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The Nunavut Impact Review Board's 2010 – 2011 Annual Monitoring Report

Meadowbank Gold Project

October 10, 2011

Report Title:	The Nunavut Impact Review Board's 2010 – 2011 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 Meadowbank PO Box 540 Baker Lake, NU X0C 0A0
Monitoring Officer:	Sophia Granchinho
Monitoring Period:	October 2010 – September 2011
Cover photo:	Meadowbank mine site

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1.0 INTRODUCTION

1.1. PROJECT COMPONENTS

In December 2006, pursuant to Section 12.5.2, Article 12, Nunavut Land Claims Agreement (NLCA), the Nunavut Impact Review Board (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.

The Project involves the construction and operation by Agnico-Eagle Mines Limited (AEM or the Proponent) 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. The Proponent has estimated that the Meadowbank project is comprised of a total proven and probable reserves of 2.7 million ounces, and that total construction and operating expenditures will run at $304 million and $100 million per year, respectively (Final Hearing Report, 2006).

In addition to mining infrastructure and activities, ancillary infrastructure associated with the Project 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 40 million litre (ML) fuel tank farm, associated interconnecting roads and a 110 km all weather private access road (access road) from the hamlet of Baker Lake to the Meadowbank mine site. Supplies are shipped from other 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 access road.

1.2. PROJECT HISTORY AND CURRENT STATUS

In early 2007, AEM acquired Cumberland Resources Ltd.'s assets which included the Meadowbank Gold Mine. Construction of the access road from the hamlet of Baker Lake to the Meadowbank mine site was completed in 2008 and the road opened to mine related transportation of materials and personnel in March 2008.

AEM has obtained the necessary leases from the Government of Nunavut (GN) department of Community and Government Services for storage and marshalling areas located on Commissioner's lands within the hamlet of Baker Lake, as well as having obtained those authorizations required and pertaining to the access road from Indian & Northern Affairs Canada (INAC; now Aboriginal Affairs and Northern Development Canada or AANDC), production and commercial leases from the Kivalliq Inuit Association (KivIA), the required blasting permits from Natural Resources Canada (NRCan), and other authorizations from Fisheries and Oceans Canada (DFO) as required.

The required Type A Water Licence (2AM MEA0815) was issued by the 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. The NWB indicated in correspondence issued in April 2010 that the Proponent would be required to apply for a further amendment to the Type A license in order to

allow for the proposed expansion of the Meadowbank airstrip. This expansion was screened by the NIRB as a new project under file number 10XN039 and in September 2010 the NIRB issued a 12.4.4(a) recommendation to the Minister of INAC indicating that the proposed project could proceed subject to additional project specific terms and conditions and that additionally the NIRB would expand its Part 7 NLCA monitoring program for the Meadowbank Project to apply to the airstrip expansion.

On November 20, 2009 the NIRB formally amended the Meadowbank Gold Mine Project Certificate [No. 004] to include an amendment to Condition 32, which resulted from the NIRB's 12.8.2 (NLCA) reconsideration of this Condition of the Project Certificate, and the Minister of INAC's subsequent acceptance of the Board's recommendation. Concurrently, this amendment further included the approval to change the name of the holder of the Project Certificate [No. 004] from Cumberland Resources Ltd. to Agnico-Eagle Mines Ltd.

The Meadowbank mine officially moved into the operations phase in 2010, with the first gold bar being poured on February 27, 2010. Throughout the 2010 year, AEM commenced the construction of a number of dewatering dikes and roads at site, and finalized the commissioning of the following facilities: the process plant, power plant, emulsion plant, primary and secondary crushers, reclaim tunnel, tailings pipeline and reclaim water system, truck shop/service complex, and 2 additional 10ML fuel tanks at AEM's Baker Lake facilities. By the end of 2010, the Meadowbank mine had reportedly produced 265,659 ounces of gold from a total 2,000,792 tonnes of ore that had been mined.

On July 14, 2011 the NIRB issued *Appendix D – Meadowbank Monitoring Program* to AEM in accordance with the Meadowbank Project Certificate [004] (Appendix I) . The Meadowbank monitoring program includes responsibilities for AEM, the NIRB, and several authorizing agencies and government departments.

2.0 MONITORING ACTIVITIES

According to Section 12.7.1 of the NLCA, the terms and conditions contained in a Project Certificate issued by the NIRB, recommendations stemming from a NLCA Part 4 NIRB decision, or approvals issued by the NWB may all provide for the establishment of a project specific monitoring program and further, may specify responsibilities for the Proponent, NIRB, or Government. The purpose of such a monitoring program is outlined in Section 12.7.2 of the NLCA as follows:

a) to measure the relevant effects of projects on the ecosystemic and socio-economic environments of the Nunavut Settlement Area;
b) to determine whether and to what extent the land or resource use in question is being carried out within the predetermined terms and conditions;
c) to provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and
d) to assess the accuracy of the predictions contained in the project impact statements.

Pursuant to the Project Certificate [No. 004], and Sections 12.7.1 and 12.7.2 of the NLCA as described above the NIRB is responsible for the monitoring of this Project and has prepared the following report accordingly.

2.1. REPORTING REQUIREMENTS

2.1.1. General Reporting Requirements

During the 2010 – 2011 monitoring period, the Proponent has demonstrated general compliance with reporting requirements imposed through commitments resulting from the NIRB's Part 5 review of the project, including those contained in related reports, plans, and the NIRB Project Certificate. The Proponent has provided the following items as required by the terms and conditions contained within Project Certificate [No. 004] and the Proponent's commitments from October 2010 through September 2011:

- Landfarm design and management plan
- Mine waste management plan
- AEM Reporting 2009 stack testing results
- 2010 Archaeological impact assessment
- AEM's 2010 Annual Report to the NIRB

2.1.2. Project Certificate [No. 004] Appendix D – Meadowbank Monitoring Program

Appendix D of the Project Certificate outlines in more detail the responsibilities of the Proponent in its establishment of a monitoring program, the NIRB Monitoring Officer in supporting the production and interpretation of the various monitoring reports, and the NIRB's requirements of various authorizing agencies in reporting their respective continued monitoring activities of the site. As outlined in Appendix D (Appendix I), the Proponent is required to submit an annual report that provides an updated status of project operations, an overview of the site and its operations during the reporting period, as well as a discussion of the observations made as a result of, or illustrated through, the monitoring program. The NIRB received AEM's *Meadowbank Gold Project 2010 Annual Report* (2010 Annual Report) on September 26, 2011.

As of the date of this report, the NIRB was developing correspondence requesting comments from parties regarding AEM's 2010 Annual Report as submitted to the NIRB. Next steps involve the NIRB's receipt of comments, followed by the provision of a detailed discussion on whether AEM's 2010 Annual Report meets the requirements established in Appendix D to Project Certificate [No. 004].

2.2. 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.

In the correspondence being prepared by the NIRB's Monitoring Officer, interested parties will be requested to provide comments and information with respect to effects monitoring, specifically pertaining to the following:

a) Whether the conclusions reached by AEM in its *2010 Annual Report* are valid;
b) Any areas of significance requiring further study(ies); and
c) Changes to the monitoring program which may be required.

As of the date of this report, the NIRB had not yet requested comments from interested parties, though it anticipates making this request in October 2011.

2.2.1. Conclusions from AEM's 2010 Annual Report

The 2010 year for Meadowbank can be characterized as a transitional year with the ongoing construction, commissioning and optimization of various processes around site. Meadowbank poured its first gold bar in February 2010 and achieved commercial production in March 2010.

Following an initial review of the AEM's 2010 Annual Report, the Monitoring Officer determined that the report did not entirely satisfy the requirements of Appendix D that was issued to AEM on July 14, 2011. Noting that the Appendix D was issued later in the reporting period than either AEM or the NIRB would have preferred, consideration will be given to the efforts of AEM to meet the requirements therein.

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

Since issuance of the Meadowbank Project Certificate, the NIRB's Monitoring Officer, government departments and agencies and the Proponent, have been assessing and, in the case of the Proponent, implementing, ongoing project monitoring that is based upon the terms and conditions and commitments established within Project Certificate [No. 004] and found within authorizations issued for the Project, as well as in direction provided by the NLCA.

In its comment submission to AEM's *2009 Meadowbank Annual Report*, INAC indicated that the creation of a formalized monitoring program in the form of Appendix D to the NIRB's Project Certificate would be helpful to the Proponent in its preparation of, and to all parties' in their review of, future annual reporting on the Project.

The recent development and issuance of Appendix D to the Meadowbank Project Certificate will assist the Proponent in delineating the expectations and requirements of its annual reporting to the NIRB and will further assist parties with the necessary guidance regarding the requirements of AEM's annual reporting as well as what other types of more broadly based information the Proponent is expected to provide with respect to the Meadowbank project.

The items listed below were identified in the NIRB's 2009 – 2010 monitoring report as needing to be reevaluated within the current monitoring framework, or for the potential consideration in the establishment of a formalized program:

a) Regarding a draft version of Appendix D circulated for comment in 2011, INAC suggested that future annual reports provide: an evaluation of the accuracy of impacts that were predicted in the EIS, a summary of conclusions made throughout the reporting period, an evaluation of the effectiveness of mitigation measures employed, and a description of any impacts or effects resulting from exceeded thresholds.
b) Planned or potential project design changes (e.g. alternatives to landfarm construction, expansion of the airstrip) should be identified as early as possible so that other monitoring and data collection activities can be adjusted as needed to ensure that consistent information and analysis is maintained during project changes.
c) The implementation of monitoring plans and programs should be addressed and evaluated through the Proponent's annual reporting and in parties' comment submissions, where applicable.

The above items were incorporated into the final Appendix D for Project Certificate [004] (Appendix I).

2.3. 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, commitments and agreements that are applicable to certain project activities, and further, is a requirement of the NIRB's Appendix D to the Meadowbank Project Certificate [No. 004]. On August 25, 2011 the NIRB requested that authorizing agencies with a mandate or jurisdictional responsibility for the Meadowbank project provide comments and information with respect to compliance monitoring for the 2010-2011 reporting period as required in Part D of Appendix D to the Meadowbank Project Certificate (Appendix I). 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, 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 NIRB received comments from the following parties regarding compliance monitoring, summarized below:

- Fisheries and Oceans Canada
- Environment Canada
- Transport Canada
- Aboriginal Affairs and Northern Development Canada
- Natural Resources Canada

2.3.1. Fisheries and Oceans Canada (DFO)

DFO conducted a site visit from August 15-17, 2011 and reported no *Fisheries Act* compliance issues. It was noted however, that issues exist with regard to sediment and the stability of the bridges and culverts at the crossings along the access road. DFO noted that the peak particle velocity (PPV) exceeded DFO's guideline limits in 2009 and 2010 and that during its 2011 site visit, DFO found the recording device at the East Dyke was located on dry land and was further, not meeting the requirement that it be representative of fish spawning habitat. DFO recommended that the recording device be moved to a location closer to the water and in an area that is considered to be potential spawning habitat.

2.3.2. Environment Canada (EC)

EC conducted one on-site and five off-site inspections for the 2010-2011 reporting period. Pursuant to the *Metal Mining Effluent Regulations* (MMER), AEM is required to submit quarterly effluent monitoring reports and an annual report to EC, each of these representing an 'off-site inspection'. In each of these instances, EC found AEM's project to be compliant with the MMER for the reporting period. These reports to EC had been included in the Proponent's annual reporting to the NWB but had been omitted from its reporting to the NIRB.

EC conducted an on-site visit from July 19-21, 2010. The following were the results from the on-site visit:

- AEM received a Warning Letter from EC enforcement for non-compliance issues related to *Environmental Emergency Regulations*. AEM took appropriate action after receiving the Warning Letter and subsequently achieved compliance with the *Environmental Emergency Regulations*;
- No violations were found during the on-site inspection related to Section 36(3) of the *Fisheries Act*; and
- EC conducted effluent sampling while on site and confirmed that AEM were compliant with the MMER.

Regarding Condition 30 of the NIRB's Project Certificate [004]; EC confirmed that AEM has filed all the appropriate and required documentation for its Schedule 2 listing of Second Portage Lake as a tailings impoundment area. The Northwest arm of Second Portage Lake was listed on Schedule 2 in an amendment to the MMER on June 19, 2008.

2.3.3. Transport Canada (TC)

A site inspection was conducted by a Navigable Waters Protection Officer during the open water season of 2011. The inspection revealed that AEM had commenced work on the project without prior completion of the *Navigable Waters Protection Act* (NWPA) approvals process. The NWPA is in the process of reviewing this file and will continue to investigate these unlawful works accordingly.

2.3.4. Aboriginal Affairs and Northern Development Canada (AANDC)

AANDC issued two leases pursuant to the *Territorial Lands Regulations* and *Territorial Quarrying Regulations* for the AEM project. While AANDC does not have the jurisdiction to issue water licenses, AANDC is responsible for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA) and licenses issued thereunder by the NWB and pertaining to the Meadowbank Gold Mine.

AANDC conducted three water license inspections and one land lease inspection for the Meadowbank project between 2010 and 2011. With regards to the water licence (NWB License No. 2AM-MEA0815, issued June 9, 2008), an inspection was conducted January 19-20, 2010 by AANDC and some minor non-compliance issues were identified. These included:

- Two jerry cans of fuel found less than 31 metres from the intake water requirement;
- Need for the Proponent to follow-up to ensure no waste re-entered the lake during on-ice drilling activities was identified;
- Some waste oil and other liquids such as glycol were found to be stored without secondary containment; and
- A fuel spill from January 17th was inspected and it was recommended that another 2 - 4 inches of the top soil should be excavated to get rid of the contaminated soil and the area affected should be reclaimed. The section of the road near to the spill site should also be widened and steel posts and metal fencing should be built at the location of the road where it curves.

On July 12, 2010 AANDC conducted an inspection of the site for the water licence and no issues were found.

An additional water licence inspection was conducted by AANDC on July 21 and 22, 2010 and was identified within the AEM's 2010 Annual Report to the NIRB. At the time of the inspection, AEM had not exceeded the quantity of water permitted in their water licence but advised that it anticipated that this limit would be exceeded in the near future.

For the land leases related to the road and quarry pits, AANDC conducted an inspection on July 22, 2010 and no significant issues were identified.

On July 5 and 6, 2011, AANDC conducted another mine site inspection for the water license. Water was found in the fuel storage berms, which was the only compliance issue identified at the time. Furthermore, during the AANDC's site inspection, water from the berms was discharged as advised by the inspector on site.

2.3.5. Natural Resources Canada (NRCan)

NRCan performed an inspection of the explosives factory site from March 8-10, 2010 and reported no compliance issues with regard to the Explosives Factory Licence (F74222) or the Project Certificate monitoring commitment (No. 83).

2.4. OTHER ACTIONABLE ITEMS

There were no additional items that necessitated action on behalf of the Proponent or the NIRB during the 2010-2011 monitoring period.

2.5. SITE VISIT

A site visit was undertaken by the NIRB's Monitoring Officer and the Director, Technical Services on September 12 and 13, 2011, and included the access road, and the Meadowbank site facilities.

2.5.1. Site Visit Observations

The following outlines the Monitoring Officer's findings as they relate to Project Certificate Terms and Conditions and resulting from the September 12 and 13, 2011 site visit:

Condition 8 requires that the Proponent assess the conditions of the existing groundwater monitoring wells and replace any defective wells. At the time of the site visit, only one groundwater monitoring well was operational. The last of the four groundwater monitoring wells installed in 2003 became damaged from frost action in 2010. Some of these defective wells were replaced in 2006 and two of them were again replaced in 2008 with a more robust design. AEM had commenced drilling of a new well at the Bay Goose area for the 2011 season and a second well was to be added beneath the tailings storage facility.

Condition 25 requires that the Proponent manage and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors. The 2010 wildlife report indicated that despite improved waste segregation, incineration and enclosed food waste facilities, the Arctic Fox population increased markedly in the spring of 2010. Approximately 67 foxes were trapped and relocated from the Meadowbank site. At the time of the Monitoring Officer's 2011 site visit, all domestic, hazardous, and combustible wastes were observed to be segregated and stored in sea-cans prior to subsequent incineration or shipment to approved off-site disposal facilities.

Where condition 26 speaks to the clean-up of spills and general tidiness of the site, the Monitoring Officer noted that both the Meadowbank and Baker Lake facilities were kept in an impressively clean state, with no apparent spills at either location and minimal wind-blown debris at the Meadowbank site. However, the Monitoring Officer noted during the site tour from Baker Lake to the mine site that there were truck tires to the side of the access road. In addition, AEM's 2010 Annual Report to the NIRB reported that a total of 7 environmental spills occurred along the access road. Only four of these spills were reported to the GN spill hotline. A noticeable hydrocarbon odour was present at the site of a previous fuel spill near kilometer 22 and at the Meadowbank fuel tank farm during the site visit.

Condition 27 requires that the Proponent use safe, environmentally protective methods for areas used to store fuel or hazardous materials. The Monitoring Officer noted that the liner at the on-site fuel tank farm was exposed.

Condition 32 requires that the Proponent take certain measures to limit unauthorized non-mine use of the road. At the time of the site visit, AEM was in compliance with all visibly measurable parts of the Condition. The required sings had been installed every 10 kilometres along the road route pursuant to Condition 32. The Baker Lake gatehouse functions to monitor and regulate traffic utilizing the access road and all potential public users are required to sign a copy of the rules and regulations in front of the AEM gatehouse employee prior to being given permission to utilize the road.

In accordance with Condition 56, updated maps dated March 2011 outlining caribou migration corridors were posted in high traffic areas such as a bulletin board outside the check-in office where all employees must report to obtain room keys upon arrival at site, and again upon departure from site to obtain travel documents.

Noise monitoring occurred at four stations in July 2010 and at five stations in August 2011 as per Condition 62. Mine activities such as helicopter and air traffic, construction and other heavy equipment and blasting are the dominant mine noise sources.

AEM has established a permanent nursing station and has two nurses on-site at any given time in accordance with Condition 66.

Condition 71 requires that the Proponent install an atmospheric monitoring station and report the results of air-quality monitoring to the NIRB annually. At the time of the 2011 site visit, the Proponent had not yet established this site.

Where Condition 74 requires that the Proponent employ measures to suppress surface dust, the Monitoring Officer noted that the 110 km access road is not subject to any dust suppression measures.

Condition 81 requires that AEM provide 24 hour security including surveillance cameras and a security office at the Baker Lake storage facility and marshalling area. This Condition also requires that AEM take all necessary steps to ensure the safe and secure storage of any hazardous or explosive components within the hamlet of Baker Lake boundaries. As was the case during the Monitoring Officer's 2010 site visit, again in 2011 it was noted that AEM maintains a 24 hour presence at the storage and marshalling facility only during the barge season and that all hazardous or explosive components that are brought to the facility are shipped directly to the Meadowbank site and are not stored within the boundaries of the hamlet Baker Lake.

For a comprehensive review of the Monitoring Officer's site visit and observations, please refer to the NIRB's *2011 Meadowbank Site Visit Report* (Appendix II).

2.6. FOLLOW UP FROM THE NIRB'S 2009 – 2010 MONITORING PROGRAM

The Board made a number of recommendations as a result of the 2010 site visit and overall monitoring efforts of 2009 – 2010. Table 1 outlines the Board's recommendations which were presented to the Proponent as a result of the NIRB's *2009-2010 Annual Monitoring Report for the Meadowbank Gold Project*.

Table 1: Follow up from the NIRB's 2009 – 2010 Monitoring Program

Condition No.	Requirement	Recommendation	Follow Up / Status
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…*	Project Certificate 8 requires that the Proponent undertake groundwater sampling on a semi-annual basis while the Type A water licence from NWB requires that groundwater quality sampling be undertaken on an annual basis. The Board plans to address this inconsistency in monitoring requirements and give consideration to potential solutions.	Ongoing
		Board recommends that AEM replace the defective wells in order to collect the robust groundwater quality data intended by… The Board would request that the Proponent ensure the replacement is completed prior to the next scheduled sampling period.	During the 2011 site visit, the Proponent indicated to the Monitoring Officer that one new groundwater well was being put in place and that a second well would be put in place later in the year.
56	*Cumberland shall … 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.*	The Proponent provide the NIRB and the GN-DoE (*Department of Environment*) with justification for the conclusions presented in AEM's *2009 Annual Report* regarding the significance of caribou migration data collected during the 2009 reporting period, and specifically, its claim that the information obtained for caribou migration did not substantially alter conclusions from 2008.	AEM in its December 12, 2010 response to the NIRB's recommendations indicated that AEM continues to collect caribou migration information from hunters and via satellite-collaring data to further refine migration patterns. The caribou migration map was updated May 2010 and forwarded to the NIRB and GN-DoE.
67	*…Cumberland shall develop and implement a program to monitor contaminant levels in country foods in consultation with HC. A copy of the plan shall be submitted to NIRB's Monitoring Officer.*	The Board recommends that NIRB staff consult with AEM and Health Canada as to next steps and/or preferred options for the program.	NIRB staff have yet to engage with Health Canada regarding this Condition.

Table 1: Follow up from the NIRB's 2009 – 2010 Monitoring Program (cont'd)

Condition No.	Requirement	Recommendation	Follow Up / Status
69	*…shall provide to the GN an updated baseline report for archaeological sites in the Project area, including…*	Provide the Board with the requested reports as was previously recommended. The Board requests that NIRB staff follow up with the Proponent and the GN to ensure the Proponent is compliant with the 2009 recommendation and to provide any guidance or assistance that may be required.	AEM in its December 12, 2010 response to the Board's recommendations indicated that supplemental archaeological field studies were undertaken in summer 2010, including assessment of the tank farm expansion as well as site audits of all sites within proximity of the marshalling area, all-season access road and quarry sources, and the mine. On December 9, the 2010 archaeological study was submitted to NIRB and to GN.
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.*	This condition has not been met and has been included as a recommendation from the Board to the Proponent following both the 2008 and 2009 NIRB Monitoring Reports. The Board recommends that the Proponent initiate air quality monitoring; and initiate discussions with EC regarding the placement of sampling equipment and parameters to be sampled, in addition to providing a plan of action for the implementation of Condition 71.	During the 2011 site visit, the Monitoring Officer was informed that an atmospheric monitoring station would be installed in the fall after discussions with EC.
74	*Cumberland shall employ environmentally protective techniques to suppress any surface dust*	The Board recommends that in AEM's 2010 Annual Report on the Meadowbank Project, it demonstrate its familiarity with all annual reporting commitments as outlined in the FEIS and supporting material such as plans and programs, and ensure that these are submitted with the subsequent years' reporting. With specific regard to this condition, the Board requires that AEM compile a Dust Monitoring Report and submit this with its 2010 Annual Report.	No information was provided to the Board from AEM and the requested information and reporting were not provided in AEM's 2010 Annual Report to the NIRB.

Table 1: Follow up from the NIRB's 2009 – 2010 Monitoring Program (complete)

Condition No.	Requirement	Recommendation	Follow Up / Status
n/a		The Board directed staff in the finalization of a formal monitoring program as an Appendix D to the Meadowbank Project Certificate.	Following the solicitation and incorporation of relevant public comments to its draft version, the NIRB issued a finalized Appendix D for the Meadowbank Project Certificate [004] on July 14, 2011.

3.0 FINDINGS

Following a review of the Board's recommendations resulting from the NIRB's *2009-2010 Annual Monitoring Report*; the Monitoring Officer's 2011 site visit; a project related correspondence and documentation; the Project Certificate [No. 004] Terms and Conditions and the recently issued Appendix D, the following outlines the Monitoring Officer's findings for 2010 – 2011.

On July 14, 2011 the NIRB issued Appendix D for the Meadowbank Project Certificate [004]. The NIRB received AEM's 2010 Annual Report on September 26, 2011. As of the date of this report, the Monitoring Officer completed a cursory overview of the annual report but had not solicited comments from parties regarding the Proponent's annual report. The Monitoring Officer determined that the report did not entirely satisfy the requirements of Appendix D for the Meadowbank Project Certificate [004]. However, it was noted that Appendix D was issued later in the reporting period making it potentially difficult for AEM to meet the requirements within Appendix D.

Regarding Condition 8, the groundwater quality monitoring program appears to have only one operational groundwater well. It has been previously recommended that the defective wells be replaced in order to provide more robust groundwater quality data. The Proponent indicated during the 2011 site visit that it has been working on an on-going basis to replace these wells and further, that it is still awaiting further direction from the NIRB regarding inconsistencies found between the NWB water licence and Condition 8 of the NIRB's Project Certificate regarding the sampling frequency.

Regarding Condition 25, the Monitoring Officer noted during the site visit that all domestic, hazardous, and combustible wastes were observed to be segregated and stored in sea-cans prior to subsequent incineration or shipment to approved off-site disposal facilities.

Condition 26 speaks to the clean-up of spills and general tidiness of the site; and during the 2011 site visit, the Monitoring Officer noted that both the Meadowbank and Baker Lake facilities were kept in an impressively clean state, with no spills at either location and very few articles of wind-blown debris apparent at the Meadowbank site. Hydrocarbon odours were noted during the site visit however, at both the site of a fuel spill near kilometre 22 of the access

road, and at the Meadowbank fuel tank farm. It was also noted that during the 2010 period, 7 environmental spills occurred along the access road.

Where Condition 27 requires that the Proponent use safe, environmentally protective methods to store fuel and hazardous materials, the Proponent appears to be in compliance.

With regard to Condition 32, the Proponent has demonstrated compliance with all visibly measurable parts of the Condition.

Where Condition 56 requires that maps of caribou migration corridors are placed in site offices, the Monitoring Officer noted that maps were present outside the high traffic check-in office during the 2011 site visit.

Condition 62 requires noise monitoring, and the Proponent has met this condition by conducting monitoring in July 2010 and again in August 2011.

The Proponent has established a permanent nursing station at the Meadowbank site as per Condition 66 and is fully compliant with this condition.

Condition 67 requires the Proponent, in consultation with Health Canada, to develop a program which monitors contaminant levels in country foods and to submit this plan to the NIRB. AEM has not been compliant with this condition as of yet and have previously indicated reservations moving forth on the program to monitor contaminant levels in country foods. AEM requested to meet with NIRB Technical staff to discuss this condition and future requirements relating to the program. The NIRB staff met with AEM in the spring of 2011 but has yet to engage Health Canada in order to move forward on this issue.

In accordance with Condition 69, an updated baseline report for archaeological sites in the Project area was to be submitted to the GN prior to the commencement of project construction activities. AEM submitted this report in December 2010 and is in compliance with this condition.

The Proponent has not achieved compliance with Condition 71 which requires the installation of an atmospheric monitoring station. The Proponent has indicated however, that a station would be established in the fall of 2011. As mentioned in last year's monitoring report, the data required from Condition 71 is important to the assessment of project related impacts, especially as relating to different project phases. The absence of this data may mean AEM is unable to make accurate comparisons to predictions regarding the project's development, which may in turn, hinder the success of the air quality monitoring program moving forward.

Where Condition 74 requires that the Proponent employ measures to suppress surface dust, AEM staff confirmed that as noted during the Monitoring Officer's 2011 site visit, the access road has not, and is not, subject to any dust suppression measures.

Condition 81 requires that AEM provide 24 hour security including surveillance cameras and a security office at the Baker Lake storage facility and marshalling area. AEM maintains a 24

hour presence at the storage and marshalling facility during the barge season. Further, all hazardous and/or explosive components that are brought to the facility are trucked directly to the Meadowbank site and are not stored within the boundaries of the hamlet Baker Lake. The Proponent appears to be in compliance with Condition 81 when during the barge season security and a site office are present at the Baker Lake storage facility and marshalling area.

4.0 SUMMARY AND CONCLUSIONS

The Meadowbank gold mine began commercial production in March 2010 and has transitioned from ongoing construction into the production phase. Installation of a number of dewatering dikes and roads remained ongoing throughout the 2010-2011 reporting period withseveral facilities having been completed, including the two additional 10ML fuel tanks at the Baker Lake marshaling area. AEM commenced the dewatering of Bay-Goose Basin area in Third Portage in 2011 following the completed construction of the Bay-Goose dike and causeway.

As development of the Meadowbank site continues, monitoring efforts have become increasingly involved as the Proponent works to prevent or mitigate the potential impacts that were predicted during the Project's environmental assessment. AEM is likely to encounter unique environmental challenges with this shift in project activities; the NIRB will continue to depend upon AEM's established practice of effectively communicating and cooperating with the Board and other regulators. The Proponent appears to be in compliance with the majority of the terms and conditions contained within the Meadowbank Project Certificate and with the monitoring and mitigation plans and procedures in place for the Project. The findings listed in this report may warrant further efforts by AEM in order to ensure the objectives of the terms and conditions in the Project Certificate [004] are satisfied.

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 3, 2011

Signature: 

Prepared by: Sophia Granchinho
Title: Technical Advisor/Monitoring Officer
Date: October 10, 2011

Signature: 

Appendix I:
Appendix D – Meadowbank Monitoring Program

Appendix D

Meadowbank Monitoring Program

A. Introduction

In accordance with the Project Certificate issued by the NIRB on December 30, 2006 for the Meadowbank Gold Mine Project, this Appendix is designed to provide direction to Agnico-Eagle Mines Ltd (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 Nunavut Land Claims Agreement (NLCA).

The purpose of the monitoring program shall be:

(a) To measure the relevant effects of the project on the ecosystemic and socioeconomic environments of the Nunavut Settlement Area;

(b) To determine whether and to what extent the project is carried out within the predetermined terms and conditions;

(c) To provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and

(d) To assess the accuracy of predictions contained within the Final Environmental Impact Statement (FEIS) for the project.

B. Proponent Responsibilities

1. Implement a comprehensive post-environmental assessment monitoring program (PEAMP) for the project, in accordance with commitments made within the Final Environmental Impact Statement (FEIS), during the Final Hearing and as required throughout the Project Certificate. The PEAMP should be designed to work as an instrument of the Proponent's overall monitoring efforts, and should provide feedback to the NIRB and other agencies regarding ongoing project monitoring. The objectives of the PEAMP shall be to:

    a. Measure the relevant effects of the project on the ecosystemic and socioeconomic environment(s). These effects may be measured through biophysical and socioeconomic monitoring programs undertaken by the Proponent or by other means as described in the Project Certificate;

    b. Assess the accuracy of the predictions made within the FEIS;

    c. Evaluate the effectiveness of project monitoring procedures and plans;

    d. Identify impacts requiring additional mitigation or adaptive management; and

    e. Provide relevant data and information to support regional monitoring initiatives where feasible.

    The PEAMP must utilize, to the extent possible, the monitoring plans and programs as described in the FEIS, during the Final Hearing, and throughout the Project Certificate as well as all monitoring plans and/or reporting required by relevant authorizing agencies. Where applicable, any additional monitoring plans developed by the Proponent should be integrated within the PEAMP.

As part of the PEAMP, the Proponent is required to ensure that the NIRB is provided with up to date copies of all monitoring and mitigation plans for the project as such plans are developed, revised, amended or updated over the life of the project.

2. Submit an annual report to the NIRB at an agreed upon time each year until operations cease and the project site is fully reclaimed. The purpose of the annual report shall be to provide the NIRB and other parties with an update regarding the status of project operations, an overview of the site and its operations during the reporting period, as well as to provide a discussion of the observations made as a result of, or illustrated through, the monitoring program. The report is expected to contain the following information:
   a. A discussion of how the Proponent has carried out the project in accordance with the terms and conditions of the Project Certificate during the reporting period. Instances where full compliance has not been achieved should be identified and explained using supporting rationale and suggestions for the resolution of outstanding issues.
   b. A summary of the results from the PEAMP including an analysis of the project's impact to the environment with reference to the predictions and environmental and socioeconomic indicators used throughout the FEIS and Final Hearing, to be clearly cross-referenced to facilitate the reviewers' ability to locate such referenced information. This analysis should include:
      i. Reference to baseline and monitoring data used to support impact predictions and effects conclusions, with a discussion of data collection and analysis methodologies employed;
      ii. An evaluation of the effectiveness of any mitigation measures undertaken and, where relevant, a discussion of any exceeded thresholds, adaptive mitigation strategies employed and their effectiveness.
   c. A comprehensive listing of all authorizations required for the project. This listing should also identify the status of all authorizations (i.e. application in progress, received, expired), the date of issue and date of expiry, and any requested renewals, updates, amendments or extensions to these authorizations;
   d. A discussion of the compliance status of the project with respect to all authorizations and applicable regulations and guidelines, including responses to recommendations or direction issued by the NIRB or other agencies;
   e. A summary of activities undertaken for the year, including any progressive reclamation work undertaken, and a work plan outlining activities anticipated to occur during the following year; site photos should be provided where useful for illustrative purposes;
   f. A summary of public/community consultations undertaken and related results or implications for the project;
   g. A listing of site-visits undertaken by federal, territorial, or other inspectors with a corresponding discussion of findings and follow-up actions; and,
   h. Any other information required as outlined within the Project Certificate terms and conditions. [*Note: Conditions 4, 8, 15, 19, 23, 29, 32, 39, 40, 45, 56, 62, 63, 64, 67, 71,*

72, 75, 76, 80, and 82 of the Project Certificate require the submission of some type of information to the NIRB.]

3. Forward copies of all authorizations obtained for the project to the NIRB on an as-received basis.

C. NIRB Monitoring Officer's Responsibilities

1. Fulfill responsibilities as outlined in the Project Certificate (Condition 2).
2. Advise the Proponent of its obligation to prepare and submit an annual report, due at an agreed upon date time each calendar year.
3. Review and distribute information collected and submitted by the Proponent and authorizing agencies.
4. Report at least annually to the Board with respect to the monitoring program as per Section 12.7.3(c) of the NLCA.
5. Provide the Proponent with any recommendations or direction issued by the Board regarding the monitoring program in a timely fashion.

D. Authorizing Agencies' and Government Responsibilities

1. Provide any compliance monitoring and/or site inspection reports to the NIRB's Monitoring Officer annually at an agreed-upon time. These reports should contain the following information:
   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, 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.

Appendix II:
The NIRB's 2011 Meadowbank Site Visit Report

2011 Site Visit Report

Meadowbank Gold Project

October 3, 2011

Full Report Title:	The Nunavut Impact Review Board's 2011 Meadowbank Gold Project Site Visit Report (NIRB File No. 03MN107)
Project:	Meadowbank Gold Project
Project Location:	Kivalliq Region, Nunavut
Project Owner:	Agnico-Eagle Meadowbank PO Box 540 Baker Lake, NU X0C 0A0
Proponent Contact:	Stéphane Robert, Environment Superintendent
Telephone:	(819) 763-0229
Visit conducted by:	Sophia Granchinho, Technical Advisor and Monitoring Officer Amanda Hanson, Director, Technical Services
Telephone:	(866) 233-3033
Site visit dates:	September 12-13, 2011
Last site visit:	September 13-14, 2010
Report prepared by:	Sophia Granchinho, Monitoring Officer
Photos by:	Sophia Granchinho
Cover photo:	Meadowbank mine site

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1. Introduction

In December 2006, the Nunavut Impact Review Board (NIRB) issued Project Certificate [No. 004] for the Meadowbank Gold Project (Project) in accordance with Section 12.5.12 of the Nunavut Land Claims Agreement (NLCA).

The project includes a gold mining operation located approximately 70 kilometres (km) north of the Hamlet of Baker Lake, as well as ancillary infrastructure consisting of barge unloading facilities, a laydown storage and marshalling area, a 40 million litre (ML) fuel tank farm, and associated interconnecting roads located approximately 2 km east of Baker Lake. The construction of a 110 km all weather private access road (access road) from the Hamlet of Baker Lake to the Meadowbank mine site was completed in 2008. The access road opened to mine related transportation of materials and personnel in March 2008. Supplies are shipped via barge from southern origins to Baker Lake where they are offloaded at the laydown and marshalling facilities. From there, materials and fuel are transported to the site via trucks along the 110 km access road.

Following requests from the Hamlet of Baker Lake and the Baker Lake Hunters and Trappers Organization, in accordance with Section 12.8.2 of the NLCA, the Board held a Public Hearing in 2009 to facilitate the reconsideration of Condition 32 of the Meadowbank Project Certificate. In June 2009, the Board issued a report to the Minister of Indian and Northern Affairs Canada (INAC; now Aboriginal Affairs and Northern Development Canada or AANDC) which recommended a revision to Condition 32 of the Project Certificate that would allow the Proponent to employ an alternative method of regulating access to the all-weather private access road and secondly, provide for limited public access along the all-weather private access road for the purposes of pursuing traditional activities.

The Meadowbank mine officially moved into the operations phase in 2010, with the first gold bar being poured on February 27, 2010. Throughout the 2010 year, AEM commenced the construction of a number of dewatering dikes and roads at site, and finalized the commissioning of the following facilities: the process plant, power plant, emulsion plant, primary and secondary crushers, reclaim tunnel, tailings pipeline and reclaim water system, truck shop/service complex, and 2 additional 10ML fuel tanks at AEM's Baker Lake facilities.

2. Objectives & Focus of Site Visit

As per the Project Certificate [No. 004] issued for the Meadowbank Gold project, the NIRB is responsible for the monitoring of this Project in accordance with Part 7 of Article 12 of the NLCA.

The objectives of the NIRB's site visit were therefore 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 [004] (Section 12.7.2(b) of the NLCA).

Prior to the site visit, the Monitoring Officer reviewed the following items: Meadowbank Project Certificate [No. 004], Appendix D and follow up correspondence from the 2010 site visit.

The observations resulting from this site visit shall, wherever possible, be incorporated into the measurement of the relevant effects of the project, as per Section 12.7.2(a) of the NLCA.

3. 2011 Site Visit

On Monday September 12, 2011 an Agnico-Eagle representative met NIRB staff members and a consultant for AEM in Baker Lake and travelled via the access road to the Meadowbank site.

On the morning of September 13, 2011, Stéphane Robert of AEM delivered a presentation which provided the NIRB staff members with a general update of the activities taking place at the Meadowbank site during the 2011 calendar year. Following this presentation, Mr. Robert gave the NIRB staff members a tour of the site, which included the following facilities: camp; active mine area; tailings storage facility (north and south cells), waste and hazardous materials storage area and incinerator; water treatment plant; freshwater barge; primary crusher; fuel storage area; and mill. Later in the afternoon of September 13, 2011, an AEM staff member drove the NIRB staff back to the hamlet of Baker Lake, concluding the 2011 site visit.

The following observations were made during the site visit:

3.1. 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. While being driven from the hamlet of Baker Lake to the Meadowbank site and back by an AEM staff member, few wildlife observations were made. These included white-fronted geese, sand-hill cranes, snow-geese (and blue geese), sik-sik and arctic hare.

b. It was noted that during the drive from the hamlet of Baker Lake to the Meadowbank site, an all-terrain vehicle (ATV) travelling southbound with driver was observed near kilometre 80. When returning to Baker Lake from the Meadowbank site. It was observed that a group of travellers were travelling on the land near kilometre 50 and another ATV was observed to be parked on the side of the road near kilometre 45. All travellers had the required buggy whip installed on their ATV's and all users observed wore the safety vests loaned out by AEM (see Photo 1 for example).

Photo 1: Public users of the access road (photo taken 2010; courtesy A. Hanson, NIRB)

c. AEM staff advised that all contaminated soil previously stored at Quarry 6 had been moved to Quarry 22. Quarry 22 remains in service as a temporary land farm and storage area for contaminated soils. AEM indicated that it has plans to treat and/or remove contaminated soil. Currently, Quarry 22 is not being used to store other material as in the past (see Photo 2). Mr. Robert mentioned that while AEM may not develop a landfarm, it was considering the development of biopiles (bioremediation method used to reduce concentrations of petroleum constituents in excavated soils[1]).

Photo 2: Quarry 22 serving as storage for contaminated soil

[1] Chapter IV of *OUST*'s publication: *How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers.* (EPA 510-B-95-007). *(http://www.epa.gov/swerust1/pubs/tums.htm.)*

d. NIRB staff were advised that environmental emergency sea-cans containing booms, shovels, absorbent pads, and other miscellaneous spill response equipment had been placed at every bridge crossing in the event of a spill (Photo 3).

Photo 3: Environmental Emergency Sea-can

e. Active blasting and drilling were ongoing at the North and South Portage pits, with daily geotechnical inspections being undertaken to ensure the safety of all employees and contractors working in the active mine area (Photo 4).

Photo 4: Drill equipment works at the South Portage pit

f. By the end of 2010, approximately 1.6 million cubic metres (m^3) of tailings had been placed in the tailings storage facility (TSF) (Photo 5). A structure known as the 'reclaim barge' is used to re-circulate water from the TSF back to the mill for reuse within the processing cycle (Photo 6). In addition, Mr. Robert indicated that an internal dike (stormwater dike) is used to prevent leaching of tailings material from the north to the south cell of the TSF. As well, it was noted by Mr. Robert that having a dryer consistency to the tailings deposited within the TSF provides something of a "beach" in the facility which helps to protect the dikes and to prevent ice formation within them. The tailings contain copper and cyanide, and at the time of the 2011 site visit, the TSF contained more water than has been seen in previous years. AEM indicated that the diversion ditch north of the TSF was not completed prior to the freshet season resulting in the additional water and is working on having this diversion ditch completed by fall of 2011.

Photo 5: Tailings storage facility – north cell

Photo 6: Reclaim barge within the tailings storage facility

g. It was noted that the liner for Saddle Dam #1 at the north cell of the TSF was ripped and exposed (Photo 7). Mr. Robert mentioned that the liner would be inspected for tears and that any found would be repaired once Saddle Dam #2 is installed.

Photo 7: Ripped liner at Saddle Dam #1

h. The Bay-Goose dike and causeway was completed in 2010 with the fish out program completed in the summer of 2010. Many of the fish were transferred to Third Portage Lake. During the site visit, it was noted that the Bay-Goose basin was still being dewatered (Photo 8). Water from Bay-Goose basin and South Portage pit are tested for total suspended solids (TSS) to ensure the quality meets discharge criteria prior to release to the environment. Mr. Robert informed the Monitoring Officer that currently, water from the South Portage Pit have been treated at the water treatment facility (Photo 9) prior to discharge while water from the Bay-Goose basin have been discharged directly to the environment. At some point during the dewatering, AEM expects that the water quality from Bay-Goose will not meet the discharge criteria and at that point the water will be diverted to the water treatment facility for treatment prior to discharge.

Photo 8: Bay-Goose basin

Photo 9: Water treatment facility

i. Water is seeping from Second Portage Lake into the Portage pit through the toe of the East Dike at a rate of 1000 m^3 per day (Photo 10) from where it is pumped into the TSF. Once the coffer dam is completed, this seepage water will be pumped into the attenuation pond, located south of the actual tailings deposition. AEM is also in the process of submitting plans for future discharge and reclamation of this water.

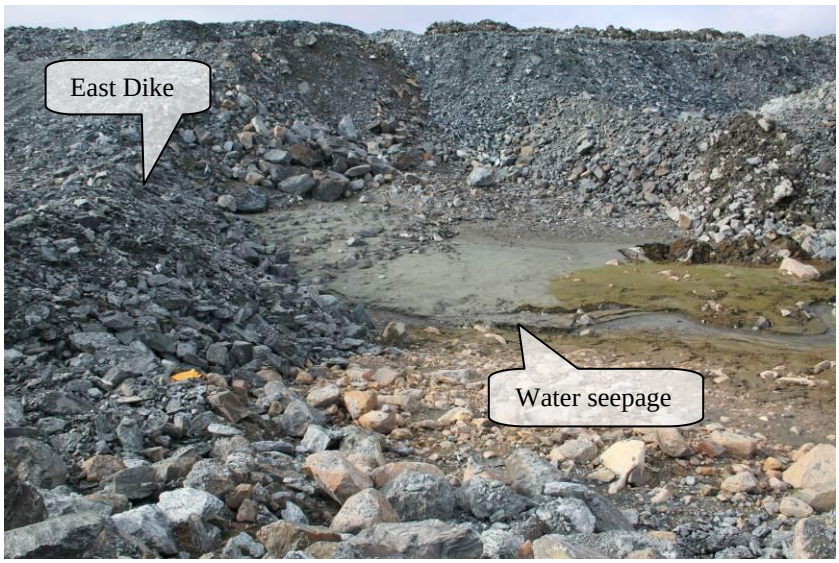


Photo 10: Seepage of water through East Dike

j. The Meadowbank site dual chamber forced air incinerator remains in service for the combustion of all non-hazardous, combustible materials at the site (Photo 11). Mr. Robert indicated that approximately 1.7 tonnes of domestic garbage is incinerated per day.

Photo 11: Dual chamber forced air incinerator at the Meadowbank site

k. In March 2011, a fire at the Meadowbank mine destroyed the kitchen and dining facilities, certain camp offices and the security office. Mr. Robert advised that a temporary kitchen was brought to site at the end of March and the new kitchen would be operational by December 2011. He further indicated that a separate kitchen space would be provided for Inuit employees to facilitate their preparation of more traditional foods (see Photo 12).

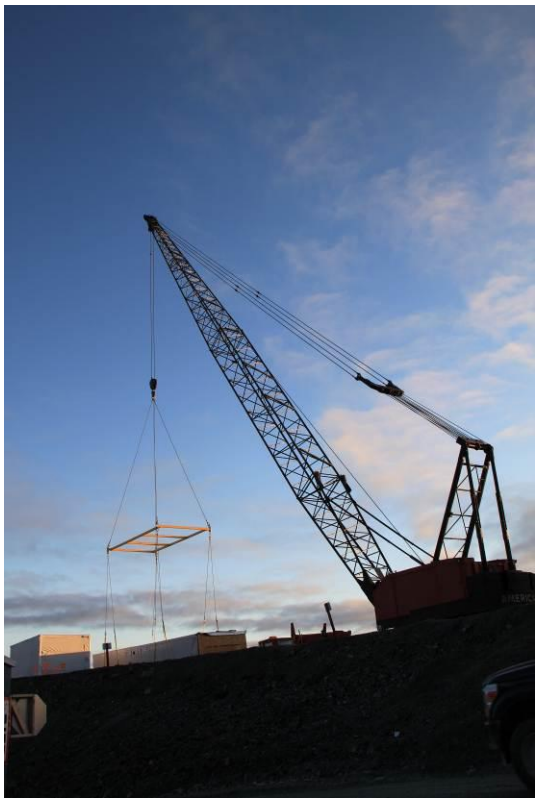


Photo 12: Construction of new kitchen facilities

Sections 3.2 through 3.8 relate to those sections of the Meadowbank Project Certificate as indicated, with specific terms and conditions providing a basis for the noted observations.

3.2. 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 one groundwater monitoring well was operational. The last of the four groundwater monitoring wells installed in 2003 became damaged from frost action in 2010. Some of these defective wells were replaced in 2006 and two of them were again replaced in 2008 with a more robust design. Mr. Robert indicated that AEM was drilling a new well at Bay Goose area (Photo 13) and that a second well would be added under the TSF.

Photo 13: Drilling of groundwater well at Bay Goose area

Condition 15 states:

> *"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 in to the Waste Management Plan to enhance tailing management during operations and closure. The results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer."*

Mr. Robert indicated that AEM samples every single blast hole and conducts an on-site analysis of the percentages of sulphur and carbon present in these samples. These results are used to differentiate between non-potentially acid generating (NPAG) and potentially acid generating (PAG) materials and to differentiate both of these from ore material. This information is then

used by mine surveyors and geologists to delineate the dig limits within the blasted rock and to guide the shovel and loader operators in directing where the rock is to be taken. Most of the NPAG material (see Photo 14) have been used to construct the dikes, dams, roads, and pads at site, while the PAG rock have been used in the TSF, stormwater dike, and rockfill road. Any remaining PAG rock material is sent to the Portage waste rock facility.

Photo 14: NPAG waste rock material

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."*

During the 2011 site visit, AEM appeared to be segregating and storing all domestic, hazardous, and combustible wastes in marked sea-cans prior to being incinerated or shipped to appropriate and approved off-site disposal facilities (Photo 15). Sea-cans filled with waste are backhauled via truck haul to Baker Lake and then with the annual sea lift to southern Canada.

Mr. Robert indicated that relatively few arctic foxes were observed around site in 2011, while in 2010 foxes were denning near the mine site and presented an issue that required ongoing adaptive management.

Photo 15: Sea-cans used for waste segregation and storage area

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 2011 visit to the Meadowbank site, the Monitoring Officer noted that all areas were kept in an impressively clean state, with no spills and very few issues of wind-blown. However, it was noted that during the drive up to the mine site that there were truck tires on the side of the access road (after kilometre 10).

NIRB staff were advised that follow up action is still to occur for the 3,000 litre (L) fuel spill that occurred near kilometre 22 of the access road in October 2010. AEM indicated that booms deployed in the watercourse nearby are checked weekly and changed when needed (see Photo 16 and Photo 17) to ensure that contaminated water does not enter the water body. The contaminated soil (approximately 5,050 tons) was taken to Quarry 5 and will remain there until a management plan is developed and implemented that addresses the issue of the contaminated soil (see Photo 18). In addition, Mr. Robert indicated that follow up action will be completed in the spring of 2012 for this spill site. No fuel contamination or staining of the water was noted by the Monitoring Officer; however, a strong hydrocarbon odour was noticeable at the spill site.

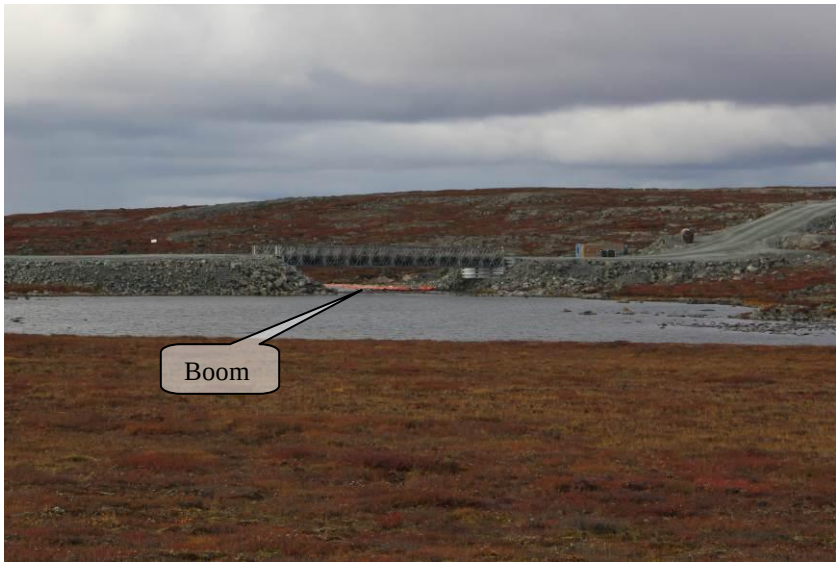


Photo 16: Bridge near kilometre 22 (HADD bridge)

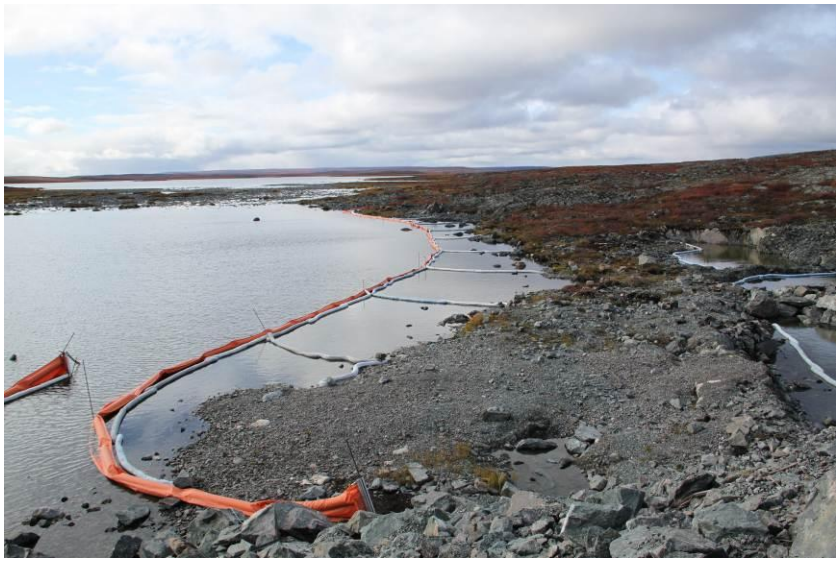


Photo 17: Booms and screens in place at HADD bridge to prevent any fuel from entering stream

Photo 18: Quarry 5 containing contaminated soil from fuel spill at kilometre 22

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 2011 site visit, the Monitoring Officer observed that all of AEM's fuel and hazardous materials associated with the Meadowbank project appeared to be stored in a safe and environmentally protective manner (i.e. secondary containment at fuel storage areas and secure containment of hazardous materials; see Photo 19). The fuel transfer station on site appeared to be well contained and properly set up for the fuelling of vehicles (Photo 20). Hydrocarbon odours were noted at the on-site fuel tank farm and at the HADD bridge at kilometre 22, and further, the Monitoring Officer noted that the liner at the on-site fuel tank farm was exposed.

Mr. Robert advised that the Meadowbank site receives 2-3 tanker trucks filled with diesel fuel per day, and that a total of 5 million litres of diesel are utilized on site each month.

Photo 19: Meadowbank on-site fuel tank farm

Photo 20: Meadowbank fuel transfer station

3.3. All-Weather Private Access Road (AWPAR)

Amended **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. *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 vehicle for the purpose of carrying out traditional Inuit activities;*
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 the road limited to authorized, safe and controlled use by all-terrain vehicles for the purpose of carrying out traditional Inuit activities;*
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*
h. *Report all accidents or other safety incidents on the road, to the GN, KivIA, and the Hamlet immediately and to NIRB annually."*

AEM maintains one gatehouse at kilometre 5 of the access road, and another gatehouse close to the entrance to the mine site and camp at Meadowbank. Both gatehouses are manned by guards who monitor the safety and security of all personnel using the road. All traffic is required to check in (via radio or in person) with the employee at the gatehouse prior to proceeding past either gatehouse (see Photo 21).

The AEM employee manning the kilometre 5 gatehouse maintains a daily logbook of all persons travelling the access road for non-mine use. Members of the public travelling along the road are required to sign AEM's *All Weather Private Access Road Safety Rules & Procedures for Road Access* prior to being granted access to the road (Appendix B).

The Monitoring Officer noted that the required sigs as per Condition 32(d) were located at the gatehouse (Photo 22) and at 10 kilometre intervals along of the road (see Photo 23 for examples). The signs were posted in both English and Inuktitut and were placed on the sides of the emergency sea-cans which were located every 10 kilometres along the road. AEM indicated that previous free-standing sign posts had been damaged during the winter season. No signs were noted at bridge crossings.

Photo 21: Gatehouse at kilometre 5, near Baker Lake

In regards to Condition 32(e), Mr. Robert indicated that AEM holds meetings with the Community Liaison committee every six weeks and that these discussions include the public's authorized use of the road. In addition, notices are placed around town every spring before the road opens to access for traditional activities as per Condition 32 (f).

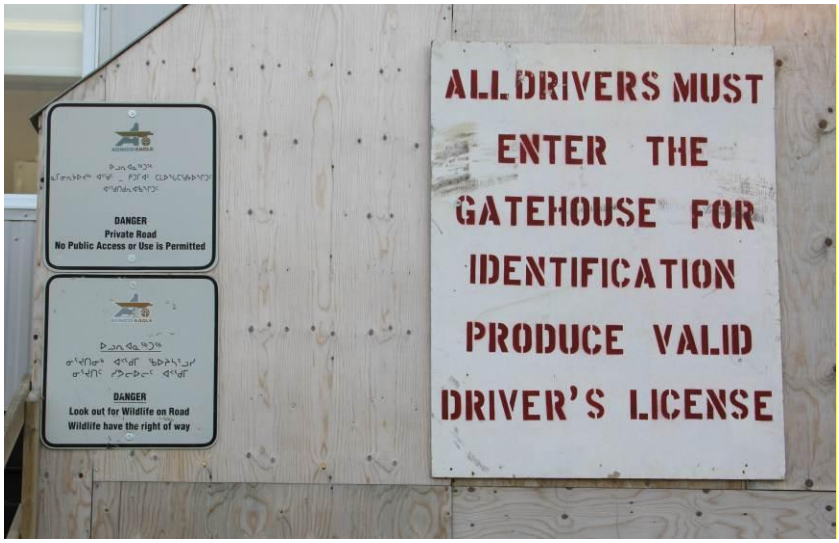


Photo 22: Signs posted at gatehouse at kilometre 5

Photo 23: Signs posted at kilometre 25 and kilometre 88

3.4. 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."*

The Monitoring Officer noted that updated maps (March 2011) outlining caribou migration corridors were posted in high traffic areas such as the bulletin board outside the check-in office - all employees must report to the check-in office upon arrival to site at the commencement of their two-week shift and again upon departure from site.

Caribou were observed on an island near the freshwater barge (Photo 24). In addition, Canada Geese were observed in and near the TSF (Photo 25). Mr. Robert indicated that birds had been observed in and around the TSF, especially during the spring months. Mr. Robert noted that deterrents are used to keep wildlife including birds away from the facility. No other wildlife were observed around site except Snow Geese.

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."*

It was noted during the site visit that no deterrents had been established near the TSF (per Condition 59). Discussions with Mr. Robert indicated that geese had been landing in the open water of the TSF and subsequently, that AEM had attempted to deter the geese. No caribou have been observed by the environment department in or near the tailings facility. The Monitoring Officer also noted that the TSF is bounded on all sides by active mine site roads.

Photo 24: Caribou near freshwater barge

Photo 25: Canada Geese at the tailings storage facility

3.5. 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. …"

During discussions with Mr. Robert, it was mentioned that it was not feasible to install sound meters for extended periods of time at the Meadowbank site. Noise monitoring occurred at four stations in July 2010 and at five stations in August 2011. Mine activities such as helicopter and other air traffic, the use of construction and operation heavy equipment and blasting are the dominant mine noise sources. Mr. Robert also indicated that every blast is monitored with an Instantel Minimate Blaster to ensure that vibrations and overpressure are within the required limits to protect fish and fish habitat.

3.6. Human Health

Condition 66

"Cumberland shall establish a nursing station and hire a registered on-site nurse."

During the 2010 site visit, AEM had established a temporary nursing station that had been housed in a camper-style site response vehicle, while the permanent nursing station was being completed. During this site visit, the Monitoring Officer was able to visit the new permanent nursing station established at site (Photo 26). Usually, AEM has two nurses at site at the same time.

Photo 26: Permanent nursing station at the Meadowbank site

3.7. 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."

At the time of the 2011 site visit, the atmospheric monitoring station had not yet been set up. Mr. Robert indicated that the station would be installed in the fall and that it would be located within a sea-can as the monitoring station must be located in a regulated and relatively warm temperature in order to function properly for the collection of data.

Condition 74

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

Water is administered onto the roads around the Meadowbank site as a dust suppressant. The Monitoring Officer noted however, that no dust suppression was employed along the access road. Mr. Robert indicated that due to the logistical requirements and other feasibility issues, the use of dust suppressant has not been initiated along the access road (Photo 27).

Photo 27: Semi-truck hauls empty sea-cans from Meadowbank to Baker Lake (photo taken 2010; courtesy A. Hanson, NIRB)

3.8. 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 unofficial visits to AEM's Baker Lake fuel tank farm and barge laydown facility, the Monitoring Officer did not observe any notable security measures in place at these sites (see Photo 28 through Photo 31). During the 2011 Site Visit, Mr. Robert indicated that all hazardous and explosive components received at the marshalling and storage area are shipped immediately to site and further, that during the sealift period, AEM ensures that 24 hour security, including surveillance cameras, are put into place.

The Monitoring Officer did note that these areas were kept impressively clean with sea-cans well organized during the barge season (see Photo 29 through Photo 31).

Photo 28: Barge offloading cargo at Baker Lake barge laydown facility (photo taken July 28, 2011)

Photo 29: Baker Lake laydown facility (photo taken September 17, 2011)

Photo 30: Baker Lake barge laydown facility (photo taken September 17, 2011)

Photo 31: Baker Lake fuel tank farm (photo taken September 17, 2011)

4. Findings and Summary

The NIRB request to be kept informed of any future plans to develop biopiles as an alternative to landfarms for the treatment of contaminated soil.

Regarding Condition 8, the Proponent has indicated that two new groundwater wells are to be installed in the future. The Monitoring Officer notes that during the 2010 groundwater monitoring program, only one well remained operational and functioning to collect data compared to the original four installed in 2003.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. The Monitoring Officer notes that the fuel spill near kilometre 22 was still being treated and through discussion with AEM, that follow-up action would be continued in the spring of

2012. Furthermore, a few instances of wind-blown debris scattered around the site were evident, possibly requiring management of waste piles or other on-site protocol.

Condition 27 requires that the Proponent use safe, environmentally protective methods for areas used to store fuel or hazardous materials. The Monitoring Officer noted that the liner at the on-site fuel tank farm was exposed.

At the time of the site visit, the atmospheric monitoring station required by Condition 71 had not yet been installed. The Proponent indicated that this station would be installed by fall of 2011.

The Proponent does not appear to have fully met the requirements of Condition 74, as dust suppression techniques while applied at the Meadowbank site, have not been applied to the access road.

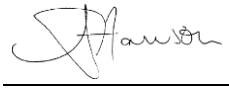
As noted in the 2010 site visit and monitoring reports, and as was observed again during the 2011 site visit, no security measures were in place at the Baker Lake storage and marshalling area as required by Condition 81.

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 and reviewed during the NIRB's 2011 Site Visit. There may be certain situations in which the Proponent has not yet fully met the requirements of the Meadowbank Project Certificate and which may require further consideration and follow up by the Board.

Prepared by: Sophia Granchinho
Title: Technical Advisor/Monitoring Officer
Date: October 3, 2011

Signature: 

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 3, 2011

Signature: 

Appendix A:
Agnico-Eagle Mines Ltd.'s Meadowbank Gold Project All Weather Private Access Road Safety Rules & Procedures for Road Access

Meadowbank Gold Project
All Weather Private Access Road

Safety Rules

- This is not a public road. Access to the road is not allowed without an HTO pass and authorization from AEM Dispatch at the Baker Lake Gatehouse.
- Only ATVs are allowed to travel on the road.
- If the Gatehouse is closed, the road is also closed, and access is not allowed. This is likely due to unsafe weather, road conditions or safety reasons
- Use of the Meadowbank All Weather Private Access Road is at your own risk. AEM is not responsible for personal injury or property damage.
- AEM reserves the right to refuse entry to anyone who does not respect these safety rules and procedures.
- AEM reserves the right to restrict public access in periods of heavy mine traffic flow, for example, during the transfer of supplies from Baker Lake to Meadowbank after the annual sealift.

Procedures For Road Access

1. Report to the Baker Lake Gatehouse to access the road. Show your HTO Pass to AEM Dispatch and provide your name and expected time of return. AEM Dispatch will explain the safety rules and procedures and provide an update on current road and weather conditions.
2. Install a buggy whip on the ATV while at the AEM Baker Lake Gatehouse and can be kept by the driver to take home.
3. Safety vest must be worn by driver and passenger.
4. AEM traffic has the right of way – the ATV must pull off the road when a vehicle is oncoming or approaching from behind and wait for that vehicle to pass before entering back onto the road.
5. Maximum speed limit is 50 km/hr.
6. All hunting activity must occur at a minimum distance of 1 km from the All Weather Private Access Road. This 1 km zone is the No-Shooting Zone that is implemented for safety reasons to avoid accidental shooting.
7. Access is forbidden upon km 85.
8. Return safety vests must be returned to Baker Lake Gatehouse.

Printed name	Date	Signature

AGNICO-EAGLE

ᐊᐳᖅᑎᓈᖅᑐᒥ ᑲᓄᕼᐊᕐᒥᒃ (ᑰᓗᒥᒃ) ᐅᔭᕋᒃᑕᕆᐊᕐᕕᒃ

ᐊᑉᕐᑯᑦ ᐊᐳᖅᑎᓈᖅᑐᒥᑦ ᖃᒪᓂᑐᐊᕐᒧᑦ ᓴᓇᔭᐅᓯᒪᔪᖅ ᓇᒻᒥᓂᕆᔭᐅᔪᖅ ᐅᔭᕋᖅᑕᕆᐊᓄᑦ ᐊᐳᑦᑎᓈᖅᑐᒥᐅᑕᓄᑦ ᐊᑐᕈᐅᔪᓐᓇᖅᑐᖅ ᐊᐳᖅᑎᓈᖅᑐᕐᒥᐅᑦ ᐅᔭᕋᒃᑕᕆᐊᑦ ᐱᓕᕆᕝᕕᖕᓄᑦ

ᐊᓂᖅᑕᐃᓕᓂᕐᒧᑦ ᐱᕐᑯᔭᐅᔪᑦ ᒪᓕᒃᓴᐅᔪᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᓃᑦ

ᐊᐳᖅᑎᓈᖅᑐᕐᒥᐅᑦ ᐊᑉᕐᑯᑎᖓᑦ ᐊᑐᕈᐅᑎᓪᓗᒍ ᒪᓕᒃᓴᐅᔪᑦ ᐊᓂᕐᑰᓐᖏᑦᓗᑎᒃ ᐊᓇᔭᓇᖅᑐᖅᑰᕐᑰᓇᑎᒃ ᑕᒡᕙᐅᕗᑦ:

- ᑖᓐᓇ ᐊᑉᕐᑯᑦ ᑭᓇᒥᐊᒧᑦ ᑭᑐᒥᐊᓄᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖏᑦᑐᖅ. ᑭᓇᒥᐊᖅ ᐅᔭᕋᒃᑕᕆᐊᖑᓐᖏᑦᑐᖅ ᑕᕝᕗᓇ ᐊᑉᕐᑯᑎᒃᑰᕈᓐᓇᖏᑦᑐᖅ ᐊᖏᕿᐅᖅᑳᕿᓂ ᖃᒪᓂᑐᐊᑉ ᐊᖑᓇᓱᒃᑎᖕᒪᑕ ᑎᑎᕋᕝᕕᖕᒪᓂᒃ ᐊᓕᓚᔪᖅᑖᖅᖄᕐᓇᓂ ᐊᒻᒪᓗ ᐊᖏᕿᐅᖅᑳᕿᓂ ᐅᔭᕋᖅᑕᕆᐊᑦ ᐳᑭᖅᑕᓕᐊᓖᖕᒪᓄᑦ ᖃᐅᔨᓴᖅᑎᖕᒪᓄᑦ
- ᑭᓯᒥᒃ ᒪᖃᐃᓐᓂᐅᑏᑦ ᕼᐋᑕᐃᑦ ᐱᖕᒪᓯᑏᓪᓗ ᓯᑕᒫᓪᓗ ᐊᑉᕐᑯᑎᒃᑰᕈᓐᓇᖅᑐᑦ.
- ᖃᒪᓂᑐᐊᕐᒥᖕᒪᖅᑐᒥ ᐊᑉᕐᑯᒻᒥ ᐊᐳᖅᑎᓈᖅᑐᑉ ᐊᑉᕐᑰᑖᓄᑦ ᐅᒃᑯᐊᖅᕕᖕᒪᑦ ᒪᓂᒃᑐᒥ ᓄᓇᒃᑰᕈᑎᓄᑦ ᖃᐅᔨᓴᕝᕕ ᐅᒃᑯᐊᖅᓯᒪᓕᖅᐸᑦ ᐊᑉᕐᑦᑎᓗᒃᑖᖅ ᐅᒃᑯᐊᖅᓯᒪᓕᓱᖅᑐᖅ. ᐱᑐᑕᐅᓇᔭᖅᓱᓂ ᓯᓚᑦᓴᐅᖕᒋᑦᐸᑦ, ᐊᑉᕐᑯᑦ ᐋᑦᕿᐅᒪᓐᖏᓕᕆᔭᖅᐸᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑲᑉᐱᐊᓇᖅᑐᖅᑲᖅᐸᓐ ᐃᖅᓯᓇᓕᖅᐸᓐ.
- ᐊᐳᖅᑎᓈᖅᑑᑉ ᐊᑉᕐᑰ ᐊᑐᕋᔾᔭᓂᕈᕕᐅᒃ ᐃᓕᓐᓄᑦ ᑲᑉᐱᐊᓇᖅᓯᓐᓇᑎᐊᓕᒃ ᐊᒻᒪᓗ ᐊᓂᕋᔾᔨᕈᕕ ᐃᒻᕕᓐ ᐱᑦᑐᑕᐅᒋᑎᓐ ᖃᐅᔨᑉᑲᓚᐅᓯᒪᓕᕋᕕᓐ. ᐊᓂᕋᔾᔨᕈᕕᓐ ᖃᐅᔨᑉᑲᓚᐅᒋᑎᓐ ᐊᐳᖅᑎᓈᖅᑐᖅ ᐅᔭᕋᒃᑕᕆᐊᖏ ᐱᑦᑐᑕᐅᓐᖏᓐᒪᑕ ᐊᑭᖦᖢᓐᖏᓐᒪᑕ ᐱᕐᑯᑎᑎᓪᓗ ᓯᕐᑯᒥᓇᔭᖅᐸᑕ ᐅᔭᕋᒃᑕᕆᐊᑦ ᐱᑦᑐᑕᐅᓐᖏᓐᒪᑕ ᐊᑭᖦᖢᓐᖏᓐᒪᑕ.
- ᐊᐳᖅᑎᓈᖅᑑᑉ ᑲᓄᕼᐊᕐᒥ (ᑰᓗᒥᒃ) ᐅᔭᕋᒃᑕᕆᐊᖏ ᕿᐱᓗᒍᓐᓇᖅᑐᑦ ᑭᓇᑐᐃᓐᓇᒧᑦ ᐊᑉᕐᑎᕐᑎᒥᓐᓄᑦ ᐃᑎᕐᑯᔨᓐᖏᑦᑯᒥᒃ ᑕᑉᑯᓂᖓ ᒪᓕᒃᓴᓂ ᐊᓂᕐᑯᔨᓐᖏᑦᑐᒥᒃ ᒪᓕᓐᖏᓇᔭᕐᓂᖅᐸᑕ
- ᐊᐳᖅᑎᓈᑐᕐᒥᐅᑦ ᐅᔭᕋᒃᑕᕆᐊᖏᑦ ᕿᐱᓗᒍᓐᓇᖅᑐᑦ ᑭᓇᑐᐃᓐᓇᕐᒧᑦ ᐃᑎᕐᑯᔨᓐᖏᑦᑐᓂᑦ ᐊᑐᕐᑯᔨᓐᖏᑦᑐᓂᒃ ᐊᐳᖅᑎᓈᖅᑑᑉ ᐊᑉᕐᑎᖕᒐᓄᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐊᑐᖅᑕᐅᔭᕆᐊᖃᓗᐊᓕᖅᖢᑦ ᐱᓕᕆᓂᑦ ᐅᔭᕋᒃᑕᕆᐊᑦ ᐱᓕᕆᕝᕕᖕᓄᑦ. ᐆᒃᑑᑎᒋᓗᒍ ᐅᒥᐊᕐᔪᐊᑦ ᓯᑲᐅᑦ ᑎᑭᐊᓂᓵᖅᖢᑕ ᓯᑲᐅᓕᑕᐊᓂᓵᖅᖢᑕ.

ᒪᓕᒃᓴᐃᑦ ᐊᐳᖅᑎᓈᑐᑉ ᐊᑉᕐᑰ ᐊᑐᕈᐅᓕᖅᖢᑦ

1. ᐅᕐᓂᓪᓗᒍ ᒪᓂᒃᑐᒥ ᓄᓇᒃᑰᕈᑎᓄᑦ ᖃᐅᔨᓴᕝᕕ ᐳᑭᖅᑕᓕᐊᓖᖅᕕᒃ. ᖃᐅᔨᓴᖅᑎ ᐳᑭᖅᑕᓕᐊᓖᖅ ᐊᓕᓚᔪᒥᒃ ᐊᖑᓇᓱᒃᑎᓂᑦ ᐊᖏᓚᐅᓐᓂᑯᓂᒃ ᑕᑯᑎᓪᓗᒍ ᐅᖃᐅᑎᓗᒍ ᐊᑎᓐᓂᒃ ᐊᒻᒪᓗ ᖃᑯᒍ ᐅᑎᕐᓂᐊᕐᒪᖕᒪᖅᐲᑦ. ᐳᑭᖅᑕᓕᐊᓖᕐᒥᑦ ᖃᐅᔨᓴᖅᑎᒥᑦ ᐅᖃᐅᑦᑐᒪᐅᓂᐊᖅᐳᑎᓐ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᒪᖕᒪᖅᐲᓐ ᒪᓕᒃᓴᓂᓪᓗ ᐅᖃᐅᓗᓂᑦ ᐊᒻᒪᓗ ᓯᓚᒥᓐ ᐅᖃᐅᓗᓂᓐ.

2. ᕼᐋᓐᑕᐅᑦ ᐃᑦᑕᓇᓗᒍ ᐊᐅᓚᕐᑯᓐᒥᒃ ᓇᑉᐸᖕᒪᔪᒥᒃ ᑕᐃᑲᓂ ᖃᐅᔨᓴᕝᕕᓐᒥ ᑭᓯᐊᓂᓗ ᐅᑎᕈᕕᓐ ᑕᐃᑯᖕᒪ ᖃᐅᔨᓴᕝᕕᓐᓄᑦ ᐊᐅᓚᕐᑯᑦ ᐊᓯᐅᑎᐊᓕᕼᕐᓗᒍ.

3. ᐊᐳᖅᑎᓈᖅᑑᑉ ᓄᓇᒃᑰᕈᑎᖏᑦ ᐱᓕᕆᑦ ᓯᑭᒥᒃ ᓯᑰᑦᑐᐅᔪᓐᓇᖅᑐᑦ ᑲᑎᒋᐊᕈᓐᓂ ᐅᕝᕙᓘᓐᓃᑦ ᑐᓄᓐᓂᑦ ᖃᖏᖅᑎᑦᓴᑕᐊᖃᖅᑕᑎᑦ ᐱᓕᕆᑦ. ᐃᒻᕕᓐ ᓄᖅᑲᑕᐊᖃᖅᑐᑎᓐ ᓄᖅᑲᖕᒪᓗᑎᓐ ᐅᑦᑭᖅᓯᔭᑕᐊᖃᖅᑐᑎᓐ ᑭᓯᐊᓂ ᖄᖏᖅᐸᑕ ᐊᐅᓚᕈᓐᓇᓕᕼᖅᑐᑎᓐ.

4. ᐊᐳᖅᑎᓈᖅᑑᑉ ᐊᑉᕐᑯᑕᓂ ᓇᑭᓂᖅᐸᒥᒃ ᐊᐅᓪᓚᕈᓐᓇᖅᑐᑎᓐ 50ᑭᓚᒥᑐ ᐃᑲᕋᒧᑦ.

5. ᒪᖃᐃᑦᓱᓐᓇᖅᑐᑎᓐ ᑭᓯᐊᓂ 1ᑭᓚᒥᑐᒥᓐ ᐅᖓᓯᓐᓂᖅᑯᕕᓐ ᐊᑉᕐᑯᒥᑦ ᐅᔭᕋᒃᑕᕆᐊᓄᓐ ᓇᒻᒥᓂᕆᔭᐅᔪᒥᑦ. ᑖᓐᓇ 1ᑭᓚᒦᑐᕐ ᐊᑉᕐᑯᒥᑦ ᐅᖓᓯᓐᓂᖅᑲᐊᖅᑲᕐᓂᖅ ᐱᑦᑐᑎᕆᐸᓗᒍ ᐊᓂᑐᖅᑯᕐᖕᒐᖓᑦᓗᒍ ᓯᖅᑯᖅᑎᑕᐅᓂᒃᑯᑦ.

6. ᒪᖃᐃᑦᓱᓐᓇᖅᑐᑦ ᑭᓯᐊᓂ 85ᑭᓚᒦᑐᕐ ᑎᑭᓪᓗᒍ ᐊᒻᒪᓗ ᖃᖏᕐᐅᑎᓂᖅ 85ᑭᓚᒦᑐᕐᒥ ᐊᔪᖅᓱᑎᑦ.

7. ᖃᐅᔨᓴᖅᑎᒧᑦ ᐅᑎᖅᑎᕆᐊᕐᓗᒍ ᐊᐅᓚᕐᑯᑦ ᓇᐸᔪᖅ ᐊᒻᒪᓗ ᐊᑐᕆᐊᖃᖅᓱᑎᒃ ᐊᐃᖏᑦᑐᒥᒃ ᐊᓂᖅᑕᐃᓕᑦᑐᒪᒥᒃ ᓯᕐᑯᖅᑎᑕᐅᑦᑕᐃᓕᖅᑐᒥᒃ.

ᐊᑏᑦ ᑎᑎᕋᓯᐊᕐᓗᒍ ᖃᐸᓘᓈᑎᑐᑦ ______ ᐅᐸᓗᒥ ᐅᐸᓗᖅ ______ ᐊᑏᑦ ᑎᑎᕋᐸᓗᒍ ______