.19-9.26, Schedule 5" regarding the noise related health impact on-site which are enforced under the Mine's Act by the mine's inspector which is a representative of the Workers Safety and Compensation Commission. The onsite Health and Safety department will continue to ensure the safety of employees under the Mine's Act.*

NIRB Recommendation 20: The Board encourages AEM and the Government of Nunavut to work together to investigate mine related disturbance on caribou and wildlife and report back to the NIRB on the progress of these discussions. It is requested that a response be provided within 90 days of receiving this recommendation. The Proponent is expected to include any further investigation into noise monitoring within its annual reporting to the NIRB.

> ***AEM Response:*** *AEM believes that they are fulfilling noise and wildlife monitoring requirements as described in the Noise Monitoring and Abatement Plan and Terrestrial Ecosystem Management Plan, with few exceedances of established thresholds. Nevertheless, AEM will have further communications with the GN to better understand their concerns regarding mine related disturbance on caribou and wildlife.*

14.0 General Clarification

Summary of NIRB Concern: In Table 7.1 of its 2013 Annual Report regarding spills, AEM did not include the unit numbers for quantities of spills which makes it difficult to provide consideration of these incidents.

Furthermore, the NIRB noted potential discrepancies and ambiguity within AEM's 2013 Annual Report as to which of the four monitoring locations were used for noise sampling. For instance, in Table 8.37, results were provided from monitoring stations R2, R3, R4, and R5 while in the discussion of its Post Environmental Assessment Monitoring Program, AEM discussed sound levels relating to monitoring stations R1, R2, R3, and R5.

Relating to the AWAR, Condition 32 (c) of the Project Certificate requires that the Proponent post signs in English and Inuktitut at the gate, each major bridge crossing, and at every 10 kilometres along the road, stating that unauthorized public use of the road is prohibited. The Monitoring Officer observed that no signage was present on the sea-can at the bridge crossing located at approximately kilometre 23.

NIRB Recommendation 21: The Board requests that AEM provide a revised Table 7.1 from its 2013 Annual Report which includes units of each spill incident. It is requested that this revised table be provided within 30 days of receiving this correspondence, and that in future years, AEM ensure that similar tables presented within its annual reporting include quantitative measurements or other essential details to enable clear understanding of materials presented.

> ***AEM Response:*** *You will find below the revised Table 7.1 - 2013 Reported Spills Revised. All reported spills are express in Liters (L) for liquid substance spilled and in Kilogram (Kg) for solid substance spilled. This was a clerical error and AEM takes note of the NIRB's recommendation and will make sure to include units of measurement in the 2014 annual report and future reports.*

Table 7.1 - 2013 Reported Spills Revised

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-01-09	Hydraulic oil	60 L	Waste dump	Hydraulic Hose Broke	Upon noticing the spill, the Haul Truck was stopped. Spill was contained and absorbant pads were placed on the spill. Hose was fixed and contaminated soil was cleaned up.	No
2013-01-09	Hydraulic oil	40 L	Top parking on South Pit Ramp	Hydraulic Hose broke	Upon noticing the spill, the drill was stopped and the hose was replaced. Absorbant pads were placed on the spill.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-01-12	Hydraulic oil	10 L	Hazmat area	Hydraulic filter was lose when equipment was picked up from the Maintenance shop	Notified Site Service supervisor than began to place absorbant pads on the ground to absorb the leaking oil	No
2013-01-14	Compressor oil	20 L	Pattern 5116418	Spill from compressor area. Most probable busted hose.	Drill was shut down immediately and spill pads were laid down on spill.	No
2013-01-14	Hydraulic oil	20 L	Shop Yard	Broken Hydraulic Hose causing T04 Oil to spill onto ground.	Site Service picked up contaminated soil	No
2013-01-16	Engine oil	10 L	Pattern 5116418 entrance ramp	A rock hit the engine oil pan	Engine was turned off.	No
2013-01-22	Anti-freeze	20 L	AWPR, MB tank farm, MB gatehouse	Lower rad hose cracked and was leaking. Most of the spill was at the MB tank farm when pumping of fuel.	None. Repaired on site.	No
2013-01-23	Hydraulic oil	20 L	Incinerator	Hyster was losing hydraulic fluid from wheel bearing.	Was cleaned by SS but was never reported	No
2013-01-26	Hydraulic oil	15 L	Open Pit Meadowbank	When noticing that the hydraulic cylinder of the excavator broke, the operator stopped the equipment. The mechanic contained the spill with a plastic bucket and absorbing towels. They replaced the cylinder on site.	They picked up and disposed following AEM procedure. Contaminated material was brought to CSP.	No
2013-02-05	Hydraulic oil	2 L	Sana garage	Leaking machine, unknown reason (maintenance) on loader 980	Contaminated soil was collected	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-02-12	Hydraulic oil	10 L	Goose Pit pattern 5102532	Hydraulic hose ruptured on IT14 loader #2	Oil spill was picked up and brought to the incinerator	No
2013-02-15	Compressor oil	20 L	Drill and Blast Mine Meadowbank Pit A Pattern 5095329	The cooler busted on a drill	Drill was shut down immediately and spill pads were laid down on spill.	No
2013-02-16	Hydraulic oil	20 L	Inventory seacan pad	Zoom Boom operator when lifting the boom, the cylinder cracked and oil leaked out of the cylinder, on the ground cover snow	Operator called Site services; oil was on the snow and pick up by the Backhoe bucket.	No
2013-02-16	Glycol	5 L	Camp genset #02	The engine is just being rebuilt and due to the extreme temperature. The entire joints are leaking. They will leak as long as we don't put heat on the engine and on the radiator. It should be fixed on Monday 18-02-2013	None. At Genset start. Will be monitored	No
2013-02-16	Diesel fuel	5 L	MB fuel farm	Poor fixation fastener of loading arm by previous filling tanker (SANA) and pipe was emptied on ground.	Fixation was fixed WO created. Written on report : As we will discuss making a tray attached to the end of the loading arm and is the Drip charchement when the tray	No
2013-02-16	Hydraulic oil	2 L	Sana Yard	Breakage of a plug on the oil reservoir that caused a small leak of oil on fuel truck unit #0121	Spill was contained. Absorbant diapers were placed on the excess oil on the ground and then collected and disposed of.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-02-17	Hydraulic oil	70 L	Mine Meadowbank	The cylinder (top one) of the boom of the excavator broke in two pieces and a quantity of hydraulic oil spilled onto the working pad.	Upon noticing that the cylinder broke off, operator put bucket down and called supervisor, who called mech. dept. The spill got contained by placing absorbent diapers onto it. The said diapers were then disposed of.	No
2013-02-17	Hydraulic oil	5 L	Sana Yard	Leak coming from connection of hydraulic hose on loader	Spill was contained and absorbent diapers were placed on the excess oil. They were collected and disposed of.	No
2013-02-18	Hydraulic oil	10 L	Laydown 4	Broken gasket on the boom of the Hyster Handler. Normal use of the equipment.	Put some absorbent pad on the spill and loader pick up the rest of the spill on the snow and bring in the contaminated bin.	No
2013-02-19	Engine oil	10 L	Maintenance Yard	Engine was left running to prevent freezing. Oil came from engine oil leak.	Once drill was brought into shop, spill was picked up and brought to incinerator roll-off	No
2013-02-20	Hydraulic oil	78 L	At the T to go to white coverall	Crack in the hydraulic tank of BAC11	Contaminated snow has been pick-up and brought to the contaminated Soil area on the Feb 21 2012	No
2013-02-23	Hydarulic oil	85 L	Vault road Y	Breakage on an anti-freeze line on a 100 tons (terex) vehicle.	Repaired on site.	No
2013-02-24	Hydraulic oil	50 L	Kitchen pad	Busted hydraulic oil on zoom boom TPA04.	Zoom-Boom was stopped immediately. Pads were laid on zoom-boom and on ground to contain oil.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-02-26	Glycol	15 L	Production Geology Meadowbank	Drove into a dip in the road and the truck bottomed out causing damage to the transmission cooler	Absorb the fluid with pads and send it to HAZMAT	No
2013-02-26	Glycol ELC coolant	10 L	Camp Genset 03	Hose on the rad broke due to cold weather and slowly run out of the Container	Radiator hose being changed on both engine with old hoses. WO 769898	No
2013-02-27	Hydraulic oil	10 L	Goose Pit 5102532	Broken hydraulic hose on backhoe 09	Contaminated soil was collected	No
2013-03-07	Power steering	1 L	Contractor Mine Meadowbank; Vault road Km 4	Pick up went off road and hit a rock	Cleaned-up contaminated soil	No
2013-03-08	Hydraulic oil	80 L	Open Pit Meadowbank. Bay Goose pit 5102530	Broken hydraulic line	Contained the spill and brought the material to the landfarm	No
2013-03-08	Hydraulic oil	50 L	Open Pit Meadowbank, Bay Goose Pit	Broken pilot line	Contained the spill picked up contaminated soil and brought it to the landfarm	No
2013-03-09	Hydraulic oil	5 L	Meadowbank; low grade stock pile	Hydraulic hose broke on the Tamrock drill	Placed absorbent pads on the ground upon noticing the spill. Picked up absorbent pads and placed inside quatrex bag, shovelled contaminated snow and placed inside yellow roll-off bin by the incinerator	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-03-13	Oil and grease mix with water	60 L	Maintenance Meadowbank: White Coverall	The RH 120 ignite and the ERT extinguished the fire with water, oil and grease were released and mix with the water. About 60 L went out of the coverall	Got frozen, shovelled and brought to the landfarm	No
2013-03-14	Compressor oil	25 L	Drill and Blast Mine Meadowbank; Pit A Pattern 5088320	Mechanical troubles.	Drill was shut down immediately and spill absorb pads were laid down on spill. Spill was picked up and brought to incinerator. Drill will be assessed and brought to the shop.	No
2013-03-24	Engine oil	20 L	Procurement and warehouse Meadowbank; Laydown #1	Zoom Boom Fork went thru the tote inside c-can.	Put spill pad in seacan and we put snow also in the seacan Oil on floor of c-can, left-over from tote, spill pads and contaminated snow were disposed in 205 liters drums to be handled with hazmat.	No
2013-03-28	Cyanide	22 Kg	Operation Process Plant Meadowbank	Reagent operator (Louis P.Breton) open sea can of cyanide and it's have some 2x6 hood in front of cyanide box, Louis take the zoom boom and try to remove this 2x6 but he hit one cyanide box. The box rip and 50lbs of solid cyanide briquettes drop outside of the sea can	We talk with the operator to change the procedure to remove the wood 2x6 in front of the cyanide box	Yes

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-04-10	Diesel fuel	20 L	Auxiliary Equipment Meadowbank	A rock contacted the fuel truck operating tank, therefore scratching the tank and making small puncture holes.	When noticing fuel leak fuel man stopped truck at fuel farm. Applied absorbing diapers and advised his supervisor of the small fuel leak. He then left to go to the garage where he placed a retention bin under the tank. Loader went to tank farm to pick up rags and brought contaminated material at csp.	No
2013-04-10	Slurry	2000 L	Operation Process Plant Meadowbank	Tailings pipe flange broke inside of Mill building. Slurry leaked outside garage door A and went towards Assay Lab building.	Slurry was contained with snow berms. Berms and contaminated material to be move throughout the next 24 hours. Material that can be returned into the circuit will be placed back in the mill. If it cannot the material will be scraped up and hauled to the TSF.	Yes
2013-04-17	Diesel fuel	5 L	Meadowbank, near blast panel	Valve on Fuel truck went into open position due to machine vibration	Spill pads were used to clean up spill. Metal bracket was welded on to keep valve position at closed and from moving into open position.	No
2013-04-18	Hydraulic oil	15 L	Open Pit Meadowbank, pattern #5046PS250, Pit B	Hydraulic line ruptured.	Drill was shut down immediately and spill pads where used to clean up/absorb the spill.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-04-22	Petroleum products	10 L	Maintenance Meadowbank Parking Lot Bay 4	Mechanic was doing test outside of the shop. Compressor tank was overfilled.	Equipment was stopped and picked up immediately with skid steer. Contaminate soil was put in a waste disposal drum. We asked maintenance that spills of this nature be taken to the contaminated soil pad in the future.	No
2013-04-24	Hydraulic oil	40 L	Open Pit Meadowbank, Pit B	Busted hose	Picked up contaminated material and brought it to the landfarm	No
2013-04-27	Hydraulic oil	40 L	Open Pit Meadowbank, bottom of waste dump ramp	Busted hose	Pick it up and brought to landfarm	No
2013-05-18	Diesel fuel	4 L	Haul truck tank farm	The quick coupler was not working properly, the labor try to make it work with a bar, the fuel came out fast and he got some on him and on the ground.	Spill was contained with snow. Coupler was fixed	No
2013-05-19	Oil	25 L	Maitenance Parking Lot Inuksuk Side	The final drive broke on haul truck 20. When removing the cover - the oil spilled onto the ground. Absorbent pads and drums were placed on and under the areas where oil continued to leak.	Site Services has been notified and will pick up the soil and deposit at the contaminated soil pad.	No
2013-05-21	Oil	15 L	Pushback pattern #5109421	Hose on Turbine broke causing spill	The operator shut down the equipment and contained the spill. Absorbent pads were used on the spilled oil.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-05-22	Propane	575 L	Behind old warehouse	Regulator Valve on propane tank stuck causing the release of propane.	ERT was called to the spill. A propane specialist was also on site to assess and stop the spill.	Yes
2013-05-24	Oil	25 L	East end of maintenance shop	A fitting on the oil tank inside Lube Truck 39 came loose causing a spill. It is unknown if the fitting was improperly connected or if it came loose due to vibration.	Mechanic laid down absorbent pads and taped/barricaded the area. The mechanic then inspected the oil tank fitting and made the proper connection.	No
2013-05-24	Hydraulic oil	10 L	Booster pump	Hydraulic hose as broken and it spill of the ground	Put some spill kit absorbent, took the absorbent at the incinerator and shoveled material and bring it to the land farm.	No
2013-05-27	Antifreeze	10 L	AWPAR	Arctic Fuel truck going off road on the AWPR.	Cleaned-up contaminated material	No
2013-06-06	Hydraulic oil	60 L	Goose pit parking	While removing a pump from the component, the remaining oil from the system spilled to the ground	When removing components, will ensure they are properly drained and place oil pans under equipment to catch draining oil	No
2013-06-06	Diesel	10 L	AWPAR Km 39 Switchback	Some fuel was left inside one of the four compartments which was not being used waiting for new valve to come in. 3 of the 4 compartments were used during transporting of diesel	Tanker has been removed from service on the AWPAR until it has been repaired	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-06-06	Diesel	40 L	Sana garage yard	Compressor, stored inside c-can was leaking fuel. Some went on ground.	Leak was stopped.	No
2013-06-12	Antifreeze	2 L	Pushback pit	An air compressor caught fire. It created a small leak on the antifreeze system.	A bucket was placed under the air compressor to contain the leak. The antifreeze collected was disposed of properly.	No
2013-06-14	Brake fluid	2 L	Environment office	When brake fluid was refilled on mule, fluid came out by broken line at front left wheel.	Mule was brought to maintenance for repair.	No
2013-06-15	Diesel	210 L	Camp genset tank #1	Workers in the area noticed that fuel was overflowing from top of tank and notified their supervisor. Environment and Power Plant staff went to access situation. The overflow is due to expansion caused by temperature.	The tank level will be lowered. Spill is contained in the tank pad soil. Once the tanks is emptied and lifted, the contaminated soil underneath the tank will be removed. It will be disposed of at our contaminated soil pad.	Yes
2013-06-16	Petroleum products	5 L	Camp Genset 2	A flange on the line between the main tank and Camp Gen 2 day tank was leaking.	The flange was tightened and the material on the ground was collected to estimate the amount of fuel spilled. The pipe will be changed in the near future. The pipe bent when it was hit with a loader over the winter.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-06-17	Fuel	10 L	Baker Lake Fuel Farm	Due to the warm weather, the fuel expansion caused the valve to leak.	A bucket was placed under the leaking valve. A work order to replace the gasket in the valve has been put through (W/O 820572).	No
2013-06-17	Grey Water/Sewage	94 L	Under Arctic Corridor leading to Service Building	A fitting was coming loose and causing pipe to leak.	Pipe was repaired	No
2013-06-27	Hydraulic oil	80 L	Pit B Blast #5053259	Hydraulic hose busted on Haul truck #2	Contaminated soil picked up with FGL loading equipment	No
2013-06-30	Heating oil	10 L	Laboratory next to Q SANA office	45 gallon drum lying on its side leaking through pump connection	Upon being advised, drum was put back standing up right. Contaminated soil was picked and brought to the yellow roll-off bin by the incinerator. Drum was removed from the area and placed inside Qamanittuaq SANA garage	No
2013-07-14	Jet A	100 L	Baker Lake Temporary Jet A Pad	Cause of spill is unknown. During the construction of the new Jet A pad - fuel odors where present when the Jet A tanks and steel footings where removed.	Material is being shipped to the contaminated soil pad at Meadowbank	No
2013-07-15	Sulphur prills	65 Kg	Overpad	An operator punctured a seacan containing sulphur prills	Clean-up of contaminated material	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-07-24	Diesel	400 L	Spill containment Baker Lake Tank Farm Tank #3	Due to expansion by hot weather, pipe moved and put pressure on the flex pipe causing it to brake	Installed 2 caps on the pipe, to be evaluated next day. A new flex pipe installed	No
2013-07-29	Seepage	NA	Portage RSF into NP2	Seepage coming from Portage RSF is seeping into NP-2	Containment of seepage.	Not officially by spill report
2013-08-03	Fuel	90 L	Exploration camp GEN26 fuel tank	Tank overfilled causing fuel to spill	Cleaned-up and brought contaminated soil to the Landfarm behind Water treatment plant. Review current operating methods with all fuel truck operators.	No
2013-08-04	Fuel	50 L	AWPAR Km 66	Broken clamp on grader's transfer fuel hose	Shovelled contaminated soil, brought soil to Meadowbank site using Arctic fuel truck. Spill rags disposed of at incinerator.	No
2013-08-30	Transmission Oil	3 L	Vault road	Crane (80T) broken hose	Driver stopped crane and put pads underneath crane.	No
2013-09-04	Oil	25 L	Hazmat Storage Area	When moving sea cans for hazmat sorting, Hyster operator noticed oil on ground underneath	Soil with oil was collected and brought to yellow roll-off, 3 buckets of loader was collected.	No
2013-09-04	Glycol	85 L	Back Entrance to gym	When opening the valve for the wing, the hose inside the tank came out of the tank the moment the pressure was turned on.	Valve was closed and repaired so hose would not come out of tank when pressure was turned on.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-09-04	Oil	35 L	Hazmat Storage Area	When moving pallets of oil drums for hazmat sorting work, a 40 liter pail fell at the back of the sea can. Lid was not closed properly and product leaked inside sea can. 20 liters inside sea can – 15 liters outside	Absorbent pads were placed inside and outside of sea can to contain and collect spill.	No
2013-09-18	Petroleum products	80 L	Baker Lake fuel farm	Overflow while filling the tanker	Stop the pump and pick up the contaminated soil	No
2013-09-24	Diesel	200 L	Open Pit	Tanker's fuel tank punctured by a rock	Repair the fuel tank and pick up the contaminated soil and brought it to the soil pad	Yes
2013-09-28	Mill Slurry	<100 L	Outside leach can, near sea can	Hole in a pressured line, sprayed out	Remove contaminated material and brought back into the circuit.	No
2013-10-02	Oil	60 L	Container inventory pad	A drum in a sea can coming from Becancour had existing small hole mid-way thru the drum.	We took out all the drums from the container, cleaned the floor and scraped all ground gravel and disposed in an empty drum.	No
2013-10-05	Oil	90 L	Baker Lake spud barge	Hazmat contractor, who prepared the containers, forgot to put the cap on one of the 1040 Liters totes. When the container was move with the container handler, oil spilled out of the tote. About 200-300 liters was spilled but only 90 went outside sea can.	Sea can was put on ground and pads were put to contain spill. Sea can was emptied.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-10-09	Oil	1 L	Dorm 12	Steering hydraulic filter from a Kubota was not tight.	Stopped the Kubota, called maintenance and cleaned up the spill. The contaminated material was brought in the contaminated soil roll off.	No
2013-10-16	Diesel	30 L	Meadowbank refueling station	Unknown. Probably overfilling.	Cleaned up contaminated material	No
2013-10-22	Hydraulic oil	80 L	Waste dump PAG side	Broken hydraulic hose on 980 loader.	Equipment was shut down and hose was repaired. Contaminated Material was picked up with the 980 Loader and taken to the contaminated soil pad.	No
2013-11-01	Coolant	20 L	Sana Yard in front of garage	Coolant hose broke/crack on tractor.	Contaminated snow/soil was collected and taken to yellow roll off container.	No
2013-11-02	Oil	200 L	New Transit Lay Down	When removing drums in sea-can, the forklift operator punctured the oil drums.	Ground was scraped with the bucket and materiel was disposed in the yellow roll-off container.	Yes

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-11-02	Lube oil	40 L	Maintenance Shop East End	An improperly connected fitting at the oil tank inside the lube truck 39 container box. It could be cause by vibration, very rough road.	Mechanic immediately installed absorbent pads to soak up the oil as well as taped and barricaded the area. Mechanic advised supervisor of the incident. The mechanic then inspected the attachment of the oil tank for proper connection. Site Services has been advise to come and pick up the contaminated soil first thing on beginning of day shift.	No
2013-11-04	Coolant	40 L	Fuel Farm Truck Parking	While machine RH120 was cooling off, a coolant hose clamp became loose causing spill.	Absorbent pads were placed on the ground.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-11-07	Seepage	> 5000 L	In front of Assay Lab	Probably Process water	Samples of seep have been taken and sent to accredited lab for RUSH analysis. Investigation continues. Containment is built to hold any further seepage from migrating. Next step will be to create sump to catch any seepage. Once this is completed, the source of the seepage will be delineated. Once source is found, and action plan will be created to stop the source and to clean contaminated ice. (If necessary) Any contaminated ice and snow will be removed and taken to the Tailings Storage Facility. Further follow-up information and updates will be providing as the investigation moves forward.	Yes
2013-11-14	Hydraulic oil	3 L	Vault heated coverall	Hydraulic Cylinder Seal leaking on the Zoom Boom TL-943.	Scrapped up the contaminated area and disposed into the yellow roll off designed for contaminated soil.	No
2013-11-18	Transmission Oil	10 L	Maintenance shop	Equipment failure.	Advised Site Services to pick up spill spot.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-11-29	Glycol	5 L	6163 Genset 7	Water pump plug let go and the engine glycol went on the floor. Since the floor is not water tight, there is a small quantity that went on the ground by the sump overflow and by the cable hole.	Glycol on floor was cleaned up and plug was put back on equipment.	No
2013-12-02	Oil	1 L	Cat dome contractor Maintenance	When plumber went to start the Kubota, he noticed a small pool of oil on the ground. Oil pan was checked and seal on the oil pan was damaged.	Oil was cleaned up with pads and shovels and disposed at the incinerator.	No
2013-12-02	Hydraulic oil	15 L	Behind batch plant	When moving 200 ton crane - hydraulic hose broke and hydraulic oil spilled onto the ground.	Machine was stopped and hose was repaired. Contaminated snow was collected and sent to yellow roll off bin.	No
2013-12-02	Diesel	2 L	Inuksuk side parking area	Accidentally powered diesel pump tank.	Tank was unplugged and spill was collected. Contaminated material sent to the incinerator.	No
2013-12-03	Antifreeze	10 L	Baker Lake gate house	Radiator hose clamp failure.	Cleaned up the contaminant and checked all clamps.	No
2013-12-13	Glycol	60 L	Vault parking lot	Rupture of the glycol heater inside the generator enclosure.	Leak was isolated by closing 2 ball valves, 6182 Gen-02 was locked-out for repairs. Glycol was collected and sent to the TSF.	No
2013-12-14	Diesel	20 L	Refuelling station - haul trucks	HTR01 Wiggin plunger was stuck while refueling.	Contaminated snow picked up and disposed of into the yellow roll-off bin.	No

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2013-12-24	Motor oil	1 L	Mine dry parking	During transport of passengers to Mine Dispatch - a rock struck the pickup truck oil pan and created a small crack. Oil from the pan began to leak out.	Spill was cleaned up with rags and pick-up truck was sent to maintenance for repair. Contaminated rags disposed into the bin at the maintenance shop	No

NIRB Recommendation 22: The Board requests that AEM clarify within its future annual reporting which sampling sites are included as reference sites only, which are active sampling sites, and which were not included in data collection. Discussion within its post environmental assessment monitoring program (PEAMP) should also provide a clear description of results, ensuring that any anomalies or changes to the monitoring program are identified.

> ***AEM Response:*** *AEM believes this is accomplished in the PEAMP and that the objectives of the Project Certificate Appendix D are met. AEM takes note of NIRB's recommendations and will discuss ways to improve the presentation of information, without creating redundancy in the annual report.*

NIRB Recommendation 23: The Board reminds the Proponent to ensure that signs are posted at each major bridge crossing, in both English and Inuktitut, and that the sea can at kilometre 23 be outfitted with appropriate signage. It is requested that a response outlining action taken by AEM with respect to this recommendation be provided within 30 days of receiving this correspondence.

> ***AEM Response:*** *AEM will order new signage to identify the sea can at kilometer 23 and will make sure that signs are posted at each major bridge crossing.*