Appendix A1

Report: 2014 KIA Quarterly Reports

MEADOWBANK DIVISION

Production Lease KVPL08D280

2014 First Quarter Report

April 2014

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List of Appendices

SECTION 1 • SUMMARY OF ACTIVITIES

Agnico Eagle Mines Limited - Meadowbank Division (AEM) is required under condition 5.10 of Production Lease KVPL08D280 to deliver quarterly reports to the KIA detailing its activities on the leased land. The following sections summarize activities during the first quarter (Q1) from January to March 2014.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 156,401 oz. of gold;
- Mined 7,661,805 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	994,193	994,193
Gold Grade (g/t)	5.09	5.09
Gold Produced (oz.)	156,401	156,401

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	4,374	4,374
Waste Rock Production (t)	6,741,283	6,741,283
Ore Production (t)	916,148	916,148
Total Blasting (t)	7,712,269	7,712,269
Total Drilling (m)	198,095	198,095

1.4 DIKE CONSTRUCTION ACTIVITIES

No dike construction happened in the first quarter of 2014.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2014 Mine Plan V1*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 6th, 2014. Following discussion with KIA, a version 2 of the 2014 Mine Plan was done to included information on RSF Seepage and Assay Road Seepage. The "*2014 Mine Plan V2*" was submitted to KIA on February 5th, 2014.

There was no planned variation from the "*2014 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current quarter, no (0) inspections were conducted by regulators.

AEM sent an updated response to KIA on February 12th regarding the 2012 Environmental Legal Audit conducted by EEM (for KIA - Appendix A).

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There were no (0) exceedences of the Water License during Q1.

Eighteen (18) spills occurred at the site; two (2) spills were reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the first quarter, 18 spills occurred at the site. Two (2) spills were reported to the Government of Nunavut:

- 300L of raw sewage spilled at the incinerator parking because the operator of the sewage truck left the valve open after checking to see if it was frozen; and
- 30 Kg of cyanide spilled outside reagent sea can at mill because the telehandler operator punctured one cyanide box.

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 279,650 m^3. The total amount of reclaim water used in the mill was 587,290 m^3.

On February 13th, 2014, AEM submitted the EEM Biological Study Design 2 to Environment Canada. AEM is still waiting for comments/approval.

AEM is currently preparing an application for the renewal of the NWB Type “A” Water License. The current license expires in May 2015.

4.2.1 Amendment Freshwater

Meadowbank’s current NWB License (2AM-MEA0815) permits Agnico Eagle Mines Ltd. (AEM) to obtain 700,000 m^3 per year of freshwater for domestic camp use, mining, milling and associated uses. Despite significant success at engineering solutions to optimize freshwater use, requirements exceed the permitted rate in the last years. On April 23rd, 2013, Agnico Eagle Mines (AEM) Meadowbank Division submitted a request to the Nunavut Water Board for an amendment to increase the freshwater use rate at the Meadowbank Gold Project. The water license amendment pre-hearing conference and technical meeting

was held in Baker Lake on October 16th and 17th. The final written hearing was held on January 17th, 2014. On January 24th, AEM received correspondence from NWB advising that hearing record is closed and the Panel will issue, in due time, a decision report to AANDC regarding whether or not to issue the requested amendment, to the Type A Water License (Appendix B). AEM is still waiting for the final decision. On February 5th, AEM sent correspondence to the NWB in response to questions raised during the Meadowbank Mine Type A Water License freshwater use amendment technical meeting and to an email from the NWB dated February 3rd, 2014 regarding the TPL water level trigger for increasing monitoring from monthly to weekly (Appendix C).

On January 22nd, 2014, AEM held a WebEx workshop with EC, AANDC, KIA and NWB to review the Meadowbank Water Management Plan. The workshop minutes of the meeting were sent to regulators on February 4th, 2014 (Appendix D).

4.2.2 RSF Seepage

The RSF seepage has been frozen since October 5th, 2013. Weekly inspections were completed at RSF and NP-2 Lake. Only one (1) monthly sample was taken in NP-2 Lake in January. No more monthly sample has been taken in February and March in NP-2 Lake as the ice is thicker than 5 feet (safety issue). On November 8th, 2013, AEM received an AANDC Inspector's Direction (Order) regarding the RSF Seepage into NP-2 in which they asked for an independent engineering firm report to conduct an investigation and provide recommendations. This report was submitted to AANDC on January 3rd, 2014 and can be found in Appendix H of the KIA 4th quarter 2013. On January 29th, a meeting was held with KIA and their consultant in Rankin Inlet to discuss about RSF seepage. KIA requested additional monitoring at NP-1, Dogleg and Second Portage Lake. AEM take note of this requirement and will start monitoring at freshet. AEM is presently working on a freshet action plan.

4.2.3 Assay Road Seepage

No more seepage has been visible since November 24th, 2013. Samples are taken in TPL monthly and to date no contaminants have been detected. AEM has engaged Tetra Tech (formerly EBA) to perform an assessment, drilling delineation program and provide a report with recommendations in early 2014. It is AEM's intent to follow the recommendations of EBA. Repairs of the containment systems in the mill have commenced and the intent is to have this completed prior to freshet. AEM is presently working on a freshet action plan.

4.2.4 Portage Attenuation Pond Discharge

No discharge from Portage Attenuation Pond (ST-9) occurred in the first quarter.

4.2.5 Vault Lake Dewatering

Vault Lake Dewatering was suspended on October 22nd, 2013 and will restart at freshet. No water was discharged during the 1st quarter of 2014.

4.2.6 East Dike Seepage Discharge

East Dike seepage non-contact water started to be discharged to Second Portage Lake on January 6th, 2014. A total of 37,480 m^3 was discharged during the quarter. The discharge water quality is in compliance with the MMER and NWB License criteria.

4.3 WILDLIFE MANAGEMENT

During the quarter, some caribou, wolverines, wolves, muskox and caribou and foxes were seen on site. No high risk incidents were reported.

On January 6th, 2014, AEM Environmental Department had to dispatch a sickly wolf. Report was sent to GN Wildlife Officer in Baker Lake and the wolf carcass was taken to the Baker Lake Wildlife Officer on January 10th. A new Wildlife Management Procedure was implemented at Meadowbank for dispatching problematic wildlife.

AEM met with Wildlife Contractor in Baker Lake on January 10th to discuss the hunter harvest survey.

During the quarter, notice for wildlife in close proximity to the Meadowbank Site was sent to AEM and contractors employees.

~~4.4~~ PERMITTING

AEM received the NIRB 2012-2013 Annual Monitoring report and recommendations on November 27th, 2013. AEM's response was submitted on January 7th, 2014 (Appendix E). On January 27th, AEM sent the Groundwater Monitoring Plan V4 to NIRB to complete response to recommendation #5 (Appendix F).

AEM sent an amended Letter of Credit to AANDC on January 9th, 2014 in the amount of $43,9 Million for the Meadowbank Gold Project Type A Water License 2AM-MEA0815 to comply with Part C, Item 1F.

AEM received correspondence from NIRB on March 6th (dated January 27th) regarding the Health Canada response to NIRB 2012-2013 recommendation # 8 (Appendix G). AEM is preparing a response to Health Canada to be submitted by the end of April.

AEM sent an email to GN to renew the authorization L-51260 for Baker Lake Facilities.

The following reports were completed and submitted to regulators:

- NWB monthly reports, December 2013, January and February 2014;
- 2013 Annual Rent KVRW06F04 and AWPAR Water compensation agreement payment sent to KIA on January 6th;
- KIA Q4 2013 Production Report submitted;
- KIA Q4 2013 report detailing water usage and fees plus payment submitted;
- Environment Canada 2013 Q4 MMER via electronic database;
- Environment Canada 2013 EEM Annual Report and Addendum;
- 2014 payment for the caribou monitoring activities (MOU) to GN;
- 2014 Annual Rental lease for Baker Lake Facilities L-51260, L-51261 and L-51262.

Appendix A

AGNICO EAGLE

February 12, 2014

Mr. Luis Manzo
Director of Lands
Kivalliq Inuit Association
PO Box 340
Rankin Inlet, Nunavut
X0C 0G0

RE: Response to Environmental Legal Compliance Audit Report - Agnico-Eagle Meadowbank Mine

Mr. Manzo,

Please find the below updates in regards to the inspection and audit performed by KIA and EEM and the associated report dated, November 2012. This letter is an update to the letter sent to Stephane Hartman dated February 26, 2013 (attached).

Environmental Compliance Evaluation Findings and Observations

1) Project Certificate, condition 8: *The certificate requires that semi-annual groundwater sampling be conducted. Sampling is conducted annually. Of the 4 wells, only 1 is currently operational. Recommendations: Repair and reinstate the three (3) broken wells). Conduct sampling semi-annually or document approval from NIRB to sample on an annual basis only.*

Action: AEM completed a 2013 groundwater sampling program. AEM now has 2 operating wells. Repair and restoration attempts on the other wells were unsuccessful. However, AEM has begun taking samples of water appearing in production drill holes within the open pit mine. A full report on the 2013 Groundwater program will be available in the 2013 Annual Report. Our sampling this year took place in August, September and October.

2) Project Certificate, condition 21: *The facility's weather station does not collect precipitation data. Baker Lake precipitation data is used. Recommendations: Document that this substitution is acceptable to NIRB.*

Action: The AEM Meteorological Monitoring Plan has been updated and now states that AEM will collect on site precipitation data at the Meadowbank site, using manual precipitation gauges. These gauges have been installed.

4) Project Certificate, condition 28: *The facility is not yet a signatory to the International Cyanide Code. The current target for implementation is 2013. The certificate requested that the facility be compliant prior to storing or handling cyanide at the facility. Recommendations: Continue implementation of ICMC.*

Action: AEM is in fact a signatory of the International Cyanide Management Code (ICMC); we have been a signatory since August 31, 2011. AEM has 3 years to implement all principals of the cyanide code. In Q2 of 2013 an internal audit took place at the Meadowbank site to determine what further requirements need to be met for the Cyanide Code prior to a 2014 audit by the ICMC. The Meadowbank Mine site now has an ICMC facilitator who works with all departments to ensure all outstanding items from the external audit are completed prior to the external audit which is tentatively scheduled for August 2014.

5) Project Certificate, condition 32: *There is an absence of signage on the access road at every 10 km, in English and Inuktitut, prohibiting public use. In addition, there is an absence of signage along the access road to identify when one is entering and leaving crown land. Recommendations: Signs prohibiting public use have been printed and now need to be posted. Print and post signs indicating when entering and leaving crown land or obtain permission from NIRB to be exempt from this condition.*

Action: Signs have been posted depicting when entering and exiting Crown and Inuit owned land. The signs prohibiting public are erected in numerous locations. However, these signs will be installed every 10 km as requested in the project certificate in Q2 2014

7) WL, Part E, s. 3: *AEM has exceeded the maximum annual water consumption of 700,000m3 since 2010. However, the facility has, with the acceptance of the Board, implemented an action plan that is aimed at reducing the facility's consumption below the maximum annual consumption limit by the end of 2012. Should planned actions prove unsuccessful; a request to increase consumption will be requested. Recommendations: Continue with approved action plan.*

Action: Amendment for fresh water consumption: NWB technical meeting and pre-hearing conference completed in Baker Lake on October 16th and 17th, 2013. Final written hearing took placeonr January 17th, 2014. Currently waiting for final NWB decision.

8) WL, Part F, s. 9: *Signage was not posted at sampling locations as required by the permit. Corrective actions were being initiated at the time of the audit. Recommendations: Continue with ongoing actions.*

Action: All signage is now in place.

12) Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (Fed): *Three (3) instances were observed where the storage of fuel delivery nozzles was weak. That is, after use the nozzles were simply laid on drums or equipment in a manner that allows residual product to drip out. The observations were made at the airport and fuel farm. Recommendations: Develop and communicate a procedure for storage of fuel delivery nozzles. Consider installing appropriate supports for fuel dispensing nozzles.*

Action: Please find the attached 3 fueling procedures that have been implemented on the Meadowbank site and associated facilities since the time of the Audit.

13) Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (Fed): *The underground fuel line between the fuel farm and the power plant is not equipped with secondary containment or cathodic protection as per the requirements of the Regulation regarding Storage Tank Systems for Petroleum Products and Allied Petroleum Products. The diameter of the pipe is 4 inches (10.2 cm). Flow meters are, however, installed at both ends of the pipe system. Recommendations: Either: Modify the underground fuel line such that it complies with the requirements of the Code; or, Request an exemption to the Code requirements from the Nunavut Impact Review Board.*

Action: On September 18, 2013 a contractor came to the meadowbank site and preformed a hydrostatic test on the fuel line. I have attached the original report completed in French as well as a supplemental report in English. No leakage was detected. AEM is committed to performing this test annually. The flow meters are still in operation and weekly dip tests are performed on our main fuel tank – there is no indication of any product loss. AEM is currently reviewing further options which include the assessment of installing a double walled above ground fuel line to the power plant.

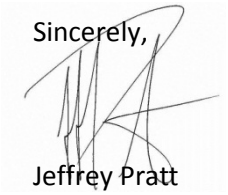
20) Environmental Protection Act - 5.1.3: *A mound of contaminated soil was observed at quarry 22 without any measures to prevent the discharge of a contaminant into the environment. Contaminated soils have historically been stockpiled at quarry 5, 6, and 22 without such measures. Recommendations: In the future, consider asking for KIA permission prior to storing contaminated soils on IOL. Future stockpiles of contaminated material should be stored to prevent the discharge of a contaminant to the environment. Ensure contaminated material is removed to an approved facility and analytical testing for residual hydrocarbon impact completed at each decommissioned quarry location.*

Action: All soil has been removed from Quarry 22 and moved to the AEM Landfarm. A completed version of AEM's Landfarm Design and Management Plan ver3 (Feb 2013) has been attached to this letter for your information.
In 2014, confirmatory sampling will be conducted on the surface area of Quarry 22.

AGNICO EAGLE

I trust this course of action meets with your approval. Should you have any questions or concerns please feel free to contact me at jeffrey.pratt@agnico-eagle.com.

Sincerely,



Jeffrey Pratt
Environmental Coordinator
Agnico-Eagle Mines Ltd.
Meadowbank Division
(867) 793-4610 ext. 6728
jeffrey.pratt@agnico-eagle.com

CC: Kevin Buck – AEM
Stephane Robert – AEM

Appendix B

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

Date: January 24, 2014

To: Meadowbank Distribution List

Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Limited, Amendment Application for the Type "A" Water Licence, Meadowbank Gold Mine Project: Close of the Public Hearing Record

Further to the Nunavut Water Board's (NWB or Board) Pre-Hearing Conference Decision issued on November 1, 2013 (PHC Decision) for the Application to amend Water Licence 2AM-MEA0815 (the Amendment Application), outlining the procedural requirements and timetable for the written public hearing, no further or additional submissions were received by the deadlines indicated in the PHC Decision. Consequently, the Board will consider the Amendment Application submitted by Agnico-Eagle Mines Limited (AEM or the Applicant) and technical written submissions filed to date by the Kivalliq Inuit Association (KivIA), Aboriginal Affairs and Northern Development Canada (AANDC) and Environment Canada (EC).

The Board has placed this information on its public registry. For further details on the existing Type "A" Water Licence, this Amendment Application for the Meadowbank Project and all technical review submissions provided to date consult the NWB's FTP site under 2AM-MEA0815 (user name: "public", password: "registry") at the following link:

ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA0815%20Agnico/

The Board wishes to advise all interested parties that the Public Hearing record for the Nunavut Water Board's Public Hearing regarding Agnico-Eagle Mines Limited's Type "A" Water Licence 2AM-MEA0915 Amendment Application for the Meadowbank Gold Mine Project is now **CLOSED**. Accordingly, no additional evidence in respect of the Amendment Application may be filed with the Board and the Hearing Record will consist solely of the documentation filed in advance of the Hearing date, January 17, 2014.

Now that the Hearing Record is closed, the Amendment Application will be remitted to the Panel who will, in due course[1], issue a decision report to the Minister of Aboriginal Affairs and Northern Development Canada regarding whether or not to issue the requested amendment to the Type "A" Water Licence to the Applicant. If the Board's decision is to recommend that an Amended Type "A" Water Licence be issued, the Board will also attach a copy of the amended licence to the decision report for the review of the Minister.

As indicated above, the Public Hearing Record is now closed and the Panel will now undertake deliberations. During this time, the Board will not provide any further comment regarding this

[1] Typically within thirty (30) days from the date the Application is remitted to the Panel.

Amendment Application until the Board publicly issues its decision regarding the Amendment Application.

The Nunavut Water Board (NWB or Board) would like to take this opportunity to thank the Applicant, AANDC, EC and the KivIA, as well as the community of Baker Lake for their participation during the NWB's consideration of this Amendment Application, including providing the Board with technical review comments, identifying concerns and issues during the Technical Meeting and Pre-Hearing Conference and working together to address issues that arose during the licensing process in a timely manner.

Regards,

Original signed by:

Phyllis Beaulieu
Manager of Licensing

Appendix C

AGNICO EAGLE

January 5, 2014

Karén Kharatyan
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0

Dear Karén

RE: Proposed Water Level Trigger for Weekly Monitoring

In response to the question during the Meadowbank Mine Type A Water License freshwater use Amendment technical meeting and to the email from the NWB dated February 3rd, 2014, AEM has developed trigger levels for increasing monitoring from monthly to weekly monitoring and to engage the NWB. These will also be included in the updated Water Management Plan.

Third Portage Lake has a pre-operation volume of 446,200,000m^3 and a pre-operation water level of 133.68 masl. As per Meadowbank's Type A Water License conditions, AEM monitors water levels in Third Portage Lake on a monthly basis. AEM is proposing two trigger values, below which measures will be taken to prevent impacts to Third Portage Lake. The trigger values were derived based on the maximum permissible winter water withdrawal volume of 10%, according to the DFO "Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut", June 21, 2010.

If the water volume is decreased by 5%, or there is a water level decrease of 0.68m (133.0 masl), AEM will increase the water level monitoring from monthly to weekly. If the water volume in Third Portage Lake decreases by 10%, or there is a water level decrease of 1.35m (132.33 masl), AEM will initiate a review of the mine site water balance, evaluate the natural contributing factors (eg. precipitation) and engage in consultation with the NWB to determine measures to protect the aquatic ecosystem.

Should you require any further information or questions please contact the below.

Regards,

Stéphane Robert
stephane.robert@agnicoeagle.com
819-763-0229
Manager Regulatory Affairs Nunavut

Ryan Vanengen
rvanengen@agnicoeagle.com
519-400-7979
Environment Biologist

Appendix D

AGNICO EAGLE

AANDC, EC, KIA, NWB & AEM – Meadowbank Water Management

Date: January 22nd, 2014– 14:00 – 15:30
Subject: Annual report workshop to provide a "guided tour" of the 2012 Meadowbank annual report.
Location: Hosted by AEM via WebEx
Participants: AEM - Stephane Robert (WebEx host and main presenter), Kevin Buck, Ryan VanEngen, Pierre McMullen; NWB – Karén Kharatyan, Phyllis Beaulieu; KIA- Luis Manzo; AANDC- David Abernathy and Ian Parsons; EC- Anne Wilson, John Price, Michael Mohammed.

Attachments – see PDF presentation sent to participants on January 20th and an updated version was sent on January 22nd.

Introduction

"Round table" introduction of all parties participating in the workshop and we reviewed the outline of the presentation. The group reviewed the purpose of the meeting, which was to have a separate workshop or presentation by WebEx and provide an overview of water management planning at Meadowbank.

A Meadowbank update was provided that included the production data, tailings deposition planning, waste rock estimates, waste rock storage, site layout, tailings storage and attenuation pond, and Vault Pit updates. One point of clarification in the slides is that Teardrop pond is referred to as the Stormwater management pond in the Type A water license.

Questions

EC (AW) - How are you controlling Vault marginal grade run-off near the Vault Waste Rock Pile, which presumably has a higher PAG potential?

AEM- All of the water flow is directed to Vault Pit which is pumped into the Vault attenuation area.

EC (AW) - Could you provide to us an update on the groundwater wells and monitoring program? Are there plans for groundwater monitoring at Vault?

AEM – We plan to replace one of the damaged wells near the south cell of the TSF to evaluate potential seepage. The reality is that we have very little success maintaining these wells so we have developed other ways to monitor groundwater quality including pit wall groundwater seepage. We have seen very small seepage from the Portage pit. We see some seepage into the Goose pit and we monitor it. In the future, we will continue to monitor any seepage in the pit alongside the groundwater monitoring. Vault pit is a shallow pit and remains within continuous permafrost; there is a closed talik, and no monitoring was plan in the EIS or in the license A.

Water Management and Freshwater Consumption

As per the slides provided, the presentation reviewed: pit water management, which is stored in the attenuation pond, pumped to the north cell or treated as needed and discharged into TPL thru a diffusor; mill water management; tailings storage; camp water management; and the overall site water management.

Questions

NWB (KK) – Last year there was a problem beaching in tailings and overall tailings deposition; could you provide an update?

AEM- Yes, last year we had a problem with our tailings management that resulted in our reclaim barge pumping in tailings sludge and subsequently freezing in the tailings reclaim area. As a result, we made significant changes that have allowed MBK to increase the number of deposition points, create better beaches and deeper water zones at the reclaim barge. Furthermore, we have improved our pumping system by installing a booster pump so it is easier to change deposition points. Lastly, we have in-house expertise that allows us to monitor and remodel the tailings deposition on a daily basis. All of this has allowed Meadowbank to improve the water management, specifically in the reclaim pond of the North Cell.

AANDC (DA) – When the south cell becomes tailings deposition where will the attenuation water be stored?

AEM- Pit water will be transferred into the Goose pit in 2015, when mining in the Goose pit will be finished. We will annually remodel the water quality to ensure that prior to breaching the dikes, water quality will meet CCME.

EC (AW) - It seems that the ammonia levels in the pit are low (9-10 ppm) – which means the ammonium management plan is working effectively.

AEM – Yes and emulsion reduces the residual ammonia. As for the water use increase, it is important to note that Meadowbank has invested $400,000 in mill changes to reduce the freshwater consumption and nearly brought us back to what was originally predicted and formed the basis for the 700,000 m^3 in the original license. Even with these changes, we feel our actual use will be between 70m^3/hr and 90m^3/hr and that is why we need an estimated 37.83 % contingency and have applied for the freshwater use amendment of 1,150,000 m^3.

Review of the TSF Reclaim Barge Problem in 2013

As described earlier in the presentation, problems at the reclaim barge in the North Cell, led to more freshwater use than expected. This is also due to higher than expected water trapping in the tailings (by capillary action and ice lens formation), increases in mill production and less precipitation than originally predicted. At the same time, in 2013, additional optimization efforts at the mill were finalized and assisted in reducing freshwater consumption which has more or less offset the freshwater needs that resulted from increased mill production.

No questions for this section of the presentation.

Water Quality

We reviewed SNCs 2012 water management plan and predictions for water quality during pit reflooding. As discussed, Goose pit will be reflooded beginning in 2015, Portage in Q4 2017/Q1 2018. In total 45Mm^3 of freshwater will be required. Furthermore we discussed the CN destruction system and the CN

WAD levels at the reclaim barge – which have shown a steady decline since 2012.

Questions

EC (AW) - What is the source of elevated chloride?

AEM- We add calcium chloride to prevent freezing in the dome and as a dust suppressant.

EC (AW) – Any way to increase CN destruction (below 15 mg/L)?

AEM – Yes we can increase the destruction, however that would require increase reagent shipment and with the amount of pyrite, it may not improve CN destruction by very much. Furthermore, the CN levels in the reclaim pond are very low which makes improvements in the CN destruction redundant.

EC (AW) – When modelling the portage pit mixing, is a chemocline assumed?

AEM- Based on work by SNC-Lavalin, no chemocline is assumed in the current model and the water is fully mixed.

AANDC (DA) - Is there waste rock in goose pit?

AEM – At present there are no plans to backfill Goose pit, rather sections of portage pit are being backfilled.

Closing

KIA (LM) –We will be in touch regarding the changes to the freshwater use compensation agreement.

AEM- Yes we will meet soon to discuss these changes.

WATER MANAGEMENT MEADOWBANK MINE

JANUARY 22, 2014

AGNICO EAGLE

AGENDA

- Meadowbank update
- Water Management
- Fresh water consumption
- 2013 TSF Reclaim Water Problem
- Water Quality

MEADOWBANK UPDATE

AGNICO EAGLE

MEADOWBANK OVERVIEW

AGNICO EAGLE

Mill Throughput:	11, 300 tpd
Metallurgical Au Recovery:	94%
Mining Method:	Three Open Pits
Tonne moved	100 000 tpd
Average annual production:	
Life of Mine:	360,000 oz Au
Open Pit Mineral Reserve:	2.2 million oz Au

PRODUCTION DATA

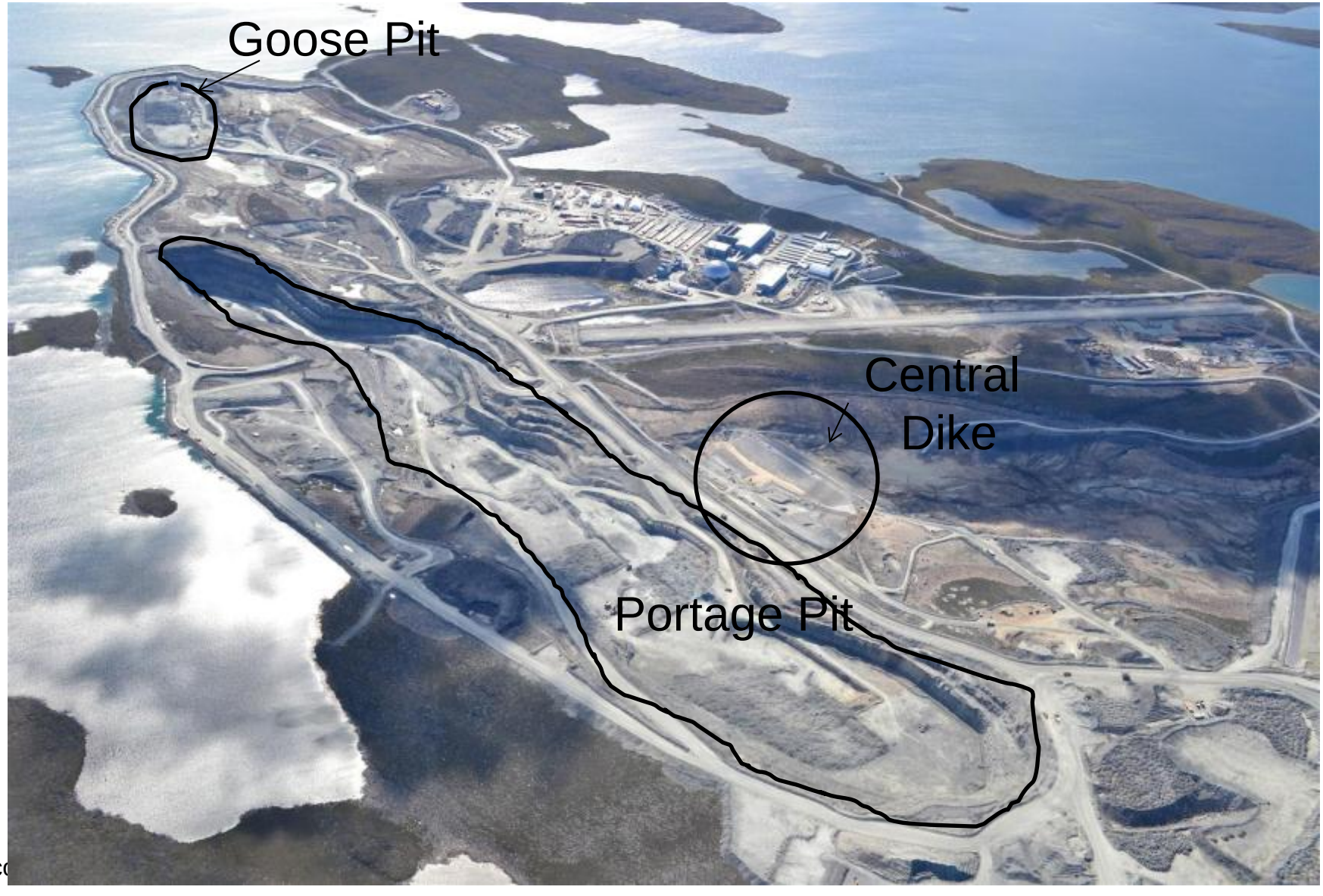
Ore : 27.9 Mt over 7.5 years

Tailing: 27.9 Mt over 7.5 years

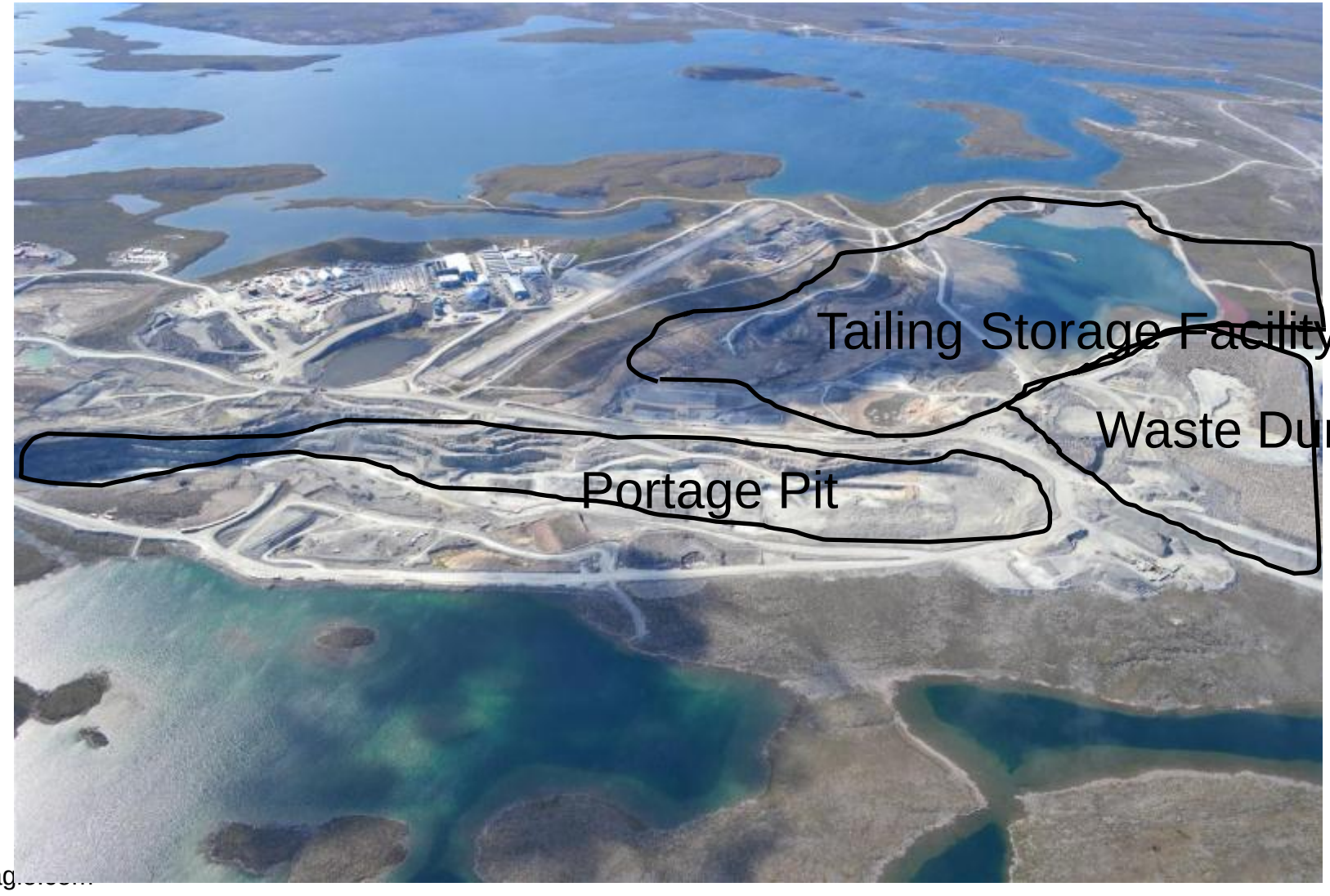
Waste: 191 Mt


GOOSE PIT
PORTAGE PIT

AUGUST 7, 2012



AUGUST 7, 2012



PORTAGE PIT, SEPTEMBER 2012

AGNICO EAGLE

SEPTEMBER 22, 2013

AGNICO EAGLE

SEPTEMBER 2011, BAY GOOSE DIKE

SEPTEMBER 2012, GOOSE PIT OPERATION

SEPTEMBER 2013, GOOSE PIT OPERATION

TAILINGS

As of September 31, 2013

North Cell (2010-2014)

Water Volume : 1,419,447m^3

Cumm. Stored Tailings :

9,242,754m^3

11,183,732t

Total capacity:

14,089,362m^3

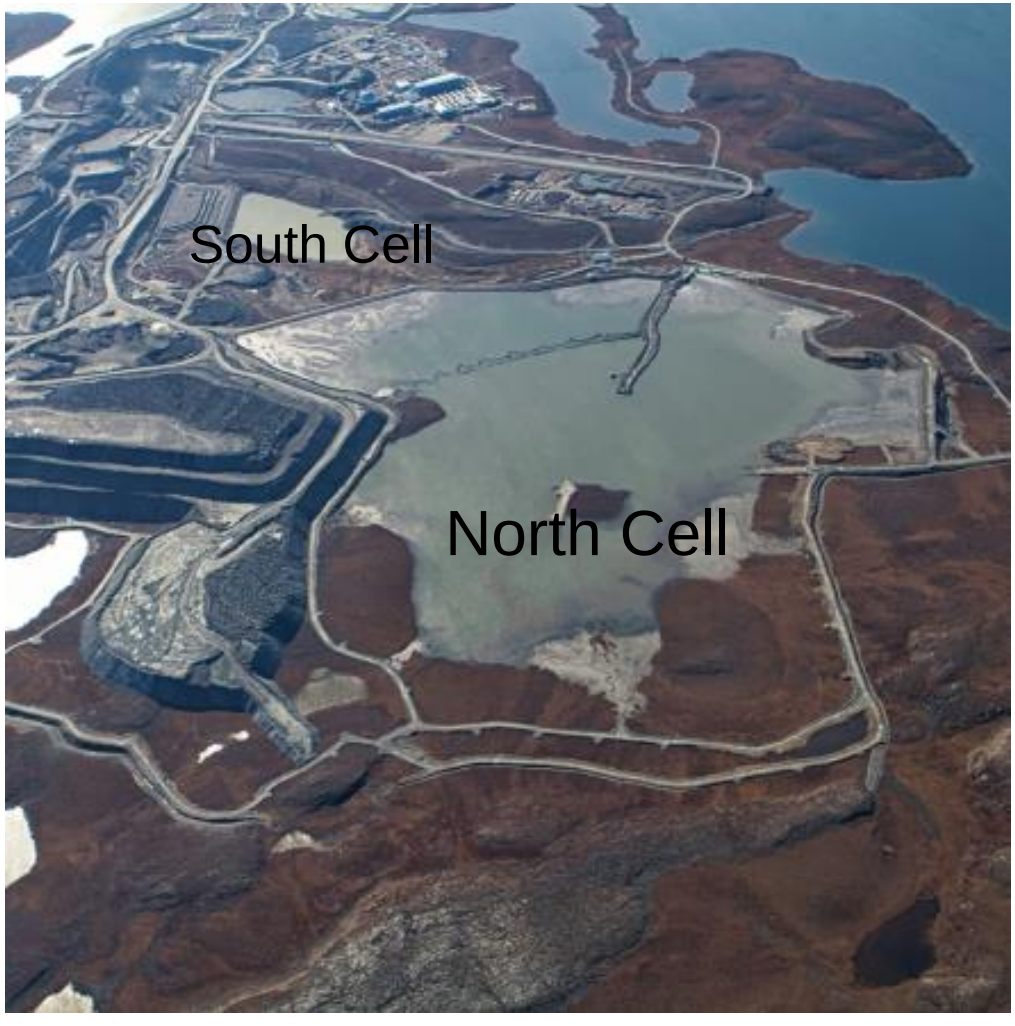
17,449,257t

South Cell (2015-2018)

Total capacity:

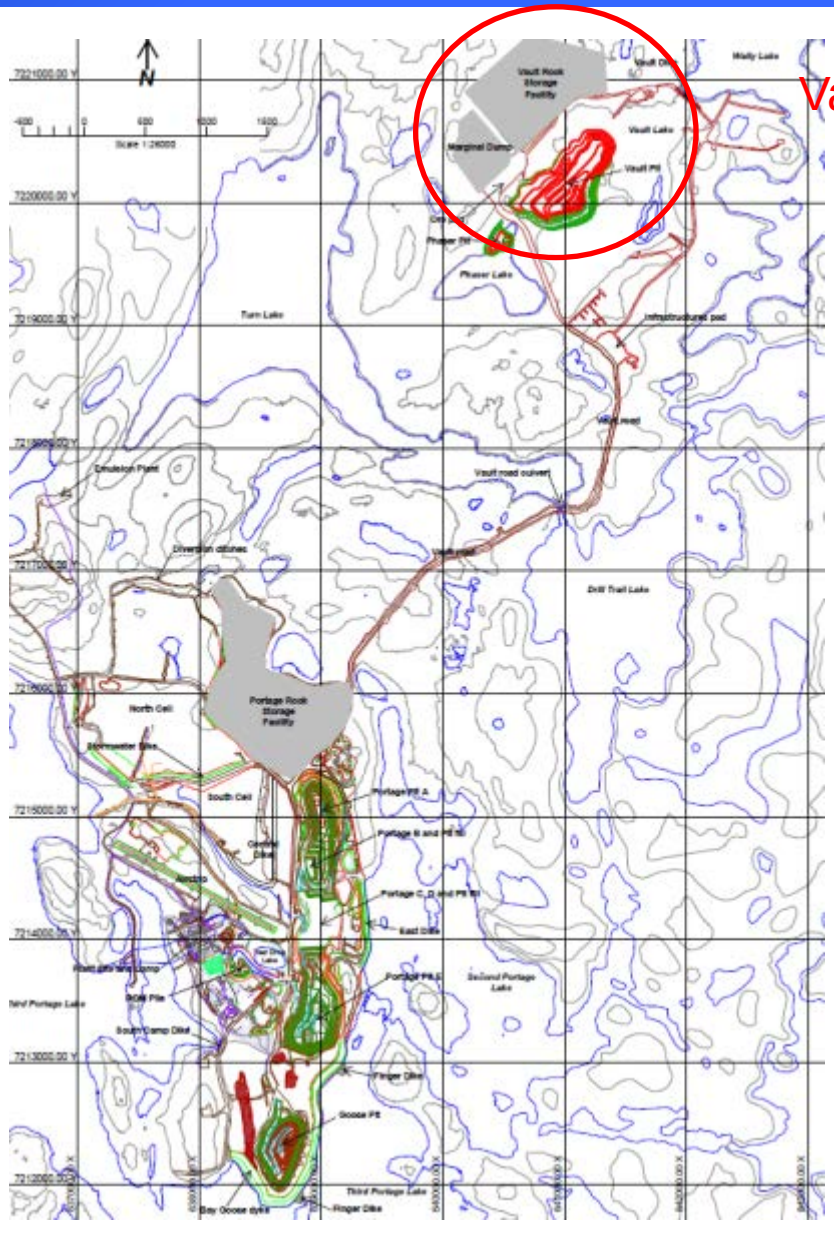
8,624,696m^3

10,435,882t



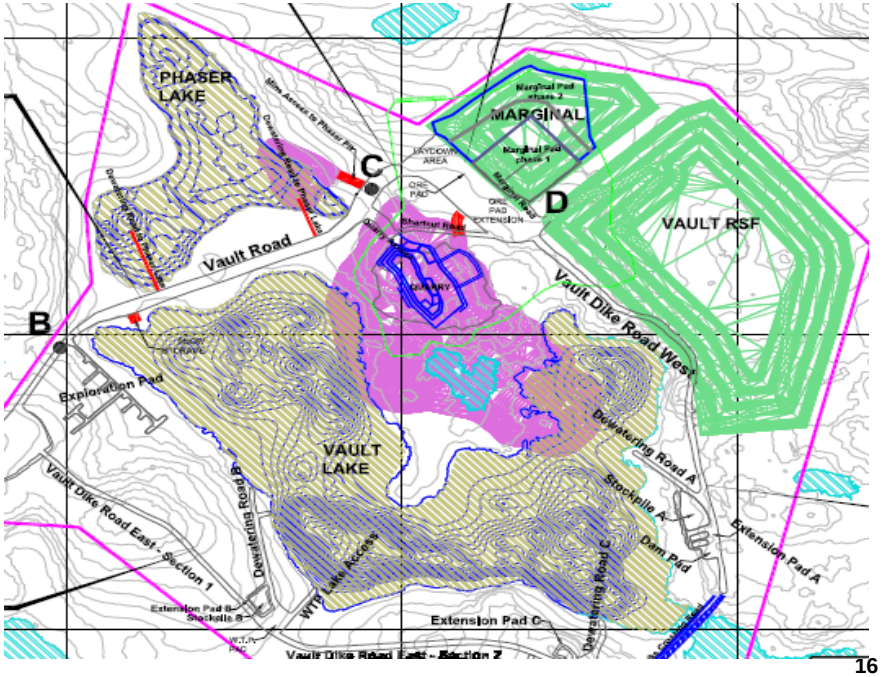
VAULT PIT

Vault is a 50M tonnes remote open pit located 8km North-East of the main camp. It will be accessible by road.



SEPTEMBER 2013 - VAULT PIT

- Vault Dikes constructed in March 2013
- Pre-stripping started
- Dewatering 2.2Mm^3 completed (2.7Mm^3 in total)
- Fishout completed in September
  - 2821 fish removed
  - 54% transfered in Wally Lake
- Phaser Pit in evaluation
  - Final decision in 2014
  - If positive decision, Phaser Pit will be included in water License renewal



WATER MANAGEMENT

AGNICO EAGLE

GENERAL SITE LAYOUT

Pits

- Portage Pit
- Goose Pit
- Vault Pit (further North-East)

Tailings Pond

- North Cell
- South Cell

Rock Storage Facility

- Portage Rock Storage Facility
- Vault Rock Storage Facility (further North-East)

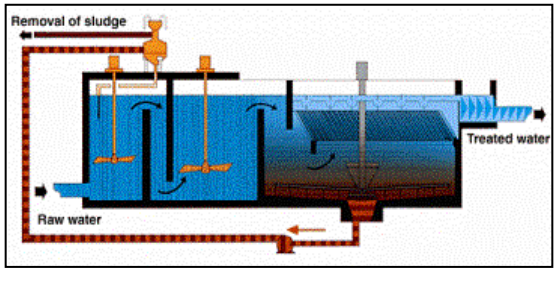
Mill Area

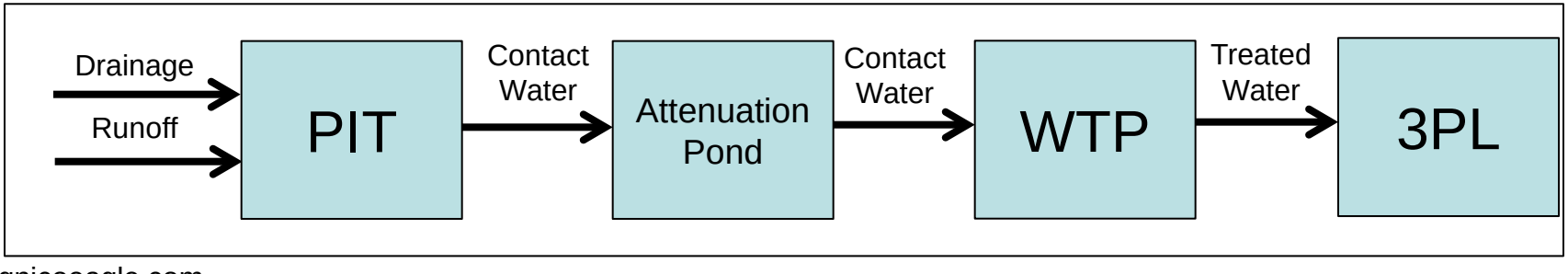
- Mill
- Camp
- Service buildings

PIT WATER MANAGEMENT

There are two water inflows into the pits: surface water (runofff) and ground water (drainage).

- Contact water is pumped out of the pit to the Attenuation Pond (currently the South Cell).
- Contact water in the Attenuation pond is treated in the Water Treatment Plant (WTP) by an Actiflo.
- The treatment consists of suspended solids removal.
- This water is then discharged into Third Portage Lake (3PL) through a diffuser.





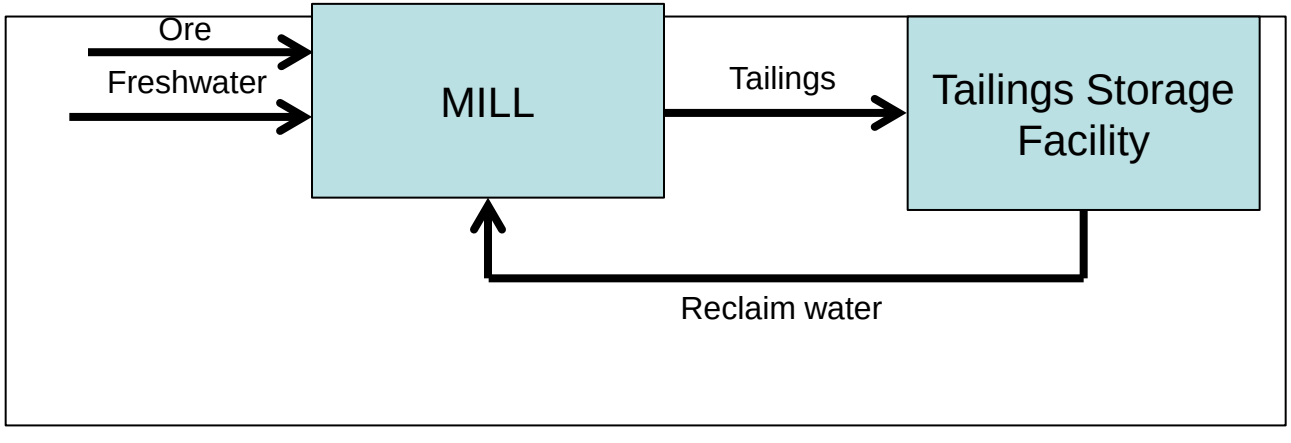
MILL WATER MANAGEMENT

The mill is the main water consumer on site.

There are three sources (inflows) :

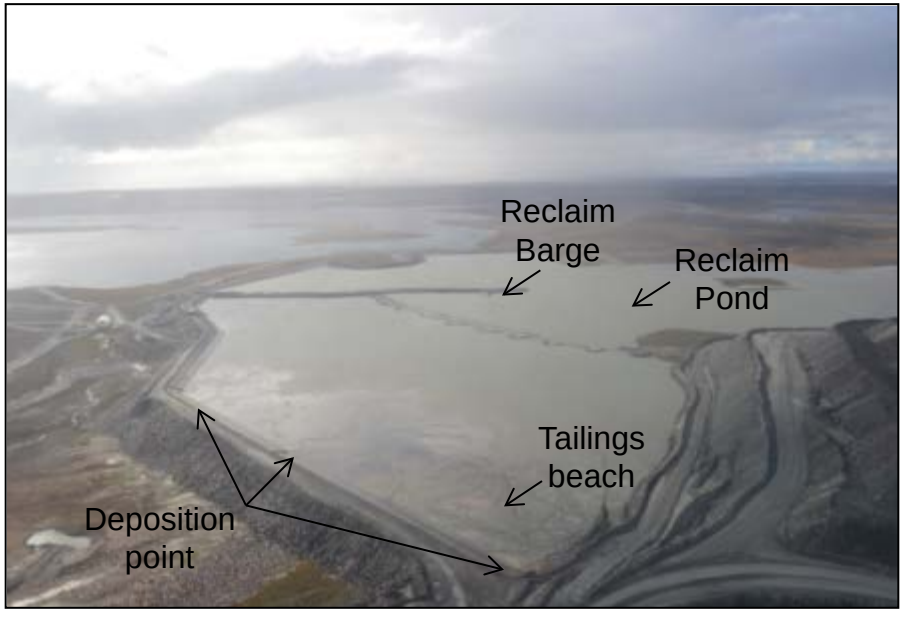
- freshwater, water pumped from Third Portage Lake;
- reclaim water, which is process water pumped from the tailings pond;
- water contained in the ore (ice, snow, etc).

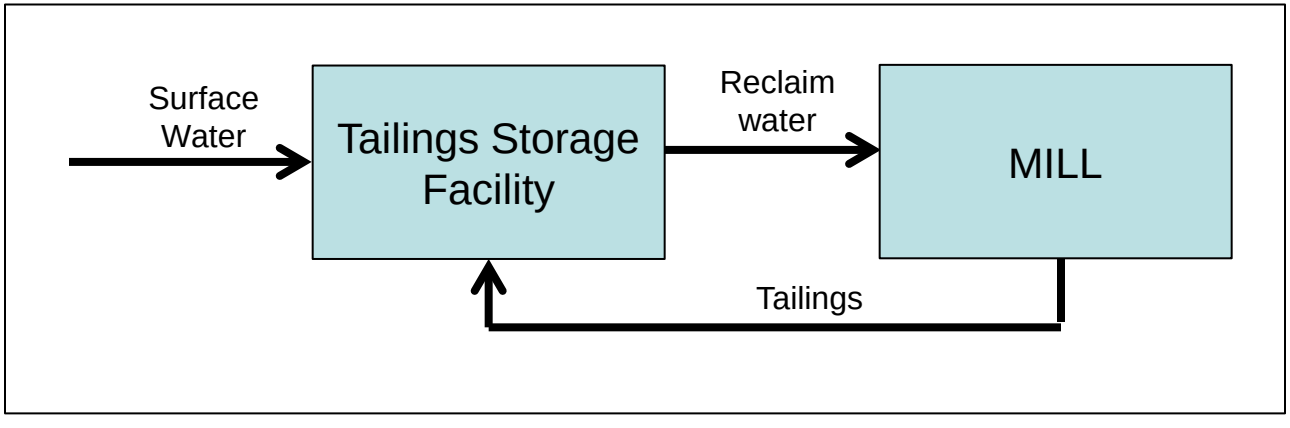
Tailings is roughly a 50% solid and 50%. The tailings are pumped to the tailings storage facility (TSF).



TAILINGS STORAGE FACILITY WATER MOVEMENT

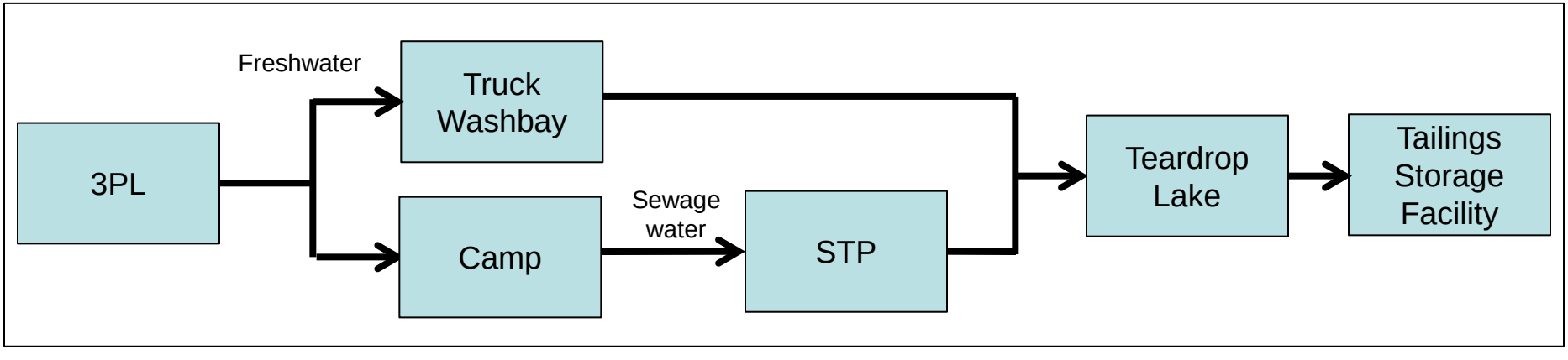
- The mill discharges tailings into the Tailings Storage Facility through deposition points that surround the basin.
- The solid particles settle down near the deposition point creating a tailings beach.
- The liquid portion of the slurry will continue to flow eventually reaching the reclaim pond.
- A barge is set up in the middle of this pond and its main function is to pump reclaim water back to the mill.



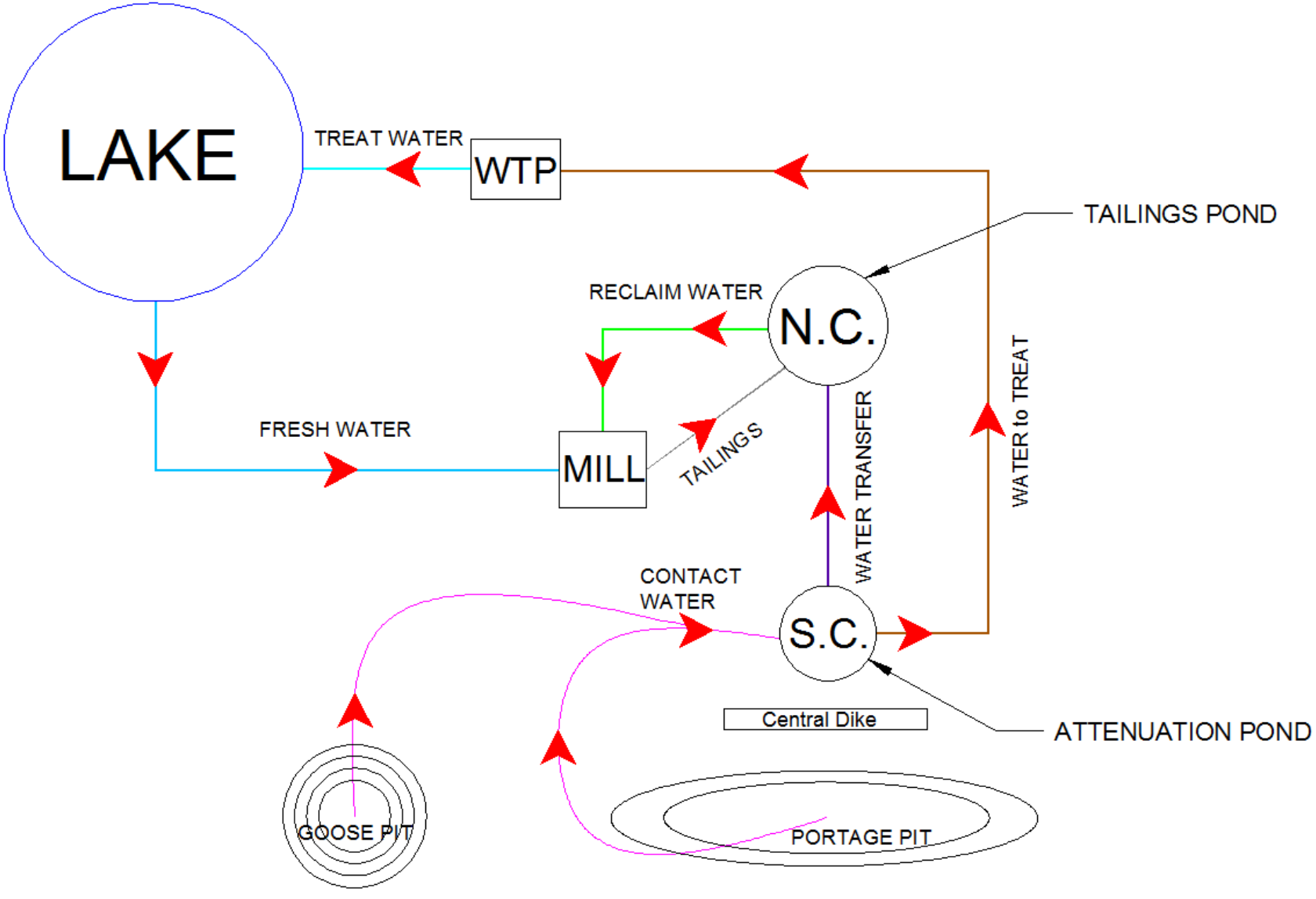


CAMP WATER MANAGEMENT

- Water coming from TPL is used as freshwater for the camp consumption and also within the garage primarily in the truck washbay.
- Sewage is treated by the sewage treament plant (STP) before being discharged into Teardrop Lake. This lake acts as a reservoir that stores treated sewage effluent from the camp and the service building until the end of winter.
- During the summer season, this basin is pumped to the Tailings Storage Facility.



GENERAL SITE WATER MANAGEMENT



GENERAL WATER MANAGEMENT KEY POINTS

- Water management at Meadowbank is inter-connected and thus a change in the system will have downstream impacts on the overall water balance.

- What comes into the system must come out; however one permanent major water loss within the system is the water entrapped within the tailings solid fraction; in addition a temporary water loss is associated with ice formation in winter only (which reduces the available water volume from our Reclaim Pond).

- The need for the WTP comes from the limited volume which the South Cell Attenuation Pond can contain without potentially damaging the surrounding infrastructure (i.e. Central Dike).

- The mill has a fixed water requirement composed of both fresh and reclaim water; the requirements may vary slightly over time due to the dynamic nature of the ore, however if we want to reduce freshwater to the mill, we need to increase the inflow of reclaim water.

FRESH WATER CONSUMPTION

AGNICO EAGLE

BACKGROUND INFORMATION

- The current fresh water consumption allowance was requested during the Water License process conducted in 2007 / 2008.

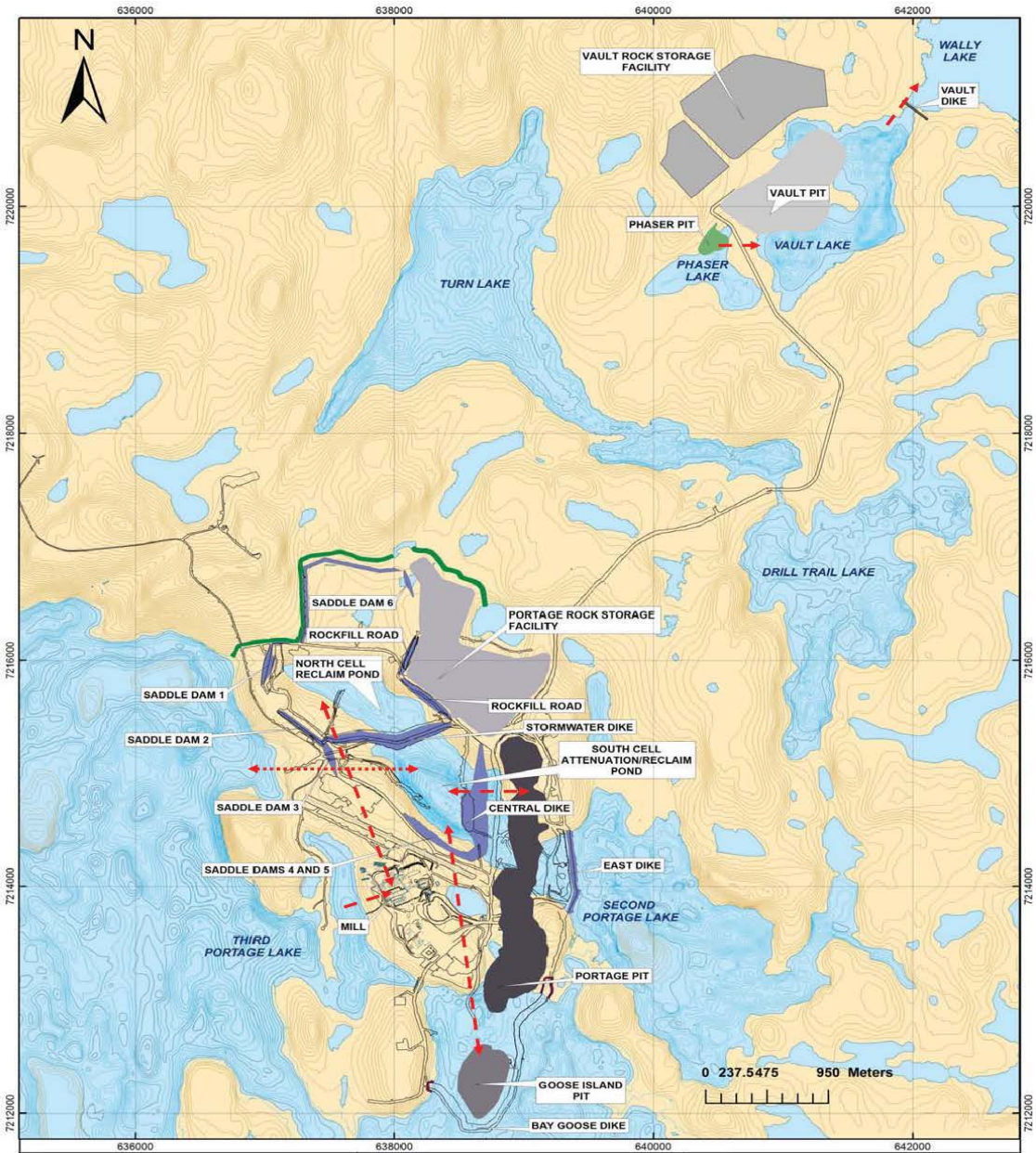
- Initial modeling estimated fresh water consumption (Cumberland, 2005) at peak production for the Meadowbank mill at approximately **60 m^3/h of fresh water** and **237 m^3/h of reclaimed water** from the tailings slurry.

- The existing type A Water License was obtained from the NWB on June 9th, 2008; License states that total volume of fresh water for all uses shall not exceed 700,000 m^3 per year (equivalent to 80 m^3/h) -> Part E, Item 3

- The existing Meadowbank Water License allows AEM to obtain fresh water from Third Portage Lake for domestic camp use, mining, milling and associated uses -> Part E, Item 1

WATER MANAGEMENT FEATURES

- 90% of fresh water use is for Mill ore processing and associated operations
- 10% of fresh water is used to make up the balance of mill and camp requirements
- Tailings water is ponded (“reclaim pond”) within the TSF and pumped from the reclaim barge to the mill
- The South Cell of the TSF is use as the attenuation pond -> stored contact water



REASONS FOR AN AMENDMENT APPLICATION

- The revised site wide water management plan (new model)(SNC Lavalin, 2013) notes a deficit in reclaim water starting in May 2013:

- Recent issue with reclaim barge has caused a temporary increase in fresh water consumption until barge repaired in August 1st, 2013

- Despite fresh water reductions, AEM has exceeded the license limit (700,000 m^3) for the last 3 years;
  - 2010: 1,148,505 m^3
  - 2011: 1,088,254 m^3
  - 2012: 1,044,675 m^3

BACKGROUND CONSUMPTION

- Use of fresh water in 2009 (site construction) was 36,451 m^3

- July 2009 : Water Management Plan was revised which described water management, infrastructure, water balance, and water quality and monitoring, based on up-to-date mine development plans

- Mill processing began in January 2010

- 2010 Fresh water use rates were higher than expected with 1,050,000 m^3

  -> approximately 120 m^3/h vs 80 m^3/h permitted by the Water Licence

PRIMARY CAUSES OF 2010 INCREASE IN FRESH WATER CONSUMPTION

AGNICO EAGLE

1- Initial water balance assumed that water from the south section of the Second Portage Arm would be used as freshwater:

-> Could not be used because of the TSS content and the fact that the supply was not constant nor consistent throughout all four seasons of the year

2. Density of the final tailings slurry was lower than expected (in the model).

-> Initial design = tailings slurry density of 50.8% solids by weight;

-> During severe winter conditions, low density was problematic for pumping;

-> Final combined tailings slurry density was adjusted to 35% solids to ensure that the slurry could be pumped to the tailings containment area with sufficient velocity to prevent sanding in the tailings pipeline.

3. Water balance didn't account for water requirements during mill shutdown periods.

4. Water consumption for the wash bay at the truck shop was not included in the original water balance. ~300,000 m^3/year of fresh water is required to wash all the vehicles on site.

BACKGROUND CONSUMPTION

- Updated Water Management Plan in September 2010
- A new water management plan was initiated, but the mine development plans underwent a significant change, including a decrease in the life of mine (LoM) from 2020 to 2017, so the water management plan had to be revised
- Works to reduce fresh water consumption in 2011 included decreasing water used in the truck wash bay and increasing use of reclaim water
- Production increased from 2,030,000 tonnes milled in 2010 to 2,980,000 tonnes in 2011, total fresh water use remained relatively steady at 1,090,000 m^3

BACKGROUND CONSUMPTION

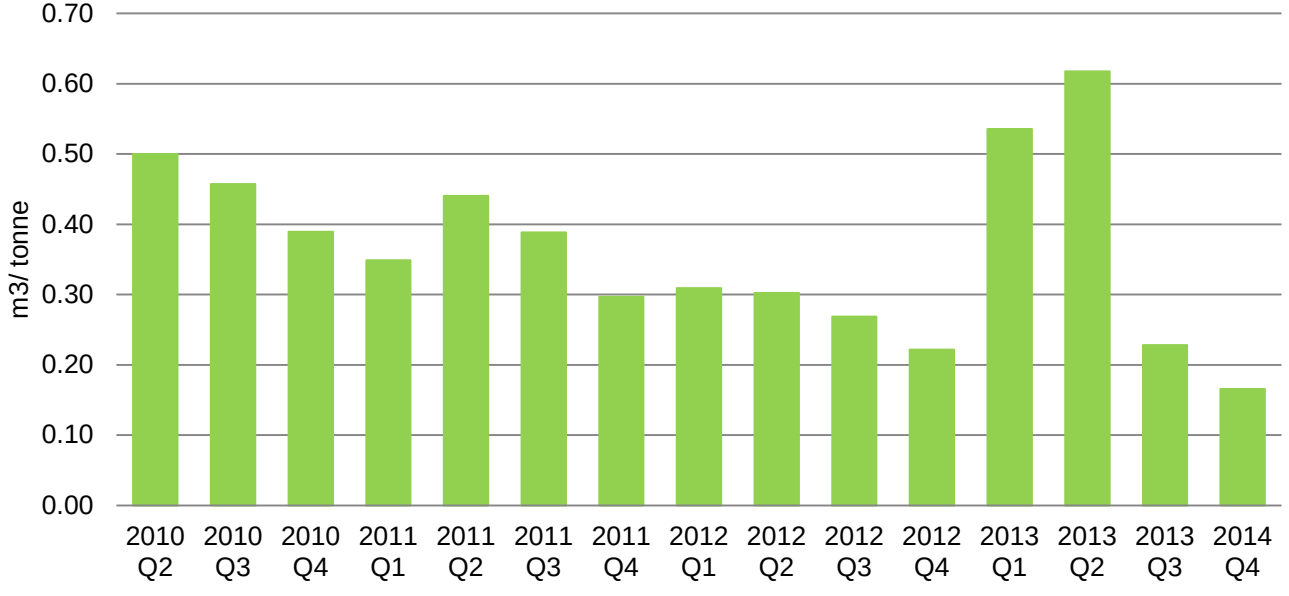
- A new water management plan was commissioned in 2012
- During this year, AEM worked diligently to reduce fresh water consumption by re-evaluating all of the processes using fresh water at the mill, as well as tailings deposition plans and water retention rates in the tailings.
- Significant reductions were achieved, despite a further increase in production to 3,820,911 tonnes milled in 2012
- Total fresh water usage in 2012 (1,040,000 m^3) was still above the permitted level. However, rates were low enough after implementation of the action plan (90 m^3/h in December, 2012) that the target of 700,000 m^3 was expected to be achieved in 2013

BACKGROUND CONSUMPTION

- Reclaimed water has accounted for the majority of the mill's water intake (73% in 2012), with the balance obtained from ore water (1 % in 2012) and fresh water (26 % in 2012).

- Significant success at engineering solutions to optimize fresh water use:

  -> Reduction from 0.46 m^3/tonne processed in Q3 2010 to 0.22 m^3/tonne in Q4 2012.



MILL FRESHWATER REDUCTION

Freshwater Consumption Status

Users	Consumption (m^3/hr)	Could be switched to reclaim
Water used for reagent preparation • Metabisulphite • Cyanide • Caustic • Copper sulphate • Lime	19.0 (all together)	Yes
Water used for : • Flocculant preparation • Flocculant dilution and dilution	18.0 (all together)	Yes Yes
Water used for : • Stripping circuit • SAG gear box and lube unit oil cooling • Ball mill gearbox and lube unit oil cooling	4.0 18.0 18.0	Yes Yes
Water used for: • Slurry pump gland water seal	42.0	Yes
Total:	119	

MILL FRESHWATER REDUCTION

Freshwater Consumption Reduction Strategy

Objective	Status	Completion date
Scaling problem Elimination in reclaim water piping	A chemical treatment approach was developed and installed earlier in 2012. Last water analysis campaign is showing major improvement in reduction of scale formation.	Completed in May 2012
Use of reclaim water for reagent preparation	Some chemical interactions are foreseen with some of the reagents. However, we will go ahead with the conversion of the lime water addition.	Mid October 2012
Use of reclaim water for flocculant dilution	Flocculant dilution water was already switched to reclaim which represent a reduction of 18 m^3/hr.	Completed in August 2012
SAG and Ball mill gear box and lube unit cooling	Based on the water analysis, we need to replace our brass heat exchanger to a 316SS heat exchanger. 6 heat exchangers in total.	Completed in December 2012
Slurry pump gland water seal	Looking at options to treat the reclaim water to satisfy this application.	Completed in July 2013

2013 RECLAIM PROBLEM

AGNICO EAGLE

2013 RECLAIM PROBLEM

- During the winter 2013, Meadowbank experienced some problems with the reclaim barge in the North Cell which led to its shutdown;
  - Freshwater was used only at the mill to compensate for the lack of reclaim water going to the mill (February to March 2013)

- A contingency pumping system was set up in the North Cell to resume the reclaim water pumping, reducing the freshwater requirement (April 2013)

- Subsequently, the contingency pumping system was optimized in order to further reduce the freshwater requirement at the mill (July 2013)

- Optimization efforts at the mill were finalized to reduce freshwater requirements (September 2013)

Month	Average freshwater Flow (m^3/hr)	Total freshwater Volume (m^3)	Cummulative 2013 freshwater Volume (m^3)
Jan	92	68,558	68,558
Feb	179	120,469	189,027
March	474	352,622	541,649
April	294	212,000	753,649
May	258	191,626	945,274
Jun	321	231,088	1,176,362
July	118	87,546	1,263,908
Aug	133	98,955	1,362,863
Sept	72	51,830	1,414,693
Oct	89	66,541	1,481,234
Nov	83	59,622	1,540,855
Dec	63	46,946	1,587,801

Table summarizes the freshwater consumption in 2013 per month. These amount of freshwater does not include water use at the Emulsion Plan (2,276 m^3) and for clean reclaim pipe (3,500m^3).

2013 RECLAIM PROBLEM

January 2013

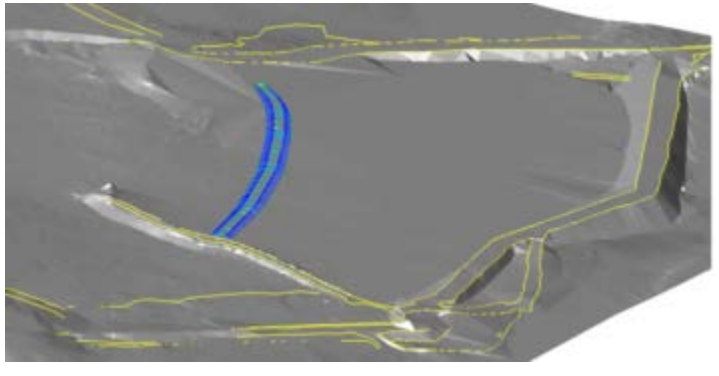
- It was observed that the tailings (slurry) was flowing over the tailings beach through long channels

February 2013

- Slurry was pumped to the mill by the reclaim pump
- It was also observed that the reclaim barge no longer floated (i.e. did not follow the ice elevation)
- Mill began running only with freshwater

March 2013

- An internal structure was built as a mitigation technique to prevent deposition from the South to reach the reclaim pond
- An extension of the reclaim road was also completed in order to install a contingency reclaim pumping system



April 2013

- Contingency pumping system started and reclaim water is sent to the mill at 250m^3/hr reducing the freshwater consumption

PROBLEM DEFINITION

Water deficit

- Only 60% of the slurry water becomes reclaim water. The other 40% is trapped inside the tailings pond by capillary action and ice lens formation

- The mill production for 2012 raised from 8,500 to 11,000 t/day and freshwater consumption was maintained at 80m³/hr (freshwater licence flow).

- The hydrology model for the site had been revised and reduces by 15% the total precipitation. Therefore the runoff water from the North Cell watershed was reduced by 15% to reflect real experience

Consequences

- Not enough water inside the TSF to perform good deposition
- Reclaim barge got stuck in the tailings
- AEM went over the annual freshwater volume of 700 000 m³ at the end of April 2013

PROBLEM DEFINITION

Tailings deposition practice

- Deposition point changes were linked with planned mill shutdowns.
- In January 2013 AEM added a tailings booster pump station to optimize deposition all around the TSF pond and without being linked to the mill shutdown
- The commissionning of the booster pump station took longer than predicted

Consequences

- Not able to perform proper deposition and create adequate beaches
- Beach slopes were low than planned which increased ice entrapment and reduced the North Cell tailings capacity. (Golder, 2009)

CURENT WATER BALANCE SITUATION

- 2013 total freshwater consumption of 1,587,801m^3 pumped from Third Portage Lake.
- The strategy for our internal water balance will be to target an annual average freshwater consumption of 82m^3/hr.
- Increase freshwater consumption during winter months to ensure that we do not enter into a water deficit in our tailings storage facility.

Month	Average Freshwater Flow (m^3/hr)	Total Freshwater Volume (m^3)	Cummulative Freshwater Volume (m^3)
January	90	66,960	66,960
February	90	62,640	127,440
March	90	66,960	194,400
April	90	64,800	259,200
May	70	52,080	311,280
June	70	50,400	361,680
July	70	52,080	413,760
August	70	52,080	465,840
September	70	50,400	516,240
October	90	66,960	583,200
November	90	64,800	648,000
December	90	66,960	**714,960**

CURENT WATER BALANCE SITUATION

Below we have a comparitative table to see the current internal water balance figures compared with the current water licence and the proposed amendment.

Year	Annual Total Freshwater Volume (m^3)	Current Water Licence Allowance Volume (m^3)	Current Water Licence Volume Difference (m^3)	Current Water Licence Percentage Difference (%)	Amendment Water Licence Allowance Volume (m^3)	Amendment Water Licence Volume Difference (m^3)	Amendment Water Licence Percentage Difference (%)
2013	1,593,578*	700,000	893,578	127.65%	1,870,000	-276,422	-14.78%
2014	714,960	700,000	14,960	2.14%	1,150,000	-435,040	-37.83%
2015	714,960	700,000	14,960	2.14%	1,150,000	-435,040	-37.83%
2016	717,120	700,000	17,120	2.45%	1,150,000	-432,880	-37.64%
2017	714,960	700,000	14,960	2.14%	1,150,000	-435,040	-37.83%

** Include water from Emulsion Plan*

As seen above, the proposed water licence amendment would provide AEM with the contingency required for operations not modelled within our water balance due to the undefined nature of these events (i.e. reclaim barge maintenance, etc)

WATER QUALITY

AGNICO EAGLE

WATER QUALITY SNC 2012 SUMMARY

- As per the SNC Water Management Plan 2012, the reclaim water (minimum of 750,000m^3) originating from the SC TSF Reclaim pond will be transfered to Portage and Goose in equal quantitites
- The Goose Pit flooding will begin in the first quarter of 2015
- The Portage Pit flooding will begin at the end of 2017, beginning 2018
- The total water required to flood both pits is estimated at 45.3Mm^3 (32.5Mm^3 for Portage and 12.8Mm^3 for Goose)

Figure 4-6: Goose Pit Flooding – Volume and Elevation

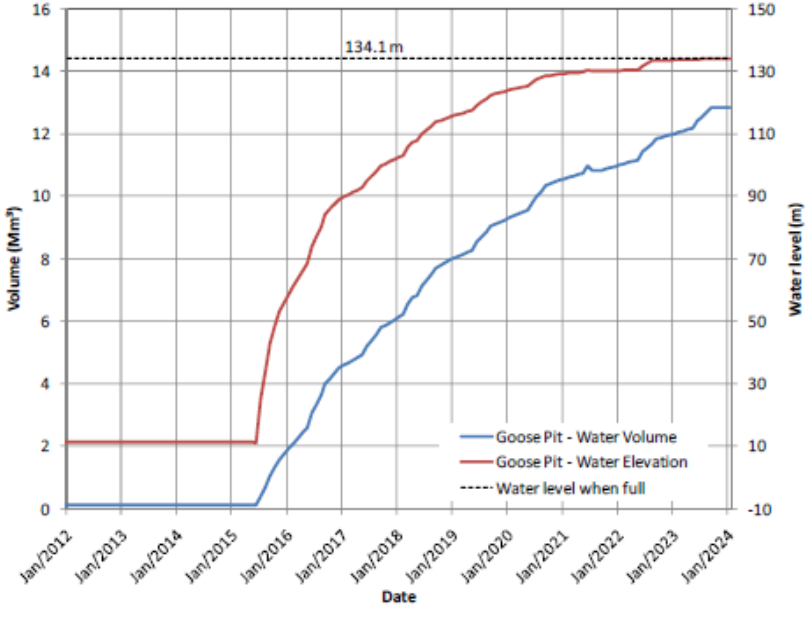
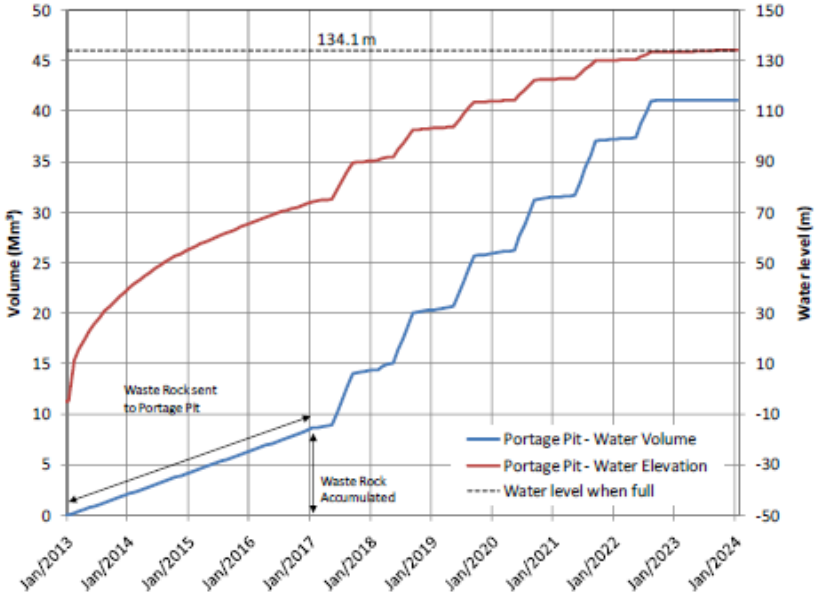


Figure 4-7: Portage Pit Flooding – Volume and Elevation



WATER QUALITY SNC 2012 SUMMARY

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Table 3-1: Average 2012 Mill Effluent Concentrations Selected for the Mass Balance Model

PARAMETER	AVERAGE 2012 MILL EFFLUENT CONCENTRATION (mg/L)
Total Cyanide (CN)	16.7 (1)
Copper (Cu)	28.3 (2)
Iron (Fe)	11.8 (2)
Ammonia (NH_3)	17.1 (3)
Nitrate (NO_3)	9.9 (3)
Chloride (Cl)	674 (3)

Table 3-2: Initial Concentration in the North and South Cells TSF Reclaim Pond

PARAMETER	INITIAL CONCENTRATION (mg/L)	
	NORTH CELL TSF RECLAIM POND (June 2012)	SOUTH CELL TSF RECLAIM POND (April 2015)
Total Cyanide (CN)	39.3	0.114[1]
Copper (Cu)	19.6 (2)	0.005
Iron (Fe)	7.4 (1)	1.3
Ammonia (NH_3)	1.0	0.15
Nitrate (NO_3)	8.6	8.6
Chloride (Cl)	626	39.5

WATER QUALITY SNC 2012 SUMMARY

AGNICO EAGLE

Table 4-3: Summary of Forecasted Concentrations in Portage and Goose Pits

PARAMETER	FORECASTED CONCENTRATION (mg/L)				CCME (mg/L)
	PORTAGE PIT		GOOSE PIT		
	April 2018 (initial)	Dec. 2025 [1] (end)	April 2018 (initial)	Dec. 2025 [1] (end)	
Total Cyanide (CN)	0.0163	0.00312	0.003	0	0.005 as free CN
Copper (Cu)	1.88	0.38	1.79	0.89	0.004
Iron (Fe)	0.85	0.17	0.81	0.41	0.3
Ammonia (NH_3)	0.83 (mg N/L)	0.17 (mg N/L)	0.79 (mg N/L)	0.40 (mg N/L)	0.86 (mg N/L)
Nitrate (NO_3)	0.41 (mg N/L)	0.08 (mg N/L)	0.39 (mg N/L)	0.19 (mg N/L)	2.9 (mg N/L)
Chloride (Cl)	29.7	6.0	28.3	14.1	120

WATER QUALITY SNC 2012 SUMMARY

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Based on the results of the water quality mass balance presented in section 4.2, treatment may be required for the copper and iron. Treatment should be undertaken at the Reclaim Pond, or prior to discharge in the Portage and Goose Pits. A potential treatment option for the removal of copper and iron prior to discharge in Portage and Goose Pit is caustic or lime precipitation. However, before such a treatment is installed, an evaluation of improving the cyanide destruction at the mill should be undertaken, to ensure (1) that the efficiency of the cyanide destruction system is maximized; and (2) that a separate water treatment operation for copper and iron removal is necessary.

IMPROVEMENT CN DESTRUCTION SYSTEM

- Main system -> SO_2/air cyanide destruction system at the mill.

- When there were issues with the SO_2/air cyanide destruction system -> the mill used sodium metabisulfite :

  -> pH control is difficult with this type of system, which leads to the re-dissolution of metals (i.e. high dissolved copper concentrations at the mill effluent);

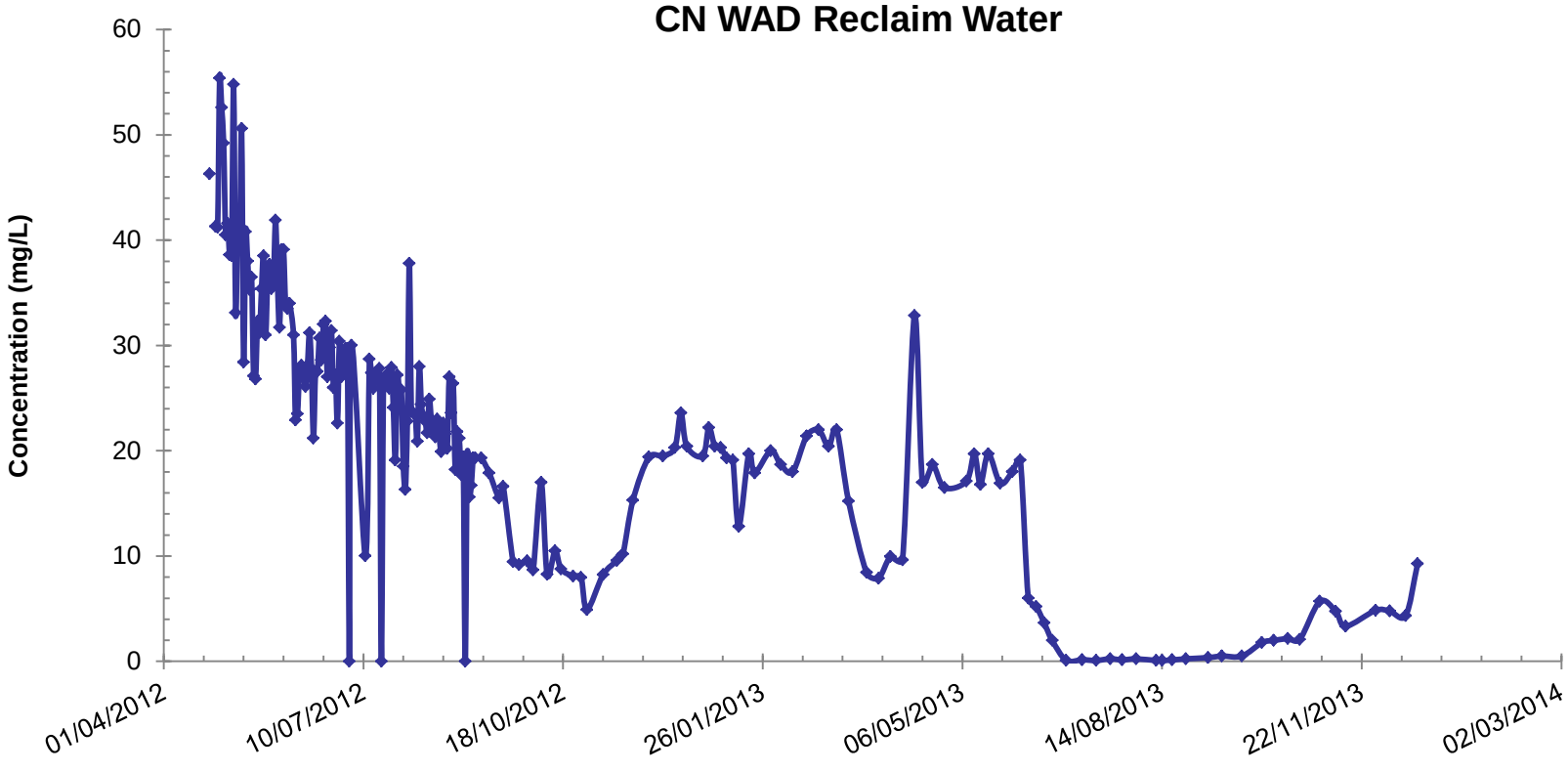
  -> Lack of required chemicals for this backup system lead to higher cyanide concentration at the effluent;

  -> System less efficient.

IMPROVEMENT CN DESTRUCTION SYSTEM

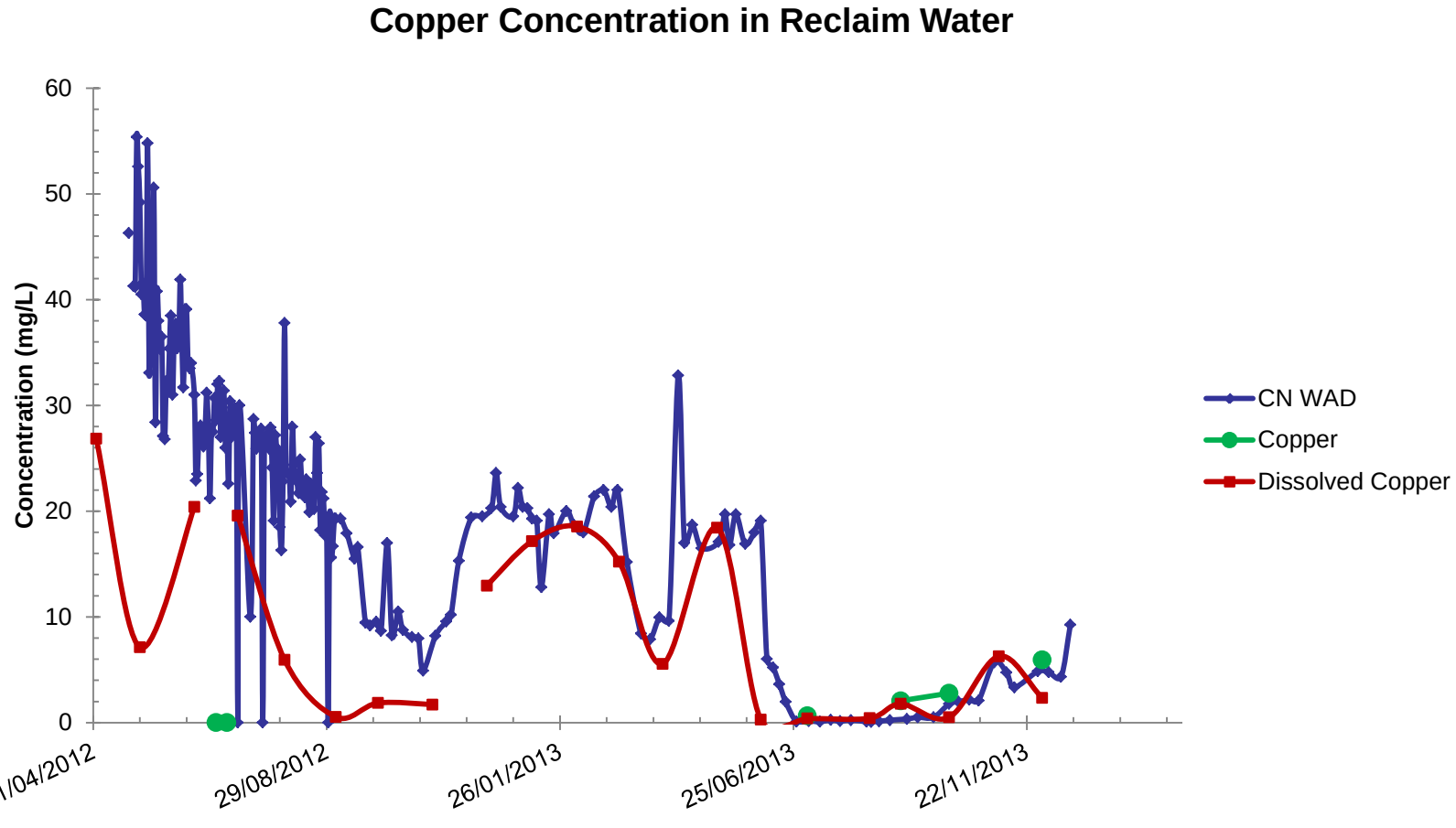
- End April 2012 : average 47 mg/L
- After CN destruction optimisation system

  -> average 16 mg/L which is near target at the mill (15 mg/L)
- In June CD WAD significantly decreases -> optimization + freshet + destruction by sunlight (UV)



IMPROVEMENT CN DESTRUCTION SYSTEM

- Cu concentration closely follows CN WAD concentration
- April 2012 - May 2013 : average 12 mg/L
- June 2013 – December 2013 : average 2.89 mg/L



MONITORING

- It is AEM's intent to closely monitor CN destruction at the mill to ensure CN and Copper are kept at optimal levels in the tailings. Currently AEM is required to monitor the water in the TSF only for dissolved metals, incl copper as per the Water License but will add Total Copper to our parameter list at assist in our monitoring and assessment

- This will minimize the likelihood that any treatment would be required prior to any water transfer from the future South Cell to Portage and Goose pits.

- In addition AEM will assess increasing and optimizing the reclaim water flow once the South Cell Tailings Facility becomes operational which will decrease the volume of any transfer to the pit.

• FUTURE CONT.

- In July, 2014 AEM will submit a Water License Renewal Application to the Board.

- The application will include an up to date Water Management Plan and Balance as well as an updated Water Quality Model, which will include the improved water quality observed in the North Cell at the present time.


MERCI !
THANK YOU !
MATNA !
QUESTION ?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WORLD
GOLD
COUNCIL
MEMBER

Appendix E

AGNICO EAGLE

January 7th, 2014

Ms. Sophia Granchinho
Monitoring Officer
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, Nunavut X0B 0C0
(867) 983-4615

Dear Ms. Granchinho,

Re: File 03MN107 - AEM Response to The Nunavut Impact Review Board's 2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project and Board Recommendations

As requested, the following information and comments are intended to address the recommendations outlined in response to the NIRB report dated November 27th, 2013 title *'The Nunavut Impact Review Board's 2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project and Board Recommendations'* made in accordance with the conditions of Project Certificate No.004.

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

NIRB Recommendation 1: The Board requests 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 for Screening File No. 10XN039. It is requested that this summary be provided within 30 days' receipt of the Board's recommendations.

AEM Response

On May 16th, 2011 AEM began consultations with the Baker Lake community members to discuss the proposed airstrip extension. Specifically, AEM consulted with HTO board members in the afternoon and hosted a community meeting in the evening at the Baker Lake community center. During these presentations AEM presented annual wildlife and fisheries monitoring information and responded to questions regarding the Meadowbank fire and the proposed airstrip extension. At this time the airstrip was planned to extend much further into Third Portage Lake and AEM presented conceptual fish habitat compensation plans; the HTO noted that "they generally agree that extension is good and that it was originally set up" when the project was proposed.

Due to geotechnical issues and associated construction costs, the proposed airstrip extension was halted and a shorter extension was considered. On February 23rd, 2012, AEM hosted a visit with the HTO board members to review the fisheries and wildlife annual monitoring results and discussed the changes to the proposed airstrip extension. The final details of the design were submitted to the NWB application in January 2013, and through the NWB process, and the intervention of the NIRB, the public was consulted on the final design that was not expected to impact the receiving water as there was a significantly reduced encroachment into Third Portage Lake (only approximately 18 meters). Through due process, the airstrip extension proposal design was accepted and the construction was completed as planned by the end of March 2013. The construction monitoring report and as-built drawings were sent to NWB on June 21st, 2013 as per the Type A Water license Part D item 26 and Schedule D Item 1 requirements.

Project Certificate [No. 004] Appendix D and the Annual Report

NIRB Recommendation 2: The Board requires 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 Project Certificate [No. 004] Appendix D. This 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. It is requested that this be provided within 60 days' receipt of the Board's recommendations.

AEM Response

NIRB noted in their letter that "the discussion and analyses presented did not provide a full discussion and summary on the PEAMP… this must include a discussion that references the baseline and previous year's monitoring date and indicates whether any trends have been observed at the mine site." AEM is of the opinion that the PEAMP documentation in the 2012 annual report meets the requirements of Appendix D (specifically Appendix D 1) a to e and 2) b). Appendix D does not require a "trends" analysis as stated in the recommendations letter, rather it requires "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, with a discussion of data collection and analysis methodologies employed (Appendix 2 b)." A discussion of this information was provided in Section 12 of the annual report and adequately refers to other monitoring reports that have been provided to the NIRB in the annual report that describe trends over time (i.e. wildlife monitoring report, Core Receiving Environmental Monitoring Plan report, etc.). AEM is open to discussing with the NIRB on how best to present the information in the PEAMP (in advance of our 2013 annual report submission), however AEM believes the intention of the PEAMP is to serve as a high level review of annual monitoring results as compared to the final environmental impact predictions and should not require AEM to duplicate information that is found elsewhere in the annual report.

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Compliance with licenses and authorizations

NIRB Recommendation 3: The Board requested that AEM provide a discussion and explanation for the total oil and grease values having exceeded the water quality allowable limits and a discussion of any steps taken to ensure levels remain within limits in future years. It is requested that this be provided within 30 days' receipt of the Board's recommendations.

AEM Response

Total Oil and Grease was detected at 7 mg/l from a sample taken in the fall of 2012 at the Baker Lake Fuel Storage Facility. This water was not pumped out of the containment at that time. It should be noted that in 2011, there were no levels above 1 mg/L. As well, in 2013 no levels were above 1 mg/L (this will be in 2013 annual Report).

The Table 8.22 in the 2012 Annual report depicts the QA/QC results which show a discrepancy in the Oil and Grease levels. In addition, the Field Blank which was taken at the same time, also has an Oil and Grease level of 7 mg/L. This would indicate that this elevated result was some type of sampling error – either from the lab or sampler. The fact that 2013 levels were very low (< 1.0 mg/l) would indicate that that was the case as no water was pumped out in the fall of 2012 when we reviewed the result indicating an exceedance of water license criteria (5.0 mg/l). As a result sampling protocols were reinforced with the Environment Department staff.

Table 8.22: 2012 Bulk Fuel Storage Facility QAQC

Duplicate / Field Blank Analytical Certificate ID	Units	27-Sep-12 Original ID BL TF NEW		Duplicate ID BL TK NEW DUP	RPD		Field Blank BL TF NEW FB
Total Suspended Solids	mg/L	6		6	0	<	1
Ammonia Nitrogen	mg N/L	0.08		0.11	-32		3.70
Arsenic	mg/L	< 0.0005	<	0.0005	0	<	0.0005
Nickel	mg/L	0.0009		0.0006	40	<	0.0005
Lead	mg/L	< 0.0003		0.0009	**-100**	<	0.0003
Zinc	mg/L	< 0.001	<	0.001	0		0.003
Total Cyanide	mg/L	< 0.005	<	0.005	0	<	0.005
Benzene	µg/L	< 0.3	<	0.3	0	<	0.3
Toluene	µg/L	< 0.3	<	0.3	0		0.4
Ethylbenzene	µg/L	< 0.3	<	0.3	0	<	0.3
Xylene	µg/L	< 0.3	<	0.3	0	<	0.3
Oil & Grease	mg/L	7		4	**55**		7
Aluminium (Al)	mg/L	0.694		0.654	6	<	0.006
Antimony (Sb)	mg/L	< 0.0001	<	0.0001	0		0.0001
Barium (Ba)	mg/L	0.0326		0.0307	6	<	0.0005
Berryllium (Be)	mg/L	< 0.0005	<	0.0005	0	<	0.0005
Cadmium (Cd)	mg/L	< 0.00002	<	0.00002	0	<	0.00002
Chrome (Cr)	mg/L	< 0.0006	<	0.0006	0	<	0.0006
Cobalt (Co)	mg/L	< 0.0005	<	0.0005	0	<	0.0005
Copper (Cu)	mg/L	0.004		0.0033	19		0.0035
Tin (Sn)	mg/L	< 0.001	<	0.001	0	<	0.0010
Iron (Fe)	mg/L	0.52		0.5500	-6	<	0.0100
Lithium (Li)	mg/L	< 0.005	<	0.005	0	<	0.0050
Manganese (Mn)	mg/L	0.0086		0.0091	-6	<	0.0005
Molybdenum (Mo)	mg/L	0.0036		0.0033	9	<	0.0005
Selenium (Se)	mg/L	0.001		0.0010	0	<	0.0010
Strontium (Sr)	mg/L	0.11		0.1080	2	<	0.0050
Thallium (Tl)	mg/L	< 0.005	<	0.005	0	<	0.0050
Titanium (Ti)	mg/L	0.03		0.0300	0	<	0.0100
Uranium (U)	mg/L	0.007		0.0070	0	<	0.0010
Vanadium (V)	mg/L	< 0.0005	<	0.0005	0	<	0.0005
Hydrocarbons C10-C50	mg/L	< 0.1	<	0.1	0		0.2000

Footnotes:
RPD = Relative Percent Difference

Water quality

NIRB Recommendation 4: The Board requests that AEM provide further discussion on predictions made in the FEIS for the water quality in the pits and whether or not these predictions will be updated as required by the PEAMP. It is requested that a discussion be provided within 60 days' receipt of the Board's recommendations.

AEM Response

AEM did not provide a thorough discussion in the annual report of the comparisons of the FEIS water quality predictions of the pit water rather focused the discussion in the PEAMP was at a high level and evaluated the general site water quality and receiving environment trends. The differences in the FEIS predicted water quality results versus actual water quality (presented in the 2012 annual report in Table 4.2) is unclear, as the operational methods and the geology

have not significantly changed as was predicted in the original FEIS model. The best explanation is that the natural and geochemical variability was not captured in the original model (i.e. a model is only as good as the input data). Regardless of the natural variability, AEM continues to meet license limits prior to discharging, which are set to be protective of the aquatic environment and is the primary reason for developing a water quality model in the FEIS and the NWB Type A water license process.

Despite pit water exceeding the FEIS predicted values, data to date for South Portage Pit (ST-19) has shown a general decline in TDS, Sulfate, Ammonia and Iron (key parameters) since 2010. Goose Pit (ST-20) has been relatively consistent since the start of operation in 2012. As we approach pit reflooding, AEM will be updating our water quality model annually. As was recently discussed with the NWB in preparation for our Type A water license renewal, this will assist us in ensuring we meet CCME limits to protect aquatic biota prior to breaching the dikes. Beginning this year, AEM has committed to updating our pit water quality predictions and provide an updated site wide water balance in our annual report. This will assist the NWB, NIRB and AEM in understanding annual changes between annual water quality and model predictions.

Groundwater monitoring wells – Condition 8

NIRB Recommendation 5: It is 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. AEM's Groundwater Plan should include consideration of alternative approaches as outlined; it is requested that this Plan be submitted to the Board for review within 60 days' receipt of the Board's recommendations.

AEM Response

AEM will submit to the NIRB within 60 days a revised groundwater monitoring plan. This plan will reflect changes that were presented in the 2012 annual groundwater monitoring report based on recommendations provided by Golder Associates in the 2012 Groundwater Monitoring Report (December 11, 2012). Alternative approaches for obtaining groundwater samples were tested in 2013 as planned; these included attempted sampling of production drill holes and sampling of pit wall seeps. AEM would like to request a meeting with NIRB's Monitoring Officer as soon as convenient to further discuss conditions of the Project Certificate pertaining to groundwater monitoring (Condition 8).

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Noise quality monitoring

NIRB Recommendation 6: The Board requires AEM to discuss the linkages between the potential effects of noise on wildlife and habitat effectiveness and to provide further discussion of its conclusion that noise values currently detected above the calculated PSL value at the site are not affecting wildlife (both terrestrial and birds). Further, it is requested that AEM provide a discussion regarding the potential impacts of noise to human health at site. It is requested that this information be submitted to the Board within 60 days' receipt of the Board's recommendations.

AEM Response

The Meadowbank noise monitoring program is summarized and the linkages to monitored noise levels, for each receptor of concern at the mine site are discussed below.

Offsite Human Receptors -
The permissible sound level (PSL) of 55 dBA derived for Meadowbank is based on noise levels that could potentially cause disturbance to offsite human receptors at a nearby temporary dwelling (e.g. a recreational or trapper cabin). If such a cabin were to be built, the PSL would be applicable at a distance of 15 m from the dwelling. To date, no cabins have been built, and no noise-related complaints have been received from residents of the area. Therefore, no impacts of PSL exceedance on offsite human receptors are anticipated at this time. Furthermore, all monitoring stations with PSL exceedances are located within 500 m of Meadowbank facilities (specifically, the emulsion plant and exploration camp). Since it is unlikely that a cabin would be built in this proximity, anticipated mine-related noise levels for future offsite receptors could reasonably be expected to be lower than measured at these stations. However, AEM continues to conduct annual monitoring at stations located at various distances from the mine footprint in order to proactively identify opportunities for abatement wherever feasible.

Onsite Workers -
The impact of noise on the health of onsite workers (i.e. occupational exposure) is a component of Health and Safety planning, and should not be specifically addressed under the environmental monitoring program. The noise monitoring stations target general sound levels around the mine site, and are not necessarily located in common workplaces. In addition, occupational exposure durations and limits are different from those used in the derivation of the PSL of 55 dBA presented in the Plan. For example, Nunavut's maximum permitted occupational exposure level for 8 h is 85 dBA. None of the sound levels recorded in 2012 approach that value. AEM's Health and Safety Department has conducted noise assessments and determined when appropriate PPE is required for workers. The appropriate PPE/hearing protection is provided to all AEM workers who require it.

Wildlife -

With respect to wildlife disturbance, quantitative noise limits (such as a PSL) which may potentially cause disturbance are not readily available, and research regarding effects of noise on wildlife is scarce and often inconclusive (Noise EIS, 2005). Terrestrial wildlife (including ungulates, predators and birds) activities are monitored as part of the Terrestrial Ecosystem Management Plan (Cumberland, 2006), per Condition 54 of the NIRB Project Certificate. Acceptable levels for various types of impacts were established in the FEIS. Since monitoring is occurring as planned, and no thresholds of predicted impacts to wildlife have been exceeded (e.g. Table 12.7; 2012 Annual Report), it follows that noise is not causing excess unpredicted impacts to wildlife.

Regardless of the receptor type however, the Noise Monitoring and Abatement Plan indicates that exceedances of the PSL will occasionally occur, and that monitoring will be used to identify the source and implement appropriate mitigation, wherever possible. In 2012 at R1, the source of PSL exceedances was mainly identified as construction of the North Cell diversion ditch, which was a temporary activity. In addition, while this site was at least 400 m from mine activity in previous years, a spur road and storage area now exists within 100 m. Loading activities are clearly audible in audio files for this site, and may have contributed to the increase in measured noise levels in 2012 compared to previous years. The R1 station now falls within the smallest zone of influence considered for roads in the FEIS, where all habitat is conservatively assumed to be lost due to sensory disturbance. Therefore, exceedances of the PSL as observed in 2012 are anticipated in this area, and no additional abatement is suggested. AEM aims to move this location in 2014 to maintain the originally intended location relative to site activity (details to be submitted with the revised Noise Monitoring and Abatement Plan).

While exceedances at R5 were not attributed to a specific activity, sound files were again reviewed, and it was noted that helicopter activity and wind appear to cause most of the PSL exceedances. This site is situated within 450 m of the exploration camp, where helicopter use is a common occurrence during the summer season. While helicopter noises are not filtered from the datasets, fixed and rotary wing aircraft were excluded from the site noise model in the FEIS because they were considered to be irregular and of short duration. Wind noises alone also regularly resulted in sound levels above the PSL at this location. Wind speeds during these times often approached the limit of 4.17 m/s, but were not high enough to warrant exclusion of the data. Since helicopter sounds are likely attributable to the exploration camp, and it is clear that wind sounds would not impact animal behaviour, further abatement of sound levels at this station do not appear to be feasible or warranted.

Since the activities contributing to excess sound levels in 2012 were generally temporary, monitoring in 2013 was increased (at all sites) to four days in order to obtain more

representative data. Changes to the plan will be noted in Meadowbank's Noise Monitoring and Abatement Plan which is being updated prior to submission of the 2013 Annual Report to NIRB.

All weather private access road – Condition 32(e)

NIRB Recommendation 7: As annual consultation with the community of Baker Lake to discuss the private nature of the access road is a requirement of Meadowbank Project Certificate [No. 004] term and condition 32(e), by not conducting these consultations AEM is not in compliance with the condition. The Board requests that AEM hold public meetings as set out in Condition 32, and that it report on this information within its 2013 Annual Report.

AEM response

In 2013 a public meeting was held with the community of Baker Lake. This meeting took place on May 30, 2013. The meetings minutes and presentation from this meeting will be included in the 2013 Annual Report.

Condition 40: Gathering of Traditional Knowledge information.

NIRB Recommendation 8: As Condition 40 of the Meadowbank Project Certificate [No. 004] requires that AEM collect and report annually to both the KivIA and the NIRB on the Traditional Knowledge gathered from the residents of Chesterfield Inlet, AEM is not in compliance with the condition. The Board requests that AEM report on further Traditional Knowledge gathered in its future annual reporting as submitted to the NIRB.

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 2012, no change in the TK gathered was report to AEM and no operational changes were necessary. AEM believes this complies with the condition 40.

Monitoring of country foods – Condition 67

NIRB Recommendation 9: The Board invites Health Canada 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. The Board respectfully requests that Health Canada provide any comments within 60 days' receipt of these recommendations.

AEM Response

AEM acknowledges NIRBs request to Health Canada and will await their response.

On-site incinerators – Condition 72

NIRB Recommendation 10: The Board requests that AEM provide an explanation for the incinerator having not achieved recommended temperatures in the secondary chamber on various occasions in 2012. Further, it is recommended that AEM describe any corrective measures employed at the incinerator. It is requested that this information be provided within 30 days' receipt of the Board's recommendations.

AEM Response

AEM's incinerator runs at a high capacity, to keep the wildlife attractant waste to a bare minimum. The days in question, in which the secondary chamber did not reach the recommended temperatures, are generally due to mechanical issues with burners not working properly. When these burners do not work properly, maintenance is performed as needed on the incinerator and site services department fix the problem as soon as the incinerator has completed its cycle and cools down to allow personnel to safely work on the system. Although efforts are made to ensure occurrences such as these are minimal, emission testing by offsite Consultant Exova, indicated that we met Environment Canada Guidelines (See Appendix E3 in 2012 Annual Report). Further emission testing is planned in 2014.

Suppression of surface dust – Condition 74

NIRB Recommendation 11: The Board requests that AEM provide a discussion of its plans to address dust control for the access road and to provide the Board with a summary of the outcome of any related studies that have been completed to date. Potential adaptive management strategies that may result from the results of these studies should also be included. It is requested that this information be provided within 30 days' receipt of the Board's recommendations.

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AEM Response

In accordance with NIRB Project Certificate No.004, AEM has conducted annual dustfall and air quality monitoring around the Meadowbank site since 2011. The monitoring results are presented in the annual reports. In 2012, an additional, preliminary study of dustfall was conducted along the AWAR, which included sampling of two replicate transects along the road, and two clusters on the minesite. The results of the 2012 preliminary study are presented in the 2012 annual report and were discussed with NIRB during site visits. Overall, maximum observed dustfall rates at AWAR locations without dust suppressant were more than four times lower than those observed on Ekati Diamond Mine haul roads after application of dust suppressants (Male and Nol, 2005[1]). Despite much higher levels of dust deposition at Ekati, Male and Nol (2005) did not find a measurable effect of roads on the birds studied (Lapland longspurs). Based on these results, AEM does not plan to apply dust suppressants along the AWAR from Baker Lake to the Meadowbank exploration camp, as it is AEM's opinion that impacts due to dust along the AWAR are less than FEIS predicted impacts.

Notwithstanding, in 2013, AEM engaged in a more robust dustfall study along the AWAR to thoroughly evaluate the impacts within the zone of influence predicted in the FEIS. Unfortunately, study results were compromised due to field data collection problems (many of the dustfall canisters were knocked over, likely by wind, during the sampling process). The available dustfall data are currently being analyzed and will be reported in our 2013 annual report. As a result of these difficulties, AEM is still evaluating dust levels and will compare them to the zone of influence predicted in the FEIS. In 2014, AEM will improve on the 2013 study and complete an analysis of the impacts of road dust using an ecological screening level risk assessment approach.

Nevertheless, AEM has an active dust suppression program for all mine site surface roads and will continue to apply dust suppressants in highest traffic zones (i.e. along haul roads around the mine site, and between the exploration camp and Meadowbank, etc.). As convenient at a future meeting, AEM would like to discuss the requirements of Condition 74 of the Project Certificate with NIRB's Monitoring Officer.

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[1] Male, S. and E. Nol. 2005. Impacts of roads associated with the Ekati Diamond Mine, Northwest Territories, Canada, on reproductive success and breeding habitat of Lapland longspurs. Canadian Journal of Zoology 83:1286-1296.

AGNICO EAGLE

Spill at Baker Lake Marshalling Area – Condition 37 & 82 and Commitments 34, 35 & 38

NIRB Recommendation 12: The Board requests that Transport Canada provide information on the conclusions of the investigation related to the fuel spill into Baker Lake in August 2012 and any outcomes that might have resulted from the investigation of the incident. The Board respectfully requests that this information be provided within 60 days' receipt of the Board's recommendations.

AEM Response

AEM acknowledges NIRBs request to Transport Canada and will await their response.

Harmful Alteration, Disruption or Destruction Crossings along the Access Road

NIRB Recommendation 13: The Board requests 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. It is requested that a report summarizing any discussions to this end be provided to the NIRB within 90 days' receipt of the Board's recommendations.

AEM Response

AEM has worked extensively with the DFO (the authorizing agency) and the Baker Lake HTO since March 2011 in revising the DFO authorizations and developing associated monitoring programs. Table 1 below, taken from the revised No Net Loss Plan (AEM, 2012), summarizes the consultation for the development of the No Net Loss Plan, consultation for the revision of the authorizations and subsequent discussions that led to a revision of the Habitat Compensation Monitoring Plan (AEM, 2013). Conditions of the new authorizations stipulated that AEM was required to revise the Habitat Compensation Monitoring Plan. As part of this process, AEM had numerous telephone conversations with DFO leading up to a meeting with DFO representatives Elizabeth Patreau and Derek Moggy, in Ottawa on February 19th, where we reviewed a draft version of "Table 3 – Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for dike faces and finger dikes". Subsequently, AEM followed up with the submission to the DFO of a draft plan on April 28th, for their review and comments. AEM finalized the plan by incorporating DFO's comments and submitted a Final Habitat Compensation Plan on July 23rd, 2013.

Table 1: Summary of No Net Loss Planning Consultation taken from AEM, 2012 Appendix C.

Date	Description	Attendees	Document Attached?
7-Mar-11	AEM No Net Loss Contingency Plan Terms of Reference	Sent to DFO by AEM	✖
28-Apr-11	DFO Approves Terms of Reference	Accepted by DFO	
30-May-11	Invitation to attend July 13th Workshop	sent to: KIA, NWB, NIRB, HTO, DFO	✖
13-Jun-11	Meadowbank Site visit with HTO- inpart discussed NNL Planning	HTO and AEM	
13-Jul-11	No Net Loss Planning Workshop	HTO, KIA, DFO, AEM, Consultants	✖
8-Aug-11	Email to DFO outlining DFO Authorization discrepancies	Sent to DFO by AEM	✖
12-Aug-11	Helicopter Tour with Workshop Attendees	HTO, KIA and AEM	
15-Aug-11	DFO Site Visit to Meadowbank and Meliadine	AEM and DFO	
11-Nov-11	Agenda sent for November 17th meeting in Ottawa	AEM and DFO	✖
17-Nov-11	November 17th and 18th meetings in Ottawa	AEM and DFO	✖
13-Dec-11	Follow-up teleconference	AEM, DFO and Consultants	
31-Jan-12	Technical Memorandum detailing a HEP method comparison	AEM, DFO and Consultants	✖
12-Feb-12	Exploratory Meeting with DFO Science to discuss research opportunities	AEM, U of G researchers, DFO Habitat and DFO Science	✖
23-Feb-12	Site visit and presentation on NNL Planning, Wildlife and Fisheries monitoring	AEM and HTO board members	
30-Mar-12	Email from DFO detailing expectations for a new Meadowbank NNLP	Sent by DFO to AEM	✖
7-Jun-12	Technical Memorandum detailing a adjusted HEP with example	Sent to DFO by AEM	
15-Jun-12	Submission of Draft NNL Plan	Sent to DFO by AEM	
16-Jul-12	Telephone conversation to discuss NNL Plan- Ryan V and Bobby Bedingfield	DFO and AEM	
19-Jul-12	Email- Comments and feedback from DFO on Draft NNL Plan; Email Entitled- Meadowbank Authorization Amendment and NNLP Contingency Plan	DFO response to AEM	✖
13-15 Aug-2012	Meadowbank site visit- discussions included the review of DFO comments and feedback on NNL Plan and monitoring programs	DFO and AEM	
28-Aug-12	DFO and AEM Meeting- Summary and Action Items	DFO and AEM	
12-Sep-12	AEM reponse to DFO July 19 email	AEM response to DFO	✖
26-Sep-12	DFO Response to AEM Email dated Sept 12	DFO response to AEM	✖

Permafrost

NIRB Recommendation 14: The Board requests 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. It is requested that this information be provided within 60 days' receipt of the Board's recommendations.

AEM Response

The action plan and permafrost monitoring program for Second Portage Lake, Portage Pit and Goose Pits are as follow:

Second Portage Lake

To monitor the permafrost aggradation and talik beneath Second Portage Lake, AEM has installed, in 2012, a thermistor (T90-2) in the North Cell tailings and a single deep thermistor (T147-1) at the downstream toe of Stormwater Dike. Thermistor (T90-2) was installed within the former lakebed inside the North Cell of the TSF. In 2012, temperatures below 0 degrees Celsius are recorded below El.140 m which appears to indicate that the tailings are continually frozen at this location. In 2012, thermistor (T147-1) shows the existence of a frozen crust of material from El. 120 m to El. 115 m that stayed frozen during the summer of 2012. Below El.

115 m the temperature varied between 0.5°C and 0.1°C from the beginning of March 2012 to the end of August 2012 indicating the beginning of freeze back of the talik. In 2013, new thermistors were installed between the Central Dike and the Portage Pit. These thermistors will provide information on the permafrost aggradation of Second Portage Lake. All thermistors are monitored on a regular basis and the 2013 data will be provided with the 2013 Annual Report.

Portage Pit

No thermistors were installed in Portage Pit because of the mining activities. However, the permafrost aggradation can be monitored with the thermistor installed in the East Dike, Central Dike and the new thermistors installed between Central Dike and Portage Pit in 2013. A discussion about the 2013 data will be providing in the Annual Report.

Goose Pit

The permafrost in Goose pit can be monitored by the thermistor SD-09-A which is located on South Camp Dike approximately 20 m further upstream within Third Portage Lake. This thermistor showed in 2012 that the soils located beneath the dike foundation and liners appear to have remained frozen (permafrost) below elevation 130 m. Also, thirty-three thermistors (from T1 to T30 and T3' to T5') are installed on Bay-Goose Dike and new thermistors were installed between Bay Goose Dike and Bay Goose Pit. These thermistors are monitored regularly and the data provide more information about aggradation of permafrost. This information will be included in the 2013 Annual Report.

NWB Water License Amendment

NIRB Recommendation 15: The Board requests 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 is further requested that AEM provide any additional plans as needed related to the potential future dewatering Phaser Lake, including an indication of authorizations required, plans to engage the NIRB's assessment process, and a timeline for these submissions. It is requested that this information be provided within 60 days' receipt of the Board's recommendations.

AEM Response

In accordance with the NIRB Project Certificate and based on the most current life of mine plans, AEM does not intend to mine Phaser Pit and do not have plans to dewater Phaser Lake. At present, these are conceptual plans, however if these plans change, AEM will inform the NIRB, develop management plans accordingly, and will engage NIRB in the assessment process.

Appendix F

AGNICO EAGLE

MEADOWBANK GOLD PROJECT

Groundwater Monitoring Plan

In Accordance with Water License 2AM-MEA0815

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Division

Version 4
January 2014

EXECUTIVE SUMMARY

This document presents the Meadowbank Mine Groundwater Monitoring Plan, a requirement of the Meadowbank Type A Water License No. 2AM-MEA0815.

The Meadowbank Mine currently has two operating groundwater monitoring wells, drilled in 2008. A number of wells drilled in 2003, 2006, 2008, and 2011 are now inoperable for various reasons. One well drilled in 2011 will be replaced in 2014, and sampling of pit wall seeps has been added to augment the program. Methods to obtain groundwater samples from production drill holes are currently under investigation.

Groundwater chemistry data is used to predict the quality of water accumulating in open pits, and to determine any effects of mining on groundwater quality, particularly with respect to tailings deposition.

Groundwater sampling will be carried out on an annual basis. Analytical parameters will comply as per Schedule 1, Table 1, Group 3 of the Meadowbank Water License. Quality Assurance/Quality Control procedures will be implemented during each sampling event.

A groundwater monitoring report will be submitted by Agnico Eagle Mines Limited to the Nunavut Water Board (NWB) by March 31 annually. This report will include all data from the previous year's results as well as a historical record, dates and methods of sampling, and an assessment of the data obtained with particular regards to salinity parameters and indicators of tailings reclaim water movement (total cyanide and dissolved copper).

IMPLEMENTATION SCHEDULE

This Plan will be implemented immediately (January 2014) subject to any modifications proposed by the NWB as a result of the review and approval process.

DISTRIBUTION LIST

AEM – Geology Superintendent

AEM – Engineering Superintendent

AEM – Geotechnical Engineer

AEM – Environment Superintendent

AEM – Environmental Coordinator

AEM – Environmental Technician

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	08/08/08			Comprehensive plan for Meadowbank Project
2	09/03/31	all		Comprehensive update of plan to include 2008 well installations
3	11/12/14			Update Executive Summary; insert Figure 1; update Table 1; addition of information on wells created in 2011; include well installation section;
4	14/01			Update Executive Summary; update Section 1.2 to reflect current wells; add Section 3.3 and 3.4 (seep and production drill hole sampling methods); update Section 5 (additional reporting on tailings-related parameters)

Version 4

Prepared By: Meadowbank Environment Department

Approved by:  _____

Kevin Buck
Environmental Superintendent

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LIST OF APPENDICES

1 INTRODUCTION

This document presents the Meadowbank Mine Groundwater Monitoring Plan, Version 4. This version maintains the principles and sampling methodology for monitoring wells presented in Version 3 (AEM, 2012), and presents alternative groundwater sampling options (pit wall seeps and production drill holes) as suggested in the 2012 Groundwater Monitoring Report (Golder, 2012). Monitoring well and alternative sampling locations, design characteristics, and the sampling methodology used to recover water samples for chemical analysis are included in this Plan.

1.1 PURPOSE OF GROUNDWATER MONITORING

Groundwater data is used to predict the chemistry of water accumulating in open pits (especially salinity as TDS, conductivity and chloride), and to determine any effects of mining on groundwater quality, particularly with respect to tailings deposition. To this end, groundwater monitoring wells have been installed to sample talik water (unfrozen ground beneath large lakes) in areas where through taliks exist. No groundwater monitoring wells will be installed at the Vault deposit, as the Vault pit will be developed in an area where the talik does not extend down through the permafrost.

Groundwater sampling has traditionally been conducted using installed monitoring wells, but difficulties in obtaining representative samples by this method prompted the investigation of alternative methods in 2013. Based on recommendations by Golder Associates (see 2012 Groundwater Monitoring Report), these include sampling of pit wall seeps and production drill holes. Traditional wells are also utilized in the monitoring program.

1.2 MONITORING WELLS

Four monitoring wells were installed at the Meadowbank site in 2003. Three of these wells (MW-03-02, MW03-03 and MW03-04) were damaged by frost action between 2004 and 2006. The fourth (MW03-01) was operable until 2010 when it was also damaged by frost action. The three defective wells were replaced in 2006 (MW06-05, MW06-06 and MW-06-07). The three wells were again damaged by frost action. MW06-05 and MW06-06 were replaced in 2008 with a more robust design (MW08-02 and MW08-03). The replacement of the third defective well (MW06-07), at the tailings storage facility, was deferred until verification of the effectiveness of the new well designs in 2009-2010. In 2011, two monitoring wells were installed. Well MW11-01 was installed on Goose Island adjacent to the Goose pit outline, to replace one of the 2003 wells (MW03-01). Well MW11-02 was installed at the tailings storage facility to replace MW06-07 and to monitor shallow groundwater quality below the basin where tailings are deposited. The well MW08-03 has been partially blocked by an ice bridge since 2010, but attempts to melt the ice have proven

somewhat successful and are ongoing. Well MW11-01 was decommissioned in 2012 after being damaged during site operations. Well MW11-02 became obstructed with development materials during the 2012 monitoring program and could not be sampled. Attempts were made in 2013 to remove the material, but these were unsuccessful. This well will be replaced in 2014.

The locations of each former and existing groundwater well are provided in Figure 1.

1.3 PIT WALL SEEPS

Seepage from pit walls commonly occurs in several locations in both the Portage and Goose pits. Groundwater samples can readily be obtained directly from the waterfall when sufficient flow occurs. In 2013, AEM obtained a sample from one seep in the Goose pit. Due to the changeable nature of seep positions, sampling locations are not set and GPS coordinates of any sampled seep will be included in each annual report.

1.4 PRODUCTION DRILL HOLES

When sufficient groundwater flow from production drill holes is encountered, sampling using this method is likely feasible. Although wells with sufficient flow rates only occur on occasion, AEM is of the opinion that this is a viable method, and will continue attempts to sample production drill holes. Since the sampled locations will change each year depending on where flowing groundwater is encountered, drill hole identification numbers and GPS coordinates will be included in each annual report. This source of groundwater has the potential to be viable in determining any mining affects to groundwater, especially in the Portage Pit as it is directly downstream of the inferred groundwater flow path.

Figure 1 - Map of former and existing monitoring wells on the Meadowbank Site

2 MONITORING WELL INSTALLATION

Installation details for existing monitoring wells are provided here. Details for decommissioned wells are presented in the Groundwater Monitoring Report for the year of installation.

2.1 2008 WELL INSTALLATION

2.1.1 MW08-02 & MW08-03

The two boreholes drilled for the replacement monitoring wells MW08-02, and MW08-03 were drilled using standard PQ and HQ size coring method. Heated water from the Second Portage Lake was used as drilling fluid during drilling. The boreholes were drilled to 200m depth along a 60 degree angle. Each borehole was cased to 20 m past the anticipated base of the permafrost using HWT flush-joint casing. The geological information used to was based on the core recovered from each borehole. The first 170 meters of the MW08-02 borehole were drilled without core recovery; the screened interval core was collected to confirm the target lithology. The full length of MW08-03 borehole was logged. Agnico Eagle geologists logged the core from both boreholes.

2.1.2 Instrumentation

The MW08-02 & MW08-03 wells were constructed with 1.5-inch diameter, schedule 40 stainless steel pipe and 18 m long 2 inch diameter stainless steel screen. The annulus between the casing and the monitoring well pipe was sealed at the base of the casing (169 m depth) with a pneumatic packer inflated with propylene glycol (a non-toxic and biodegradable liquid with low freezing point). This isolated the annular space between the borehole casing and the monitoring well pipe from the borehole interval below the permafrost. A small diameter double valve pump (DPV) driven by inert nitrogen gas was fixed to the outside of the riser pipe to allow removal of water from the well annulus above the packer to keep this area dry and minimize the potential for frost damage to the outside of the monitoring well pipe. A smaller diameter stainless steel pneumatic packer was installed inside of the monitoring well pipe immediately above the screen interval to prevent freezing of the inside of the monitoring well pipe throughout the permafrost. After sample collection, the inside packer is inflated and a portable DPV pump is used to evacuate water above this packer and keep the well pipe dry between the sampling events. A heating cable was attached to the outside of the monitoring well pipe through the entire anticipated interval of permafrost. The heating cables prevent water from freezing during sampling, and constitute a back-up system to melt the ice inside the monitoring well in case of a packer failure.

2.2 2011 WELL INSTALLATION

2.2.1 MW11-02

Although MW11-02 is planned to be replaced in 2014, installation details are included here because decommissioning has not yet occurred. The borehole was drilled using standard HQ size coring method. Heated lake water was used as drilling fluid during drilling. The borehole was drilled to 81 m depth at an angle of 80 degrees below ground surface. The borehole was cased through the overburden and into the first few metres of bedrock. All cores were recovered and logged by Agnico Eagle geologists.

2.2.2 Instrumentation

MW11-02 was constructed with 1.5 inch diameter, schedule 40 stainless steel pipe and 15.25 m of 2 inch diameter slotted stainless steel screen. The well was installed into an open borehole. The annulus between the stainless steel well and the borehole was filled with approximately 16 m of sand. A bentonite seal approximately 4 m thick was placed on top of the sand. The remainder of the annulus was loosely filled with gravel and a grout seal was placed at the top of the well. Although the ground is not frozen at this location in the talik, it is predicted to freeze in time. For this reason, a heating cable was attached to the outside of the stainless steel pipes above the bentonite seal. The heating cable will allow for thawing of the well in the event of permafrost in the area.

3 SAMPLING METHODS

Since monitoring results to date have not indicated any effects of mining activity on groundwater quality, the groundwater sampling program will be performed annually using traditional onsite monitoring wells, as well as pit wall seeps and production drill holes as available. One sample will be collected in duplicate and submitted blind (using different reference numbers) to the analytical laboratory.

Specific details of sampling methods for monitoring wells, pit wall seeps and production drill holes are provided here. The collection of samples from production drill holes will occur when flowing conditions are encountered in order to obtain additional samples to assist in the assessment of any potential impacts of mining activity.

3.1 GROUNDWATER WELL MW08-03

3.1.1 Well Preparation for Sampling

At the time of purging and sampling the heat trace cables will be activated to warm the well pipe. Once the new well has been warmed up the pneumatic valve inside the well pipe will be deflated to allow groundwater to flow into the well pipe.

3.1.2 Well Purging

The well is then purged to remove standing water inside the well and to induce the flow of fresh groundwater from the rock formation. Purging is done by lowering a portable double valve sampling pump (DVP) into the well pipe to approximately 10 to 20 meters above the top of the screened interval and activating the DVP. The pump is activated by pumping compressed air into a ¼" Low Density Polyethylene (LDPE) tubing attached to the DVP. The quality of the purged water is to be monitored for pH, electrical conductivity, temperature, water clarity and colour (visual observation) during this activity. A minimum of 3 well volumes (volume of water between the in-well packer and bottom of screened interval) are to be removed prior to sampling or until the monitored parameters stabilize (values remaining within 10% for three consecutive readings).

3.1.3 Groundwater Sampling

Groundwater is to be sampled immediately after purging, by lowering the intake of the DVP tubing to 3 to 5 meters above the screened interval. The same DVP pump and tubing used for purging is to be used for sampling but utilizing compressed nitrogen gas to evacuate water that entered the sampler unit. Nitrogen gas is stable (inert) and avoids alteration of

groundwater chemistry during sampling. Chemical parameters are to continue to be measured during sampling.

A groundwater sample is to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

3.1.4 Well Close-Down Procedure

Once the water sample is obtained, the pneumatic valve will be re-inflated and the well water above the valve will be removed using the portable DVP pump. The DVP pump fixed to the outside of the well will also be activated to remove water accumulated in the annulus of the well during purging and sampling (if any). The heating cable will be de-activated and the cap will be replaced on the casing.

3.2 GROUNDWATER WELLS MW08-02 AND MW11-02

Although MW11-02 will no longer be sampled after it is replaced in 2014, the replacement well will be sampled in the same manner.

3.2.1 Well Preparation for Sampling

Because water is allowed to rise and freeze in place within the well pipe, the heat trace cable activation period will be considerably longer, in the order of 4-7 days, to thaw standing water (ice) present in the well pipe. The effective heating cables in the groundwater wells should allow the water present in the well pipe to thaw in a timelier manner.

3.2.2 Well Purging

Once ice is fully thawed purging is initiated in the same way as for the 2008 wells, by inserting the DVP and tubing at 10 to 20 meters above the screened interval and removing well water by pumping compressed air. Groundwater will be continually pumped from the well until electrical conductivity and pH readings stabilized. This process may require more than 3 well volumes. In consideration of the low hydraulic conductivity of the rock causing a very slow recovery of groundwater level (only a few litres of groundwater can be removed at a time), this process can take up to 4 days to complete.

3.2.3 Groundwater Sampling

Groundwater sampling will be carried out immediately after well purging, in the same manner as for the 2008 design wells (same equipment, elevation of tube intake for water sample, use of nitrogen gas, monitoring of water quality parameters during this process).

Groundwater samples are to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

Samples are to be collected in duplicate and submitted as blind duplicates (using different reference numbers) to the analytical laboratory. Duplicate samples are to be analyzed for chloride and the suite of dissolved metals specified in Table 1 of Schedule 1 of the Meadowbank Water License.

3.2.4 Well Close-Down Procedure

Once the water sample is obtained, the heating cable will be de-activated and the cap will be replaced on the well.

3.3 PIT WALL SEEPS - ST-GW-#S

Samples from pit wall seeps will be collected directly from the pit wall waterfall.

A groundwater sample is to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

A separate container should be used to collect water for immediate measurement of field parameters (pH, conductivity).

3.4 PRODUCTION DRILL HOLES – ST-GW-#P

The collection of samples from production drill holes will occur whenever flowing drill holes are encountered and the designed methods will be modified as required based on field testing. Standard methods are provided in Appendix B, and summarized here.

AEM's Senior Environmental Technician or Coordinator will request that the Blast Supervisor (Mine Dept.) notify Environment Department staff when a flowing production well is encountered during regular production (for blasting) drilling (it is not a regular occurrence). Sampling needs to be conducted prior to addition of any explosive material.

Before sampling, three well volumes will be purged from the flowing hole. Production wells are usually 0.17 m diameter and 8.5 m deep so approximately 579 L will be removed.

Analysis of field parameters will be used to assist in determining if sufficient purging has occurred. Values are to be stable (within 10%) for three consecutive readings (in accordance with procedures for monitoring wells).

The sample is to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

For each sampling location, GPS coordinates and the drill hole number/blast pattern number will be recorded.

4 SAMPLE ANALYSIS

4.1 ANALYSIS

These samples will have field parameters taken (pH and Conductivity) and will also be sent to an accredited laboratory for analysis. Analytical parameters will include the following, per Schedule 1, Table 1, Group 3 of the Meadowbank Water License: pH, alkalinity, turbidity, hardness, ammonia nitrogen, nitrate, nitrite, chloride, fluoride, sulphate, total dissolved solids (TDS), total and free cyanide (for wells located in the flow path of the tailings containment area) and the following dissolved metals: aluminum, arsenic, barium, cadmium, copper, iron lead, manganese, mercury, molybdenum, nickel, selenium, silver, thallium and zinc.

4.2 QUALITY ASSURANCE / QUALITY CONTROL

4.2.1 Handling

The following procedures will be followed to provide data quality control:

- Measurement of field parameters at selected intervals until stable readings (within 10% of each other);
- Minimization of the exposure of the sampled water to the atmosphere;
- Use of compressed, inert gas (nitrogen) to evacuate water for sample collection;
- In-situ measurement of sensitive chemical parameters (pH, conductivity, dissolved oxygen, alkalinity, where applicable); and
- Abiding by sample preservation methods (refrigeration and use of preservatives where needed); and specified holding times.

4.2.2 Duplicates

A duplicate sample will be collected for one monitoring well per sampling event, and submitted as a blind duplicate to the analytical laboratory. Where both results are higher than five times the method detection limit (MDL), the relative percent difference (RPD) will be calculated as:

RPD = absolute difference in concentration/average concentration x 100

USEPA (1994) indicates that an RPD of 20% or less is acceptable. Where one or both results are less than five times the MDL, a margin of +/- MDL is acceptable.

5 REPORTING

An annual groundwater monitoring report will be submitted by Agnico Eagle Mines Limited to the Nunavut Water Board (NWB) by March 31 of the following year. This report will include the following information:

- Installation logs for any new monitoring wells;
- Location in UTM coordinates of all groundwater sample locations;
- Description of the working condition of the existing wells;
- Date of groundwater sampling;
- Details of sampling methods;
- Analytical results including: field data, laboratory analytical data and QA/QC information;
- Comparative assessment of data obtained to date to input values used in the Water Quality Model for the site (relevant salinity parameters); and
- Comparative assessment of parameters indicative of mine impacts to groundwater, with particular regard to tailings (total cyanide and dissolved copper).

APPENDIX A

Standard Operating Procedure for Sampling of Groundwater Monitoring Wells

WORK INSTRUCTION

Purpose:

This procedure is used to ensure that groundwater (GW) sampling is conducted in a safe and orderly manner. All samples need to be taken in the same manner to provide continuity of samples regardless of who is taking the samples. The Environment Department is required to conduct a GW sampling program to determine if there are any mining impacts to the local GW regime. This is in accordance with both our NWB and NIRB permits. In 2013 AEM environment staff will conduct the GW sampling program at Meadowbank.

Groundwater Sampling SOP:

GW sampling consists of measuring field parameters and collecting GW samples within the designated bottles.

Material needed:

Waterra 1 inch
Waterra ¼ inch
2 Genset (Atlas Copco, QAS 30) (GEN 30 and 34)
1 compressor (environment compressor)
3 Nitrogen tanks (JDE number 134720)
Nitrogen regulator
Solinst pump
Clean pails
Cond./pH/Temperature probe (PCStestr 35 or multi-parameter probe)
Water level probe
Control box
Red hose for NO2
Black hose with moisture trap for NO2
Adaptor, Fitting, Ring, Tools
Sampling bottle and syringe

Procedures to be done in 2013 for existing GW Wells

MW-11-02

In accordance with the 2012 Golder Groundwater Technical Memorandum Env Dept staff needs to retrieve a melted waterra that has plugged this well at a depth of 28 meters. This will require the use of at least a 30 meter RW drill rod with a fitting containing external thread. Orbit Gallant will conduct this drilling to remove the blockage (Ask Orbit to drill with size A casing).

Also there is a short on the heat trace cable in this well so the electrician must be informed prior to plug the heat trace to avoid overheating.

MW-08-03

This well has been determined to have an ice blockage, below the existing heat trace, at a depth of 150 meters. To melt the ice, Carlon tubing HDPE is required (about 200 meters).Orbit Garant will thaw the blockage below the heat trace cable with hot water. Once the ice melts we can push the tubing down to continue the purge and characterization of the water prior to obtain a sample. Temperature of the heated water shouldn't exceed 60 °C

MW-08-02

Nothing special. This well was sampled last year using regular unthawing and purging techniques.

Thaw and Purge Procedures

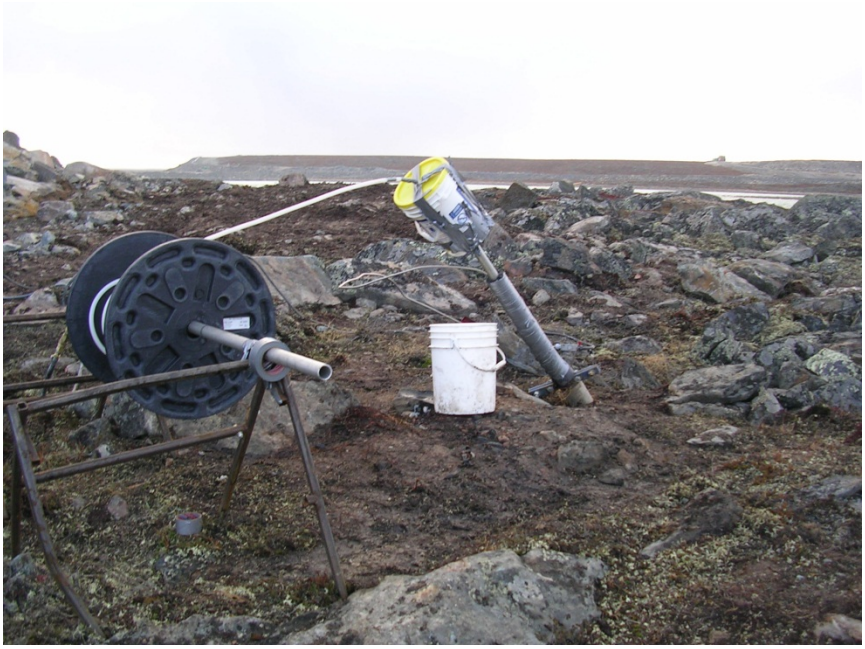
A) Melt the ice in the monitoring well

1- Measure the depth of the ice in the well – use existing well logs to document all activity. This is important for report preparation.
2- Ask for an electrician to plug the heat trace to the generator (Atlas Copco, QAS 30)

3- Monitor the ice and water depth every twelve hours or so.
4- Once the ice level has been melted to a depth of over 150 meters, we can start to purge.

B) Purge the water in the well

1- Place a pail upside down on top of the well to avoid having water flow all over and place an additional pail on the ground underneath to collect the purged water (see photo below).

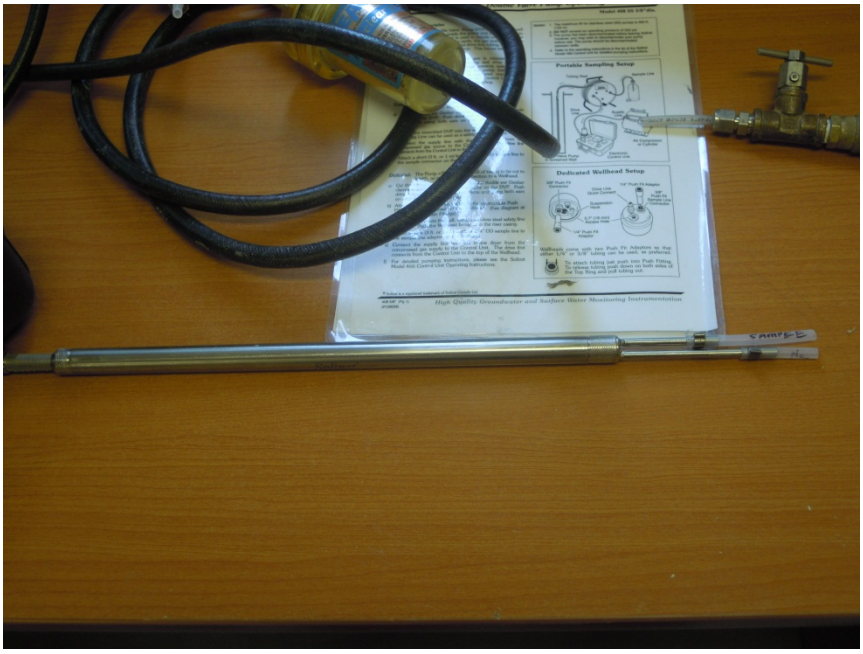


2- Place the 1 inch Waterra into the well to about 30 meters below the water level.
3- Place the rings (the smaller one first and then larger one after) onto the tubing and screw the fitting on the Waterra.
4- Connect the fitting to the red hose and then connect the red hose to the compressor.
5- Plug the compressor into the generator (make sure that the valves are close).

6- Once the compressor reaches 125 psi, open the valve and wait for the water to flow out (can take between 30 seconds to 2 minutes).
7- Once there is no water flowing, close the valve, measure the pH, conductivity, temperature, amount of water purge (by number of pails), level of the water and then, lower the waterra, wait for 10 minutes and start over. This will equal one volume purged.
8- At the end of the day, take the waterra of the well and take the water level.
9- Once you purge 3 times the amount of water in the well and parameters are stabilized (all results within +/-10%), you can sample the well

C) Sample the water in the well

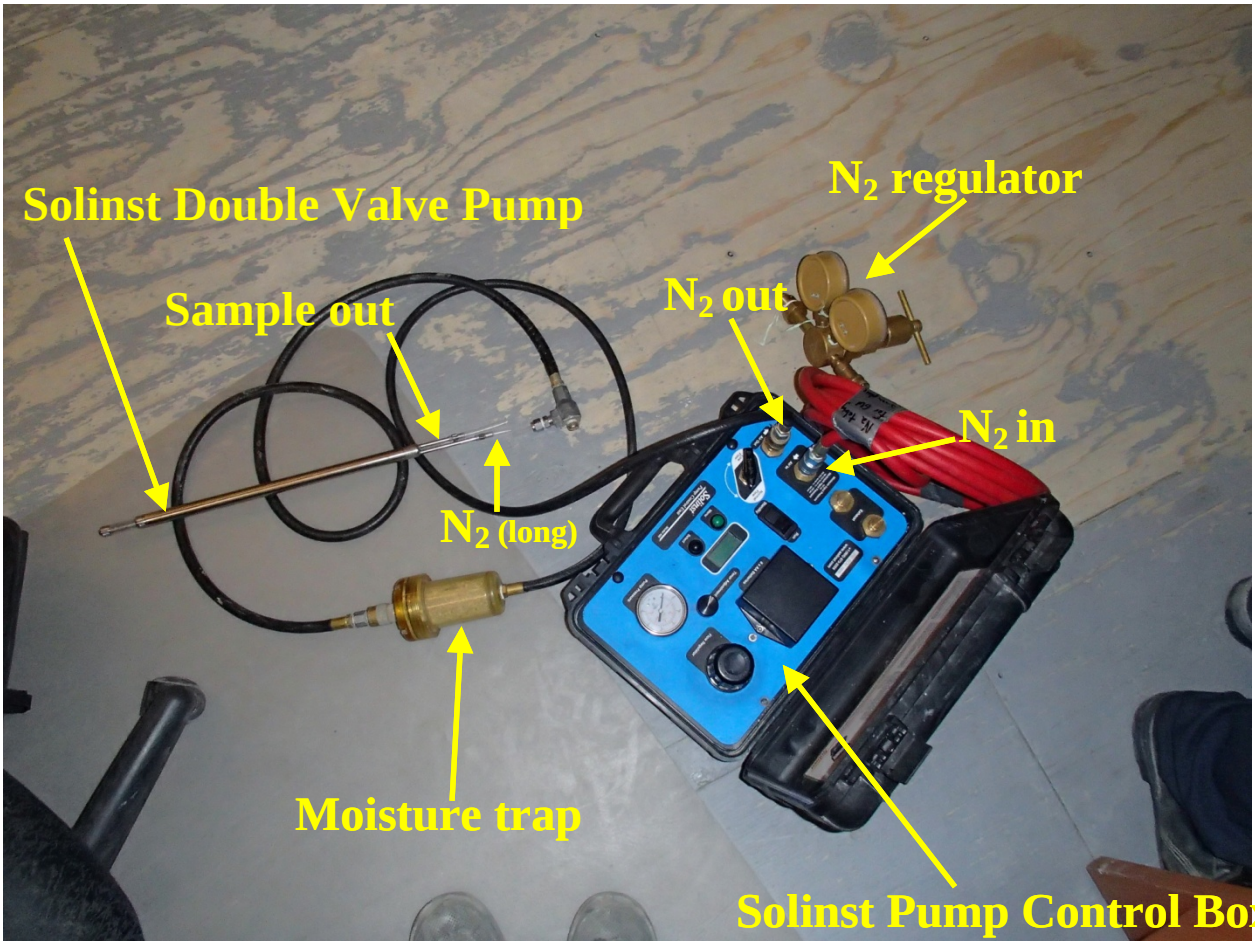
1- Place the ¼ inch double waterra line on the Solinst double valve pump.
2- Tighten the waterra with the rings



3- One Waterra line will be bring the sample water and one will send Nitrogen to the pump. Make sure to identify which line is the one for Nitrogen and which one is the line for water (longest metal tale on the pump is for nitrogen) (see photos).
4- On the nitrogen waterra line, place 2 rings and a bolt and place it on the 90˚adapter and the black hose with the moisture trap.

5- Connect the black hose to the Nitrogen control box (AIR OUT)
6- Plug the red hose to the control box (AIR IN).
7- Plug the other end of the red hose to the ``T`` regulator with the gauge.

8- Connect the regulator to the nitrogen tank and slowly open the Nitrogen tank to a pressure of140 PSI.
9- On the control box press RUN than put the menu on AUTO mode.
10- With the SELECT button adjust the pressure so that when it's pumping the pressure is at 140 PSI and when it's venting, it goes back to 0 PSI.
11- This should take about 5 minutes before there is a water flow.
12- Let it run for 10 to 15 minutes, measure parameters with the PCSTestr 35 or the multi-parameter probe and sample the water. Record all field parameters results.
13- For filtering, place the pumped GW in a clean container, rinse 3 times and use a syringe to sample.


Solinst Double Valve Pump
Sample out
N_2 (long)
Moisture trap
N_2 regulator
N_2 out
N_2 in
Solinst Pump Control Box

Control box


8 AA batteries
250 ECU 5655
+1(905) 873-2255
www.solinst.com
Exhaust
N_2 in, connected to N_2 regulator
Minimum Input Pressure
Maximum Input Pressure
Air In
Run
Standby
8 x AA Batteries
Timer Adjustment
Pressure fluctuates between 0 and 140 psi between drive and purge cycles
Drive – 12s
Normal Flow
Normal flow
Menu
Select
Pump Pressure
Solinst
N_2 out, connected to ¼ tubing attached to Solinst Double Valve Pump (long stainless steel tube)
Control box

Valve and Ring

Take a triplicate for every sample, send 2 to the lab and keep a backup sample.

Follow the SOP for the shipping request..\Shipping\Shipping Samples SOP.doc

Author:		
Environmental Technician	Martin Theriault	
Print Title	Print Name	Signature

Approval:		
Environmental Coordinator	Jeffrey Pratt	
Print Title	Print Name	Signature

APPENDIX B

Standard Operating Procedure for Sampling of Production Drill Holes (Interim)

Procedure for Groundwater Sampling from Flowing Production Drill Holes/Wells

Purpose:

This procedure is to ensure that groundwater (GW) sampling from flowing production drill holes/wells is conducted in a safe and orderly manner. Production holes are drilled to place explosives for blasting. All samples need to be taken in the same manner to provide continuity of samples regardless of who is taking the samples. Using the Environment Department PCSTestr 35 conductivity and salinity readings are to be taken from flowing production wells, when notification is received, and compared to results from previous GW sampling events conducted by Golder (see chart below). If these parameters are determined to be similar we can conclude that the water is representative of area GW.A sample can then be taken. The drilling of production wells involves the use of freshwater and this water will be purged when a flowing well is encountered. It is important to ensure that this water is purged prior to taking a sample (which is why the meter is used – to take continuous samples until it is determined that the water is GW).

Groundwater sampling from production holes SOP:

GW sampling from production holes consists of measuring field parameters (conductivity, TDS and salinity) with the PCSTestr 35 and comparing the results with past results (Golder) from the GW wells. If the results are similar in chemistry to previous results then a sample is collected using the designated sample bottles prior to the addition and use of explosives in the hole. The location, time, depth of hole and procedural notes are documentation that will be required from each sampling event.

Material needed for the job:

Calibrated Multi-parameter PCSTestr 35
Watch
Clean Pail
Sampling gloves
Sampling bottles
GPS
Camera

Procedures to be done in 2013

1- Senior Environmental Technician or Coordinator will request that the Blast supervisor (Mine Dept) notify Env staff when a flowing production well is drilled (it is not a regular occurrence). We need to make sure no explosive material is added to the hole before sampling. Env Dept should have equipment ready and proceed to site upon notification if possible.

2- Before sampling, make sure that 3 well volumes have been purged from the flowing hole. Production wells are usually 0.17 meter diameter and 8.5 meters deep so approximately 579L

needs to have been discharged. It will not always be possible to determine the purged volume due to the time it takes to travel to the location. In field sampling will assist in determining if the GW is representative of the area GW.

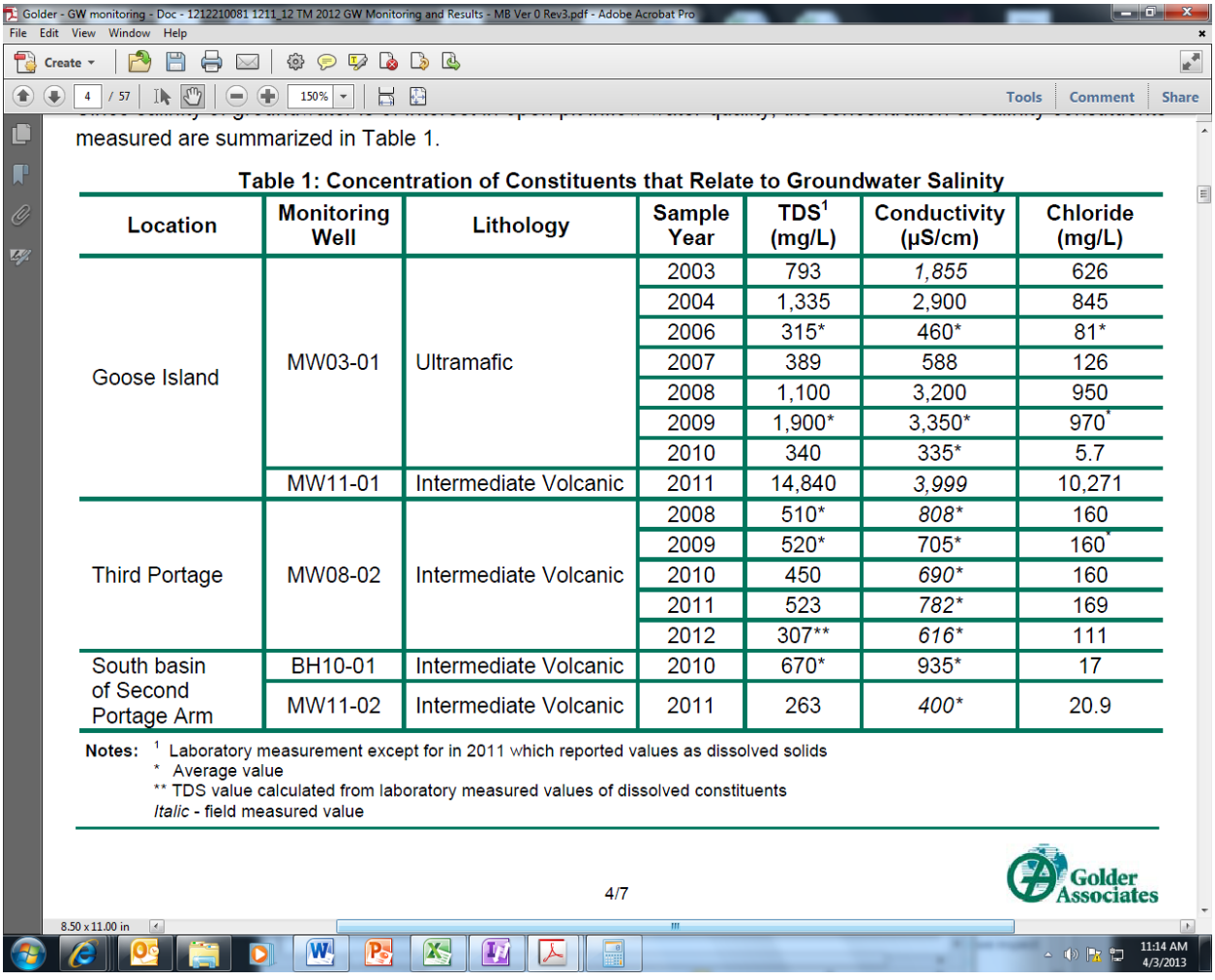
3- Calculate the amount of time needed before sampling according to the flow.

4- Take at least 3 readings during the purging with the multi-parameter probe (conductivity, TDS and salinity) and compare your results with Golder's results (see table below). Parameters need to be stable (within 10% of each other).

5- If results are similar, once the purge is completed, put on the nitrile gloves and sample the hole with the appropriate bottles. For filtering, let the water flow into a clean container, rinse 3 times and use a syringe to sample.

6- Take the GPS coordinates and the identification of the hole (blast pattern) of the sampling location and also take some pictures of the overflowing hole.

Golder's results for TDS, Conductivity and Salinity



measured are summarized in Table 1.

Table 1: Concentration of Constituents that Relate to Groundwater Salinity

Location	Monitoring Well	Lithology	Sample Year	TDS[1] (mg/L)	Conductivity (µS/cm)	Chloride (mg/L)
Goose Island	MW03-01	Ultramafic	2003	793	*1,855*	626
			2004	1,335	2,900	845
			2006	315*	460*	81*
			2007	389	588	126
			2008	1,100	3,200	950
			2009	1,900*	3,350*	970*
			2010	340	335*	5.7
	MW11-01	Intermediate Volcanic	2011	14,840	*3,999*	10,271
Third Portage	MW08-02	Intermediate Volcanic	2008	510*	*808**	160
			2009	520*	705*	160*
			2010	450	*690**	160
			2011	523	*782**	169
			2012	307**	*616**	111
South basin of Second Portage Arm	BH10-01	Intermediate Volcanic	2010	670*	935*	17
	MW11-02	Intermediate Volcanic	2011	263	*400**	20.9

Notes: [1] Laboratory measurement except for in 2011 which reported values as dissolved solids
* Average value
** TDS value calculated from laboratory measured values of dissolved constituents
Italic - field measured value

Golder Associates

Follow the SOP for the shipping request..\Shipping\Shipping Samples SOP.doc

Author:		
Environmental Technician	Martin Theriault	
Print Title	Print Name	Signature

Appendix G

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

March 6, 2014

Kevin Buck
Environment Superintendent
Agnico Eagle Mines Limited - Meadowbank Division
P.O. Box 540
Baker Lake, NU X0B 0C0

Sent via email: kevin.buck@agnicoeagle.com

Re: Health Canada Response to the Nunavut Impact Review Board's *2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project* and Board Recommendations

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Dear Kevin Buck:

On November 27, 2013 the Nunavut Impact Review Board (NIRB or Board) issued a recommendation to Health Canada related to Condition 67 of the Meadowbank Project Certificate [No. 004] as issued for Agnico Eagle Mines Ltd.'s (AEM) Meadowbank Gold Mine Project (NIRB File No. 03MN107).

On January 27, 2014 the NIRB received Health Canada's response (enclosed) to the Board's recommendation regarding AEM's preliminary quantitative risk assessment (PQRA)[1] report as related to Condition 67 of the Meadowbank Project Certificate. While this correspondence had been made available on the NIRB's public registry shortly thereafter; unfortunately, owing to an administrative oversight, notice of this correspondence was not provided to AEM or the Meadowbank distribution list until March 3, 2014. The NIRB apologizes for the delay in notifying parties and any inconvenience this may have caused.

The NIRB understands after speaking with AEM that it intends to provide a response to Health Canada's January 27, 2014 correspondence. The Board looks forward to receiving AEM's response and appreciates its efforts to this end.

[1] "Human Health Preliminary Quantitative Risk Assessment of Consumption of Country Foods for the Meadowbank Gold Project," Appendix I2 of *Meadowbank Gold Project 2011 Annual Report*, 2012. Available from: http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/02-PROPONENT/2011/01-REPORT/.

If you have any questions or require clarification regarding the Board's recommendations or the NIRB's monitoring program for the Meadowbank project, please contact me directly at (867) 793-4633 or sgranchinho@nirb.ca.

Sincerely,

Sophia Granchinho, M.Sc., EP
Senior Technical Advisor & Meadowbank Project Monitoring Officer
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico Eagle Mines Ltd.
Nicole Coté, Health Canada
Gregory Kaminski, Health Canada
Kelly Senkiw, Health Canada
Meadowbank Distribution List

Enclosed: Letter from Health Canada to NIRB Re: Health Canada's review of the additional information provided regarding the 2011-2012 Monitoring Report for the Meadowbank Gold Project, 2012 (*January 27, 2014*)

Health Canada Santé Canada

Safe Environments Directorate
Healthy Environments and Consumer Safety Branch
269 Laurier Ave. W., 4th floor, A/L 4904A
Ottawa, ON K1A 0K9

January 27, 2014

Sent by e-mail to: Info@nirb.ca

Subject: Health Canada's review of the additional information provided regarding the *2011-2012 Annual Monitoring Report for the Meadowbank Gold Project, 2012* (NIRB File No. 03MN107)

Dear Nunavut Impact Review Board,

Health Canada (HC) submits this letter in response to the NIRB's November 27, 2013 letter requesting input on additional information in the report, "Appendix I2: Human Health Preliminary Quantitative Risk Assessment (PQRA) of Consumption of Country Foods", (Appendix I2 was provided with the 2011-2012 Annual Monitoring Report), with respect to the monitoring program as outlined in Condition 67 of the Board's recommendations. The NIRB had previously requested HC's review of the PQRA on December 7, 2012, to which HC had responded on February 4, 2013. The Appendices to the PQRA were not made available to HC until January 28, 2013, therefore they were not reviewed prior to HC's response.

HC reiterates that it has not reviewed the report, "Appendix I1: Wildlife Screening Level Risk Assessment" (WSLRA), as HC does 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). Another department may have the expertise necessary to review the WSLRA.

HC has reviewed the Appendices to the PQRA report, as well as the additional information provided by Agnico Eagle Mines Ltd (AEM) on April 10, 2013, and provides the following comments for the NIRB's consideration.

General

HC reviewed the worked calculation examples provided by AEM and has not identified any concerns.

Methodology and TRVs to assess risk

Tin (Sn)

The toxicological reference value (TRV) chosen by AEM for inorganic tin is more conservative than the value supported by HC. HC agrees with the proponent's two assertions that it is unlikely tributyl tin would be naturally present in the environment and that it is unlikely to represent a concern in the context of the mine. HC has no further questions with respect to the levels of tin modeled in country foods.

Arsenic (As)

The levels of exposure to total arsenic from country foods assessed were negligible in comparison to the levels of total dietary exposure presented in the Canadian Total Diet Study (2007). Therefore, HC has no further questions with respect to levels of arsenic in the country foods assessed in the PQRA.

Cadmium (Cd)

HC agrees with AEM's discussion on the potential health risks posed by cadmium. HC has no further question with respect to the levels of cadmium in the country foods assessed in the PQRA.

As previously mentioned in HC's letter to the NIRB dated February 4, 2013, HC reiterates that the Territorial Governments may want to re-examine existing guidance for the consumption of caribou organs (liver and kidney).

Lead (Pb)

The predicted values for the levels of lead in country foods for both the onsite and external reference site are within an order of magnitude of each other, according to the data provided in the PQRA. HC compared several estimates of total dietary exposure to Pb with the predicted daily exposure estimates to Pb by moderate and high consumers of caribou kidney and liver; and Canada goose muscle, provided in the PQRA (refer to attached Appendix 1). In the case of caribou liver, moderate consumption of this country food, from the project site or external reference site, is predicted to exceed the 90th percentile total dietary exposure estimates in both toddlers and in teens/adults (for the general Canadian population); and, this moderate consumption is also predicted to exceed the mean total dietary exposure to Pb by First Nations populations living on reserve, as found in the 2008/2009 report of the First Nation Food, Nutrition & Environment Study (Chan et al, 2011).

Health Canada recommends that dietary exposure to lead should be As Low as Reasonably Achievable (ALARA principle)[1]. If the predicted Pb residue levels and the estimates of exposure to Pb in the country foods included in the assessment are accurate, some concerns about the consumption of country foods obtained from the project site (and the external reference site) exist. HC notes the uncertainty in some of the lead concentrations in country foods that were used in the exposure model (AEM asserted that the level of Pb in the onsite sedge sample was likely mis-reported as it is much higher than other samples) and the uncertainty associated with the use of conservative, predictive models employed to estimate Pb levels in the country foods assessed. Given these uncertainties, HC suggests sampling caribou kidney, caribou liver and Canada goose muscle at both onsite and external reference locations in order to establish the current Pb levels in these country foods. This would also serve as a benchmark for future assessments of lead in country foods from this site. If the background levels of lead in these country foods are determined to be high in the region, then it may be appropriate to consider risk management options.

<u>Other – Migration of Fish Offsite</u>

HC considers AEM's response to the question regarding migration of fish offsite to be sufficient. HC has no further questions on the topic of including a monitoring program for levels of mercury in fish from the site.

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[1] Health Canada. 2011. Food Directorate Updated Approach for Managing Dietary Exposure to Lead. http://www.hc-sc.gc.ca/fn-an/securit/chem-chim/environ/lead_strat_plomb_strat-eng.php

Should you have any questions regarding HC's response, please contact Kelly Senkiw, Environmental Assessment Coordinator, at 613-941-7997 or via email, kelly.senkiw@hc-sc.gc.ca.

Sincerely,

Nicole Coté
Manager, Environmental Assessment Division
Health Canada, National Capital Region
Tel.: 613-952-8267
Fax: 613-946-9673
Email: Nicole.cote@hc-sc.gc.ca

cc: Kelly Senkiw, Environmental Assessment Coordinator, Health Canada
Gregory Kaminski, Senior Environmental Health Assessment Specialist, Health Canada

References

Chan, L, Receveur, O, Sharp, D, Schwartz, H, Ing, I and Tikhonov, C. (2011). First Nation Food, Nutrition & Environment Study (FNFNES): Results from British Columbia (2008/2009). Prince George, BC: University of Northern British Columbia, [accessed: January 9, 2014]: http://www.fnfnes.ca/docs/BC%20Reports/FNFNES_Report_BC_FINAL_PRINT_v2.pdf.

Health Canada. Canadian Total Diet Study. 2007. (and various years). www.hc-sc.gc.ca/fn-an/surveill/total-diet/index-eng.php

Encl.

Appendix 1. Predicted exposure to lead from caribou kidney, caribou liver or Canada goose muscle compared to total dietary exposure to lead.

Appendix 1: Predicted exposure to lead from caribou kidney, caribou liver or Canada goose muscle compared to total dietary exposure to lead. Only those values exceeding one of the total dietary intake assessments are presented. All values are in units of (ug/kg bw/d).

Country Food and Human Consumer	Predicted lead exposure – moderate consumption*	Predicted lead exposure – high consumption*	Internal Health Canada probabilistic lead exposure Assessment – median +	Internal Health Canada probabilistic lead exposure Assessment – 90th percentile+	Final Human Health State of the Science Report on Lead**	FNFNES***
Caribou kidney onsite/ toddler	-	0.192	0.195	0.363	0.1	0.23
Caribou kidney external reference/ toddler	-	0.103				
Caribou kidney onsite/ adult	-	0.108	0.069	0.148		
Caribou kidney external reference/ adult	-	-				
Caribou liver onsite/ toddler	0.685	1.443	0.195	0.363		
Caribou liver external reference/ toddler	0.368	0.775				
Caribou liver onsite/ adult	0.365	0.814	0.069	0.148		
Caribou liver external reference/ adult	0.196	0.437				
Canada goose muscle onsite/ toddler	-	0.256	0.195	0.363		
Canada goose muscle external reference/ toddler	-	-				
Canada goose muscle onsite/ adult	-	0.139	0.069	0.148		
Canada goose muscle external reference/ adult	-	-				

* Appendix C of AEM's PQRA on the Meadowbank Mining project; **Toddler = 1-4 years**

+ values are for all foods. Based on lead occurrence data from the 2000-2002 Total Diet Study(TDS) combined with consumption data from the Canadian Community Health Survey (CCHS) cycle 2.2, 2004.
Toddler = 6 months-4 years, adult =12+

TDS: www.hc-sc.gc.ca/fn-an/surveill/total-diet/index-eng.php
CCHS: Statistics Canada 2004. Canadian Community Health Survey – Cycle 2.2 Nutrition. Detailed information for 2004 at: http://www.statcan.gc.ca/cgibin/imdb/p2SV.pl?Function=getSurvey&SDDS=5049&lang=en&db=imdb&adm=8&dis=2
CCHS general information: http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index-eng.php

** Health Canada. (2012). Final Human Health State of the Science Report on Lead: http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhssrl-rpecscepsh/index-eng.php#a7 [accessed January 9, 2014].
Value represents the median dietary lead exposure for the Canadian population.

*** Chan, L, Receveur, O, Sharp, D, Schwartz, H, Ing, I and Tikhonov, C. (2011). First Nation Food, Nutrition & Environment Study (FNFNES): Results from British Columbia (2008/2009). Prince George, BC: University of Northern British Columbia, [accessed January 9, 2014]: http://www.fnfnes.ca/docs/BC%20Reports/FNFNES_Report_BC_FINAL_PRINT_v2.pdf.
Value represents average daily intake of lead from food and tap water for BC First Nations people living on reserve.

MEADOWBANK DIVISION

Production Lease KVPL08D280

2014 Second Quarter Report

July 2014

TABLE OF CONTENTS

List of Appendices

SECTION 1 • SUMMARY OF ACTIVITIES

Agnico Eagle Mines Limited - Meadowbank Division (AEM) is required under condition 5.10 of Production Lease KVPL08D280 to deliver quarterly reports to the KIA detailing its activities on the leased land. The following sections summarize activities during the second quarter (Q2) from April to June 2014.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 118,139 oz. of gold;
- Mined 8,829,270 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1,051,019	2,045,212
Gold Grade (g/t)	3.68	4.37
Gold Produced (oz.)	118,139	274,540

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	139,909	144,300
Waste Rock Production (t)	7,669,633	14,418,373
Ore Production (t)	1,019,728	1,926,227
Total Blasting (t)	9,355,405	17,067,684
Total Drilling (m)	224,470	422,565

1.4 DIKE CONSTRUCTION ACTIVITIES

Central Dike construction continued during the second quarter of 2014. Major work completed during the quarter are summarize below:

- Drill and blast of the foundation to a footprint of the dike at a final elevation of 136.1m.
- Mucking of the frozen soft sediment and blasted rock over the entire footprint.
- Placement of rockfill, coarse and fine filters over the entire foundation.
- Clean-up of the key trench with air, slush grout of the exposed bedrock surface and till placement on top of the slush grouted surface.

- Expansion of the existing Cofferdam to reach elevation 116m by placement of rockfill. The slope is constructed with coarse and fine filters over the rockfill.
- Geotextile and LLDPE liner installation on the upstream slope of the dike between elevation 110m and 116m.
- Continuation of the expansion of the Cofferdam to elevation 120m with rockfill (ongoing).

Some works were also undertaken in the Tailings Storage Facility. A protective structure consisting of a layer of 500mm of crusher rejects, protected by a layer of 500mm of fine rockfill, was built on the North-West corner of the North tailings cell. This structure was designed to prevent any seepage through the existing road while depositing the tailings at point W20.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2014 Mine Plan V1*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 6th, 2014. Following discussion with KIA, a version 2 of the 2014 Mine Plan was done to included information on RSF Seepage and Assay Road Seepage. The "*2014 Mine Plan V2*" was submitted to KIA on February 5th, 2014.

There was no planned variation from the "*2014 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current quarter, one (1) formal inspection was conducted by regulators:

- KIA Inspector visited site on May 21st – no immediate concerns. Inspector requested information regarding the RSF and mill seepage so the 2014 Freshet Action Plan (Appendix A) was forwarded on May 22nd. No report received.

On June 11th, AEM made a presentation to KIA and conducted site tour of TSF and seepage areas.

Informal site visit with GN representative (review and feedback provided on the OPEP) on May 28th.

ENVIRONMENTAL MONITORING

SUMMARY

There were one (1) exceedences of the Water License during Q2:

- Portage Attenuation Pond discharge aluminium concentration on June 10th (1.80 mg/L), June 24th (1.55 mg/L) and June 30th (1.62 mg/L) exceeded the Water License Part F, Item 2 for effluent quality (1.5 mg/L as a maximum grab sample). AEM exceed the monthly average concentration limit for aluminum (1.53 mg/L).

Thirty-one (31) spills occurred at the site; three (3) spills were reported to the Government of Nunavut.

3.1 WASTE MANAGEMENT

During the second quarter, 31 spills occurred at the site. Three (3) spills were reported to the Government of Nunavut:

- 340 L of hydraulic oil spilled in Vault Pit due to failure on stick cylinder;
- 500 Kg of quick lime spilled at the tailings interception sump due to a ripped bag during the transport; and
- 4.5 Kg of caustic soda spilled in row 11 sea can laydown during the transport of a sea can.

AEM sent a letter on June 24th to Baker Lake Mayor's to advise that AEM will conform to his request and started application of dust suppressant on June 25th on the road between AEM dock and Baker Lake Gatehouse.

Transportation of Dangerous Good (TDG) training was completed by Environmental Department.

Following the clean-up of contaminated soil at Quarry 22 and 5, surface soil samples were taken in Quarry 5 to verify if the soil is still contaminated –no result yet received. Soil sampling in Quarry 22 was expected to be completed in July.

3.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 399,761 m^3. The total amount of reclaim water used in the mill was 495,185 m^3.

On February 13th, 2014, AEM submitted the EEM Biological Study Design 2 to Environment Canada. On June 23rd, a draft comments from Environment Canada was received as some TAP agencies have not had the time to review the comments once they were complied.

AEM is currently preparing an application for the renewal of the NWB Type "A" Water License. The application should be submitted beginning of July 2014. The current license expires in May 2015.

On May 29th, AEM provided 10 days' notice to the AANDC Water Inspector for discharging accumulated water from the Meadowbank mine site and the Baker Lake Tank Farms, Vault Dewatering and Portage Attenuation Pond.

On June 12th and 13th, AEM discharge water from Meadowbank and Baker Lake Diesel Tank Farm. No water was discharge from the Baker Lake Jet-A fuel as the water was not compliant with Part F, Item 23 of the Water License.

In April, AEM elaborated a Freshet Action Plan to avoid any non-compliance during the freshet. This plan included action and monitoring to take regarding diversion ditches, seepage area, pit, etc. Please refer to the Freshet Action Plan in Appendix A to get more details.

3.2.1 Amendment Freshwater

Meadowbank's current NWB License (2AM-MEA0815) permits Agnico Eagle Mines Ltd. (AEM) to obtain 700,000 m^3 per year of freshwater for domestic camp use, mining, milling and associated uses. Despite significant success at engineering solutions to optimize freshwater use, requirements exceed the permitted rate in the last years. On April 23rd, 2013, Agnico Eagle Mines (AEM) Meadowbank Division submitted a request to the Nunavut Water Board for an amendment to increase the freshwater use rate at the Meadowbank Gold Project. The water license amendment pre-hearing conference and technical meeting was held in Baker Lake on October 16th and 17th. The final written hearing was held on January 17th, 2014. On January 24th, AEM received correspondence from NWB advising that hearing record is closed and the Panel will issue, in due time, a decision report to AANDC regarding whether or not to issue the requested amendment, to the Type A Water License. On June 30th, AEM received from NWB an approval letter and raison for decision permitting withdraw of 1,870,000 m^3 in 2013 and 1,150,000 m^3 per year after 2013 (Appendix B). Those documents have been forwarded to Minister of Aboriginal Affairs for his final approval.

3.2.2 RSF Seepage

In May, AEM started daily inspections at RSF and NP-2 Lake as describe in the Freshet Action Plan prepare for the annual thaw (Appendix A). This plan also includes the pumping of any seepage water from ST-16 to the North Cell TSF. For May and June, total water pumped is 26,363m^3. AEM also completed bi-weekly monitoring for CN. To date, the water level in ST-16 area was very low avoiding any seepage to pass thru the till road.

3.2.3 Assay Road Seepage

In April, a design for an interception trench was approved by Tetra Tech (formerly EBA), a firm engaged by AEM to perform an assessment, drilling delineation program and to provide a report with recommendations. AEM is still waiting to receive the final report. Construction of the interception trench started in April and was completed beginning of May. In mid-May, with the freshet, some water was accumulated as predicted in the original sump and the new interception trench. To date 6,264m^3 were pumped back to the mill. Daily inspection of the area is conducted and all the water was contain in these containments and do not reach TPL. Samples are taken in TPL and to date no contaminants (CN) have been detected. Repairs to the containment systems in the mill have commenced and are progressing well. You can refer to the Freshet Action Plan found in Appendix A for more details regarding the monitoring and action taken by AEM.

3.2.4 Portage Attenuation Pond Discharge

On June 10th, AEM started to discharge effluent from Portage Attenuation Pond and on June 30th the discharge was stopped. AEM did not plan to discharge again water from Portage Attenuation Pond because after 2014 water contained into the Attenuation Pond will be contaminated by reclaim water. A total of 193,723m^3 of water was discharge during the quarter into Third Portage Lake.

Four weekly effluent samples were taken from the Actiflo Water Treatment Plant (ST-9) in June. All the results were in compliance with Water License Part F, Item 2 for effluent quality limits except for aluminium concentration. On June 10th, June 24th and June 30th, 2014 the aluminum concentration was 1.80 mg/L, 1.55 mg/L, and 1.62 mg/L respectively, exceeding the license limit of 1.5 mg/L as a maximum grab sample. AEM exceed the monthly average concentration limit with 1.53 mg/L. The source of the elevated level of aluminium appears to be from the coagulant used in the water treatment plant, and the difficulty to optimize coagulant dosage. Discharge in compliance with the MMER regulation and no toxic effluent.

3.2.5 Vault Lake Dewatering

Continuation of Vault Lake Dewatering began on June 20th and was stopped on June 29th. In June, a total of 139,900 m^3 of water was discharged to Wally Lake. The dewatering of Vault Lake was officially completed and the dewatered Vault Lake becomes the Vault Attenuation Pond (contact water). There were no exceedences of either MMER or Type A Water License 2AM-MEA0815 criteria and no toxic effluent.

3.2.6 East Dike Seepage Discharge

East Dike Seepage Discharge was stopped on May 2nd following a visual turbidity increase due to the freshet. In April, the monthly average concentration was 14.33 mg/L (maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 4). To avoid any non-conformity and as per the NWB Modification Letter Approval, the East Dike Seepage non-contact water was discharged to the Portage Attenuation Pond until the return to acceptable limit. AEM expect that as soon as the freshet is complete, the turbidity level will decrease and the discharge to Second Portage Lake will resume. The total year-to-date discharged water thru a diffusor into Second Portage Lake is 48,743 m^3 and no MMER / NWB Water License exceedances occurred.

3.3 WILDLIFE MANAGEMENT

During the quarter, some ducks, ptarmigan, Peregrine Falcon, grizzly bear, caribou, wolverines, wolves, muskox with baby and foxes were seen on site.

Fifteen (15) AWAR Wildlife Surveys conducted during the quarter.

Hunter Harvest Study completed in Baker Lake by a Consultant and AEM on April 26th.

AEM made a presentation on Wildlife at the Kivalliq Wildlife Board Meeting (all HTOs within Kivalliq) on April 10th.

Raven's nest observed in Pit A near the central waste dump on June 12th. AEM contact the GN and an exemption to disturb/destroy the nest was received from the GN on June 16th (Appendix C).

On May 11th, AEM observed the first migratory birds return to Meadowbank. Extra inspection on TSF and propane cannon installed for deterrence.

In May, the number of Caribou increased along the AWPAR. AEM sent a reminder to employees that herds increased and wildlife has the Right of Way over and above all vehicles. Sent an email to advise BL Wildlife Officer of our actions.

Sighting of a Grizzly bear at KM 96 on the AWPAR on June 6th and 2 young Grizzlies near the emulsion camp at km 101 on the road on June 16th – did not return. Wildlife memo resent to all AEM employees and an email was sent the Wildlife Officer.

Peregrine Falcon observed in AWPAR Quarry. Environmental Department inspected pit/operational area, quarry and BL Tank Farm regularly for Falcon activity.

3.4 PERMITTING

On April 15th, NWB acknowledge the reception of the 2013 Annual Report. On April 25th, NIRB acknowledge the reception of the report and requested parties to provide comments by June 9th. On June 27th, AEM received from NIRB a formal letter (Appendix D) requesting AEM to provide responses to the 2013 Annual report comments by July 28th. AEM response is ongoing.

AEM received correspondence from NIRB on March 6th (dated January 27th) regarding the Health Canada response to NIRB 2012-2013 recommendation # 8. AEM response regarding the Health Canada review of the 2011 HH PQRA for consumption of Country Food was sent to NIRB on April 16th (see Appendix E for HC letter and AEM response). AEM also received regarding the AEM response a request from the Mine Safety Inspector for the location of the sampling. AEM forwarded response indicating locations sampling.

On May 27th, the annual AWPAR Baker Lake Community meeting was held as per NIRB project certificate condition 32e).

Sent a wildlife permit application to Government of Nunavut in May. AEM should receive the permit by July 30th.

The following reports were completed and submitted to regulators:

- NWB monthly reports March, April and May 2014;
- 2013 GHG report submitted to Environment Canada via the RISS Website on May 16th;
- 2013 NPRI report submitted to Environment Canada via the RISS Website on May 26th;
- Sent to NWB the payment for the 2014-2015 Annual Water Use Fee on May 20th.

- Sent the 2014 Rent and Disturbance Fees and Q1 2014 Water Compensation payment to KIA on April 15th;
- 2013 Annual report for Screening Decision 11EN010 sent to NIRB on May 8th;
- Sent Statistic Canada Survey regarding water consumption from Dyno and Mine Site on June 27th;
- 2013 Annual report on April 4th;
- KIA Q1 2014 Production Report submitted;
- Environment Canada 2014 Q1 MMER via electronic database;

Appendix A

AGNICO EAGLE

MEADOWBANK GOLD MINE

FRESHET ACTION PLAN

APRIL 2014

EXECUTIVE SUMMARY

The purpose of this Action Plan is to identify areas of concern around the Meadowbank mine site and the AWPR that need to be managed in an organized and timely manner during the annual freshet period to prevent adverse environmental and operational impacts. The freshet period typically occurs during the annual snow and ice melt sometime around mid-May and extending until the end of July. During this period excess water is created and must be managed through additional pumping and management practices at vulnerable areas around the site. Mitigation techniques, timeframes and specified roles and responsibilities are outlined in this document for each area of concern.

The main areas of concern are the mining pits and pit walls, the East and West diversion ditches, Vault Road culverts, the area around the Portage Waste Rock Storage Facility (WRSF) including the northern portions of the NPAG waste rock extension (part of the Waste Rock Storage Facility (WRSF), Northwest corner of the North Cell TSF, Saddle Dam 1 corner, Saddle Dam 2 sump, AWPR culverts near the site and along the road to Baker Lake, WRSF – ST-16 Seepage, Assay Road Seepage and the Vault Pit area.

It is important that all dewatering and associated infrastructure be in good working order and adequate to receive the expected water flows associated with the freshet period; this includes but is not limited to pumps, ditch and sump maintenance, critical piping system installation and inspection, adequate resource allocation for preparative work and establishing a viable monitoring program for the areas of concern. A concise summary of the 2014 preparation works and roles and responsibilities is presented in the attached Appendix 1 (2014 Freshet Action Plan Procedures). Appendix 1 will be updated yearly to reflect changes in conditions at the Meadowbank site. Appendix 2 contains diagrams depicting the areas of concern.

DOCUMENT CONTROL

Revision				Pages Revised	Remarks
#	Prep.	Rev.	Date		
01	AEM	Internal	April 2014	All	

Prepared By: _____

Engineering and Environmental Department

Approved by:

_____

Engineering and Environmental Department

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LIST OF FIGURES

SECTION 1. INTRODUCTION

The purpose of this Action Plan is to ensure that AEM can address and manage excess water associated with the freshet season at the Meadowbank site. The freshet season is loosely defined as being a period of time from approximately May 15 – July 30; in some cases this period of time can extend up to early fall when freezing re-occurs (October 15). There are many areas around the site that are vulnerable to this excess water; the goal is to identify these areas and develop a clear plan with defined roles and responsibilities (among AEM Departments), and to manage the freshet flows.

In addition, several guiding principles are applicable to the formation of this plan. The highest priority principles are:

1) to ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts;

2) to ensure that the health and safety of AEM employees is protected, especially with respect to mining operations when excess water is present; and

3) to make sure the site is in compliance with the Nunavut Water Board (NWB) License, Part D, Item 33 and Part E, Item 9.

The plan will identify the areas of concern and discuss the potential risks as well as mitigation measures necessary to address the identified issues. Appendix 1 contains the actual defined 2014 procedures, the roles and responsibilities and associated timelines. AEM's intent is to update the Procedural Appendix on a yearly basis. For example, there may be additional mitigation measures for a defined problem area or in some cases a previously defined issue may be permanently rectified.

The main areas of concern are the mining pits and pit walls, the East and West diversion ditches, Vault Road culverts, the area around the Portage Waste Rock Storage Facility (WRSF) including the northern portions of the NPAG waste rock extension (part of the Waste Rock Storage Facility (WRSF), Northwest corner of the North Cell TSF, Saddle Dam 1 corner, Saddle Dam 2 sump, AWPR culverts near the site and along the road to Baker Lake, WRSF – ST-16 Seepage, Assay Road Seepage and the Vault Pit area.

Each area identified above will be discussed in detail below. All areas of concern are considered priorities based on the guiding principles.

SECTION 2. AREAS OF CONCERN

2.1 MINING PITS AND PIT WALLS

All permanent ramps, jump ramps, ditches and sumps must be cleaned of all ice and snow before the month of May in order to contain any water resulting from the snow melt. All pumps must be checked and serviced before the month of May. In addition, a check must be completed confirming that all piping systems starting from the different pits leading to the attenuation pond are free of ice by validating pumping values (if pumping systems are active) and/or performing an air test in the pipe with a compressor.

2.1.1 Goose pit

Water management in the Goose pit has been challenging for the mining operation. A significant section of the main access ramp is located in an ultramafic rock band called soapstone, a material that becomes fragile when it comes in contact with water. After each rain event, an inspection of the Goose pit west wall is required. To reduce health and safety risks and impact on production, proper water management must be executed during freshet.

2.1.1.1 Goose pit west wall

With the amount of ice present on the west walls in Goose pit, as shown in Figure 2-1, special attention must be taken when ice is removed from the walls. Periodically, ice removal is to be performed with an excavator to prevent any ice overhangs forming over the ramp.

Figure 2-1: Goose pit West Wall

2.1.1.2 Goose Pit ramp and switchbacks

The Goose pit ramp is located in the section of the pit associated with highly fractured rock. Water seeps continually from the west wall over the pit ramp leading to concentrated efforts in water management during normal operation of this mining area. Mine operations personnel have established sumps on each switchback to manage the water. Ditches located on the toe of the hauling road direct the water inflow into these sumps to avoid formation of ice on the ramp. Figure 2-2 presents the location of the ice over the walls as purple clouds, the ditches are identified by thick red lines and the sumps are represented by circles. Note that the sump located at the south switchback (black) is active however the sump on the north switchback (blue) still remains to be constructed.

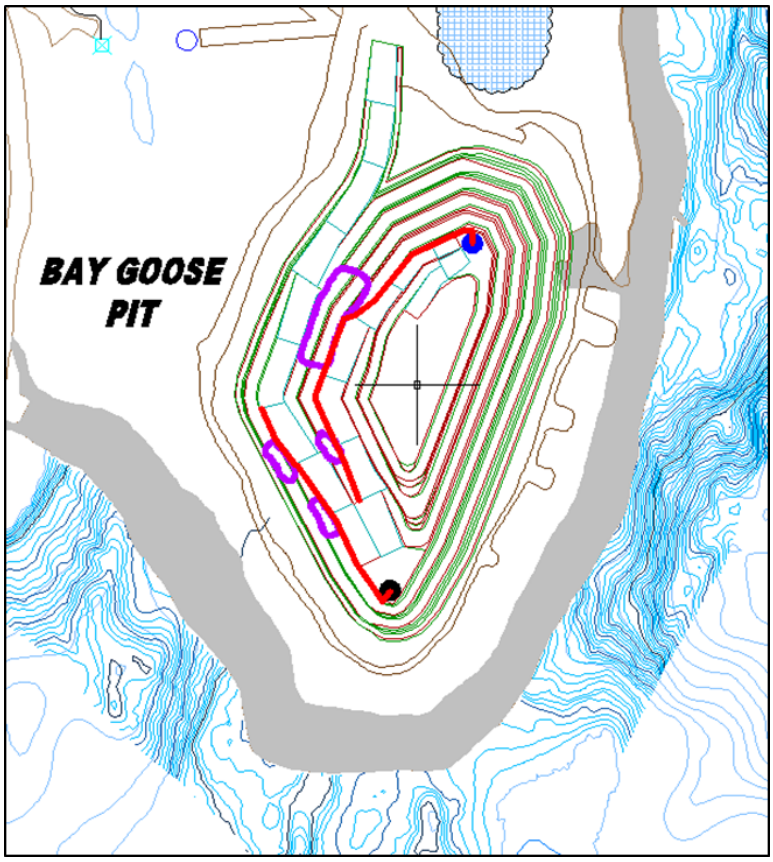


Figure 2-2: View of Goose pit with the associated sumps and trenches to be maintained before freshet

The existing ditch along the ramp on its first portion, between the 5102 bench and the first switchback at 5074, has to be maintained free of ice during winter as a part of an established procedure. The sump on the switchback at 5074 must be free of ice as well. The pump, already installed in the sump, must remain at this location and any maintenance to the pump or genset shall be completed before May. As the ramp is progressively established between the switchbacks at 5074 and 5028, a ditch must be constructed along the west wall to reach the switchback. This ditch must also be free of ice. A permanent sump (north) must be blasted on the 5028 switchback and a pump installed before May.

Mining operation in Goose pit may be suspended for an undefined period following the 2014 freshet due to safety concerns related to the ice formation on the west pit wall. The 5025 bench

will be mined and the decision to continue mining operations will be taken after daily inspections and assessment are performed by geotechnical and mining crews in the spring. If unsafe conditions, expected sometime in May are observed, the Goose pit mining operations will be suspended, all equipment and personnel will be evacuated and the monitoring program will continue until it is judged safe to return to normal operation. The pit could also be declared inoperable due to water affecting sampling in ore patterns. Operation will resume as normal once the geotechnical and mining crews agree that it is safe to do so.

2.1.2 Portage pit

Water management in the Portage pit has been simplified since the mining of pits B, C and D has been completed. These completed pits; located in the talik area had significant water inflows compared to the remaining Portage pit mining areas. However, the new pit design calls for a pushback of the Pit E area. This pushback will interfere with existing runoff water infrastructure (ditches) shown on the Figure 2-3. The channel between the sump number 8 and the pond GP8 is now blocked by the Portage pit E3 access ramp. A new sump area will be located near the GP8 pond.

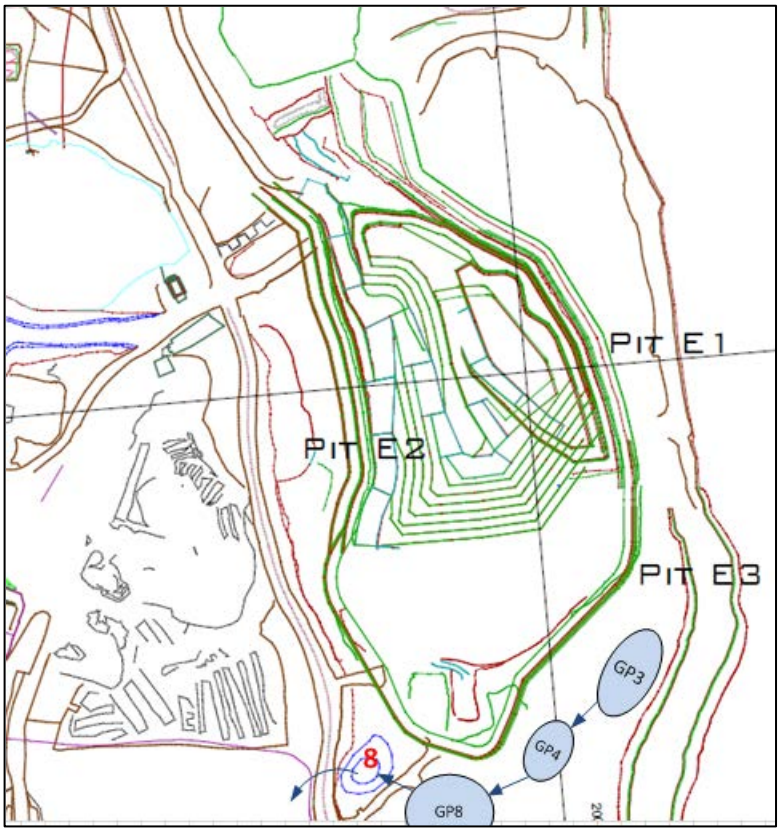


Figure 2-3: View of Portage Pit E area with the associated sumps and trenches to maintain before freshet

2.1.3 Vault Pit

In 2013, Vault Lake was partially dewatered leaving 4 isolated ponds (A, B, C & D) to collect water from freshet as shown in Figure 2-4. Pond A will be pumped into B during freshet to avoid runoff water to flow into the pit. The light blue surfaces in Figure 2-4 represent the final water elevation of each pond at the end of the 2013 dewatering season.

To avoid pumping mine contact water flowing into the Vault Lake, the water from Vault pit will be directed and/or pumped, and stored in the Vault quarry during next (2014) freshet. This quarry water was previously pumped into pond D at the end of the 2013 pumping season. No water flow into the quarry has been observed during the mining of Vault pit during winter 2013-2014, therefore this quarry only contains a small amount of snow accumulation. The Vault quarry will be used as the Vault attenuation sump until the dewatering plan established in 2013 (pumping of ponds A and B to Wally Lake as it is non-contact water) will be completed.

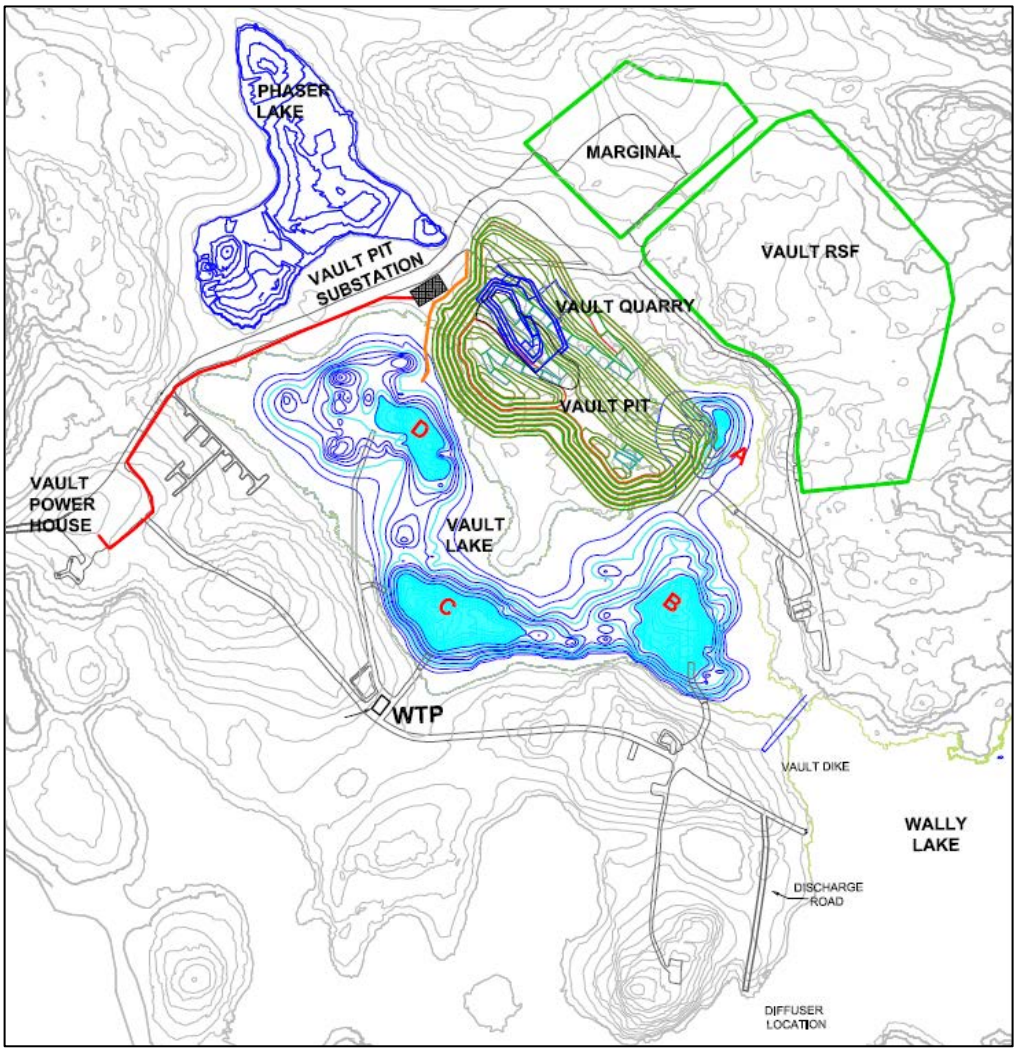


Figure 2-4: View of Vault Pit and Vault Lake with its associated ponds

When the quarry needs to be emptied, the entire volume of water will be pumped to pond D which is independent (non-contact) of ponds A, B and C. Pond D water is considered to be contact water and part of the Vault Attenuation Pond. At the elevation 137.5 m, the contact water in pond D will begin to overflow into pond C at which point it can be treated via the Vault Water Treatment Plant and discharged through the diffuser. The water elevation of each pond will be surveyed on a daily basis to avoid pond D water contacting ponds A, B and C.

Any discharge of pond D water requires treatment at the WTP prior to discharge, through the diffuser into Wally Lake as per the Type A Water License. It is anticipated that the dewatering of ponds A and B will be completed before any discharge of ponds C and D is required. The

Environmental department must be notified before discharging any water to Wally Lake for sampling purposes. All piping and the discharge diffuser must be inspected in April in order to have all installations in place to proceed with dewatering and/or treatment activities during freshet. The WTP will also be inspected and commissioned to be ready for the pumping season.

2.2 NORTH CELL TAILINGS STORAGE FACILITY

Water management around the North Cell Tailings Storage Facility (TSF) is required to maintain integrity of the tailings pond and to prevent any adverse environmental impacts. This section covers the different infrastructure in place to control runoff water and reduce its impact on this tailings storage facility and the environment.

2.2.1 Diversion Ditches

The East and West Diversion ditches were constructed in 2012 around the North Cell TSF and the Portage WRSF. The diversion ditches are designed to redirect the fresh water from the northern area watershed away from the tailings pond and WRSF and return it to the natural receivers, Second and Third Portage Lakes. As seen in Figure 2-5, seven zones have been identified where actions will be taken during or before freshet:

1) AWPR culvert – Discharge to Third Portage Lake;

2) West Diversion Ditch elbow;

3) Northwest corner of North Cell TSF;

4) East Diversion Ditch low point;

5) East Diversion Ditch Outlet to NP-2 Lake

6) North portion of NPAG waste rock expansion; and

7) Vault road culvert – NP-2 Lake exit to NP-1 Lake.

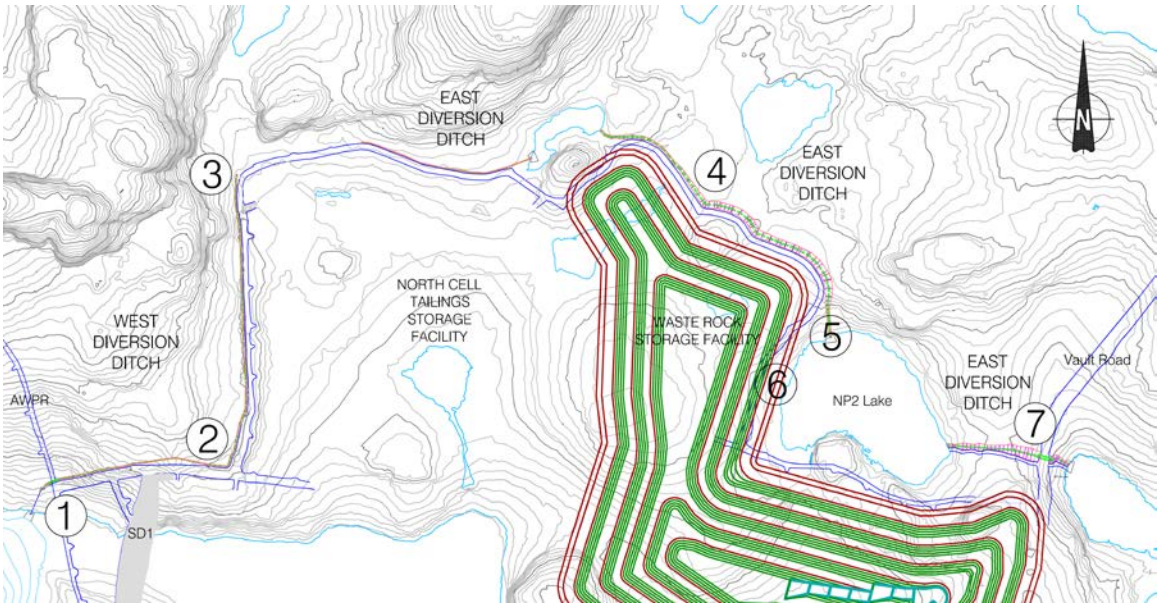


Figure 2-5: Location of the areas of interest for the 2014 diversion ditches freshet Action plan

2.2.1.1 AWPR culvert – discharge to Third Portage Lake

Ditch outflows are important to ensure proper flow of freshet drainage. The culvert under the AWPR (Figure 2-5 #1) is a critical section of the West Diversion Ditch. Snow removal must be performed to avoid ponding and damage to the ditch/trench structure as well as to maintain the integrity of the AWPR which, in turn, is critical to transportation at the Meadowbank mine site.

Figure 2-6 illustrates this culvert. Snow and/or ice must be removed using an excavator on each side of the culvert to allow water to flow through to prevent upstream ponding. The culvert may need to be steamed if blocked by ice. Before starting the cleaning operation, it is important to ensure that the electrical cable (5kV) location has been visually identified.

After flowing through the culvert the water discharges across the tundra into Third Portage Lake – see Figure 2-6 below. Snow and ice needs to be removed in early May to prevent any back up in the West Diversion ditch. This could increase water levels upstream in the ditch causing problems discussed in Section 2.2.1.2. In 2013 silt curtains were installed at the discharge area to Third Portage Lake to control elevated TSS during the freshet period. The elevated TSS was caused due to the back up of water caused by snow blockage. The higher water levels scoured the top portion of the ditch causing sediment release. Snow and ice removal should keep the water levels lower thus preventing the scouring effect observed in 2013.

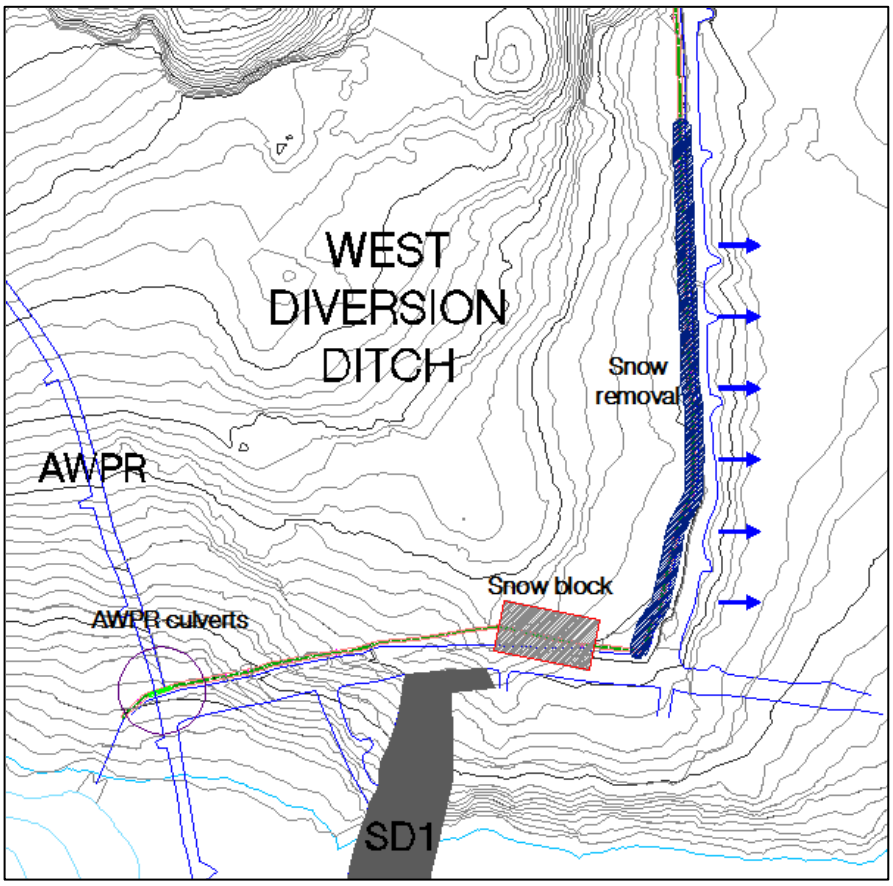


Figure 2-6: West diversion ditches area of interest

The turbidity barrier installed in 2013 was left in place over the winter. Additional barriers can be installed after ice melt as a contingency. Daily inspections will be conducted starting in mid-May. Sample monitoring will commence when open water is present in accordance with the Water License (ST-6). Sampling frequency of ST-6 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. If a discharge of TSS occurs, the Environment Department will notify DFO.

2.2.1.2 West Diversion Ditch Elbow

One of the deepest sections of the West Diversion ditch is located in the corner next to the Saddle Dam 1 – see Figure 2-6 and Figure 2-5 #2 above. In 2013 a large accumulation of snow blocked the flow through this ditch at a location denoted by the red square. Water accumulated behind the blockage and raised upstream creating channels through the rockfill and into the North Cell TSF. In early May, AEM will remove the snow accumulation to allow the water to flow freely preventing the upstream from increasing in level and hydraulic head pressure. In addition, large flows can scour the ditch system causing sediment migration through the ditches which could impact Third Portage Lake. To prevent this, snow must be removed from the corner area with a long reach excavator before the month of May. A contingency in the event of high flows despite the snow removal will be to install a pump and then discharge the water directly in the tailings pond.

Another risk is the possibility of tailings reclaim water seeping, through the rockfill road perimeter that surrounds the north and west sections of the TSF, into the West Diversion ditch. To mitigate

that risk, AEM performed a seepage analysis to evaluate the maximum elevation of the tailings beach that could be raised at the toe of the North Cell ring road. Sections have been realized at each deposition point to determine if the tailings beach will reach the toe of the road. Results presented on the Figure 2-7 showed that no tailings should reach that elevation.

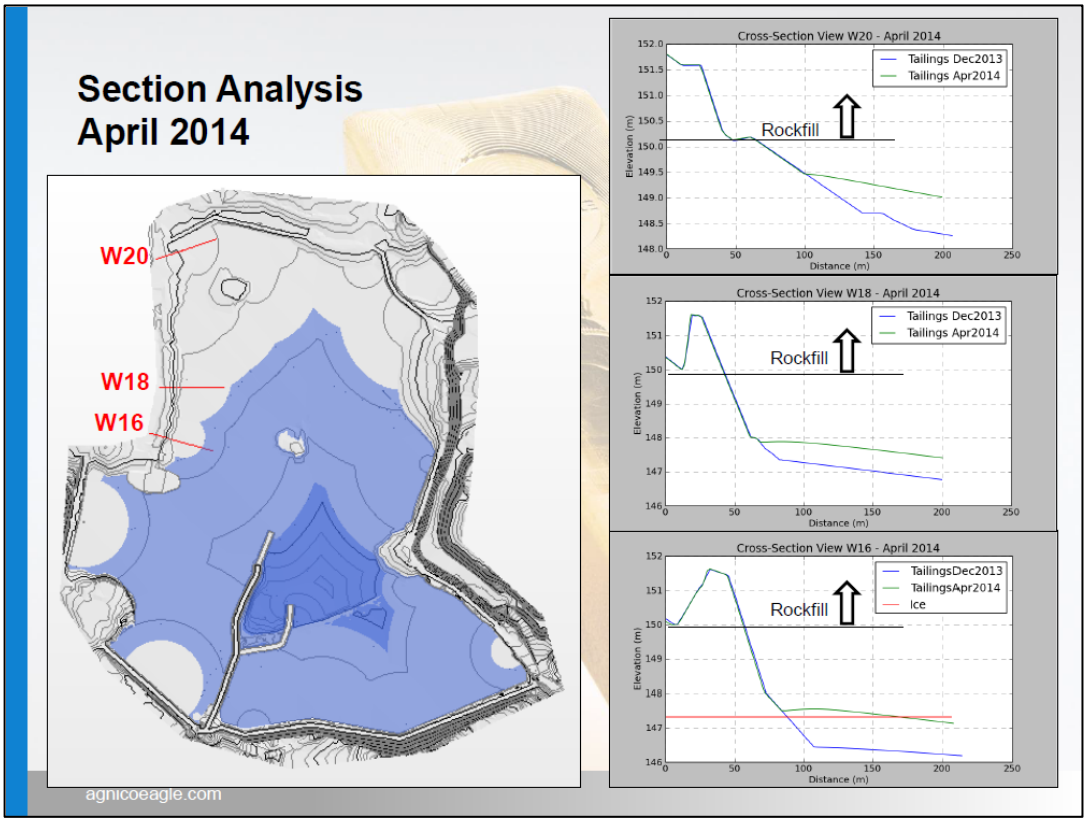


Figure 2-7: North Cell ring road seepage analysis

As a further precaution AEM constructed a retention sump located at the west diversion ditch elbow location. The sump has a capacity of 3000 m³. The sump is designed to intercept water coming from the most critical parts of the West Ditch. Sample monitoring will determine if there is any seepage from the TSF or elevated TSS. If seepage is detected a temporary dam will be placed in the ditch downstream from the sump and a pumping system will be installed which would discharge the water from the sump to the TSF. These measures will prevent any contaminated water from reaching Third Portage Lake. This sump will also act as a settling pond to prevent water with elevated TSS from reaching Third Portage Lake. Daily inspections will be conducted during the freshet. Figure 2-8 shows the North Cell interception/settling sump after the completion of the construction.

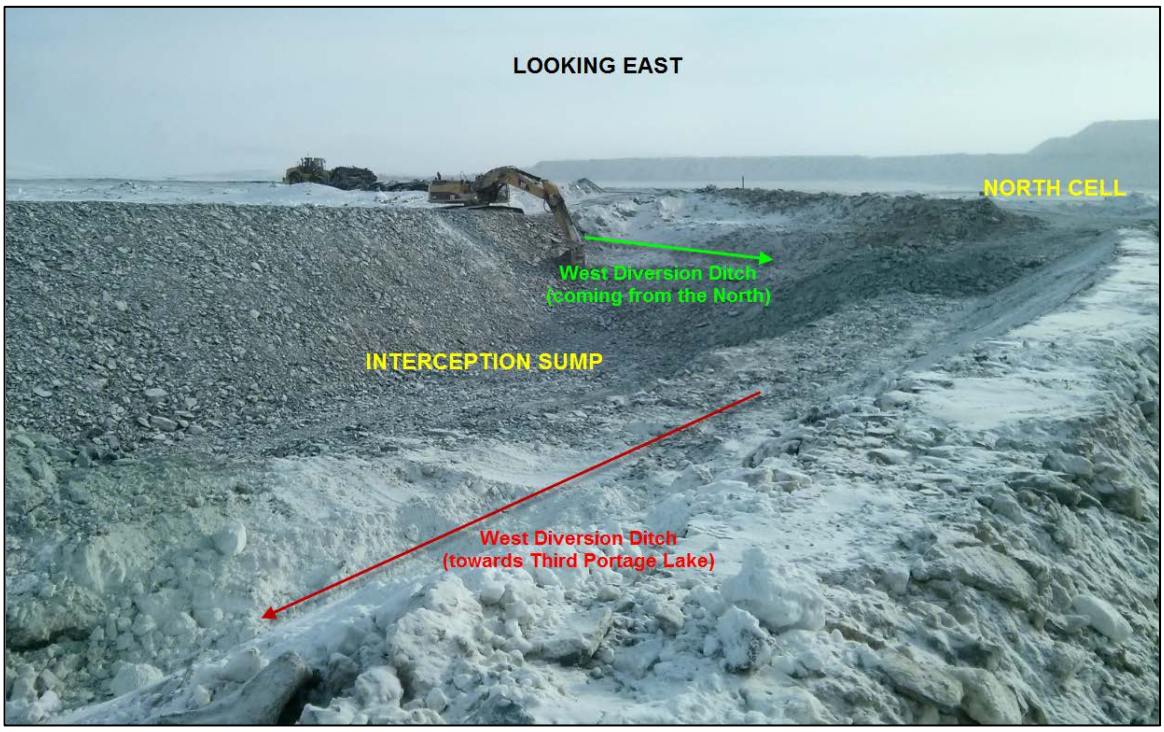


Figure 2-8: North Cell West Diversion ditch interception sump

2.2.1.3 Northwest Corner of North Cell TSF

The construction access road at the Northwest corner of the North Cell TSF (see Figure 2-9 and Figure 2-5 #3) is vulnerable to damage from the freshet water flow from the northern watershed (see watercourse flow in Figure 2-9 denoted by light blue dotted line). The start of the West Diversion ditch is also located in this area and is designed to collect most of the freshet flow – note arrows in Figure 2-9. In order to prevent the water from accumulating against the access construction road and possible overflow to the tailings pond, the snow and ice must be removed in early May from the areas indicated by the red circle in Figure 2-9. This is very important as the start of the West ditch is shallow, must manage a high initial flow rate and can plug easily (with snow). Also, note in the Figure 2-9 two areas where water ponded during the 2013 freshet. As a contingency, a pump can be utilized to transfer this water to the North Cell TSF or the West Diversion ditch (non-contact water only). In addition, to prevent any contamination of Third Portage Lake, daily inspections will be completed and samples will be taken if AEM suspects that any seepage contamination is migrating out of the TSF (analysis for CN and metals). If water is contaminated with tailings, the water will pumped back to the TSF.

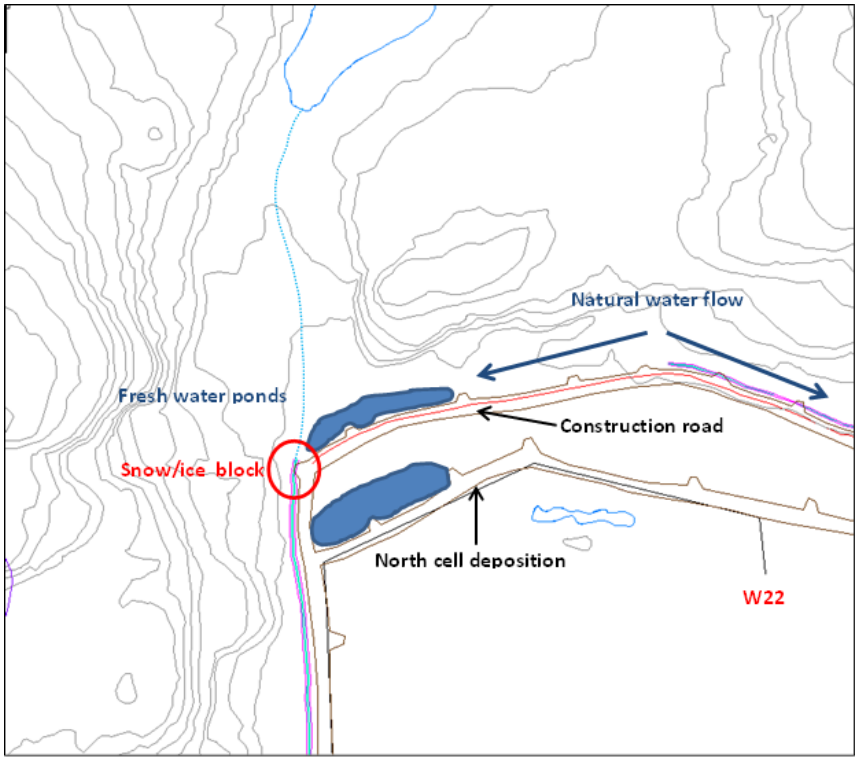


Figure 2-9: View of the northwest corner of the ditches

2.2.1.4 East Diversion Ditch Low Point

There is a low point located on the northernmost portion of the East Diversion ditch – see Figure 2-10 below and Figure 2-5 #4. Snow needs to be removed from this area, denoted by the blue arrow, to prevent watershed flow from following the historical watercourse (dotted line) and reaching the toe of the NPAG Waste Rock extension (WRSF). In 2013, a snow plug was created in this area (red circle on diagram) preventing the water from flowing from the area which caused the runoff to overflow the East Diversion ditch, into the historical watercourse and ultimately into the WRSF. Removing the accumulated snow in early May at a downstream location referenced by the blue arrow will allow the runoff to flow freely through the East Diversion ditch to NP-2 Lake. Daily inspections will be undertaken to ensure the watershed non-contact water flows freely in this section of the East Diversion Ditch.

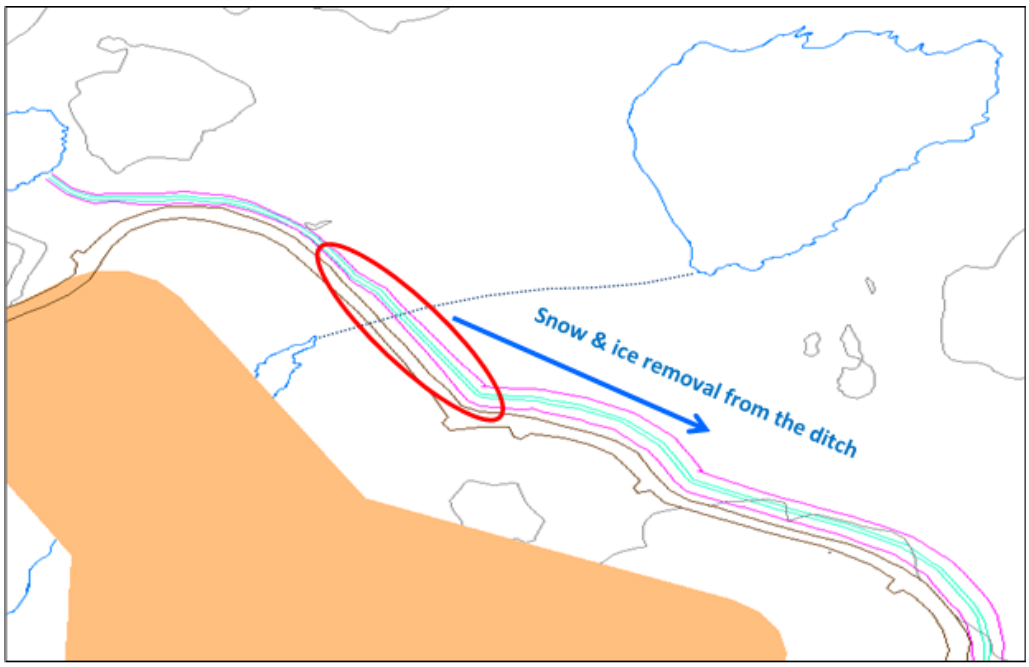


Figure 2-10: View of the north low area where a snow build up retained water in spring 2013

2.2.1.5 East Diversion ditch outlet to NP-2 Lake

This area of the East Diversion ditch, seen in Figure 2-11 and Figure 2-5 #5, is critical as it acts as the outflow of the North part of the East Diversion ditch into NP-2 Lake. This outlet must be cleared of obstructions – snow and ice in early May to promote drainage through the ditch and into NP-2 Lake. The presence of ice blocks will be be mitigated using the steam machine to melt away the obstruction. Daily inspections will commence in early May and sample monitoring will be conducted monthly during open water in accordance with the Water License (location ST-5). Sampling frequency of ST-5 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Turbidity barriers will be available for installation at the ditch outlet into NP-2 to mitigate elevated TSS if needed. If a discharge of TSS occurs, the Environmental Department will notify DFO.

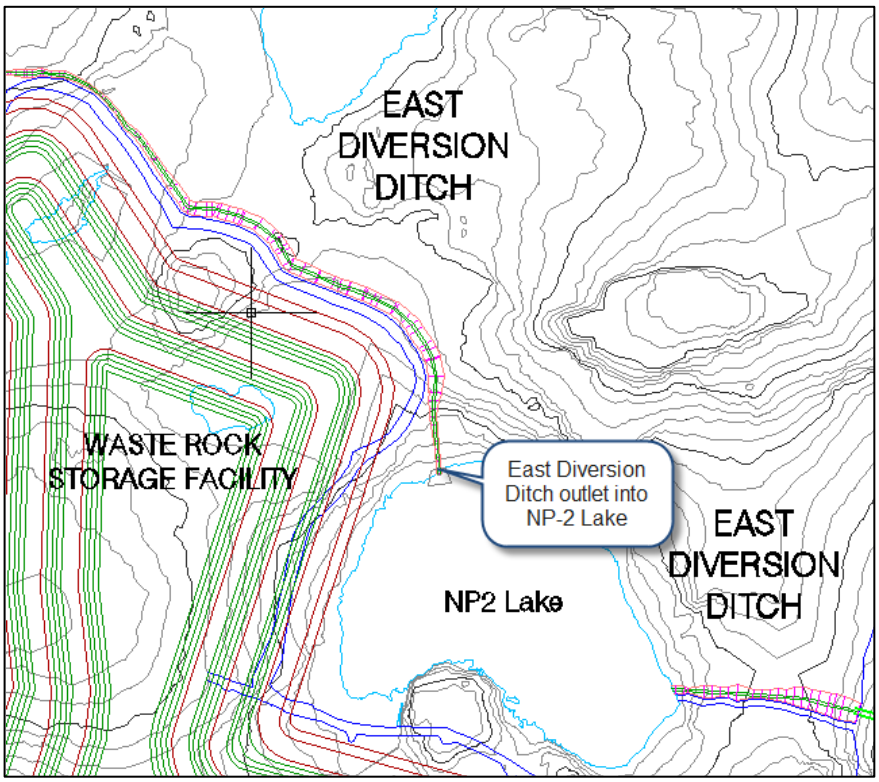


Figure 2-11: View of the East Diversion ditch outlet into NP-2 Lake

2.2.1.6 NP-2 Outlet and Vault Road Culvert

This area of the East Diversion ditch is critical as it acts as the outflow of NP-2 Lake through the Vault Road culvert (see Figure 2-5 #7). The culvert seen in Figure 2-12 connects the East Diversion ditch from Lake NP-2 to NP-1. Snow and ice must be removed from the area, including upstream at the exit of NP-2 Lake in early May to ensure that the outlet of NP-2 flows freely to NP-1 and ultimately to Dogleg Lake. Back up could cause upstream water raises in Lake NP-2 which could cause overflow into the WRSF at ST-16. First, snow from the ditch between NP1 and the road (1) would be removed in early May. Next, any obstruction between the road and NP2 Lake (2) would be removed. After, if needed, the steam machine would be used to remove the ice and snow from inside the culvert (3) and ensure that any other ice obstructions were removed from the outlet of NP2 Lake (4) to allow free flow of melt water. Daily inspections will commence in early May and TSS sample monitoring will be conducted monthly. Sampling frequency may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Turbidity barriers will be available for installation at the ditch outlet into NP-1 to mitigate elevated TSS if needed. If a discharge of TSS occurs, the Environmental Department will notify DFO.

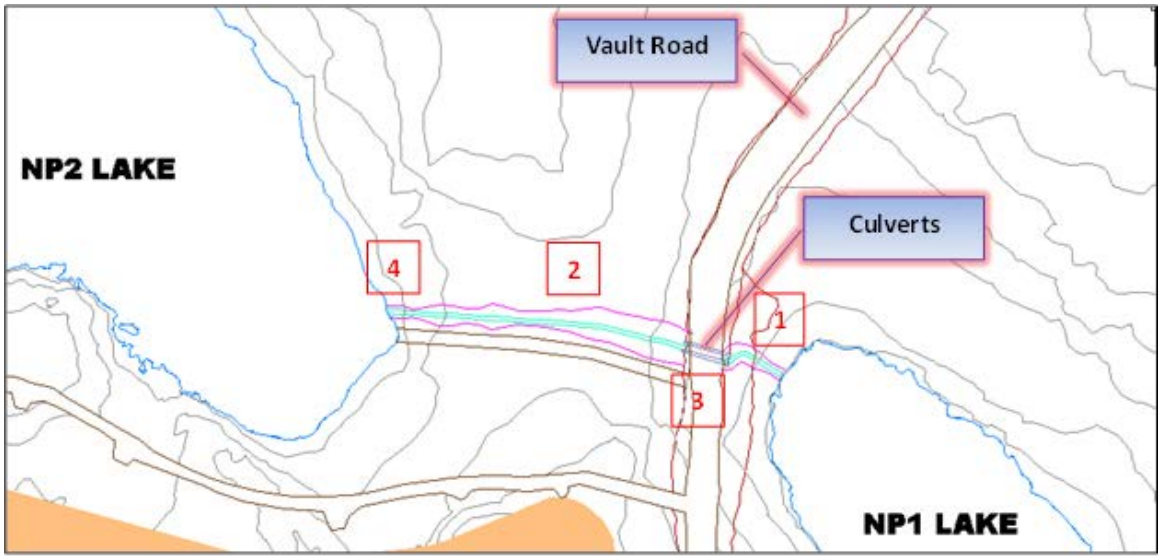


Figure 2-12: View of the diversion ditches at the Vault road area

2.2.1.7 North Portion of NPAG Waste Rock Expansion

The northwestern area of the WRSF, which consists entirely of NPAG material, extends towards the East Diversion ditch as shown in Figure 2-5 #6. Runoff from this area, while not anticipated to be contaminated could, if significant, discharge to NP-2 lake after crossing the tundra. A natural depression should capture most of the NPAG runoff. Daily inspections will be conducted by the Environmental Department. Sample monitoring will be undertaken when water is observed in order to determine water quality. Contaminated water must be kept from reaching NP-2 Lake. Ditching can be undertaken as a mitigation measure if required.

2.2.2 Saddle Dams

2.2.2.1 Saddle Dam 1

This dam, peripheral to the North Cell TSF, is critical to the normal operation of the North Cell TSF. Daily inspections starting mid-May will be required for Saddle Dam 1 (SD1) to ensure that water does not pool against the toe of the dike. A pumping station located along the toe of the dike was installed previously to mitigate the pooling of water at the toe. This pumping station must be operational once water is observed at the toe to pump the water to the TSF. The pumping system must be checked in early May to ensure proper operation. Monthly sampling will be conducted at this station (ST-S-2) during open water conditions in accordance with the Water License.

2.2.2.2 Saddle Dam 2

This dam, just South of SD1, is also critical to the normal operation of the North Cell TSF. Historically, this structure has not had any issues with water pooling at the toe, therefore monthly inspections starting mid-May will be required for Saddle Dam 2 (SD2) to ensure that water does not pool against the toe of the dike. If water is observed at the toe, a mitigation plan will be determined and implemented by the Geotechnical department.

2.3 VAULT ROAD CULVERT

The Vault road crosses over a connection between two water bodies, Turn Lake and Drill Trail Lake, at approximately km 2. A system of culverts was installed to allow flow to occur between the two waterbodies. Beginning in mid-May it will be important to complete daily inspections. In the case that excessive TSS is observed, samples will be taken and analyzed. In the case, where the TSS levels go beyond 30mg/L, a report will be made to the DFO. Turbidity barriers will be installed as a mitigation measure if needed.

2.4 RSF SEEPAGE

2.4.1 General RSF Inspection

The Portage Rock Storage Facility (WRSF) will require weekly inspections around the perimeter beginning in mid-May to identify any seepage. As will be noted in the following section, seepage was identified in 2013 at location ST-16. In the event that additional seepage is observed from the RSF, it must be reported to the Engineering Department and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary.

2.4.2 ST-16 Seepage

In July 2013, it was noted that seepage from the Waste Rock Storage Facility (RSF) had migrated through a rockfill road at a seepage sump located on the north-east side of the RSF (see ST-16 on Figure 2-13). The seepage, which contained elevated copper, nickel, ammonia and cyanide entered NP-2 Lake. It was determined through investigation that the likely source of the contaminants was reclaim water from the North Cell TSF. This water migrated underneath the RSF through a former watercourse into the seepage sump area (ST-16). AEM took immediate measures to stop the seepage and implement corrective measures to prevent a recurrence. This included, keeping the sump area pumped to a low level, installing an impermeable barrier (till plug) in the rockfill road, implementing a comprehensive monitoring program and ensuring tailings deposition was enhanced in the North Cell to create beaches that would stop any water egress (this activity is continuous as it is part of AEM's Tailings Deposition Plan). In order to mitigate the expected seepage this summer, a permanent pumping system will be established prior to freshet. The piping for this system will be installed no later than the second week of April, with the final installation of the pump and associated equipment (i.e. pig launcher) completed before mid-May. Pumping will begin once the melt begins. Any large snow accumulation will be removed before May if necessary. Pumped volumes will be documented and daily inspections of the area will be undertaken. Once pumping begins, the existing RSF seep monitoring program will commence. This includes:

A. Monthly : ST-16 and NP-2 South/West/East testing at Multi Lab for metals, CN Total, CN Free (SGS), ST-16 metals requirements and to include new KIA requested parameters and locations (NP1, Dogled, SPL); and

B. Bi-weekly (2x a week): On site assay lab for CN WAD at ST-16 and NP-2 South. Sampling frequency change to weekly (1x a week) after 1 month.

In the event that seepage water flows through the rockfill road reaching NP-2 Lake, the Environmental Department will notify authorities.

To complement the work done with the tailings deposition, which ensures adequate beaches along RF1 and RF2, thermistors, installed in 2013, will be closely monitored to identify unusual events. All the information collected from the inspections, pumping, thermistors, and sampling results will be compiled and submitted as progress reports to regulators. These actions

correspond to recommendations made by Golder Associates, "*Rock Storage Facility Seepage – Meadowbank Gold Mine, Nunavut*" (January, 2014). This document can be found as an Appendix to AEM's 2014 Water Management Plan.

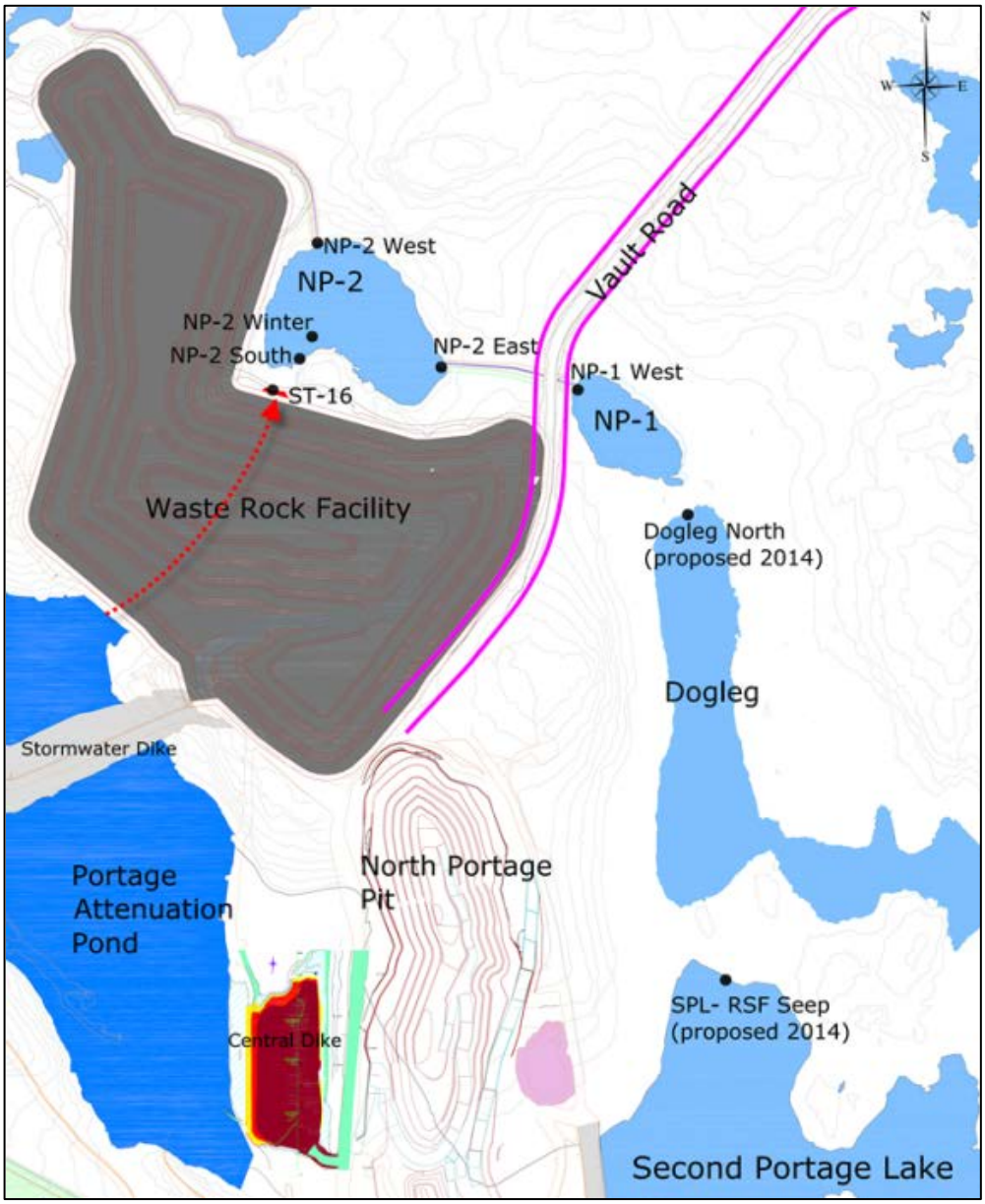


Figure 2-13: View of the RSF seepage observed at the ST-16 station with a red arrow representing the flow of the seepage

2.5 MILL SEEPAGE

In November 2013, AEM observed seepage discharging at a location West of the site access road in front of the Assay Lab (see Figure 2-14). Initial sample results revealed elevated cyanide and copper which is indicative of mill processes. After an investigation, which included sample monitoring, the source was determined to be seepage from several containment areas within the mill, the worst being the CIP tank overflow collection sump. Repairs are underway to seal all the

mill sumps thus stopping the source of the seep. AEM engaged Tetra Tech in December, 2013 to propose a drilling delineation program and further steps necessary to control the seepage and prevent offsite migration to Third Portage Lake – see Figure 2-14 for the seep location. AEM completed drilling program and is committed to implementing the construction of a permanent interception/collection trench prior to the freshet season which is anticipated to begin in mid-May. A comprehensive monitoring program will also be implemented.

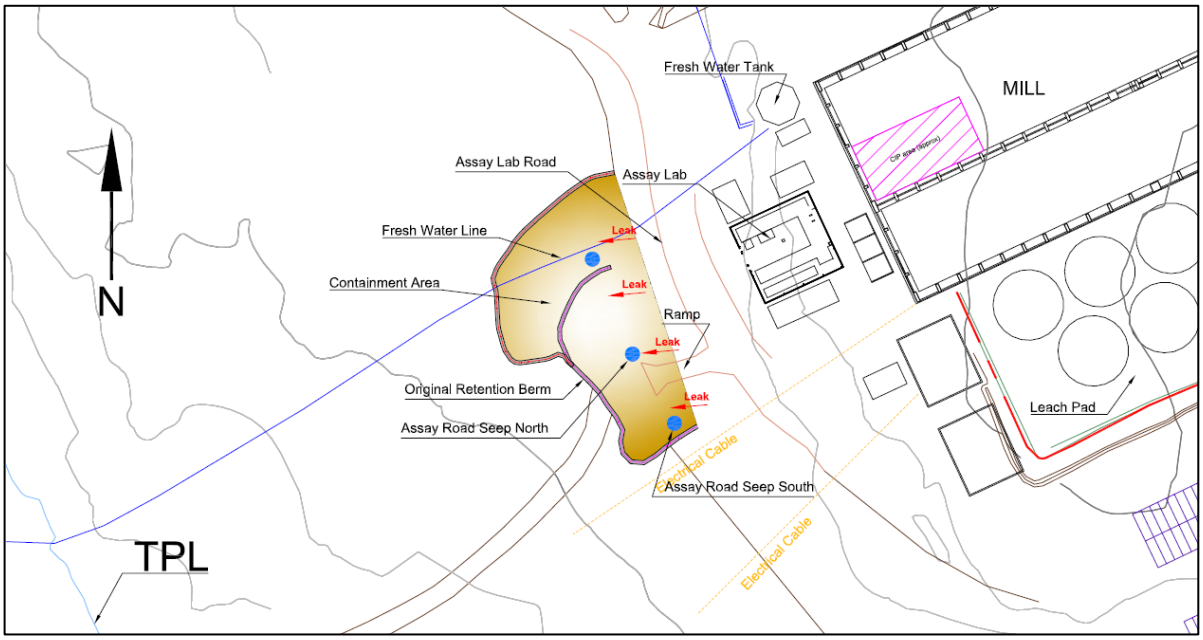


Figure 2-14: View of the mill seepage area and initial retention berm construction

The construction of the permanent interception trench will be completed by the first week of May, 2014. The design of the trench can be seen in Figure 2-15. Once completed, a pump will be installed in the interception trench. Any collected water will be pumped to the mill and discharged with the tailings to the TSF. In addition, pumping of any seepage will also occur at the original containment area constructed in November, 2013 (see gold colour in Figure 2-14). A final report will be completed by Tetra Tech upon completion of the trench outlining all drilling and construction activities. Daily inspections will be conducted of the pumping, collection systems and perimeter area and the pumped volumes will be recorded. The water sampling monitoring program that will be implemented once open water is present is as follows:

A. Monthly : testing at Multi Lab for Cn Free (SGS), Cn Total, Copper, and Iron for Trench, MW's 4, 5, 6, 7, 8, original retention area and Third Portage Lake; and

B. Bi-weekly (2x a week): on-site testing for CN WAD from original retention area, trench, and MW's 02, 03, 08, 201, 202, 203.

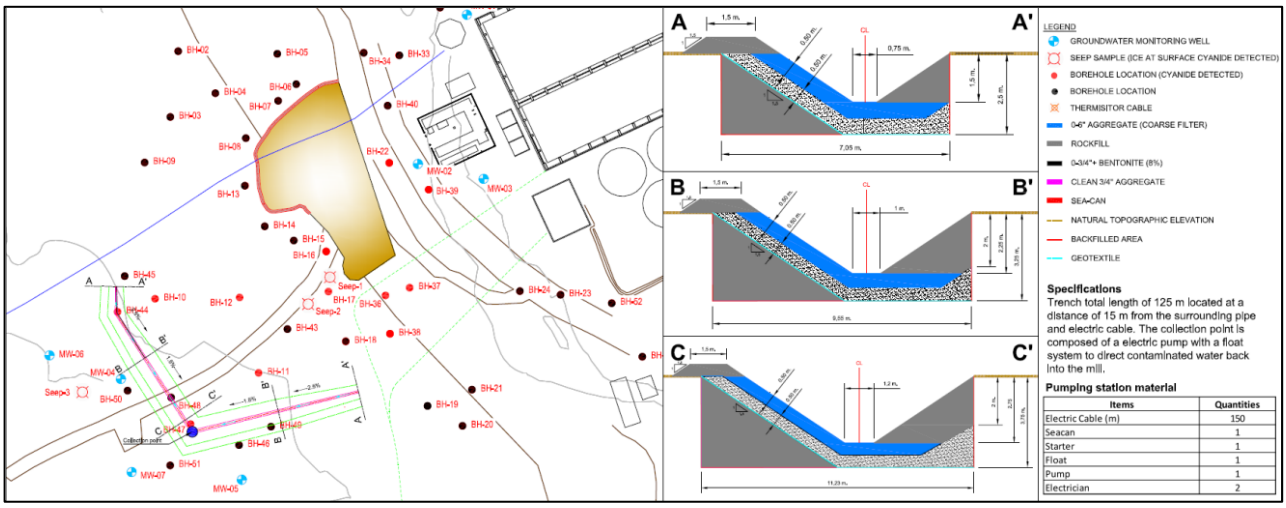


Figure 2-15: View of the mill seepage area and interception trench design

2.6 STORMWATER MANAGEMENT POND

The Stormwater Management Pond is a small shallow and fishless water body that can be seen in Figure 2-16 adjacent to Portage Pit. Treated sewage is discharged into this pond before being transferred to the active TSF. The quantity of water transferred each year, occurring only during the summer months, is recorded. Weekly inspections will be undertaken to determine the commencement of pumping.

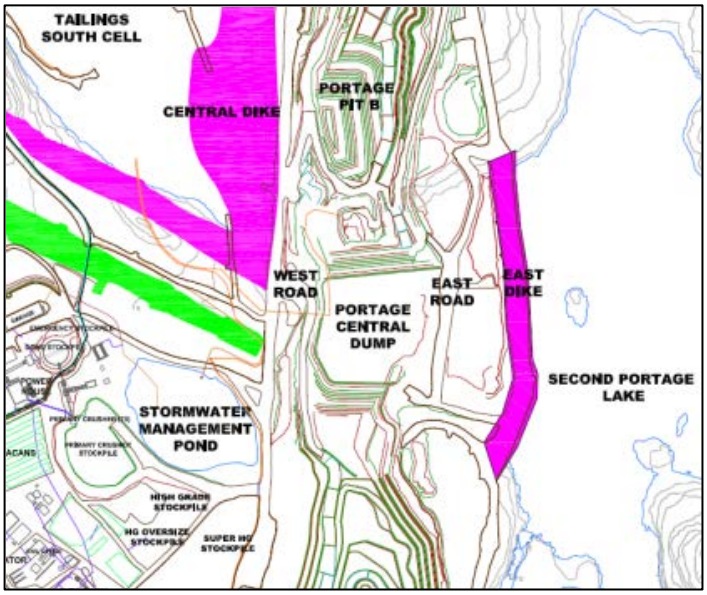


Figure 2-16: Portage Pit area with the Stormwater Management Pond

2.7 FUEL TANK FARMS

2.7.1 Meadowbank Tank Farm

Snow and ice accumulation within the fuel tank farm must be adequately managed to prevent overflow to the environment and/or damage to the fuel handing systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra/ground. In the event that the water sample results do not meet discharge criteria the water can be pumped to the Stormwater Management Pond.

2.7.2 Baker Lake Tank Farms

Snow and ice accumulation within the fuel tank farms at Baker Lake must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra but the flow rate shall be such to avoid erosion or damage to the tundra. **In the event that the water sample results do not meet discharge criteria the water cannot be pumped to the tundra.**

2.7.3 Vault Tank Farm

Snow and ice accumulation around the fuel tank farms must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin to direct water to the tundra but the flow rate shall be such to avoid erosion or damage to the tundra. In the event that the water sample results do not meet discharge criteria the water can be pumped and trucked to the Stormwater Management Pond.

2.8 VAULT RSF

Much like the WRSF located near Portage pit, the Vault RSF will require some monitoring during the freshet period to ensure adequate water management. Weekly inspections around the RSF perimeter will be conducted to identify any seepage. In the event that seepage is observed, the Engineering Department must be notified and samples taken to determine water quality. The sample monitoring will be in accordance with the Water License requirements. It is anticipated that there will be no water quality issues as primary drainage is toward the Vault Pit and Attenuation Pond; as well the waste rock from the Vault Pit is primarily NPAG.

2.9 AWPR CULVERTS ON THE BAKER LAKE PORTION

Weekly inspections will be undertaken at all culverts along the AWPR to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS levels are observed

sampling will occur and the results assessed. In addition snow and ice removal may be required to allow the water to flow as per design specifications.

2.10 MEADOWBANK ASSAY LAB

The Assay Lab needs to be advised of the extra sampling that will occur during the freshet period, well in advance. Consideration should be given to reducing the initial sampling after one month period if sample results are consistent or results indicate no elevated contaminant levels. The onsite laboratory, although not accredited, can provide indicative results quickly so that mitigation measures can be implemented in a timely manner.

APPENDIX 1

2014 Freshet Action Plan Procedure

Section	Area of Concern	Role/Action	Resposabilities	Dates
2.1	**Mining Pits and Pit Walls**			
2.1	Mining Pit and Pit walls - General	1) Clean all ice and snow on all permanent ramps, jump ramps, ditches and sump.	Mine Operations	Before May
		2) Check and service all pumps.	Dike/Dewatering and Maintenance	Before May
		3) Check that all piping systems starting from the different pits leading to the attenuation pond are free of ice by validating pumping values (if pumping systems is active) and/or performing an air test in the pipe with a compressor.	Dike/Dewatering	Before May
2.1.1	**Goose Pit**			
2.1.1.1	Goose Pit West Wall	1) Periodically remove ice from the wall with an excavator to prevent any ice overhang to form over the ramp.	Mine Operations	Periodically before spring melt
2.1.1.2	Goose Pit Ramp and Switchbacks	1) Make sure that the sump on the switchback at 5074 is free of ice during winter. The pump already installed in the sump must remain at this location.	Mine Operations	Before May
		2) Make sure that the ditch along the ramp on the first portion between the 5102 bench and the first switchback at 5074 is maintained free of ice during winter.	Mine Operations	Continually during winter before freshet

		3) Perform any maintenance to the pump or genset.	Dike/Dewatering and Maintenance	Before May
		4) Construct a ditch along the west wall to reach the switchback (between the switchbacks at 5074 and 5028). This ditch must be free of ice.	Mine Operations	May/June
		5) A permanent sump (North) must be blasted on the 5208 switchback and a pump be installed.	Dike/Dewatering	Before May
2.1.2	**Portage Pit**			
2.1.2	Portage Pit	1) Once the ring road construction is completed, inspection of this area should be performed to evaluate the work needed in order to prevent the water from accumulating on the dike toe and eventually overflowing into the Portage pit extension	Geotech tech and Engineering	Before June
2.1.3	**Vault Pit**			
2.1.3	Vault Pit	1) Set-up pumping from pond A to B to prevent water from flowing into the Vault pit area	Water engineers and Engineering	Freshet 2014
		2) Pump contact water from Vault pit into the Vault quarry.	Dike/Dewatering	Freshet 2014
		3) Finalize dewatering of Ponds A and B & C	Dike/Dewatering	Freshet/Summer 2014

		4) Once Vault Quarry needs to be emptied, the entire volume will be pumped to pond D	Dike/Dewatering	Freshet/Summer 2014
		5) Daily water level survey of pond A, B, C and D (to avoid pond D contracting pond A, B and C)	Engineering	Freshet/Summer 2014
		6) Notify Environmental Department before discharging any water to Wally Lake. **NOTE: Any discharge of contact water must be through the Diffuser.**	Water engineers and Engineering	Freshet/Summer 2014
		7) Inspect all piping and discharge diffuser	Dike/Dewatering	April
		8) Inspect and commission the WTP	Dike/Dewatering	April
2.2	**NORTH CELL TAILINGS STORAGE FACILITY**			
2.2.1	**North Cell Tailings Storage Facility (Diversion Ditch areas)**			
2.2.1.1	AWPR Culvert - West Diversion ditch exit to TPL	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20

		3) Before starting snow clearing operation, make sure the electrical cable location has been visually identified in the field	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		4) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		5) ST-6 sampling as per Water License and monthly inspection	Env. Department	Monthly as soon as freshet start and until water freeze
		6) Increase frequency of ST-6 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated, can use onsite assay lab for this (provide notice). Extra sample to Multilab if needed.	Env. Department	Depend of TSS result
		7) Have turbidity barriers in place at TPL (2) and maintain	Env. Department	May 15 - before freshet start and until water freeze up
		8) Report any discharge of TSS to DFO/NWB (grab > 30 mg/L)	Env. Department	May 15 - as soon as freshet start and until water freeze up
2.2.1.2	West Diversion Ditch elbow near Saddle Dam 1	1) Snow and/or ice must be removed with an excavator to allow water flow and prevent ponding upstream	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May

		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		3) Sample for TSS monthly (Multi Lab) and as needed for Turbidity - can use on site lab for TSS if necessary. Increase frequency of sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average)	Env. Department	May 15 - until Freshet complete and after rain events
		4) If water exceeds Water License criteria (TSS - 30 mg/L (grab) and 15 mg/L (monthly average), contact Engineering to pump water to tailings and temporarily stop (dam) flow through ditch to prevent impact to TPL.	Env Dept/ Eng Dept if limits exceeded, Dikes/Dewatering if pumping needed	May 15 - as soon as freshet start and until water freeze up
2.2.1.3	Northwest corner of North Cell TSF (West Diversion ditch)	1) Snow and/or ice must be removed with an excavator to allow water flow to enter West Diversion Ditch	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		3) Sample if suspect Tailings - analyse for Cn, Copper, Iron - can use onsite lab for CN WAD as indicator	Env. Department	May 15 - until Freshet complete and after rain events
		4) If tailings water present - water to be pumped back to TSF, and contact engineering and dikes/dewatering	Env. Dept Eng. Dept if limits exceeded, Dikes/Dewatering if pumping needed	May 15 - as soon as freshet start and until water freeze up

		5) Tailings beach to be maintained in TSF	Water engineers to ensure tailings deposition	All year
2.2.1.4	East Diversion Ditch low point (E 638418, N7216815). **(area where former pipe was through road)**	1) Snow removal to allow free water flow	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
2.2.1.5	East Diversion ditch outlet to NP-2 Lake	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		3) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		4) ST-5 sampling as per Water License and monthly inspection (keep record)	Env. Department	Monthly as soon as freshet start and until water freeze up
		5) Increase frequency of ST-5 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated, can use on site assay lab for this (provide notice). Extra samples to Multi lab if necessary.	Env. Department	Depend of TSS result

		6) Install turbidity barriers in NP-2, if needed, and maintained	Env. Department	May 15 - before freshet start and until freeze up
		7) Report any discharge of TSS to DFO/NWB (grab > 30 mg/L)	Env. Department	May 15 - as soon as freshet start and until water freeze up
2.2.1.6	East Diversion Ditch - NP2 Oulet and Vault Road culvert to NP-1 Lake	1) Snow and/or ice must be removed with an excavator on each side of the culvert and upstream at the exit of NP-2 Lake to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		3) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		4) Install turbidity barriers in NP-1, if needed, and maintain - see # 5 below.	Env. Department	May 15 - before freshet start and until freeze - up

		5) Sample for TSS monthly (Multi Lab) and as needed for Turbidity. Increase frequency of sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average) - use on site assay lab as this location is not regulated. Multi Lab to verify levels >30 mg/l - install turbidity barrier for elevated levels	Env. Department	May 15 - until Freshet complete and after rain events
2.2.1.7	North portion of NPAG Waste Rock Expansion	1) Daily inspection - kept record	Env. Department	May 15 until runoff complete
		2) Sample for ST-S-5 and ST-16 metals when water observed; sample upstream (background)in diversion ditch for same parameters and compare results (rush analysis). If results indicate potential for impact, ie results are > background, meet with engineering and determine necessity of ditching	Env. Dept + Eng Dept assistance if ditches needed	May 15 until runoff complete
		3) Prevent **contaminated** contact water from reaching NP-2	Env. Department	May 15 until runoff complete
2.2.2	**Saddle Dams**			
2.2.2.1	Saddle Dam 1	1) Inspect pumping system	Dikes/Dewatering	Early May
		2) Daily inspection - kept record	Eng Dept and Dikes/Dewatering	May 15 and until water freeze
		3) Start pumping to TSF when water observed. Kept volume pumped out.	Eng Dept and Dikes/Dewatering	After May 15 and until water freeze

		4) ST-S-2 sampling as per Water License	Env. Department	Monthly as soon as freshet start and until water freeze
2.2.2.2	Saddle Dam 2	1) Monthly Inspection - kept record	Geotech engineer and Engineering	May 15 until water freeze
2.3	**VAULT ROAD CULVERT**			
2.3	Vault road culvert from Turn Lake to Drill Trail Lake (~km 2 on Vault road)	1) Daily inspection - kept record	Env. Department	May 15 - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed, and maintain	Env. Department	May 15 - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use onsite assay lab and Multi Lab to verify levels >30 mg/l	Env. Department	May 15 - until freshet complete and after rain events
		4) Report any discharge of TSS to Drill Tail to DFO (grab > 30 mg/L)	Env. Department	May 15 - until freshet complete and after rain events

2.4	**RSF SEEPAGE**			
2.4.1	General Portage RSF Inspection	1) Weekly inspection around the RSF perimeter to identify any seepage	Env. Department	May 15 - as soon as freshet start and until freeze up
		2) If seepage observed notify Eng Department AND sample for Cn, ST-16 parameters	Env. Department	May 15 - as soon as freshet start and until freeze up
2.4.2	ST-16 Seepage	1) Piping for discharge to TSF to be installed	Engineering and Dikes/Dewatering	2nd week of April
		2) If the snow accumulation is judged to be too great, then snow rmust be remove	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		3) Pump installation and pumping - volumes must be documented, snow removal if necessary	Engineering and Dikes/Dewatering, Mine Dept if snow removal necessary	May 15 - as soon as freshet starts until freeze up
		4) Daily inspection - keep record	Env. Dept, Eng Dept and Dikes/Dewatering	May 15 - as soon as freshet starts until freeze up

	5) Notify Eng. Dept and Dikes/Dewatering when water present and pumping can start. **Water level to be maintained, as a minimum, below the till plug elevation. Water should not pond against the Till plug for extended time periods - ie < 2 - 3 hours. For emergencies the mine water trucks can be requested.**	Env. Department	May 15 - as soon as freshet starts until freeze up
	6) Water sampling program start when water present in accordance with Water Mgt Plan and RSF Seep Monitoring program: a) Monthly (ST-16, NP2 South/West/East) at Multi Lab for CN Total, CN Free (SGS), ST - 16 metals requirements and to include new KIA requested parameters and locations (NP1, Dogleg, SPL) b) Initially on site assay lab 2x/week for CN WAD at ST - 16 and NP-2 South, 1x/week after one month	Env. Department	May 15 - as soon as freshet starts until freeze up
	7) Any seepage through rockfill road to NP-2 must be reported to Env Dept and authorities.	Env. Dept, Eng Dept and Dikes/Dewatering	May 15 - as soon as freshet starts until freeze up
	8) Tailings beach at RF-1 and RF-2 to continue	Engineering and Dikes/Dewatering	Ongoing throughout the year - Tailings Deposition Plan
	9) Thermistor Monitoring	Env. Department	Ongoing throughout the year
	10) Submit progress/update report to regulators	Env. Department	Fall 2014

2.5	**MILL SEEPAGE**			
		1) Construct Interception trench as per design prepared by Engineering and approved by Tetra Tech	-Design - Enginnering -Construction - Env. Dept with assistance from Eng. Dept -QA/QC Tetra Tech	10-May-14
		2) Pump/piping installation at interception trench and pumping - volumes documented	Env Dept., Eng. Dept and Power Plant	Before end of May - operates seasonally until freeze - up
		3) Pumping/collection of water from Assay Road berm (original) - volumes documented	Env. Dept with assistance from Site Services	May 15 until complete
2.5	Mill Seepage	4) Daily inspection of pumping, collection systems, bermed areas and perimeter area - documented. **For emegencies the mine water trucks can be requested.**	Env. Department	Start May 15 until freeze-up (Oct 15)
		5) Monitoring Program - includes but not limited to (trecnh, original retention area and lake): a) Monthly send to Multi Lab - Cn Free (SGS), Cn Total, Copper,and Iron for Trench, MW's 4, 5, 6, 7, 8, original sump and TPL b) Assay Lab - initial 2x weekly for CN WAD from original sump, interception trench, and MW's 02, 03, 08, 201, 202, 203.	Env. Department	As soon as freshet start until water freeze

		6) After snow subsides, if possible, remove ice pockets identified in Tetra Tech (EBA) March drilling program as having CN present and dispose of in TSF.	Env Dept with assistance of Site Services	Late May - Early June
		7) Submit final Tetra Tech report to regulators as well as progress report	Env. Department	June, 2014
2.6	**STORMWATER MANAGEMENT POND**			
2.6	Stormwater Management Pond	1) Pump Stormwater to applicable TSF in Spring -pumped volume must be kept	Site Services and Dike/Dewatering	When required in Spring
2.7	**FUEL TANK FARMS**			
2.7.1	Meadowbank Tank Farm	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September

		5) Pump to tundra/ground or Stormwater Mgt Pond (note pumping to Stormwater Mgt Pond does not requi:re compliance with limits - at Meadowbank only). **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September
2.7.2	Baker Lake Tank Farms	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September
		5) Once approval given by Env Dept, Site Services can pump to tundra but must avoid erosion during pumping, ie., low flow, the volume must also be determined by Site Services personnel **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September

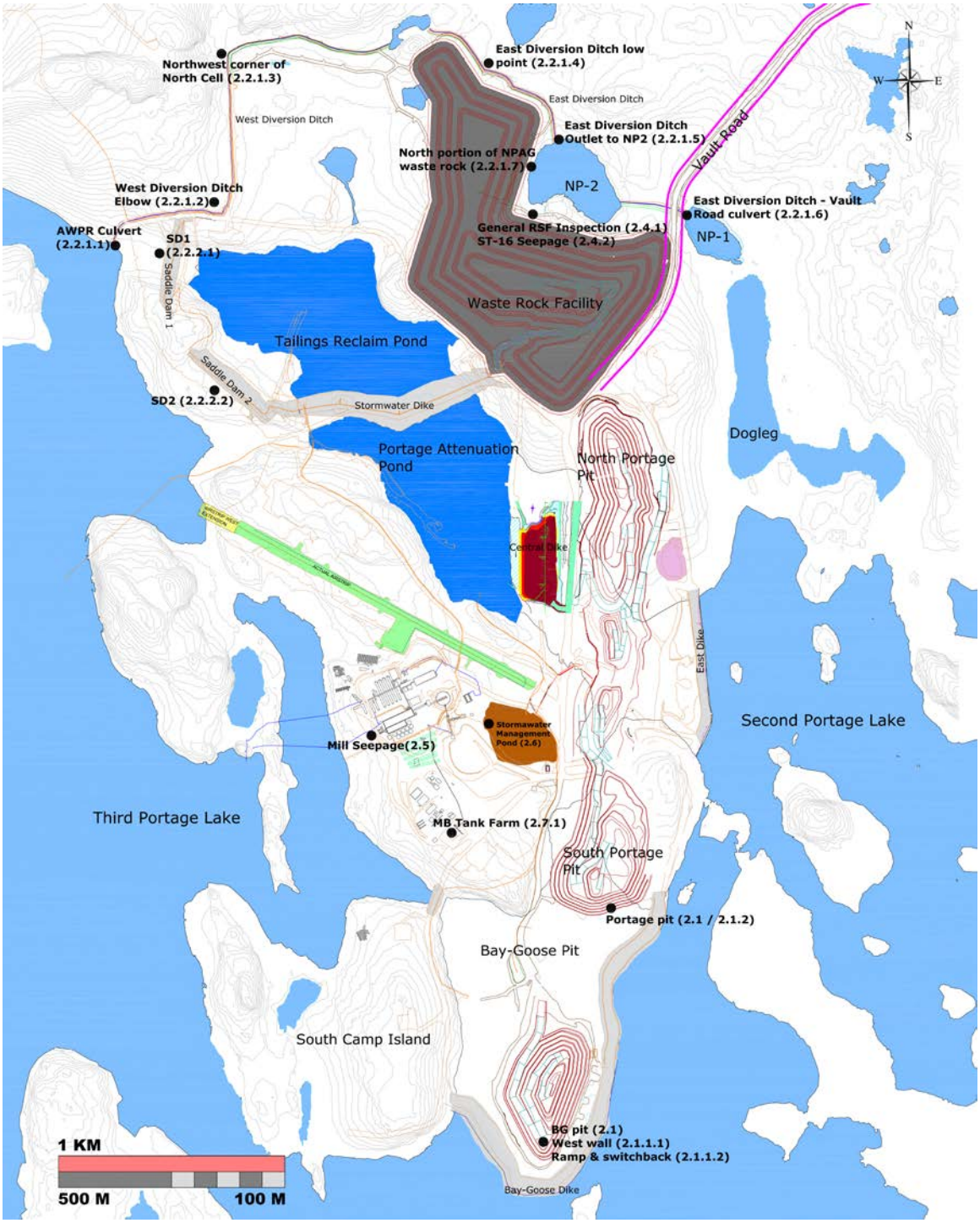
2.7.3	Vault Tank Farm	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September
		5) Once approval given by Env Dept, Site Services can pump to tundra but must avoid erosion during pumping, ie., low flow, the volume must also be determined by Site Services personnel **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September
2.8	**VAULT RSF**			
2.8	Vault RSF	1) Weekly inspection around the RSF perimeter to identify any seepage	Env. Department	May 15 - as soon as freshet starts until freeze up
		2) If seepage observed notify Eng Department AND sample for Cn and Water License Parameters	Env. Department	May 15 - as soon as freshet starts until freeze up

2.9	**AWPR Culverts on the Baker Lake Portion**			
2.9	AWPR Culverts on the Baker Lake Portion	1) Weekly inspection of culverts along AWPR to Baker Lake	Env. Department	May 2014
		2) Sample for TSS and Turbidity if elevated TSS observed	Env. Department	May 9 - until freeze up
		3) Notify Site Services if severe erosion/scouring observed - for repair action	Env. Department	May 9 - until freeze up
		4) Install turbidity barriers if required	Env. Department	May 9 - until freeze up
2.10	**ASSAY LAB**			
2.10	Meadowbank Assay Lab	1) The Assay Lab needs to be advised of the extra sampling that will occur well in advance of the freshet. 2) Consideration should be given to reducing the initial sampling after an initial one month period. If we are managing the water as planned (ie on site) there is no need to require extra sampling	Env. Department	May 2014

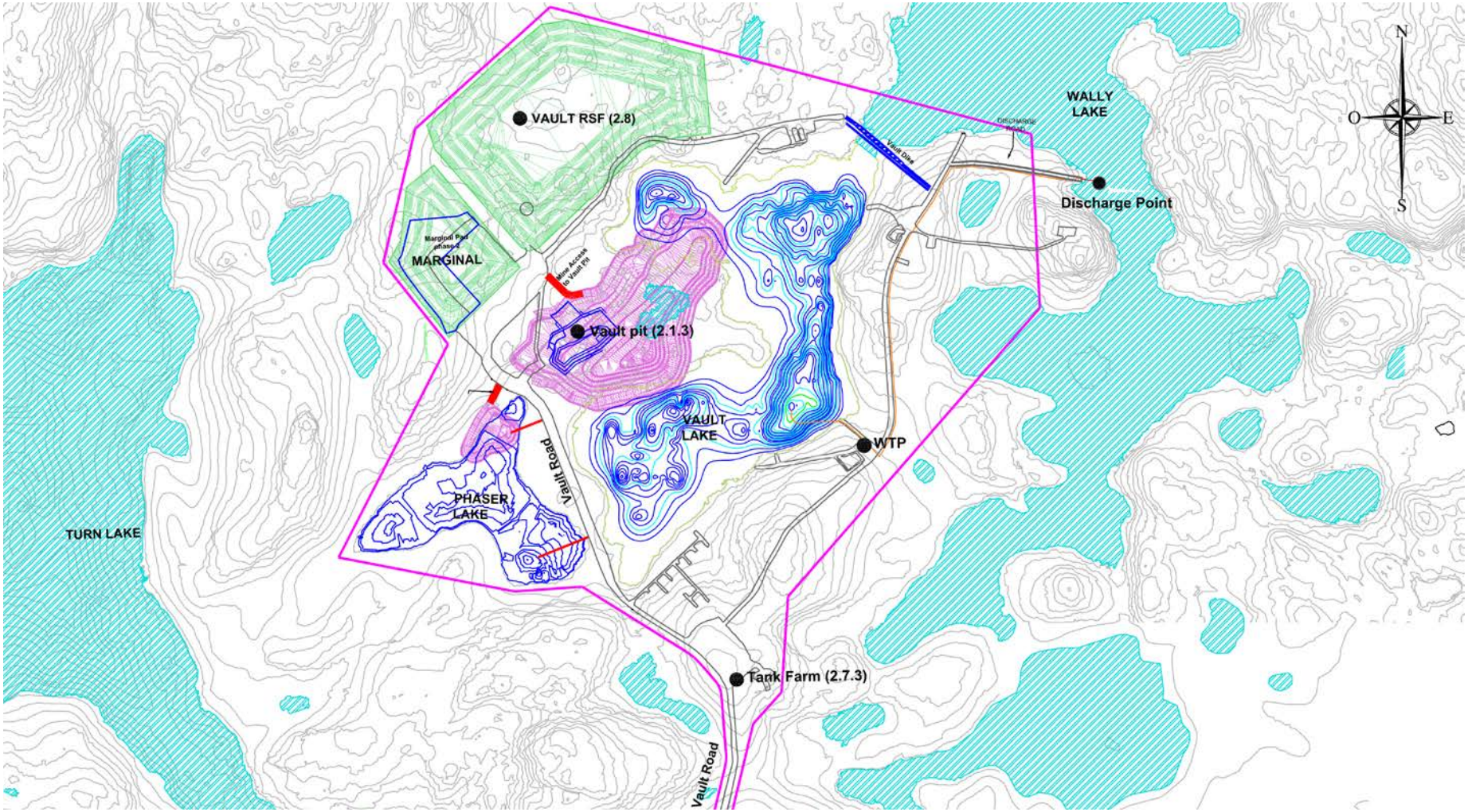
APPENDIX 2

2014 Monitoring Location for the Freshet Action Plan

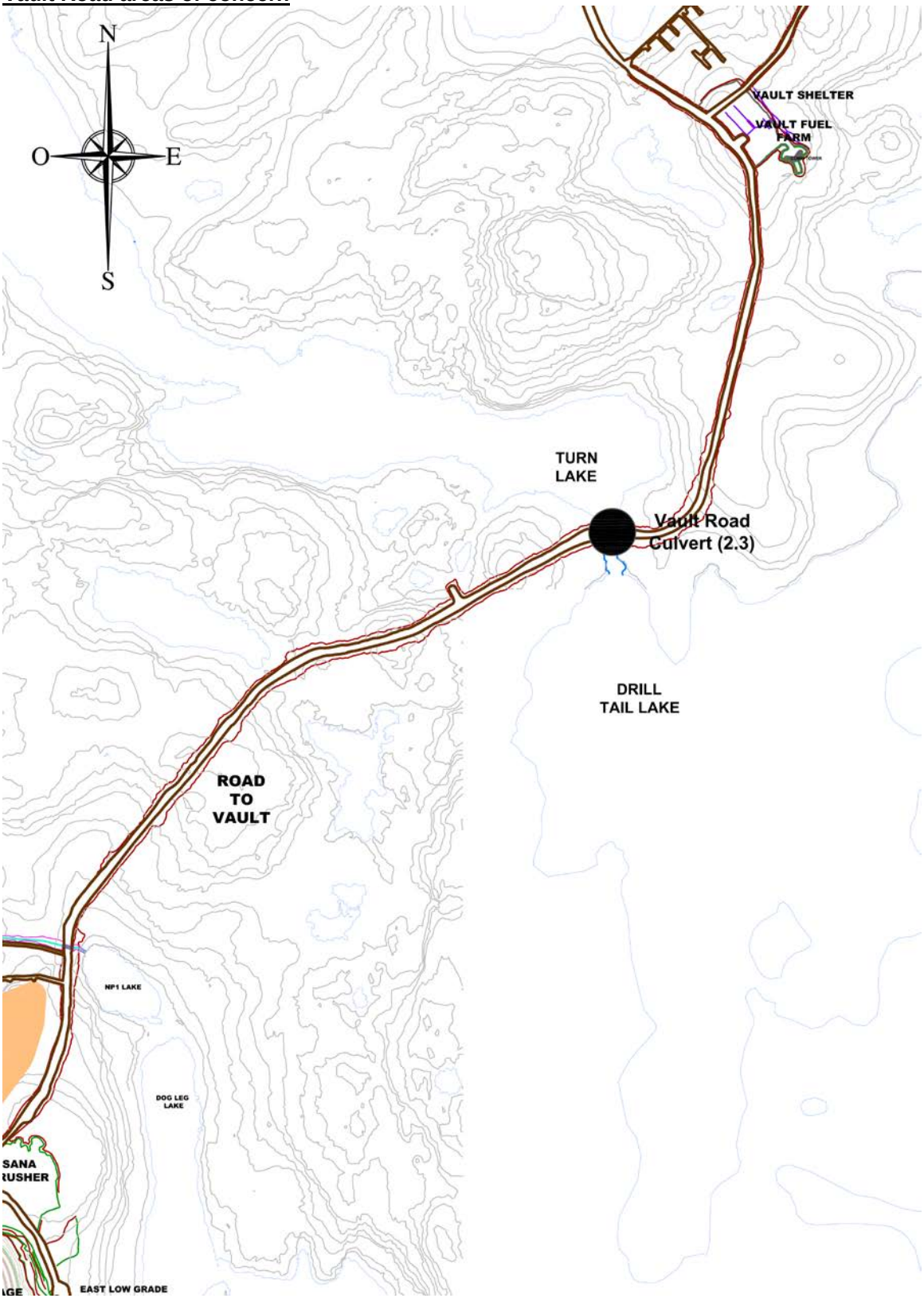
Meadowbank areas of concern



Vault areas of concern



Vault Road areas of concern



Appendix B

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No. 2AM-MEA0815 / Amendment No. 2

June 30, 2014

Mr. Stéphane Robert
Manager Regulatory Affairs, Nunavut
Agnico-Eagle Mines Limited – Meadowbank Division
10200, Route de Preissac
Rouyn-Noranda, Quebec J0Y 1C0

Email: stephane.robert@agnico-eagle.com

Subject: Licence No. 2AM-MEA0815 – Meadowbank Gold Project; Amendment No. 2 – Use of Waters

Dear Mr. Robert:

Please find enclosed Amendment No. 2 to Licence No. 2AM-MEA0815 Type "A", issued to Agnico-Eagle Mines Ltd (AEM), as approved by the Nunavut Water Board (NWB). The Board's approval (Panel 9 Motion #2014-08-P9-07) is pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA).

The Terms and Conditions of the Existing Licence, which pertain to the use of freshwaters and disposal of waste, remain integral parts of this approval.

Please note that the Amendment, as issued, must first be approved by the Minister of Aboriginal Affairs and Northern Development Canada, pursuant to section 56 of the NWNSRTA and that, accordingly, the NWB has forwarded the Amendment to the Minister for his consideration under a separate cover.

The NWB recommends that AEM carefully review the accompanying "Reasons for Decision Including Record of Proceedings" and all comments received by interested persons on the Application during the licensing process carried out by the Board.

Sincerely,

Lootie Toomasie
Hearing Chair

LT/kk/pb

Enclosures: Licence No. **2AM-MEA0815 – Amendment No. 2**
Comments - AANDC, EC and Kiv.IA

Cc: Distribution - Meadowbank

LICENCE AMENDMENT No. 2

Licensee:	AGNICO-EAGLE MINES LTD.
Licence No:	2AM-MEA0815 Type "A"
Licence Issued:	June 9, 2008
Minister Approval of Licence:	July 10, 2008
Licence Expiry:	May 31, 2015
Amendment No. 1 Issuance:	May 5, 2010
Minister Approval of Amendment No. 1	June 18, 2010
Amendment No. 2 Issuance:	June 30, 2014

Pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, with respect to an application for amendment dated April 26, 2013, made by Agnico-Eagle Mines Ltd. (AEM or Licensee) for the Meadowbank Gold Project, and the *Reasons for Decision* issued by the Nunavut Water Board (NWB) following the public hearing held with respect to the Application, the NWB hereby issues amendments to Licence 2AM-MEA0815 as follows:

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to:

AGNICO-EAGLE MINES LTD.

(Licensee)

10200, ROUTE DE PREISSAC,
ROUYN-NORANDA, QUEBEC J0Y 1C0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence amendment:

Licence Number/Type:	2AM-MEA0815 TYPE "A"
Water Management Area:	QUOICH / BACK WATERSHEDS (09 / 31)
Location:	MEADOWBANK GOLD PROJECT KIVALLIQ REGION, NUNAVUT
Classification:	MINING UNDERTAKING
Purpose:	USE OF WATERS AND DEPOSIT OF WASTE
Quantity of Water use not to Exceed:	1,870,000 CUBIC METERS PER ANNUM IN 2013, 1,150,000 CUBIC METRES PER ANNUM THEREAFTER
Amendment Issuance:	JUNE 30, 2014
Expiry of Licence:	MAY 31, 2015

This Licence Amendment No.2 issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. SCOPE

Amend Item a

This Licence authorizes Agnico-Eagle Mines Ltd. ("AEM" or "Licensee") to the use of Waters and deposit of Waste associated with the Mining undertaking at the Meadowbank Gold Project as outlined in the Water Licence Application, submitted to the Board throughout the regulatory process.

AEM may conduct mining, milling and associated activities at the Meadowbank Gold Project in the Kivalliq Region of Nunavut, (65°01'33" N, 96°04'01" W) including, in general, as follows: (bulleted items remain unchanged).

PART B: GENERAL CONDITIONS

Amend Item 3

The amount of Water use fees shall be determined in accordance with the section 12(1)(b) of the Regulations.

Amend Item 4

Payment of fees shall be made in accordance with sections 12(2)(b) and 12(7)(b) of the Regulations.

PART E: CONDITIONS APPLYING TO WATER USE AND MANAGEMENT

Amend Item 3

The use of Waters, for all purposes as per Items 1 and 2, shall not exceed a total of 1,870,000 cubic metres per annum in 2013, followed by a maximum of 1,150,000 cubic metres per annum in subsequent years.

SCHEDULE A – Scope, Definitions, and Enforcement

Amend **"Regulations"**

"**Regulations**" means the *Nunavut Waters Regulations SOR/2013-69.*

All remaining terms and conditions of Licence 2AM-MEA0815 Type "A" dated June 9, 2008 and Licence Amendment No. 1 dated May 5, 2010, shall continue to apply.

This Licence Amendment issued and recorded at Gjoa Haven, Nunavut on June 30, 2014.

Lootie Toomasie
Nunavut Water Board
Hearing Chair

APPROVED BY:

The Honourable Bernard Valcourt
Minister of Aboriginal Affairs and Northern Development Canada

DATE LICENCE APPROVED:

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File: 2AM-MEA0815 / Amendment No.2

June 30, 2014

Honourable Bernard Valcourt, PC, QC, MP
Minister of Aboriginal Affairs and Northern Development Canada
21st Floor, 10 Wellington
Gatineau, Quebec K1A 0H4

Email: Bernard.valcourt@parl.gc.ca

By Courier, Email and Regular Mail

Subject: Licence No. 2AM-MEA0815 – Meadowbank Gold Project, Nunavut; Amendment No.2 – Use of Waters

Dear Honourable Minister Valcourt:

Please find enclosed, Amendment No.2 to Licence 2AM-MEA0815 (Amendment). The Existing Licence was issued by the Nunavut Water Board (NWB) on June 9, 2008 and was subsequently approved by the Minister of Aboriginal Affairs and Northern Development Canada on July 10, 2008.

The enclosed Amendment includes changes to the original Licence conditions which result in increases to the authorized use of freshwater associated with the Meadowbank Gold Project. The existing authorized amount of 700,000 m^3 of freshwater per year for all purposes (domestic camp use, mining, milling and associated uses) is increased to a total authorized amount of 1,870,000 m^3 for the year 2013 and then to a total authorized amount of 1,150,000 m^3 per year for 2014 and until the expiry of the Licence (Amendment to Part E, Item 3).

While not requested by the Applicant, the Board has also changed a number of other conditions, namely:

- the exact location of the undertaking to correspond with the information provided to the Board by the Applicant in its Annual Reports (Amendment to Part A, Section 1 [Scope], Item a.);
- the definition of "Regulations" to reflect the fact that the *Nunavut Waters Regulation*, SOR/2013-69 are now in effect in Nunavut, as of April 18, 2013 (Amendment to Schedule A, "Regulations");
- the terms related to the calculation of fees payable for the right to use waters, as the

"Regulations" referred to in the Existing Licence (and which serve as the basis for calculating fees) have changed when s. 12 of the *Nunavut Waters Regulations*, SOR 2013/69, came into force (Amendment to Part B, Items 3-4).

In accordance with section 56 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the Amendment issued by the Board requires your approval and as such, the NWB hereby submits the attached "Reasons for Decision Including Record of Proceedings" and Amendment for your consideration.

Should you have any questions or require clarification on the above, or wish to discuss further, please contact the undersigned in writing.

Sincerely,

Lootie Toomasie
Nunavut Water Board
Hearing Chair

cc: Meadowbank Distribution List
NWB Public Registry

NUNAVUT WATER BOARD

WATER LICENCE NO: 2AM-MEA0815

REASONS FOR DECISION
INCLUDING
RECORD OF PROCEEDINGS

NUNAVUT WATER BOARD

In the Matter of:

Applicant:	Agnico-Eagle Mines Limited
Subject:	Application for Amendment to Existing Type "A" Water Licence 2AM-MEA0815
Date:	June 30, 2014
Precedence:	Where there is any inconsistency or conflict between the *Nunavut Land Claims Agreement* (*Agreement*) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*, the *Agreement* prevails to the extent of the inconsistency or conflict. Where there is any inconsistency or conflict between the *NWNSRTA* and any other act of Parliament, except the *Nunavut Land Claims Agreement Act*, the *NWNSRTA* prevails to the extent of the inconsistency or conflict.

RECORD OF PROCEEDINGS

Applicant:	Agnico-Eagle Mines Limited	
Address:	10200, Route de Preissac Rouyn-Noranda, Québec J0Y 1C0	
Purpose:	Application for Amendment of Type "A" Water Licence 2AM-MEA0815 Mining and Milling Undertaking	
Application Received on:	April 22, 2013	
Application Received from:	Stéphane Robert, Manager Regulatory Affairs; and Kevin Buck, Environment Superintendent Agnico-Eagle Mines Limited	
Date of Written Public Hearing:	Friday, January 17, 2014	
Date Board Confirmed Public Hearing Record Closed:	Friday, January 24, 2014	
Date Water User Compensation Confirmed:	Friday, June 13, 2014	
Nunavut Water Board Panel Members (P9 Meadowbank Panel):	Panel Chair	L. Toomasie
	Member	B. Dean
	Alternate Member	R. Mrazek
	Member	A. Ningark
Nunavut Water Board Staff:	Executive Director	D. Côté
	Board Secretary/Interpreter	B. Kogvik
	Director Technical Services	D. Hohnstein
	Technical Advisor	K. Kharatyan
	Technical Advisor (Public Hearings)	S. Aredes
	Manager of Licensing	P. Beaulieu
	Licensing Administrator	R. Ikkutisluk
	Legal Counsel	T. Meadows, (Shores Jardine, LLP)
Interpreter(s):	N/A	

Court Reporter:	N/A
Applicant: Agnico-Eagle	▪ S. Robert, Manager Regulatory Affairs ▪ K. Buck, Environment Superintendent ▪ E. Voyer, Principal Geotechnical Engineer
Parties:	
Kivalliq Inuit Association	▪ L. Manzo, Director of Lands
Aboriginal Affairs and Northern Development Canada	▪ K. Costello, Director of Resource Management ▪ D. Abernethy, Regional Coordinator, Water Resources Division, Nunavut Regional Office ▪ M. Ball, Manager of Water Resources, Nunavut Regional Office
Environment Canada	▪ Y. Fan, Senior Environmental Assessment Coordinator
Participants Appearing at Public Hearing:	N/A
Written Record of Submissions:	Available from the Board's public registry using the following (username: public, password: registry): ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA0815%20Agnico/2%20ADMIN/3%20SUBMISSIONS/

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REASONS FOR DECISION

Executive Summary

This decision is in relation to an application by Agnico-Eagle Mines Limited (AEM or the Applicant) requesting the Nunavut Water Board to amend Part E, Item 3 of Type "A" Water Licence 2AM-MEA0815 to increase the authorized use of water associated with the Meadowbank Gold Mine from the existing licensed amount of **700,000 m^3** per year of freshwater for all purposes (domestic camp use, mining, milling and associated uses), to a total licensed amount of **1,870,000 m^3** in 2013 and **1,150,000 m^3** per year after 2013 (the Amendment Application). The Meadowbank Gold Project involves the construction, operation, maintenance, reclamation, closure and monitoring of an open pit gold mine and mill associated infrastructure located approximately 70 km north of Baker Lake, within the Kivalliq Region of Nunavut.

As indicated in the Amendment Application, the amendment seeks to add considerably to the current water use limit. AEM has indicated that the additional volume of water is being sought because, since the Meadowbank Gold Mine went into commercial production in March 2010, the annual freshwater consumption at the mine has consistently exceeded the freshwater usage permitted within the existing Type "A" Licence. The Applicant has indicated that the higher-than-predicted freshwater use can be attributed to several factors, including higher than anticipated rates of ore processing, and an adjustment to the initial water balance model, resulting in a deficit of reclaimed water compared to the information provided in the original Water Licence Application submitted in 2007.[1]

Given that the Amendment Application is very narrow in terms of scope and that the Licensee is anticipated to be required to submit a renewal application for the existing Type "A" Licence nine to twelve months prior to the expiry of the Licence (May, 2015) the Nunavut Water Board, as previously outlined in the Pre-hearing Conference Decision associated with the Amendment Application,[2] determined that the Amendment Application could be processed on the basis of a written rather than an in-person Public Hearing.

[1] See Meadowbank Mining Corporation, Meadowbank Gold Project Type "A" Water Licence Application, August 2007, available on-line at: ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA0815%20Agnico/1%20APPLICATION/070904%202AM-MEA----%20Final%20Application/070828%202AM-MEA----%20485%20Type%20A%20Water%20License%20Application-ILAE.pdf

[2] Nunavut Water Board, Type "A" Water Licence 2AM-MEA0815, Agnico-Eagle Mines Limited: Pre-Hearing Conference Decision Regarding an Application for Amendment, issued November 1, 2013, at pp. 14-15.

On the basis of technical review comments, the written submissions and evidence filed with the Board, the Board has decided the following:

- To grant the Applicant's request to amend Type "A" Water Licence 2AM-MEA0815 to increase the total authorized use of waters from **700,000 m^3** per year of freshwater for all purposes (domestic camp use, mining, milling and associated uses) to a maximum of **1,870,000 m^3** in 2013 and a maximum of **1,150,000 m^3** per year after 2013 as outlined in the attached Decision and Licence;

- Reflecting the Panel's decision, the Board authorizes the following amendments to terms and conditions of Type "A" Water Licence 2AM-MEA0815:

    - A revision to the water management areas specified on the cover page of the Licence to reflect changes to the water management areas that were introduced when the Nunavut Waters Regulations came into force on April 18, 2013;

    - A revision to Part A: Item 1. Scope, Clause a. to change the location of the undertaking from 67°0'75" N, 96°04'39" W to **65°01'33" N, 96°04'01" W** to reflect the exact location of the undertaking as provided by the Applicant in all annual reports provided to the NWB;

    - A revision to Part B: General Conditions, Items 3 and 4 to reflect a change to the references in the new Nunavut Waters Regulations governing the calculation and payment of water use fees;

    - Amendment of Part E, Item 3 to change the total volume of fresh Water for all uses from **700,000 m^3** per year to a total amount of **1,870,000 m^3** for 2013 and **1,150,000 m^3** per year after 2013;

    - A revision to Schedule A: Scope, Definitions and Enforcement: definition of "Regulations" to reflect that the *Nunavut Waters Regulations* are now in force in Nunavut and replace the former *Northwest Territories Water Regulations*, SOR/93-303, June 8, 1993.

- Further, the Applicant is reminded that compliance with the terms and conditions of this Licence, as amended, does not absolve the Licensee from responsibility for compliance with all applicable legislation, guidelines and directives, including, without limitation, the requirements to obtain the necessary authorizations from agencies such as the Nunavut Impact Review Board, the Kivalliq Inuit Association, Aboriginal Affairs and Northern Development Canada, Environment Canada, the Department of Fisheries and Oceans and Natural Resources Canada.

SECTION I: BACKGROUND AND REGULATORY HISTORY

Application

The Amendment Application before the Board is an application to amend Part E, Item 3 of Type "A" Water Licence 2AM-MEA0815 (the Existing Water Licence) to increase the authorized use of freshwater from the existing licensed amount of **700,000 m^3** per year for all purposes (domestic camp use, mining, milling and associated uses), to a total licensed amount of **1,870,000 m^3** for 2013 and **1,150,000 m^3** per year after 2013 (the Amendment Application).

As indicated in the Amendment Application, the increased water use reflects that since the Meadowbank Gold Mine went into commercial production in March 2010, the annual freshwater consumption at the mine has consistently exceeded the freshwater usage authorized under the existing Type "A" Licence. The Applicant reported annual water use of 1,148,505 m^3, 1,088,254 m^3, 1,044,674 m^3 and 1,587,801 m^3 of freshwater in 2010, 2011, 2012 and 2013, respectively. The Applicant has indicated that the higher than predicted freshwater use is due to higher than anticipated rates of ore processing, and an adjustment of the initial water balance model, resulting in a deficit of reclaimed water compared to the information provided in the original water licence application submitted in 2007.

Further, although the Applicant has implemented an action plan to minimize the use of freshwater and come into compliance with the Licence since the increased use was noted, the Applicant conceded in the Amendment Application that despite significant success at engineering solutions to optimize freshwater use, the Applicant's freshwater use requirements are still projected to continue to exceed the initially permitted rate. Also, the Applicant further noted that, because of operational problems with the reclaim water barge, limited water recycle occurred from approximately February 2013 through to June 2013 and, as such, this amendment to the Licence is required.

Application and Supporting Materials Submitted by the Applicant

The following documents were included within the Amendment Application:

1. Cover Letter;
2. Completed Application form for Water Licence Amendment;
3. Compliance assessment/status report;
4. Water Management Plan 2012, updated March 2013 and including:
   - Appendix A1: Maps;
   - Appendix A2: Water Balances Schematics;
   - Appendix A3: Freshwater Usage Sensitivity Analysis;

- Appendix B: Water Quality for the Portage Area (2012-2025);
- Appendix B1: Water Quality Analysis;
- Appendix C: Ammonia Management Plan;
    - Appendix C1: Environmental Field Stations – Mine Site View; and
    - Appendix C2: Spill Control and Loading Procedures Plan;
    - Appendix C3: Dyno Nobel Emergency Responsibility Plan – Magazine, Plant and Work Site; and
    - Appendix C4: MSDS for Bulk Emulsion and Presplit.

5. Freshwater Consumption Executive Summary – English and Inuktitut; and
6. $30 application fee.

On July 15, 2013, in response to a query from the NWB dated July 11, 2013 inquiring as to the basis for the water use volumes and discrepancies in amounts sought in the Amendment Application, Stéphane Robert from AEM provided an e-mail entitled "Clarification on Water Consumption" that confirmed that the water use volumes sought included a contingency value that was not identified in the Amendment Application form filed with the Board in April.

For further details on the existing Type "A" Water Licence and this Amendment Application for the Meadowbank Gold Project, consult the NWB's FTP site under 2AM-MEA0815 (user name: public, password: registry) at the following link:

ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA0815%20Agnico/

The Project

The Project, as it was assessed by the Nunavut Impact Review Board[3] and licensed by the NWB in 2007,[4] involved the construction, operation, maintenance, reclamation, closure and monitoring of an open pit gold mine and milling facility in the Kivalliq Region of Nunavut. The Project as proposed in the NWB Application consisted of mining four main gold-bearing deposits in close proximity to one another, extraction via three separate open pits and milling of the ore at an on-site facility. Mining the ore beneath shallow lakes required the construction of water retention dikes from mined rock. Tailings and waste rock storage facilities were also required to be constructed on-site.

The mine life was predicted to be 8 – 10 years and, upon conclusion of the activities, the Licensee planned to fully decommission the mine by removing the mill and ancillary buildings, access roads, including the all-weather access road and re-contouring disturbed areas and reclaiming vegetation.

Existing Licence History

The existing Type "A" Water Licence 2AM-MEA0815 was issued by the NWB on June 9, 2008[5] (the Existing Licence). The Existing Licence was subsequently approved by the Minister of Indian and Northern Affairs Canada (as the Minister was known then, now Aboriginal Affairs and Northern Development Canada, or AANDC) on July 10, 2008. The Existing Licence authorizes the use of Waters and deposit of waste in relation to the operation of the Mining and Milling undertaking at the Meadowbank Gold Project located approximately 70 km north of Baker Lake, within the Kivalliq Region of Nunavut.

Amendment No. 1 to 2AM-MEA0815 was issued by the NWB on May 6, 2010 and was subsequently approved by the Minister on June 18, 2010. Amendment No. 1 allowed AEM to

[3] See Nunavut Impact Review Board, Final Hearing Report for the Meadowbank Gold Project, Cumberland Resources Ltd., August 30, 2006; the letter from the Hon. J. Prentice, Minister of Indian and Northern Affairs Canada (as AANDC then was) to E. Copland, NIRB Acting Chair, November 17, 2006 accepting the NIRB's Final Hearing Report; and Project Certificate NIRB No.: 004 for the Meadowbank Gold Mine Project Proposal, issued December 30, 2006. **NOTE:** In 2009, the NIRB reconsidered and revised Term and Condition #32 of Project Certificate NIRB No.: 004 (this term and condition related to restrictions on non-mine use of the All Weather Access Road), but as this reconsideration did not result in consequential amendments to the Existing Licence, this assessment is not discussed further).

[4] Nunavut Water Board, Reasons for Decision for 2AM-MEA0815, Applicant: Miramar Hope Bay Ltd., issued September 19, 2007.

[5] Nunavut Water Board, Reasons for Decision for 2AM-MEA0815, Applicant: Agnico-Eagle Mines Limited, issued June 9, 2008.

expand the Marshalling Area Bulk Fuel Storage Facility and fuel storage area, increasing capacity from 40 million litres (ML) to 60 ML of diesel fuel by adding two additional 10 ML capacity diesel fuel tanks. In addition, the amendment authorized the construction of an additional 2 ML tank for the bulk storage of Jet A fuel to refuel aircraft flying into the Meadowbank mine site.

Regulatory History

On April 26, 2013, on the basis of an AANDC Inspector recommendation, AEM submitted an Amendment Application to amend Part E, Item 3 of the Licence to increase the use of waters volume from the existing limit of 700,000 m^3 per year to 1,870,000 m^3 in 2013 and 1,150,000 m^3 per year thereafter. The Applicant made it clear that following the completion of the action plan and despite significant success at engineering solutions to optimize freshwater use, the water requirements of the Project would continue to exceed the permitted rate. The Applicant indicated that the need for the increased freshwater use is related to higher than anticipated rates of ore processing and an adjustment of the initial water balance model, both of which resulted in a deficit of reclaimed water.

On June 5, 2013, the Board acknowledged receipt of the required application fee from the Applicant.[6] On July 15, 2013,[7] the NWB acknowledged receipt of the Amendment Application and asked interested persons to review the scope and completeness of information provided, as well as to identify any deficiencies with the Application. The Board also requested that the Nunavut Impact Review Board (NIRB) confirm whether any additional screening, reconsideration or review of the NIRB's Project Certificate [004] for the Project would be required as a result of the Amendment Application.

The NWB also provided notification to the Nunavut Planning Commission (NPC), as the Commission provided the original conformity determination for the Meadowbank Gold Project. The NPC has not provided any indication that an additional conformity determination is required for the Amendment Application.

[6] Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Mines Limited-Meadowbank Divison, from Megan Porter, Licensing Administrator Assistant, dated June 5, 2013. Re: Acknowledgement and Receipt of Application Fee – Amendment 2 Water Licence – Meadowbank Gold Project.
[7] Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Mines Limited-Meadowbank Divison, from David Hohnstein, Director Technical Services, NWB, dated July 15, 2013. Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Ltd.: Amendment Application - Fresh Water Consumption.

By August 6, 2013, the NWB was in receipt of comments on the completeness of the application from Aboriginal Affairs and Northern Development Canada (AANDC) and Environment Canada (EC).[8] In the comments received and as a result of the Board's own review there was no indication that the application should not proceed through the regulatory process.

Following the review of technical comments and pursuant to Article 13 Clause 13.3.6 of the Nunavut Land Claims Agreement and s. 29[9] of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA), the Board delegated its power to dispose of all matters relating to the Application, including the conduct of the Public Hearing, to the duly constituted Meadowbank Panel (P9 or the Panel) of the Board.

On August 29-30, 2013, the Board gave notice of the Amendment Application in accordance with s. 55(1) of the NWNSRTA, inviting interested persons to continue their technical review of the application and make representations within thirty days of the Notice of Application (September 29, 2013).[10] The Notice also indicated that the Meadowbank Panel (P9) had directed the staff to hold a Technical Meeting and Pre-Hearing Conference in Baker Lake (tentatively scheduled to take place over two days during the week of October 14th – 18th, 2013).

By September 29, 2013, the NWB received written technical review comments from AANDC and EC.[11]

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[8] See letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated August 6, 2013, Re: Water Licence #2AM-MEA0815 – Meadowbank Gold Mine – Agnico-Eagle Mines Ltd. – Kivalliq Region Amendment Application #2 – Completeness Review and also letter and attachment to Robin Ikkutisluk, Licence Administrator Assistant, NWB, from Yongshu Fan , Senior Environmental Assessment Coordinator, Prairie and Northern Region Environmental Protection Operations (EPO) Directorate, Environment Canada, dated August 6, 2013, Re: Licence No. 2AM-MEA0815 - Agnico-Eagle Mines Ltd.: Amendment Application – Fresh Water Consumption.

[9] Section 29 of the NWNSRTA states:

(1) The Board may establish panels of the Board and delegate any of its powers, duties and functions to them.

[10] Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Mines Limited-Meadowbank Divison, from Damien Côté, Executive Director, NWB, dated August 29, 2013. Re: Notice of Type "A" Water Licence Amendment – 2AM-MEA0815 and Nunavut Water Board Public Notice of Amendment Application Agnico-Eagle Mines Limited, distributed to Meadowbank Distribution List on August 30, 2013.

[11] Letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated September 26, 2013, Re: Technical Review – Amendment Application No. 2 – Increased Water Use Water Licence #2AM-MEA0813 – Meadowbank Gold Mine Project – Agnico-Eagle Mines Ltd. – Kivalliq Region and letter and attachment to Robin Ikkutisluk, Licence Administrator Assistant, NWB, from Loretta Ransom, Senior Environmental Assessment Coordinator, Prairie and Northern Region Environmental Protection Operations (EPO) Directorate, Environment Canada, dated September 26, 2013, Re: 2AM-MEA0815 - Agnico-Eagle Mines Limited Type A Water Licence Amendment.

On October 1, 2013, the Nunavut Impact Review Board (NIRB) issued correspondence to the NWB stating that the Amendment Application was exempt from the requirement for further screening by the NIRB pursuant to Section 12.4.3 of the Nunavut Land Claims Agreement (NLCA) because the Amendment Application would not change the general scope of the Meadowbank Gold Project as previously reviewed by the NIRB and as subject to NIRB Project Certificate [004].[12] The NIRB also determined that the Amendment Application did not trigger reconsideration or other change to the terms and conditions of the NIRB Project Certificate [004] and therefore the Amendment Application could proceed to the next steps in the licensing process, namely the NWB's TM/PHC.

On October 9, 2013, the Kivalliq Inuit Association (KIA), citing internet problems that prevented the electronic delivery of their submissions on September 29, 2013, provided the Board with their written technical review comments.[13]

On October 22, 2013, as follow up to the attendance and participation of Sophia Granchinho, the NIRB's Monitoring Officer for the Meadowbank Gold Project, at the NWB TM/PHC, the NWB received correspondence from the NIRB clarifying that "no additional monitoring or reporting with regard to the current water licence amendment are required at this time."[14]

On October 31, 2013, by Panel Motion #2013-18-P9-03, the members of the Meadowbank Panel (P9), on the basis of the results of the Technical Meeting and confirmation from the parties in attendance at the Pre-hearing Conference, approved the Amendment Application proceeding to Public Hearing. The Panel also approved the release of the Pre-Hearing Conference Decision (PHC) Report[15] along with the procedural direction for the written Public Hearing to be conducted for the Amendment Application. The PHC Report set December 20, 2013 as a deadline for intervenors' final written submissions, and January 3, 2014 as a deadline for the Applicant's final responses to the information filed with the NWB to date, including any written

[12] Letter to Thomas Kabloona, Chair, NWB, from Ryan Barry, Executive Director, Nunavut Impact Review Board dated October 1, 2013. Subject: Application Exempt from the Requirement for Screening pursuant to Section 12.4.3 of the NLCA: Agnico-Eagle Mines Ltd.'s Application to Amend Type A Water Licence for the Meadowbank Gold Project, Kivalliq Region.

[13] Letter to Nunavut Water Board, from Kivalliq Inuit Association, dated October 9, 2013, Re: Review of Amendment of the Type A Water Licence for the Meadowbank Gold Project.

[14] Letter to Phyllis Beaulieu, Manager of Licensing, NWB, from Sophia Granchinho, Senior Technical Advisor & Monitoring Officer, Nunavut Impact Review Board, dated October 22, 2013. Re: Clarification provided to the NIRB regarding AEM's Type A Water Licence Amendment Application for the Meadowbank Gold Project, Kivalliq Region.

[15] Nunavut Water Board, Type "A" Water Licence 2AM-MEA0815, Agnico-Eagle Mines Limited: Pre-Hearing Conference Decision Regarding an Application for Amendment.

submissions filed by intervenors on December 20, 2013. In addition, January 17, 2014 was set as the date on which the written Public Hearing would close.

On December 20, 2013, ANNDC submitted its final submission however no technical issues were identified to be addressed by the Applicant before the Public Hearing.[16] On January 24, 2014, the Board advised all interested parties that the PH record for the NWB PH regarding AEM's Type "A" Water Licence 2AM-MEA0915 Amendment Application for the Meadowbank Gold Project was closed and remitted the matter to the Panel for deliberations and a decision.[17] At the time the matter was remitted to the Panel, Panel Member B. Dean was unable to participate in the Panel deliberations and consequently alternate Panel Member, R. Mrazek replaced her on the Panel. Alternate Panel Member Mrazek was then fully briefed on the file, reviewed all submissions received and participated in the deliberations and the Panel's decision in this matter in place of Panel Member Dean.

On January 17, 2014, the NWB received advice from the Kivalliq Inuit Association indicating that the water user compensation assessment for Meadowbank was underway with AEM and it was anticipated that it should be concluded shortly. On February 4, 2014, the KIA updated the Board that the final water user compensation negotiations had commenced and that these should last approximately one week.[18] However, final confirmation that water user compensation had been adequately addressed in respect of the Amendment Application was not actually received until June 13, 2014.[19]

A complete list of submissions and correspondence in support of this Amendment Application is provided in APPENDIX B – List of Submissions and Correspondence. All listed submissions and correspondence associated with the Amendment Application have been placed on the Board's public registry and are available from the NWB's ftp site using the access username of "public" and the password of "registry" (without the quotes) at the following link:

[16] Letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated December 20, 2013. Re: Final Written Submission Water Licence: #2AM-MEA0815 Licensee: Agnico Eagle Mines Ltd. Issue: Amendment Application #2 Region: Kivalliq.
[17] Letter to Meadowbank Distribution List, from Phyllis Beaulieu, Manager of Licensing, NWB, dated January 24, 2014, Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Limited, Amendment Application for the Type "A" Water Licence, Meadowbank Gold Mine Project: Close of the Public Hearing Record.
[18] Email to Karén Kharatyan, Technical Advisor, NWB, from Luis Manzo, Director of Lands, Kivalliq Inuit Association, dated February 4, 2014. Subject: Water Compensation Agreement.
[19] Letter to Damien Côté, Executive Director, NWB, from Luis Manzo, Director of Lands, Kivalliq Inuit Association, dated June 12, 2014 (received by the Board on June 13, 2014), confirming that a Water User Compensation Agreement is in place.

ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA0815%20Agnico/

SECTION II: SUMMARY OF FINAL HEARING SUBMISSIONS OF THE PARTIES

Kivalliq Inuit Association (KIA)

The KIA is a Designated Inuit Organization under the Nunavut Land Claims Agreement, representing the rights and values of the Inuit within the Kivalliq Region of Nunavut in respect of rights to water and wildlife compensation, landowner rights and negotiation of an Inuit Impact and Benefit Agreement.

The KIA provided written submissions in advance of the Technical Meeting and Pre-Hearing Conference[20] and did not provide further comments following the TM/PHC. Overall, the KIA indicated that they did not have issues with the Amendment Application specifically. The KIA noted that they were satisfied with AEM's commitment to increase monitoring from monthly to weekly frequency if changes in water levels or erosion were observed at the source where the increased water withdrawal would take place (Third Portage Lake).

As discussed in detail at the TM/PHC, the KIA did not identify specific technical issues associated with the increased use of Waters proposed under the Amendment Application. The KIA did identify concerns in relation to understanding of the effects associated with the increased rate of ore processing (increased ore processing having been identified as one of the central factors that resulted in AEM requiring the use of additional freshwater).

The KIA conceded at the TM/PHC that these more global site issues could be addressed during the licensing process associated with the upcoming renewal application. Consequently, the Board has not considered these comments in detail with respect to this specific Amendment Application, but anticipates that these issues will be revisited during the renewal application. In particular, the KIA identified concerns that the increased ore processing could also increase the footprint of the waste rock storage and could also then create more contact water points and associated seepage. Further the KIA indicated that it wanted to ensure that monitoring sufficient to identify adverse impacts to the water chemistry in the north cell of the Tailings Storage Facility (TSF) resulting from recently identified seepage be continued. Overall the KIA indicated that additional information should be supplied regarding whether the reclamation plan,

[20] Letter to the Nunavut Water Board, from Kivalliq Inuit Association, dated October 9, 2013, Re: Review of Amendment of the Type A Water Licence for the Meadowbank Gold Project.

security deposit and monitoring plans provided by the Applicant should also be updated to reflect the increased ore processing rate.

Water Compensation

At the TM/PHC, the KIA indicated that water user compensation discussions would be commenced and concluded in early 2014. On June 13, 2014 the Board received written confirmation from the KIA that there are no outstanding water compensation issues under the Existing Licence.

Aboriginal Affairs and Northern Development Canada (AANDC)

Aboriginal Affairs and Northern Development Canada (AANDC) has a broad mandate for the co-management of water resources and the management of Crown land in Nunavut under the following applicable law and policy: the *Department of Indian Affairs and Northern Development Act*,[21] the *Nunavut Land Claims Agreement* and the *Nunavut Land Claims Agreement Act*;[22] the *Territorial Lands Act*[23] and applicable *Regulations*;[24] the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;[25] the *Nunavut Waters Regulations*,[26] the *Canadian Environmental Assessment Act*;[27] and *the Mine Site Reclamation Policy for Nunavut*.[28] AANDC administers Crown land and resources and enforces regulatory permits affecting land and water resources in Nunavut.

In AANDC's written submissions,[29] AANDC identified several issues for consideration by the NWB associated with the Amendment Application.

[21] R.S.C. 1985, c. I-6.
[22] S.C. 1993, c. 29.
[23] R.S.C. 1985, c. T-7.
[24] See for example *Territorial Land Use Regulations*, C.R.C. c. 1524 and the *Northwest Territories and Nunavut Mining Regulations*, C.R.C. c. 1516.
[25] S.C. 2002, c. 10.
[26] S.O.R./2013-69.
[27] S.C. 1992, c. 37.
[28] Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf.
[29] Letter to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated August 6, 2013, Re: Water Licence #2AM-MEA0815 – Meadowbank Gold Project – Agnico-Eagle Mines Ltd. – Kivalliq Region Amendment Application #2 – Completeness Review; letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated September 26, 2013, Re: Technical Review – Amendment Application No. 2 – Increased Water Use Water Licence #2AM-

AANDC stated overall that "it is not anticipated that the increased freshwater consumption rate will cause significant impacts to Third Portage Lake's local aquatic ecosystem." AANDC's submission did however identify some key recommendations intended to improve the modeling, monitoring and reporting aspects of the Existing Licence as follows:

- ensuring that, going forward, annual water balance and water quality modeling reports compare predicted and measured water quantity and water quality parameters;
- ensuring that future water balance, water quality modeling reports and/or Water Management Plan updates detail what measures are being implemented to ensure that the water quality of the re-flooded Portage, Goose and Vault Pits will be acceptable to the local aquatic ecosystem before perimeter dikes are breached;
- the existing Licence should be amended to reconcile differences between licence requirements and the Applicant's management planning procedures; and
- the existing Licence should be updated to reference the most recent plans submitted by AEM to meet the objectives of the planning, monitoring and reporting aspects of the Licence.

In its December 20, 2013 final submission, AANDC stated that "adequate justification for increased freshwater consumption has been provided and the amendment will bring AEM into compliance with licence terms and conditions" with respect to the use of waters. Further, in the same submission, AANDC stated that "details associated with the provision of monitoring information (water balance and water quality) and referencing of updated management plans in licence terms and conditions should be addressed in the upcoming licence renewal process".

Environment Canada (EC)

The primary relevant legislation and standards that Environment Canada (EC) administers or adheres to and that are applicable to the Application are the *Department of the Environment Act,*[30] *Canadian Environmental Protection Act, 1999*[31] and the pollution prevention provisions of the *Fisheries Act.*[32] EC is a science-based Department responsible for leading implementation of

MEA0813 – Meadowbank Gold Project – Agnico-Eagle Mines Ltd. – Kivalliq Region; and Letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated December 20, 2013. Re: Final Written Submission Water Licence: #2AM-MEA0815 Licensee: Agnico-Eagle Mines Ltd. Issue: Amendment Application #2 Region: Kivalliq.

[30] R.S.C. 1985, c. E-10.

[31] S.C. 1999, c. 33.

[32] R.S.C. 1985, c. F-14.

the Government of Canada's environmental agenda that is committed to contributing to the realization of sustainable development in Canada's North. The Department focuses on the provision of scientific expertise for incorporation into decisions on developments, such that all parties, by working together, can ensure that there is minimal impact on the natural environment and that ecosystem integrity is maintained and preserved for future generations.

EC filed a submission with the NWB[33] in response to a request from the NWB for written submissions with respect to the technical review of the Amendment Application indicating EC had no concerns with the increase in water use and with the Amendment Application. Having no technical comments and raising no technical issues, EC did not participate in the Technical Meeting/Pre-Hearing Conference held in respect of the Amendment Application and also did not provide a final written submission for the Public Hearing by the December 20, 2013 deadline applicable to intervenors providing final written submissions.

Agnico-Eagle Mines Limited (AEM)

In its written submission of February 5, 2014, AEM provided the Board[34] with the Proposed Water Level Trigger for Weekly Monitoring (dated January 5, 2014) that will be included within the updated Water Management Plan.

SECTION III: SUBMISSIONS BY OTHER INTERVENING PARTIES OR MEMBERS OF THE PUBLIC

There were no submissions on the Amendment Application provided to the Board by any other intervening parties or members of the public.

[33] Letter and attachment to Robin Ikkutisluk, Licence Administrator Assistant, NWB, from Loretta Ransom, Senior Environmental Assessment Coordinator, Prairie and Northern Region Environmental Protection Operations (EPO) Directorate, Environment Canada, dated September 26, 2013. Re: 2AM-MEA0815 - Agnico-Eagle Mines Limited Type A Water Licence Amendment.

[34] Letter and attachment to Karén, Kharatyan, Technical Advisor, NWB, from Stéphane Robert, Manager Regulatory Affairs Nunavut, AEM, dated February 5, 2014: Proposed Water Level Trigger for Weekly Monitoring.

SECTION IV: JURISDICTION OF THE BOARD

This Board has jurisdiction over this Application pursuant to Division 2 of the NWNSRTA.[35] Relevant sections in that Division allow the Board to issue a licence,[36] amend a licence,[37] or in certain circumstances, cancel a licence.[38] In deciding to issue a licence or engage in any other statutory function, the Board must follow the objects of this legislative base, which are:

> "… to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters for the residents of Nunavut in particular and Canadians in general."[39]

In setting the Terms and Conditions of a licence the Board is guided by these objects and also by the Project Certificate issued by the Nunavut Impact Review Board that addresses effects and mitigation measures applicable to the use of water and deposit of waste in a particular case.[40] The Board must meet its statutory duty to make *all* reasonable efforts to minimize *any* adverse effects on aquatic ecosystems. Reading several of the Articles of the NLCA together,[41] the Board relies on the broad definition of "ecosystemic" found in Article 12, Section 12.1.1. of the NLCA, requiring not only the NIRB but also the NWB to ensure that all components of the ecosystem, such as fish and fish habitat, are protected within the parameters of s. 71 of the NWNSRTA.

As with all applications considered by the Board, the burden of proof rests with the Applicant to demonstrate that the Applicant's request for an amendment to an existing water licence should be granted. In addition, the NWB Rules of Practice state: "[a]ny party offering evidence before the Board shall have the burden of introducing sufficient and appropriate evidence to support its position."[42] Where intervening parties, community representatives and the public present no evidence supporting or rejecting the Applicant's evidence, the NWB will base its decision on its own assessment of the Applicant's request.

[35] Sections 42-81 of the NWNSRTA.
[36] See ss. 42, 48, 55, 56, and 70 of the NWNSRTA.
[37] See s. 43(1)(b) of the NWNSRTA.
[38] See s. 43(1)(c) of the NWNSRTA.
[39] See s. 35 of the NWNSRTA.
[40] See the NWB's implementation obligations as set out in Article 12, Section 12.9.7 of the NLCA and see the Project Certificate NIRB No.: 004 for the Meadowbank Gold Mine Project Proposal, issued December 30, 2006.
[41] This approach is consistent with the direction provided in Article 2, section 2.9.1 of the NLCA.
[42] Section 23.1 of the Nunavut Water Board "Rules of Practice and Procedure for Public Hearing" (May 11, 2005).

SECTION V: REQUIREMENTS OF THE NWNSRTA, NWR AND NLCA

Objects of the Board and its Relationship to other Bodies

Land Use Planning

As noted in the discussion of the regulatory history, the Nunavut Planning Commission (NPC) has provided no indication that a conformity determination was required by the NPC and the NWB has considered the requisite land use planning requirements of the NLCA to be fulfilled such that the NWB could proceed to process the Amendment Application.

Environmental Assessment

As outlined briefly in the section of this decision discussing the regulatory history of the file, as the Nunavut Impact Review Board has previously screened the Meadowbank Gold Mine Project[43] and as the Application did not involve any substantive changes to the project proposal as originally screened, further screening by the NIRB was not required by the NIRB[44] before the NWB could process the Amendment Application.

Inuit Water Rights

As of June 13, 2014, the Kivalliq Inuit Association has confirmed that the requirements of water user compensation pursuant to s. 63(1) of the NWNSRTA had been satisfied with respect to the Amendment Application.

The Nunavut Waters Regulations

At the time that the Existing Licence was issued, the NWB's jurisdiction to charge water user fees and to require a Type "A" Water Licence for this activity was set out in accordance with certain provisions of the *Northwest Territories Waters Regulations.*[45] These *Regulations* were identified as applicable in Nunavut (in the absence of Nunavut's own regulations) under the

[43] See Nunavut Impact Review Board, Final Hearing Report for the Meadowbank Gold Mine Project, Cumberland Resources Ltd., August 30, 2006; the letter from the Hon. J. Prentice, Minister of Indian and Northern Affairs Canada (as AANDC then was) to E. Copland, NIRB Acting Chair, November 17, 2006 accepting the NIRB's Final Hearing Report; and Project Certificate NIRB No.: 004 for the Meadowbank Gold Mine Project Proposal, issued December 30, 2006.

[44] Letter to Thomas Kabloona, Chair, NWB, from Ryan Barry, Executive Director, Nunavut Impact Review Board dated October 1, 2013, Subject: Application Exempt from the Requirement for Screening pursuant to Section 12.4.3 of the NLCA: Agnico-Eagle Mines Ltd.'s Application to Amend Type A Water Licence for the Meadowbank Gold Project, Kivalliq Region.

[45] S.O.R./93-303.

"Application of Regulations" made under paragraph 33(1) (m) or (n) of the *Northwest Territories Waters Act* in Nunavut Order, S.O.R./2002-253. However, the *Northwest Territories Waters Regulations* were replaced by the new *Nunavut Waters Regulations* (NWR),[46] which came into force on April 18, 2013. Consequently, the Amendment Application and issued issues such as water user fee calculations are to be governed by the provisions of the NWR, and the Board has amended the relevant references in the Existing Licence, as discussed in more detail in the appropriate sections of the decision to reflect this regulatory change.

SECTION VI: DECISION TO DENY/GRANT THE AMENDMENT

Following the close of the written Public Hearing held in respect of this Application and for reasons elaborated further below, the Board has decided to grant the Applicant's request to amend Type "A" Water Licence 2AM-MEA0815 to increase the total authorized use of waters from 700,000 m^3 per year of freshwater for all purposes (domestic camp use, mining, milling and associated uses) to 1,870,000 m^3 in 2013 and 1,150,000 m^3 per year after 2013 subject to the conditions set out therein.

Based on the Amendment Application, the technical comments received and the Board's consideration of its objects and mandate, the Board has determined that if the requested Amendment is granted, the Project can continue to meet acceptable standards for water quantity, water quality and effluent quality. In issuing the Amended Licence, the Board is satisfied that the Amendment Application contained the required information and was in the proper form, having regard to the requirements of the NWNSRTA[47] and associated regulations.[48]

Compensation of Existing or Other Users

The NWNSRTA requires that the Board be satisfied that compensation of existing or other users has been or will be paid prior to the issuance of a Licence.[49] Given that the Amendment Application involves additional water use, the Board ensured that the Notice of the Amendment Application invited parties with water user compensation issues to advise the Board regarding such issues. The NWB confirms that no representations regarding compensation were made to the Board.

[46] S.O.R./2013-69.
[47] See s. 48 of the NWNSRTA.
[48] *Nunavut Waters Regulations*, SOR/2013-69, April 18, 2013.
[49] See ss. 58-60 of the NWNSRTA.

SECTION VII: WATER LICENCE 2AM-MEA0815 AMENDED TERMS AND CONDITIONS

The Licence Amendment does not take effect until approval of the Minister is given or deemed to have been given pursuant to s. 56 of the NWNSRTA.[50] As indicated in Section VI, the Panel, by way of Motion #2014-08-P9-07 has decided to issue the Amendment to Water Licence No. 2AM-MEA0815, subject to the amended terms and conditions set out below. To provide context and clarity, the Board has provided discussion and comments about only the specific terms and conditions that have been amended and has not provided commentary for those licence terms and conditions that remain the same.

Part A: Scope, Definitions and Enforcement

The Project for which this Amended Licence is issued is classified as a Mining Undertaking in accordance with Schedule 1, Item 2 of the *Nunavut Waters Regulations*.[51]

Scope

The scope of the Type "A" Water Licence remains the same as the Existing Licence with the following exception; the Board has revised Part A: Item 1. Scope, Clause a. to change the location of the undertaking from the description under the Existing Licence **67°0'75" N, 96°04'39" W** to the revised description **65°01'33" N, 96°04'01" W** to reflect the exact location of the undertaking as provided by the Applicant in all annual reports provided to the NWB.

Schedule A: Definitions

The Board has revised the definition of "Regulations" to reflect that, as of April 18, 2013, Nunavut is subject to the *Nunavut Waters Regulation*, SOR/2013-69.

[50] Section 56 of the NWNSRTA states:

> The issuance, amendment, renewal and cancellation of a Type A licence, and if a public hearing is held, a Type B licence are subject to the approval of the Minister.

Under s. 56(2.2) if the Minister does not issue a decision within 45 days of receiving the Licence from the Board, (or within 90 days if the Minister has extended the decision-making period by an additional 45 days) the Minister is deemed to have approved the Licence.

[51] Formerly classified as a "Mining and Milling Undertaking" under Schedule 1 of the *Northwest Territories Waters Regulations*, S.O.R./93-303 and Application of Regulations made under paragraph 33(1) (m) or (n) of the *Northwest Territories Waters Act* in Nunavut Order, S.O.R./2002-253.

Consequently the definition of "Regulations" has been revised from the Existing Licence definition that states:

> "Regulations" means the *Northwest Territories Water Regulations* SOR/93-303 8 June, 1993

To the amended definition:

> "**Regulations**" means the *Nunavut Waters Regulation*, SOR/2013-69

Enforcement and Compliance

During consideration of this Amendment Application, the Board was mindful of the fact that the Applicant's request for the amendment to the Existing Licence was in part a reflection of AEM's non-compliance with the water use limits in the Existing Licence and the direction from the Inspector designated by the Minister under the NWNSRTA[52] to enforce the terms and conditions of the Existing Licence.[53] To this end, the Board recognizes the steps that have been taken by AEM to more effectively manage freshwater use at the site and the Board anticipates that the upcoming application for renewal of the Existing Licence will include further information on AEM's water management measures, including increased emphasis on water conservation and recycling.

Part B: General Conditions

Water Use Fees

It should be noted that although the Applicant did not request an Amendment to this section of the Existing Licence, the Board has changed the terms and conditions related to the calculation of fees payable for the right to use waters, as the Regulations referred to in the Existing Licence as the basis for calculating fees changed in April 2013, when s. 12 of the *Nunavut Waters Regulations,* SOR 2013/69, came into force.

Further, it should be noted that pursuant to s. 12(6) of the new NWR "no licence fees are payable for the right to the use of waters on, in or flowing though Inuit-owned Lands". As a result, the fees being referred to in this section are only for waters on, in or flowing through Crown Lands,

[52] Sections 85-94 of the NWNSRTA.
[53] Letter to Louise Grondin, VP Environment, Agnico-Eagle Mines Ltd., from Andrew Keim, Inspector, Indian and Northern Affairs Canada, dated April 17, 2012. Re: Water Licence Inspection – Meadowbank Mine Site March 23/24 2012.

which must be submitted to the NWB's Manager of Licensing and made payable to the Receiver General for Canada. The Licensee is responsible to conduct the appropriate water use fee calculations for all waters in, on or under **Crown lands** that will be used by the Licensee in the upcoming year and then remit the required water use fees in advance.

On this basis Part B: Items 3 and 4 have been amended so that the appropriate sections in the NWR in relation to the payment of water use fees are now referenced.

Part E: Conditions Applying to Water Use

Section 11 of the NWNSRTA states "… no person shall use, or permit the use of, water in Nunavut except in accordance with the conditions of a licence."

Water Use

As noted by AEM in the Amendment Application before the Board despite the implementation of various management measures, the Project continues to require much more freshwater use than sought in the original water licence application in 2007. The Board notes, however that AEM has implemented an action plan to minimize the use of freshwater and come into compliance with the Licence since the increased use was noted, but the Applicant conceded in the Amendment Application that despite significant success at engineering solutions to optimize freshwater use, the Applicant's water use requirements are still projected to continue to exceed the permitted rate due to higher than anticipated rates of ore processing and an adjustment of the initial water balance model which has resulted in a deficit of reclaimed water compared to the information provided in the original water licence application submitted in 2007.

The Board recognizes that there are situations where the operational realities of a Project may diverge from the predictions available at Project inception. Further, the Board recognizes that specific operational problems with the reclaim water barge (which AEM indicated at the Technical Meeting/Pre-hearing Conference have now been resolved) caused significant limitations on the ability to recycle water through the process from approximately February 2013 through to June 2013 have resulted in the unusual request to the Board to retroactively establish a water use limit specifically for 2013 that reflects these unusual circumstances.

Having considered the Amendment Application and the comments received, the Board has amended Part E, Item 3 of Type "A" Water Licence 2AM-MEA0815 as requested to increase the authorized use of waters from the existing licensed amount of **700,000 m^3** per year for all

purposes (domestic camp use, mining, milling and associated uses), to a total authorized use total licensed amount of **1,870,000 m^3** for 2013 only and **1,150,000 m^3** per year after 2013.

In granting the Amendment the Board is confident that the Amended Licence yearly limits on water requirements for the Project will still protect sources from the effects of drawdown and are sufficiently protective that no harm to the receiving freshwater environment will result from the increased water use.

APPENDIX A—List of Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada	ᑲᓇᑕᒥ ᓄᓇᕗᑦᑲᑦᑐᑎᓕᕆᓂ ᐅᑭᐅᕗᑦᑕᕗᑐᒃ ᐱᓕᕆᓂᐊᕐᓕᕆᓂ
DFO	Fisheries and Oceans Canada	ᑲᓇᑕᒥ ᐃᕗᑲᑎᓕᕆᓂ ᐃᒪᖏᐅᑕᓕᕆᓂᕐᑐ
EC	Environment Canada	ᑲᓇᑕᒥ ᐊᓂᑎᑎᓕᕆᓂ
GN	Government of Nunavut	ᓄᓇᕗᑦ ᒪᓂᒪᖅ
HTO	Hunters’ and Trappers’ Organization	ᐊᓱᓂᖅᐸᑦ ᑲᑐᔪᕐᑲᑎᑎᑦᓯᖏᑦ
IIBA	Inuit Impact and Benefit Agreement	ᐃᓄᐃᑦ ᐊᒃᑐᖅᑕᐅᓂᐊᖏᓪᓗᓂᑦ ᐃᑲᔪᓱᐊᖅᑕᐳᓐᓇᐅᑎᖓᓪᓗᓂᑐ ᐊᖏᕈᑎᑦ
IOL	Inuit Owned Land	ᐃᓄᐃᑦ ᓄᓇᕗᒻᒥᖏᑦ
IPG	Institution of Public Government	ᐃᓄᖅᓄᑦ ᑲᓂᒪᕗᖅᖃᐅᖅ
KIA	Kivalliq Inuit Association	ᑭᓂᓕᖏᑎ ᐃᓄᐃᑦ ᑲᑐᔪᕐᑲᑎᑎᑦ
NIRB	Nunavut Impact Review Board	ᓄᓇᕗᒻᒥ ᐊᓂᑎᓕᓚᑲᓂᑦ ᑲᑎᒪᔨᖏᑦ
NLCA	Nunavut Land Claims Agreement	ᓄᓇᕗᒻᒥ ᓄᓇᒋᔭᖓᒧᑦ ᐊᖏᕈᑎᑦ
NPC	Nunavut Planning Commission	ᓄᓇᕗᒻᒥ ᐸᕐᓇᐃᓐᓂᑦ
NWB	Nunavut Water Board	ᓄᓇᕗᒻᒥ ᐃᒪᓕᑕᓐᓂᑦ ᑲᑎᒪᔨᖏᑦ
PHC	Pre Hearing Conference	ᐃᓄᑭᐊᑎᑦᓯᔪᐃ ᐃᓄᐃᑦ ᑲᑎᒪᑎᑕᐅᓂᐊᓴᕐᓂᖏᓪᓂᒃ ᑲᑎᒪᓂᖅ

APPENDIX B – List of Submissions and Correspondence

Application:

1. Cover letter to Phyllis Beaulieu, Manager of Licensing, NWB, from Stéphane Robert and Kevin Back, Agnico Eagle, dated April 22, 2013. Re: Meadowbank Water License – 2AM-MEA0815 Fresh Water Consumption Amendment Application.
2. Application for Water Licence Amendment, from Stéphane Robert, AEM Manager Regulatory Affairs, dated April 19, 2013, received April 26, 2013.
3. Meadowbank Mine Application for Amendment NWB Licence 2AM-MEA0815 Freshwater Consumption April 2013, prepared by Agnico Eagle Mines Limited – Meadowbank Division, received April 26, 2013.
4. Meadowbank Gold Project Water Management Plan 2012, prepared by SNC Lavalin, dated March 15, 2013, received on April 26, 2013.
5. Letter to Louise Grondin, VP Environment, Agnico-Eagle Mines Ltd., from Andrew Keim, Inspector, Indian and Northern Affairs Canada, dated April 17, 2012. Re: Water Licence Inspection – Meadowbank Mine Site March 23/24 2012.
6. Letter to Andrew Keim, A/Manager Field Operations Aboriginal Affairs and Northern Development Canada, from Jeffrey Pratt, Environmental Coordinator, Agnico-Eagle Mines Ltd., dated June 2, 2012. Re: Water License Inspection – Meadowbank Mine Site March 23/24 2012 – NWB Lic # 2AM-MEA0815.
7. Water Use Inspection Report Form, Licensee: Agnico-Eagle Mines Ltd. (AEM, Licence No.: 2AM-MEA0815, prepared by Christine Wilson, Inspector, Aboriginal Affairs and Northern Development Canada, dated July 27, 2012.
8. Letter to Christine Wilson, Resource Management Officer, Aboriginal Affairs and Northern Development Canada, from Jeffrey Pratt, Environmental Coordinator, Agnico-Eagle Mines Ltd., dated August 15, 2012. Re: Water Use Inspection Report – Meadowbank Mine Site July 27, 2012.

Further Submissions and Correspondence:

9. Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Minest Limited-Meadowbank Divison, from Megan Porter, Licensing Administrator Assistant, dated June 5, 2013. Re: Acknowledgement and Receipt of Application Fee – Amendment 2 Water Licence – Meadowbank Project.
10. Email to Stéphane Robert, Manager Regulatory Affairs, AEM, from Karén Kharatyan, Technical Advisor, NWB, dated July 11, 2013. Re: 2AM-MEA0815 Amendment 2 Clarification on Water Consumption.
11. Email to Karén Kharatyan, Technical Advisor, NWB, from Stéphane Robert, Manager Regulatory Affairs, AEM, dated July 15, 2013. Re: 2AM-MEA0815 Amendment 2 Clarification on Water Consumption.

12. Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Minest Limited-Meadowbank Divison, from David Hohnstein, Director Technical Services, NWB, dated July 15, 2013. Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Ltd.: Amendment Application - Fresh Water Consumption.
13. Letter to Phyllis Beaulieu, Manager of Licencing, NWB, from Yongshu Fan, Senior Environmental Assessment Coordinator, Environmental Protection Operations Directorate, Environment Canada, dated August 6, 2013. Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Ltd.: Amendment Application - Fresh Water Consumption.
14. Letter to Phyllis Beaulieu, Manager of Licencing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated August 6, 2013. Re: Water Licence #2AM-MEA0815 – Meadowbank Gold Mine – Agnico-Eagle Mines Ltd. – Kivalliq Region Amendment Application #2 – Completeness Review.
15. Letter to Stéphane Robert, Manager Regulatory Affairs Nunavut, Agnico-Eagle Mines Limited-Meadowbank Divison, from Damien Côté, Executive Director, NWB, dated August 29, 2013. Re: Notice of Type "A" Water Licence Amendment – 2AM-MEA0815.
16. Nunavut Water Board Public Notice of Amendment Application Agnico-Eagle Mines Limited, distributed to Meadowbank Distribution List on August 30, 2013.
17. Letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated September 26, 2013. Re: Technical Review – Amendment Application No. 2 – Increased Water Use Water Licence #2AM-MEA0813 – Meadowbank Gold Mine Project – Agnico-Eagle Mines Ltd. – Kivalliq Region.
18. Letter and attachment to Robin Ikkutisluk, Licence Administrator Assistant, NWB, from Loretta Ransom, Senior Environmental Assessment Coordinator, Prairie and Northern Region Environmental Protection Operations (EPO) Directorate, Environment Canada, dated September 26, 2013. Re: 2AM-MEA0815 - Agnico-Eagle Mines Limited Type A Water Licence Amendment.
19. Letter to Local Organizations – Request to Post Notices, from Robin Ikkutisluk, Licence Administrator Assistant, NWB, dated October 1, 2013.
20. Letter to Thomas Kabloona, Chair, NWB, from Ryan Barry, Executive Director, Nunavut Impact Review Board dated October 1, 2013. Subject: Application Exempt from the Requirement for Screening pursuant to Section 12.4.3 of the NLCA: Agnico-eAgle Mines Ltd.'s Application to Amend Type A Water Licence for the Meadowbank Gold Project, Kivalliq Region.

21. Letter to Nunavut Water Board, from Kivalliq Inuit Association, dated October 9, 2013. Re: Review of Amendment of the Type A Water Licence for the Meadowbank Gold Project.
22. Email to Stéphane Robert, Manager Regulatory Affairs, AEM, from Phyllis Beaulieu, Manager of Licensing, NWB, dated October 11, 2013. Subject: 131009 2AM-MEA0815 KIA Final Report.
23. Letter to Robin Ikkutisluk, Licence Administrator Assistant, NWB, from Loretta Ransom, Senior Environmental Assessment Coordinator, Prairie and Northern Region Environmental Protection Operations (EPO) Directorate, Environment Canada, dated October 11, 2013. Re: 2AM-MEA0815 - Agnico-Eagle Mines Limited – Meadowbank - Type A Water Licence Amendment Technical Meeting and Pre-Hearing Conference.
24. Letter to Phyllis Beaulieu, Manager of Licensing, NWB, from Sophia Granchinho, Senior Technical Advisor & Monitoring Officer, Nunavut Impact Review Board, dated October 22, 2013. Re: Clarification provided to the NIRB regarding AEM's Type A Water Licence Amendment Application for the Meadowbank Gold Project, Kivalliq Region.
25. Letter to the Meadowbank Distribution List, from Damien Côté, Executive Director, NWB, dated November 1, 2013. Subject: Type "A" Water Licence 2AM-MEA0815, Agnico-Eagle Mines Limited: Pre-Hearing Conference Decision Regarding an Application for Amendment.
26. Nunavut Water Board Notice of Public Hearing, distributed to Meadowbank Distribution List on November 1, 2013.
27. Letter and attachment to Phyllis Beaulieu, Manager of Licensing, NWB, from David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate, Aboriginal Affairs and Northern Development Canada, dated December 20, 2013. Re: Final Written Submission Water Licence: #2AM-MEA0815 Licensee: Agnico Eagle Mines Ltd. Issue: Amendment Application #2 Region: Kivalliq.
28. Email to Phyllis Beaulieu, Manager of Licensing, NWB, from Luis Manzo, Director of Lands, Kivalliq Inuit Association, dated January 17, 2014. Subject: Water Compensation Agreement.
29. Email to Meadowbank Distribution, from Nunavut Water Board, dated January 22, 2014. Subject: 2AM-MEA0815 Meadowbank Gold Mine Project Amendment Application Closing of Public Hearing.
30. Letter to Meadowbank Distribution List, from Phyllis Beaulieu, Manager of Licensing, NWB, dated January 24, 2014. Re: Licence No. 2AM-MEA0815, Agnico-Eagle Mines Limited, Amendment Application for the Type "A" Water Licence, Meadowbank Gold Mine Project: Close of the Public Hearing Record.

31. Email to Stéphane Robert, Manager Regulatory Affairs Nunavut, AEM, from Karén Kharatyan, Technical Advisor, NWB, dated February 3, 2014. Subject: 2AM-MEA0815 Amendment, Proposed Water Level Trigger for Weekly Monitoring.
32. Email to Luis Manzo, Director of Lands, Kivalliq Inuit Association, from Karén Kharatyan, Technical Advisor, NWB, dated February 4, 2014. Subject: Water Compensation Agreement.
33. Email to Karén Kharatyan, Technical Advisor, NWB, from Luis Manzo, Director of Lands, Kivalliq Inuit Association, dated February 4, 2014. Subject: Water Compensation Agreement.
34. Email to Luis Manzo, Director of Lands, Kivalliq Inuit Association, from Karén Kharatyan, Technical Advisor, NWB, dated February 4, 2014. Subject: Water Compensation Agreement.

    Letter and attachment to Karén Kharatyan, Technical Advisor, NWB, from Stéphane Robert, Manager Regulatory Affairs Nunavut and Ryan Vanengen, Environmental Biologist, AEM, dated February 5, 2014. Re: Proposed Water Level Trigger for Weekly Monitoring.
35. Letter to Damien Côté, Executive Director, NWB, from Luis Manzo, Director of Lands, Kivalliq Inuit Association, dated June 12, 2014 (received by the Board on June 13, 2014), confirming that a Water User Compensation Agreement is in place.

Appendix C

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Building *Nunavut* Together
*Nunavu*liuqatigiingniq
Bâtir le *Nunavut* ensemble
Nunavut

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ
Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0

Attn: Ryan Vanengen

June 16, 2014

Re: Exemption Permit to disturb/destroy a raven nest at the central waste dump in pit B owned by Agnico-Eagle Mines Ltd.

Agnico-Eagle Mines limited is requesting permission to remove a raven's nest containing eggs that have been established at the central waste dump at pit B owned by Agnico-Eagle Mines. The reason for this request is that the nest is in an area that will be extended for operations and the nest will need to be removed.

By way of this letter Agnico-Eagle Mines Ltd is authorized to remove the nest.

Ravens and their nests are protected by law, specifically by section 72 of the *Wildlife Act* (Nunavut) which states:

Bird's Eggs

72. (1) Unless lawfully harvesting eggs, no person shall injure, molest or destroy an egg of a bird.

Bird's Nest

(2) Unless lawfully harvesting down, no person shall injure, molest or destroy

(a) the nest of a bird when the nest is occupied by a bird or its egg; or

(b) the nest of a bird of prey or prescribed bird.

P.O. Box 1000, Stn.1320
Iqaluit, Nunavut X0A 0H0

(867) 975-7700
(867) 975-7740
www.gov.nu.ca

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Building Nunavut Together
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Nunavut

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Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

Also, pursuant to the prescribed matters reglations, ravens are a prescribed bird for the purposes of Section 72(2)(b) of the *Wildlife Act.*

Therefore:

- pursuant to Section 72 (1) of the *Wildlife Act* it is an offence to injure, molest or destroy a raven egg; and
- pursuant to section 72 (2)(a) of the *Wildlife Act* it is an offense to injure, molest or destroy an occupied raven nest; and
- pursuant to Section 72 (2)(b) of the *Wildlife Act* it is an offense to injure, molest or destroy an occupied raven nest.

This letter constitutes an Exemption Permit, issued under the authority of Section 21 of the *Wildlife Act.* It exempts you from the above listed prohibitions. You are hereby authorized to remove and/or destroy the nest and any eggs that may be in it. In the event that the adult birds are present and create a hazard in your attempts to carry out the removal of the nest, you are further authorized to destroy the adults by shooting.

If you have any questions about how to proceed with activities under this permit, please don't hesitate to contact me.

Sincerely,

Drikus Gissing

Director of Wildlife

cc. Manager of Wildlife, Kivalliq Region

Baker Lake HTO, Baker Lake

Nunavut Wildlife Management Board

P.O. Box 1000, Stn.1320
Iqaluit, Nunavut X0A 0H0

(867) 975-7700
(867) 975-7740
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Appendix D

NIRB File No.: 03MN107
AANDC File No.: N2013F0030, 5510-5-3
DFO File No.: NU-03-0191
EC File No.: 4703 001 015 120
NRCan File No.: F74222
NWB File No.: 2BE-MEA1318

June 27, 2014

Ryan Vanengen
Environment Superintendent
Agnico Eagle Mines Ltd. – Meadowbank Division
P.O. Box 540
Baker Lake, NU X0B 0C0

Sent via email: ryan.vanengen@agnicoeagle.com

Re: Opportunity to Address Comments Received Regarding Agnico Eagle Mines Ltd.'s "Meadowbank Gold Project 2013 Annual Report"

Dear Ryan Vanengen:

On April 25, 2014 the Nunavut Impact Review Board (NIRB or Board) invited interested parties to review Agnico Eagle Mines Ltd.'s (AEM) *Meadowbank Gold Project 2013 Annual Report.* As required by Section 12.7 of the Nunavut Land Claims Agreement (NLCA) and provisions prescribed in the Project Certificate [No. 004] – Appendix D, the NIRB's monitoring program focuses on compliance and effects monitoring. The NIRB requested that interested parties review the *Meadowbank Gold Project 2013 Annual Report* and provide comments with respect to their jurisdiction and/or area of expertise by June 9, 2014.

On or before June 9, 2014 the NIRB received comments from the following interested parties:

- **Aboriginal Affairs and Northern Development Canada (AANDC)**
- **Environment Canada (EC)**
- **Fisheries and Oceans Canada (DFO)**
- **Health Canada (HC)**
- **Transport Canada (TC)**
- **Government of Nunavut (GN)**

All comments received and pertaining to this file can be obtained from the NIRB's online public registry at:

http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/02-PROPONENT/2013/03-COMMENTS/

The NIRB has completed its review of the comments received and hereby requests that AEM review all submissions and provide the NIRB with a response to the questions or requests for clarification summarized below:

Water Quality

AANDC commented on observed impacts in *Table 12.3 Water Quality* of the *Annual Report* (p. 114), noting observation of poor water quality within the nearshore areas of NP-2, followed by conclusion of no observed impacts; recommend that AEM provide an explanation on this impact prediction.

AANDC commented on the proposed monitoring for tailings contamination of groundwater presented in *Table 12.3 Water Quality* of the *Annual Report (*p. 114); recommend that AEM provide clarification on how current monitoring is sufficient to capture potential contaminants flowing through the underlying talik into the groundwater, where permafrost has not fully developed.

EC commented on parameters included in *Table 4.2 2013 Comparison of predicted pit water quantity to the measured water quantity and quality;* recommend that AEM provide clarification regarding the *Third Portage Pit Sumps Water Quality* sub-table and whether "ammonia" in mg N/L is intended to refer to the NH_3 fraction and the "ammonia nitrogen" in mg N/L is intended to refer to the total ammonia.

EC commented on values contained within *Table 4.2 2013 Comparison of predicted pit water quantity to the measured water quantity and quality* and *Table 8.6 2013 Saddle Dam 1 Water Quality Monitoring (ST-S-2)*; recommend that AEM provide clarification on whether metals are expressed as total or dissolved metals.

EC commented on changes to cyanide concentrations in tailings decreasing as illustrated in *Table 8.10 2013 Tailings Reclaim Pond Water Quality Monitoring (ST-21)*; recommend that AEM provide clarification on why cyanide concentrations in the tailings reclamation pond water decreased by 4 orders of magnitude between June and July.

Fish and Fish Habitat

DFO commented on requirements under the DFO Authorization *NU-03-0190 AWPAR;* recommend that AEM provide clarification on the absence of photographic records.

DFO commented on the requirement for monitoring of shoal habitat in 2013 within the DFO Authorization *NU-08-0013 Western Channel Crossing;* recommend that AEM provide clarification on the absence of reporting on monitoring of the Western Channel Crossing with regards to habitat compensation.

DFO commented on AEM's *Habitat Compensation Monitoring Report 2013* as it relates to the DFO Authorization *NU-03-0191.3;* recommend that AEM provide clarification on whether any

construction took place in 2013 to which the mitigation measures apply and on any ongoing basin habitat improvements that have been made.

DFO commented on specific terms and conditions included under Authorization *NU-03-0191.4 Vault Lake*; recommend that AEM provide clarification on whether any activities took place in which mitigation measures at Vault Lake would need to be taken and whether construction of NP-2 Channel and Dogleg North Pond have taken place.

DFO commented on the *Meadowbank Gold Project Habitat Compensation Monitoring Plan;* recommend that AEM provide clarification on the versions referenced.

Wildlife
The GN commented on wildlife mortality, specifically the death of five caribou following a collision with a grader; recommend that AEM provide additional information on new mitigation measures.

The GN commented on increased harvesting along the All Weather Access Road (AWAR); recommend that AEM provide clarification on the extent of the no shooting zone off the AWAR and the suitability of this zone for mitigating impacts on hunting activities centered along the AWAR.

Archaeology
The GN commented on the surveyed areas in *Appendix G19 Report: Archaeological Impact Assessment Agnico Eagle Meadowbank 2013 Exploration Studies;* recommend that AEM provide geo-spatial clarification on the areas surveyed in Areas 1 and 2.

The NIRB would like to provide AEM with an opportunity to address these comments prior to the submission of the *Monitoring Officer Report* and requests that a response be provided directly to the NIRB by **July 28, 2014**. If it is unrealistic for AEM to provide a response by this date, please indicate by July 28, 2014 when the NIRB can expect a response submission. Please send your comments to the NIRB at info@nirb.ca or via fax at **(867) 983-2594**.

If you have any questions or concerns, please contact the undersigned at (867) 983-4606 or hrasmussen@nirb.ca.

Sincerely,

Heather Rasmussen

Heather Rasmussen
Technical Advisor, Monitoring Officer
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico Eagle Mines Ltd.
Tracey McCaie, Aboriginal Affairs and Northern Development Canada
Georgina Williston, Fisheries and Oceans Canada

John Clarke, Natural Resources Canada
Paula Smith, Environment Canada
Meighan Andrews, Transport Canada
Luis Manzo, Kivalliq Inuit Association
Phyllis Beaulieu, Nunavut Water Board
Tineka Simmon, Northern Project Management Office
Agnes Simonfalvy, Government of Nunavut

Appendix E

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

March 6, 2014

Kevin Buck
Environment Superintendent
Agnico Eagle Mines Limited - Meadowbank Division
P.O. Box 540
Baker Lake, NU X0B 0C0

Sent via email: kevin.buck@agnicoeagle.com

Re: Health Canada Response to the Nunavut Impact Review Board's *2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project* and Board Recommendations

---

Dear Kevin Buck:

On November 27, 2013 the Nunavut Impact Review Board (NIRB or Board) issued a recommendation to Health Canada related to Condition 67 of the Meadowbank Project Certificate [No. 004] as issued for Agnico Eagle Mines Ltd.'s (AEM) Meadowbank Gold Mine Project (NIRB File No. 03MN107).

On January 27, 2014 the NIRB received Health Canada's response (enclosed) to the Board's recommendation regarding AEM's preliminary quantitative risk assessment (PQRA)[1] report as related to Condition 67 of the Meadowbank Project Certificate. While this correspondence had been made available on the NIRB's public registry shortly thereafter; unfortunately, owing to an administrative oversight, notice of this correspondence was not provided to AEM or the Meadowbank distribution list until March 3, 2014. The NIRB apologizes for the delay in notifying parties and any inconvenience this may have caused.

The NIRB understands after speaking with AEM that it intends to provide a response to Health Canada's January 27, 2014 correspondence. The Board looks forward to receiving AEM's response and appreciates its efforts to this end.

[1] "Human Health Preliminary Quantitative Risk Assessment of Consumption of Country Foods for the Meadowbank Gold Project," Appendix I2 of *Meadowbank Gold Project 2011 Annual Report*, 2012. Available from: http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/03-ANNUAL%20REPORTS/02-PROPONENT/2011/01-REPORT/.

If you have any questions or require clarification regarding the Board's recommendations or the NIRB's monitoring program for the Meadowbank project, please contact me directly at (867) 793-4633 or sgranchinho@nirb.ca.

Sincerely,

Sophia Granchinho, M.Sc., EP
Senior Technical Advisor & Meadowbank Project Monitoring Officer
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico Eagle Mines Ltd.
Nicole Coté, Health Canada
Gregory Kaminski, Health Canada
Kelly Senkiw, Health Canada
Meadowbank Distribution List

Enclosed: Letter from Health Canada to NIRB Re: Health Canada's review of the additional information provided regarding the 2011-2012 Monitoring Report for the Meadowbank Gold Project, 2012 (*January 27, 2014*)

Health Canada Santé Canada

Safe Environments Directorate
Healthy Environments and Consumer Safety Branch
269 Laurier Ave. W., 4th floor, A/L 4904A
Ottawa, ON K1A 0K9

January 27, 2014

Sent by e-mail to: Info@nirb.ca

Subject: Health Canada's review of the additional information provided regarding the *2011-2012 Annual Monitoring Report for the Meadowbank Gold Project, 2012* (NIRB File No. 03MN107)

Dear Nunavut Impact Review Board,

Health Canada (HC) submits this letter in response to the NIRB's November 27, 2013 letter requesting input on additional information in the report, "Appendix I2: Human Health Preliminary Quantitative Risk Assessment (PQRA) of Consumption of Country Foods", (Appendix I2 was provided with the 2011-2012 Annual Monitoring Report), with respect to the monitoring program as outlined in Condition 67 of the Board's recommendations. The NIRB had previously requested HC's review of the PQRA on December 7, 2012, to which HC had responded on February 4, 2013. The Appendices to the PQRA were not made available to HC until January 28, 2013, therefore they were not reviewed prior to HC's response.

HC reiterates that it has not reviewed the report, "Appendix I1: Wildlife Screening Level Risk Assessment" (WSLRA), as HC does 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). Another department may have the expertise necessary to review the WSLRA.

HC has reviewed the Appendices to the PQRA report, as well as the additional information provided by Agnico Eagle Mines Ltd (AEM) on April 10, 2013, and provides the following comments for the NIRB's consideration.

General

HC reviewed the worked calculation examples provided by AEM and has not identified any concerns.

Methodology and TRVs to assess risk

Tin (Sn)

The toxicological reference value (TRV) chosen by AEM for inorganic tin is more conservative than the value supported by HC. HC agrees with the proponent's two assertions that it is unlikely tributyl tin would be naturally present in the environment and that it is unlikely to represent a concern in the context of the mine. HC has no further questions with respect to the levels of tin modeled in country foods.

Arsenic (As)

The levels of exposure to total arsenic from country foods assessed were negligible in comparison to the levels of total dietary exposure presented in the Canadian Total Diet Study (2007). Therefore, HC has no further questions with respect to levels of arsenic in the country foods assessed in the PQRA.

Cadmium (Cd)

HC agrees with AEM's discussion on the potential health risks posed by cadmium. HC has no further question with respect to the levels of cadmium in the country foods assessed in the PQRA.

As previously mentioned in HC's letter to the NIRB dated February 4, 2013, HC reiterates that the Territorial Governments may want to re-examine existing guidance for the consumption of caribou organs (liver and kidney).

Lead (Pb)

The predicted values for the levels of lead in country foods for both the onsite and external reference site are within an order of magnitude of each other, according to the data provided in the PQRA. HC compared several estimates of total dietary exposure to Pb with the predicted daily exposure estimates to Pb by moderate and high consumers of caribou kidney and liver; and Canada goose muscle, provided in the PQRA (refer to attached Appendix 1). In the case of caribou liver, moderate consumption of this country food, from the project site or external reference site, is predicted to exceed the 90th percentile total dietary exposure estimates in both toddlers and in teens/adults (for the general Canadian population); and, this moderate consumption is also predicted to exceed the mean total dietary exposure to Pb by First Nations populations living on reserve, as found in the 2008/2009 report of the First Nation Food, Nutrition & Environment Study (Chan et al, 2011).

Health Canada recommends that dietary exposure to lead should be As Low as Reasonably Achievable (ALARA principle)[1]. If the predicted Pb residue levels and the estimates of exposure to Pb in the country foods included in the assessment are accurate, some concerns about the consumption of country foods obtained from the project site (and the external reference site) exist. HC notes the uncertainty in some of the lead concentrations in country foods that were used in the exposure model (AEM asserted that the level of Pb in the onsite sedge sample was likely mis-reported as it is much higher than other samples) and the uncertainty associated with the use of conservative, predictive models employed to estimate Pb levels in the country foods assessed. Given these uncertainties, HC suggests sampling caribou kidney, caribou liver and Canada goose muscle at both onsite and external reference locations in order to establish the current Pb levels in these country foods. This would also serve as a benchmark for future assessments of lead in country foods from this site. If the background levels of lead in these country foods are determined to be high in the region, then it may be appropriate to consider risk management options.

<u>Other – Migration of Fish Offsite</u>

HC considers AEM's response to the question regarding migration of fish offsite to be sufficient. HC has no further questions on the topic of including a monitoring program for levels of mercury in fish from the site.

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[1] Health Canada. 2011. Food Directorate Updated Approach for Managing Dietary Exposure to Lead. http://www.hc-sc.gc.ca/fn-an/securit/chem-chim/environ/lead_strat_plomb_strat-eng.php

Should you have any questions regarding HC's response, please contact Kelly Senkiw, Environmental Assessment Coordinator, at 613-941-7997 or via email, kelly.senkiw@hc-sc.gc.ca.

Sincerely,

Nicole Coté
Manager, Environmental Assessment Division
Health Canada, National Capital Region
Tel.: 613-952-8267
Fax: 613-946-9673
Email: Nicole.cote@hc-sc.gc.ca

cc: Kelly Senkiw, Environmental Assessment Coordinator, Health Canada
Gregory Kaminski, Senior Environmental Health Assessment Specialist, Health Canada

References

Chan, L, Receveur, O, Sharp, D, Schwartz, H, Ing, I and Tikhonov, C. (2011). First Nation Food, Nutrition & Environment Study (FNFNES): Results from British Columbia (2008/2009). Prince George, BC: University of Northern British Columbia, [accessed: January 9, 2014]: http://www.fnfnes.ca/docs/BC%20Reports/FNFNES_Report_BC_FINAL_PRINT_v2.pdf.

Health Canada. Canadian Total Diet Study. 2007. (and various years). www.hc-sc.gc.ca/fn-an/surveill/total-diet/index-eng.php

Encl.

Appendix 1. Predicted exposure to lead from caribou kidney, caribou liver or Canada goose muscle compared to total dietary exposure to lead.

Appendix 1: Predicted exposure to lead from caribou kidney, caribou liver or Canada goose muscle compared to total dietary exposure to lead. Only those values exceeding one of the total dietary intake assessments are presented. All values are in units of (ug/kg bw/d).

Country Food and Human Consumer	Predicted lead exposure – moderate consumption*	Predicted lead exposure – high consumption*	Internal Health Canada probabilistic lead exposure Assessment – median +	Internal Health Canada probabilistic lead exposure Assessment – 90th percentile+	Final Human Health State of the Science Report on Lead**	FNFNES***
Caribou kidney onsite/ toddler	-	0.192	0.195	0.363	0.1	0.23
Caribou kidney external reference/ toddler	-	0.103				
Caribou kidney onsite/ adult	-	0.108	0.069	0.148		
Caribou kidney external reference/ adult	-	-				
Caribou liver onsite/ toddler	0.685	1.443	0.195	0.363		
Caribou liver external reference/ toddler	0.368	0.775				
Caribou liver onsite/ adult	0.365	0.814	0.069	0.148		
Caribou liver external reference/ adult	0.196	0.437				
Canada goose muscle onsite/ toddler	-	0.256	0.195	0.363		
Canada goose muscle external reference/ toddler	-	-				
Canada goose muscle onsite/ adult	-	0.139	0.069	0.148		
Canada goose muscle external reference/ adult	-	-				

* Appendix C of AEM's PQRA on the Meadowbank Mining project; **Toddler = 1-4 years**

+ values are for all foods. Based on lead occurrence data from the 2000-2002 Total Diet Study(TDS) combined with consumption data from the Canadian Community Health Survey (CCHS) cycle 2.2, 2004.
Toddler = 6 months-4 years, adult =12+

TDS: www.hc-sc.gc.ca/fn-an/surveill/total-diet/index-eng.php
CCHS: Statistics Canada 2004. Canadian Community Health Survey – Cycle 2.2 Nutrition. Detailed information for 2004 at: http://www.statcan.gc.ca/cgibin/imdb/p2SV.pl?Function=getSurvey&SDDS=5049&lang=en&db=imdb&adm=8&dis=2
CCHS general information: http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/index-eng.php

** Health Canada. (2012). Final Human Health State of the Science Report on Lead: http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhssrl-rpecscepsh/index-eng.php#a7 [accessed January 9, 2014].
Value represents the median dietary lead exposure for the Canadian population.

*** Chan, L, Receveur, O, Sharp, D, Schwartz, H, Ing, I and Tikhonov, C. (2011). First Nation Food, Nutrition & Environment Study (FNFNES): Results from British Columbia (2008/2009). Prince George, BC: University of Northern British Columbia, [accessed January 9, 2014]: http://www.fnfnes.ca/docs/BC%20Reports/FNFNES_Report_BC_FINAL_PRINT_v2.pdf.
Value represents average daily intake of lead from food and tap water for BC First Nations people living on reserve.

AGNICO EAGLE

April 16th, 2014

Ms. Heather Rasmussen
Technical Advisor
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU X0B 0C0
Phone: (867) 983-4600

Dear Ms. Rasmussen,

Re: NIRB File No.: 03MN107: Response to Health Canada's review of the 2011 HH PQRA for Consumption of Country Foods for the Meadowbank Gold Project: letter dated January 27th, 2014.

AEM has completed a review of the comments made by Health Canada (HC) in their correspondence to NIRB in a letter dated January 27th, 2014. Overall, AEM agrees with HC's evaluation and will be conducting a follow-up SLRA in August 2014 (every 3 years as described in the Terrestrial Ecosystem Management Plan- TEMP, 2005) following the same sample collection and methodology and data analysis presented in 2006 and 2011, as deemed acceptable by HC and NIRB. Please note the following:

- AEM agrees that the Territorial Government re-examine existing guidance for the consumption of caribou organs to ensure the protection of local harvesters. As noted by HC, it is important to identify that exceedances of modelled parameters occurred at both offsite (reference areas undisturbed by mining) and minsite stations.

- HC re-evaluated the results of lead (Pb) under Health Canada's February 2013 "Risk Management Strategy for Lead", which has the mandate that Pb consumption be as low as possible. In their letter to NIRB, they compare predicted Pb exposure levels from country foods in the Meadowbank PQRA to median (and 90th centile) exposure values estimated from studies of the Canadian population. These values were exceeded under various consumptions scenarios, as presented, with the worst case being that moderate consumption of caribou liver (both onsite and offsite reference areas) exceeds average exposure to Pb from food for the Canadian population[1]. AEM understands the updated position of HC and will adjust the evaluation of Pb in future monitoring programs.

[1] Previously (2004) Health Canada published a tolerable daily intake value for Pb of 3.6 ug/kg/d. There were no exceedances of this value in the Meadowbank risk assessment, with the highest predicted intake from country foods being approximately half this value (1.8 ug/kg/d –assuming heavy consumption rate of all foods by toddlers, based on maximum measured Pb values in environmental media).

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- HC notes that "if the predicted Pb residue levels and estimates of exposure to Pb in the country foods included in the assessment are accurate, some concerns about the consumption of country foods obtained from the project site **(and external reference site)** exist." This may be accurate, however AEM would like to point out that although the levels exceeded national averages for Pb exposure, predicted concentrations of Pb (mg/kg ww) in caribou kidney, liver, muscle and Canada goose muscle for the Meadowbank area (both onsite and offsite) are lower than or similar to many values measured in caribou and waterfowl throughout northern regions (see Table 1). Furthermore, the above comparisons Pb predicted exposure rates are elevated principally because maximum measured concentrations of Pb in plant/soil/water samples were used in the calculations, and one very high result for Pb in sedge onsite was obtained. While most samples of sedge (a major component of caribou and goose diets) were < 0.5 mg Pb/kg, one onsite sample was over 12 mg/kg (see Figure 1), significantly influencing the onsite results and is not be representative of all of the samples.

- AEM will be conducting a follow-up SLRA in August 2014 (every 3 years) following the same sample collection methodology and data analysis presented in 2006 and 2011. This will not include animal muscle tissue sampling in wildlife as recommended by HC; this should be part of the Territorial government's review of consumption guidelines.

In keeping with the scope and objectives of the original SLRA monitoring program AEM will continue to work with regulators to take measures to protect the health of wildlife in the area and protect traditional harvest and safe consumption of country foods.

Should you require any further information or questions please contact the below via email or by telephone.

Regards,

Stéphane Robert
stephane.robert@agnicoeagle.com
819-763-0229
Manager Regulatory Affairs

Ryan Vanengen
rvanengen@agnicoeagle.com
819.651.2974
Environment Biologist

cc: Nicole Coté, Health Canada
Gregory Kaminski, Health Canada
Kelly Senkiw, Health Canada
Kevin Buck, AEM

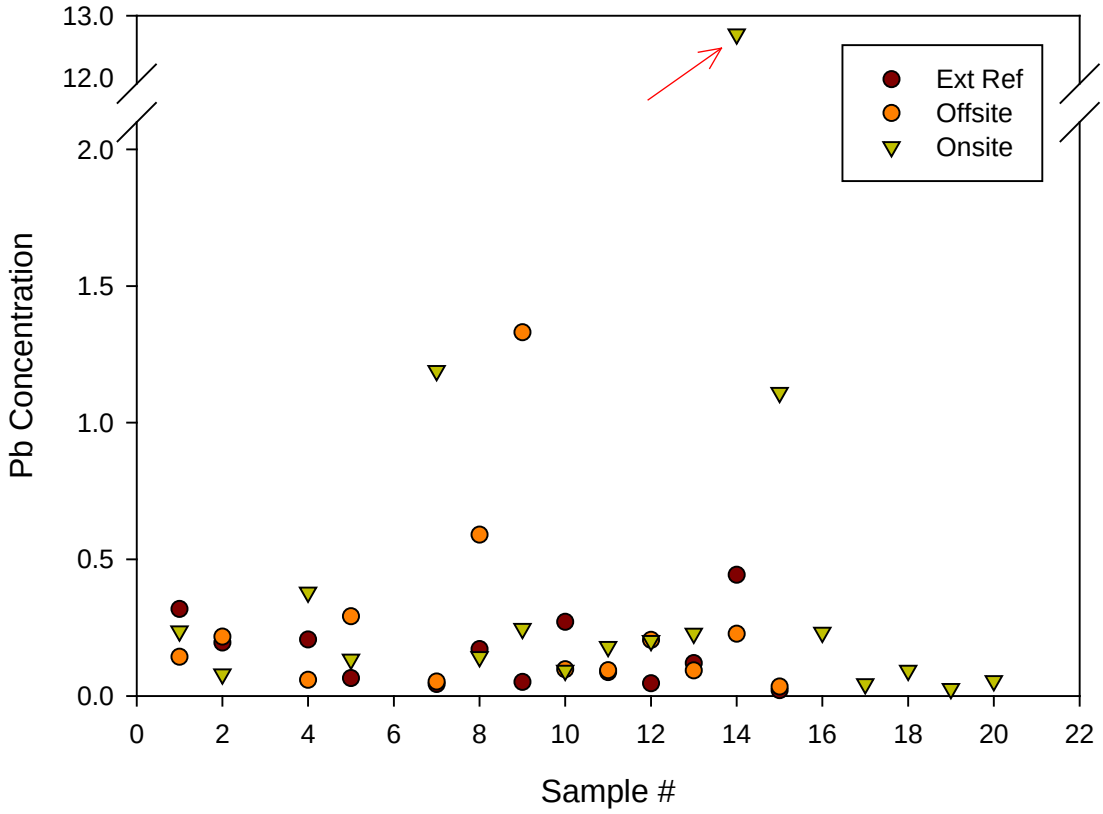

Figure 1- 2011 Pb concentrations (mg Pb/kg) in sedge at mine site and reference stations[2]

[2] Maximum measured concentrations of Pb in plant/soil/water samples were used in the calculations, and *one* very high result for Pb in sedge onsite was obtained. While most samples of sedge (a major component of caribou and goose diets) were < 0.5 mg Pb/kg, *one* onsite sample was over 12 mg/kg, significantly influencing the onsite results.

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Table 1- Predicted concentrations of Pb in country food items based on measured concentrations in environmental media on the Meadowbank site (onsite) and at the external reference location, and approximate measured values from the literature (in some cases converted from dry-weight values using accompanying moisture content or an assumed value of 77% as in the Meadowbank PQRA).

Tissue	Predicted Concentration (mg/kg ww)		Approximate Max. Measured Concentration (mg/kg ww)	
	Onsite Value	External Reference Value	Literature Value	Reference
Caribou kidney	0.236	0.142	4.06*	NWT/Yukon (Gamberg, 2000)
			1	Quebec (Robillard et al. 2002)
			0.98	Canadian north (Larter and Nagy 2000)
			0.75	Labrador (Pollock et al. 2009)
			0.432	NWT/Yukon (Gamberg, 2008)
Caribou liver	1.984	1.066	3	Quebec (Robillard et al. 2002)
			1.6	Barrow, Alaska (O'Hara et al. 2003)
			0.926	Greenland (Aastrup et al. 2000)
			0.74*	Yukon (Gamberg, 2000)
Canada goose muscle	0.114	0.011-0.015	<0.58*	Yukon – waterfowl (Gamberg, 2000)
			0.19	New Jersey (urban)-Canada goose (Tsipoura et al., 2011)
			0.15	Manitoba - mallard (Chan et al. 2012)

**mean+standard deviation*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

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References

Aastrup, P., Riget, R., Dietz, R., and Asmund, G. 2000. Lead, zinc, cadmium, mercury, selenium and copper in Greenland caribou and reindeer (*Rangifer tarandus*). The Science of the Total Environment 245(2000):149-159.

Chan, L., Receveur, O., Sharp, D., Schwartz, H., Ing, A., Fediuk, K., Black, A. and Tikhonov, C. 2012 First Nations Food, Nutrition and Environment Study (FNFNES): Results from Manitoba (2010). Prince George: University of Northern British Columbia.

Chan, L., Receveur, O., Sharp, D., Schwartz, H., Ing, A. and Tikhonov, C. 2011. First Nation Food, Nutrition & Environment Study (FNFNES): Results from British Columbia (2008/2009). Prince George, BC: University of Northern British Columbia.

Gambert, M. 2000. Contaminants in Yukon Country Foods. Prepared for Yukon Contaminants Committee and Department of Indian and Northern Affairs, Northern Contaminants Program, Whitehorse, Yukon. June, 2000.

Gamberg, M. 2008. Contaminants in Arctic Moose and Caribou – 2006. Technical Report. June, 2008.

Larter, N. and Nagy, J., A comparison of heavy metal levels in the kidneys of High Arctic mainland caribou populations in the Northwest Territories of Canada. The Science of the Total Environment. 146(2000):109-119.

O'Hara, T., George, J., Blake, J., Burek, K., Carroll, G., Dau, J., Bennett, L., Mccoy, C., Gerard, P., Woshner, V. 2003. Investigation of Heavy Metals in a Large Mortality Event in Caribou of Northern Alaska. Arctic 56(2):125-135.

Pollock, B., Penashue, B., McBurney, S., Vanleeuwen, J., Daoust, P., Burgess, N., and Tasker, A. 2009. Liver parasites and body conditions in relation to environmental contaminants in caribou (*Rangifer tarandus*) from Labrador, Canada. Arctic. 62(1):1-12.

Robilliard, S., Beauchamp, G., Paillard, G. and Belanger, D. 2002. Levels of cadmium, lead, mercury and caesium in caribou (*Rangifer tarandus*) tissues from northern Quebec. Arctic. 55(1):1-9.

Tsipoura, N., Burger, J., Newhouse, M., Jeitner, C., Gochfeld, M. and Mizrahi, D. 2011. Lead, mercury, cadmium, chromium and arsenic levels in eggs, feathers, and tissues of Canada geese of the New Jersey Meadowlands. Environmental Research. 111(2011):775-784.

MEADOWBANK DIVISION

Production Lease KVPL08D280

2014 Third Quarter Report

October 2014

TABLE OF CONTENTS

List of Appendices

SECTION 1 • SUMMARY OF ACTIVITIES

Agnico Eagle Mines Limited - Meadowbank Division (AEM) is required under condition 5.10 of Production Lease KVPL08D280 to deliver quarterly reports to the KIA detailing its activities on the leased land. The following sections summarize activities during the third quarter (Q3) from July to September 2014.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 91,551 oz. of gold;
- Mined 8,705,247 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1,057,241	3,102,453
Gold Grade (g/t)	2.88	3.86
Gold Produced (oz.)	91,551	366,092

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	185,511	328,795
Waste Rock Production (t)	7,500,818	21,912,319
Ore Production (t)	1,018,918	2,953,189
Total Blasting (t)	8,214,538	25,532,008
Total Drilling (m)	174,173	596,738

1.4 DIKE CONSTRUCTION ACTIVITIES

Central Dike construction continued during the third quarter of 2014. Major work completed during the quarter are summarize below:

- Placement of rockfill, coarse and fine filters over the entire foundation;
- Clean-up of the key trench with air, slush grout of the exposed bedrock surface and till placement on top of the slush grouted surface;
- Geotextile and LLDPE liner installation on the upstream slope of the dike between elevation 116m to 136m; and
- Placement of the protective layer on top of the liner until elevation 128m.

Completion of the works undertaken in the Tailings Storage Facility - Deposition continues in the north cell. The most northern portion of the north cell has been filled and capping design has commenced with work to begin in 2015. A protective structure consisting of a layer of 500 mm of crusher rejects, protected by a layer of 500 mm of fine rockfill, was built on the North-West corner of the North tailings cell. This structure was designed to prevent any seepage through the existing road while depositing the tailings at point W20. Dike review board meeting was held at the mine site.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2014 Mine Plan V1*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 6th, 2014. Following discussion with KIA, a version 2 of the 2014 Mine Plan was done to included information on RSF Seepage and Assay Road Seepage. The "*2014 Mine Plan V2*" was submitted to KIA on February 5th, 2014.

On August 20th, AEM sent a request to KIA to include the Vault Pit Expansion into Phaser Lake into the Mine Plan of the KIA Production Lease KVLP08D280.

SECTION 3 • INSPECTION REPORTS

During the current quarter, six (6) inspections were conducted by regulators:

- AANDC and KIA conducted an Annual Surface Water Sampling (non-regulatory) on July 13th – 6 locations were sampled.
- Inspection and meeting with Transport Canada in Baker Lake regarding implementation of OPEP at Baker Lake Marshalling Facility on August 2nd - 3rd. Following this visit, AEM received a non-compliance letter outlining requirements that need to be met (see Appendix A and section 4.4).
- Environment Canada visit from August 25th to 27th primarily to review EEM work and general site tour – visit went well.
- Transport Canada at Baker Lake for Artic Fuel Contractor Inspection and also included an onsite visit on August 25th. TC will provide recommendations regarding our TDG.
- Site visit with HTO on August 27th – included an introduction to Amaruq Project.
- NIRB site visit on September 4th-5th – visit went well.

No inspection reports were received from regulators regarding these inspections.

AANDC was on site August 9th and 10th for a comprehensive overview of the project and site visit – non formal.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There were five (5) exceedences of the Water License during Q3:

- Portage Attenuation Pond Discharge (ST-9) aluminium concentration on July 5th (1.79 mg/L) exceeded the Water License Part F, Item 2 for effluent quality (1.5 mg/L as a maximum grab sample). AEM exceed the monthly average concentration limit for aluminum.

- On July 5th, final effluent from Portage Attenuation Pond (ST-9) has been toxic for Daphnia.

- TSS result on August 6th for Vault Attenuation Pond Discharge was non-compliant for both MMER regulation and NWB Waters License which permits for a grab sample of 30 mg/L for the maximum authorized concentration and 15 mg/L for the maximum authorized monthly mean concentration. The August 6th result is 57 mg/L with a monthly mean of 30.5 mg/L.

- On August 12th, final effluent from Vault Attenuation Pond was toxic for Daphnia.

- Mercury level exceed the EC guideline during the incinerator stack testing from July 10th to 15th.

Fourteen (14) spills occurred at the site; five (5) spills were reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the third quarter, 14 spills occurred at the site. Five (5) spills were reported to the Government of Nunavut:

- 140 L of drill oil spilled in Row 2 of laydown sea can because pallet wrapping broke and pails fell off during transport. This was not reported following an administrative error.

- 1,000 L of tailings slurry spilled at the mill garage door due to a disconnected pipe inside the mill and some slurry escaped out through the door.

- 200 L of diesel spilled at the Baker Lake Diesel Refueling station due to contractor overflow.

- 140 L of drill oil spilled in transit laydown because a pallet of pails tipped during transport.

- 5 Kg of copper sulphate spilled in the transit laydown due to a damaged bag store into a sea can.

During the quarter, a total of 138 sea cans filled with hazardous waste material (924.2 tonnes) were organized and prepared for shipment from the Meadowbank project. The sea cans were shipped from the spud barge at AEM's Baker Lake marshalling facilities to Bécancour, Quebec by sealift. The materials were subsequently shipped to licensed hazardous waste companies in the Province of Quebec (recycling or permanent disposal). These materials were transported under Waste Manifest #'s 9331181-9, 9331185-0, 9331182-7 and 9331184-3. A description of the types of waste, packaging and volume is provided in Table 4.1.

Table 4.1: 2014 Hazardous Materials Shipped Off Site

	Drum	Tote	Quatrex	60 L steel drum	20 L plastic pail	Container (Bulk)
Acid lead batteries			12			
Activated alumina	7					
Airplane de-icing	15					
Crushed neon	1					
Environmental Hazardous N.O.S (Copper)			4			
Corrosive liquid flammable (Diethylenetriiamine)	1					
Empty content	196	17		68	5860	
Empty contaminated steel pail			1			
Flammable compressed gas N.O.S.			1			
Glycol	3	17				
Glycol and oil mix		40				
Oil filters	186		1			
Oily solids waste	13		448	1		
Oily water		16				
Plastic pail lids (SO)			35			
Scraped tire						7
Tetrachloroethylene			1			
Vegetal oil (cooking)	6					
Vegetal grease (cooking)	19					
Waste diesel	21	9				
Waste Jet fuel	29					
Waste grease	168			53		

Waste Kerosene	19					
Waste lamp			1			
Waste Methanol	1		9			
Waste oil	108	439			2	
Waste paint	1		8			
Waste petroleum distillated	1					
Waste spray cans (aerosols)			22			
TOTAL	**795**	**538**	**543**	**122**	**5862**	**7**

Soil sampling of Quarry 5 was completed on June 25th, 2014. All the results passed the CCME industrial guideline. Sampling of Quarry 22 was completed on July 9th. However, some results did not pass the CCME Guideline so remediation work will continue next year. A summary report for Q5 and Q22 will be provided as part of the 2014 Annual Report.

Sent a letter, on June 24th, to advised that AEM has put measures in place to adhere to the Baker Lake Mayor's request. AEM applied dust suppressant, which began on June 25th, on the road between AEM dock and Baker Lake Gatehouse.

Exova was on site to conduct the incinerator stack testing from July 10th to 15th. Mercury levels exceed the EC guideline; laboratory re-analysis confirmed these results, so an investigation with site services department is underway to determine the potential sources. Retesting will be completed in 2015.

Incinerator ash sample for July and September exceeded chromium guideline as set in the Incinerator Waste Management Plan. As per the management plan, ashes are disposed into the TSF instead of landfill until further notice. Investigation is ongoing and sampling frequency increase from annually to monthly. October sampling indicated reductions in chromium to levels below the guidelines.

Hydrostatic tests conducted on September 15th on the fuel line between tank farm and power house did not pass. The line was immediately decommissioned and an internal investigation is ongoing (AEM is currently waiting on equipment to safely cut and conduct pressure tests on segments of the pipe to determine the location of the failure). On September 18th, AEM called KIA to discuss of the problem and will follow-up with regulators following the internal investigation.

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 136,470 m^3. The total amount of reclaim water used in the mill was 732,997 m^3.

AEM received Environment Canada and TAP's comments beginning July regarding the EEM Biological Study Design 2 submitted on February 13th, 2014. On July 21st, AEM sent the response to these comments. On August 11th the approval letter from Environment Canada (dated July 21st) was received. On August 12th, AEM sent to EC the updated schedule for the EEM Cycle 2 as outlined in the approval letter. The sampling for the EEM successfully took place at the end of August and was completed during the first week of September.

Discharge water from Baker Lake Diesel Tank Farm #1-4 occurred on August 19th. Water from the Baker Lake Jet-A containment was transferred via tanker to the TSF at the Meadowbank Mine Site on August 22nd as it did not meet TSS discharge limit. On September 12th, AEM provided 10 days' notice to the AANDC Water Inspector for discharging accumulated water from the Baker Lake Tank Farms. Discharge water from Baker Lake Diesel Tank Farm #5-6 through the environment on September 21st - 22nd. All the water was compliant with Water License Part F, Item 23.

Three (3) CREMP monitoring events occurred during the quarter – July, August and September.

4.2.1 Amendment Freshwater

Meadowbank's original NWB License (2AM-MEA0815) permitted Agnico Eagle Mines Ltd. (AEM) to use 700,000 m^3 per year of freshwater for domestic camp use, mining, milling and associated uses. Despite significant improvements and optimization of freshwater use, requirements exceed the permitted volume. On April 23rd, 2013, Agnico Eagle Mines (AEM) Meadowbank Division submitted a request to the Nunavut Water Board for an amendment to increase the freshwater use rate at the Meadowbank Gold Project. On June 30th, 2014 AEM received from NWB an approval letter that permitted the withdraw of 1,870,000 m^3 in 2013 and 1,150,000 m^3 per year after 2013. On July 23rd, AEM received from Minister of Aboriginal Affairs the final approval to the amendment (Appendix B).

4.2.2 NWB Water License Renewal

On July 23rd, AEM submitted an application document for the NWB Type A Water License Renewal. The current license expires in May 2015. On August 29th, NWB requested that interested parties review the submission for completeness. On September 30th, AEM received the NWB review for completeness that included recommendations from AANDC, EC, KIA and DFO. AEM response to these comments will be submitted on October 14th. On September 30th, NIRB also sent a letter stating that the License Renewal does not required a screening.

4.2.3 RSF Seepage

During the quarter, AEM pumped 8,284 m^3 of seepage water from ST-16 to the North Cell TSF. To date an annual total of 32,169 m^3 was pumped.

At the end of August, a flowmeter was installed to monitor volumes of water pumped at ST-16. After installation, AEM realized that the previous methods to calculate the volume (based on the pump capacity and time of pumping) overestimated the actual quantity of water pumped. AEM has since corrected the previous cumulative annual volume based on the flowmeters, which overestimated the annual volume by approximately 6,000m^3 (previous YTD including September is 38,522m^3).

AEM also completed biweekly (August and July) and weekly (September) and after rain event inspections at RSF and NP-2 Lake and weekly monitoring for CN. To date, the water level in ST-16 area has been low and is contained in the sump; as a result the water has not been in contact with the cut off plug and till road and therefore ensures no possible seepage into NP2.

4.2.4 Assay Road Seepage

During the quarter, the water in the interception sump and original sump was pumped back to the mill for a total of 7,557 m^3. Year to date pumped volume is 11,942 m^3.

At the end of August, a flowmeter was installed to monitor the volume of water pumped at this location. After the installation, AEM noted an overestimation of water quantity pumped by approximately 3,500m^3 (i.e. previous YTD including September is 15,427m^3).

Weekly and after rain event inspection of the area were conducted. Based on well monitoring downstream of the trench, all the water was contained up gradient or collected by the interception trench and therefore has not reached TPL. This was confirmed with near shore sampling in TPL; to date no contaminants (copper, total CN or free CN) have been detected in the lake. AEM have received the *Meadowbank Mine, Assay Road Seepage Phase 2: Environmental Site Assessment and Engineering QA/QC, TetraTech EBA (2014)* in August (Appendix C) and has put in place or will complete all recommendations made in this report. Repairs to the containment areas inside the mill, and in particular near the CIP and other problem areas, have been completed. Repairs and sealing of other areas inside the mill and outside the leach tanks are nearly complete.

4.2.5 Portage Attenuation Pond Discharge

Three (3) days discharge occurred during the quarter on July 1st, 2nd and 5th. AEM does not plan to discharge any more water from the south cell in 2014. A total of 14,090 m^3 of water

was discharge during the quarter into Third Portage Lake for a total year to date of 207,813 m^3.

One weekly effluent sample was taken from the Actiflo Water Treatment Plant (ST-9) in July. All the results were below the Water License Part F, Item 2 for effluent quality limits except for aluminium concentration and daphnia toxicity. The effluent was toxic for daphnia on the last day of discharge on July 5th but not for Rainbow trout. Also, on July 5th, the aluminum concentration was 1.79 mg/L exceeding the license limit of 1.5 mg/L as a maximum grab sample. AEM exceeded the monthly average concentration limit as only one sample was taken given the short duration of discharge (3 days). The source of the elevated level of aluminium appears to be from the WTP decommissioning and the coagulant used in the water treatment plant was not adequately removed. WTP operators and engineering staff were made aware of the exceedances; improvements in commissioning and decommissioning will be made in the future to ensure the treated water discharge meets the limits.

4.2.6 Vault Attenuation Pond Discharge

Vault Lake Dewatering (non-contact water) was completed on June 29th. On July 24th, AEM started to discharge contact water from the Vault Attenuation Pond into Wally Lake and stopped on August 14th. During this period, a total of 189,201 m^3 of water was discharge for a total year to date (including dewatering water) of 329,101 m^3.

During the quarter, three (3) weekly effluent samples were taken at ST-10. All the results respected the Water License Part F, Item 3 for effluent quality limits except for TSS concentration on August 6th and daphnia toxicity on August 12th.

On July 24th, 2014, AEM began discharging Vault Attenuation Pond contact water for a short duration which ended on August 14th. Prior to discharge, samples were taken on June 30th and confirmed that all regulatory limits would not be exceeded. As required by the Water License Table 2, weekly samples were taken during the three (3) weeks of discharge on July 31st (TSS - 3 mg/L), August 6th (TSS - 57 mg/L) and August 12th (TSS - 4 mg/L), with an average of 21 mg/L over this period of discharge and an average of 30.5 mg/L for August only. As part of our internal monitoring to ensure the protection of the receiving environment, AEM also took TSS samples from July 24th to July 28th and August 2nd at our onsite laboratory, which is not accredited but provides AEM real time data for decision making. Results of these sampling were respectively 8 mg/L, 6.4 mg/L, 6 mg/L, 3.6 mg/L, 7 mg/L and 3.6 mg/L (with a monthly average of 5.7mg/L). It is evident from these data that the 57 mg/L, was not representative of the water quality during discharge and was an anomaly caused either by cross contamination or sampling error.

AEM received the August 6th results on August 27th, two (2) weeks after stopping the discharge. Toxicity tests were collected on August 12th, 2 days prior to stopping the

discharge and were found to be protective of rainbow trout but were toxic for daphnia. Unfortunately, given the short duration of discharge, it was not possible to conduct another test to validate these exceedances.

Given the water quality chemistry prior to discharge into Wally Lake, the results on July 31st and August 12th, the onsite laboratory results for TSS during discharge, the TSS exceedance is an outlier and with the short duration of the discharge, AEM is confident the aquatic environment was protected. Core receiving environment monitoring in Wally Lake data has been collected and will confirm these findings.

4.2.7 East Dike Seepage Discharge

East Dike Seepage Discharge into Second Portage Lake was stopped on May 2nd following a visual and in-house turbidity increase due to the freshet. These results were confirmed with an external laboratory. On July 29th, AEM restarted the East Dike Discharge. During the quarter, a total of 43,679 m^3 was discharged thru a diffusor into Second Portage Lake. Total year to date discharged is 92,422 m^3.

TSS results did not exceed the maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 4 and are in compliance with MMER regulation.

4.3 WILDLIFE MANAGEMENT

During the quarter, some wolverine, caribou, wolf, muskox, duck, migrating geese and foxes were seen on site and at Vault.

Fifteen (15) AWAR Wildlife Surveys conducted during the quarter.

Peregrine Falcons were observed in AWPAR Quarries. Environmental Department inspected pit/operational area, quarry and BL Tank Farm regularly for Falcon activity.

Greater than 43 lake trout were rescued from a small pool in the channel at the outlet of NP2 and returned to NP2 Lake. This was observed in the previous years and confirms fish are present in NP2.

On September 19th, AEM sent the Wildlife Protection Protocol on the AWAR to all contractors and employees as an increase in caribou herds in proximity of the road was observed.

A family of grizzly bears were reported, on September 22nd, on the AWAR close to KM 85, but not confirmed by the environmental department.

On September 25th, caribou were observed around Vault haul road – heavy truck traffic was stopped for a few hours to let caribou cross the road.

No wildlife mortalities or high risk incidents were reported during the quarter.

4.4 PERMITTING

On June 27th, AEM received from NIRB a formal letter requesting AEM to provide responses to the 2013 Annual report comments by July 28th. AEM requested a submission extension. On August 15th, AEM submitted a response to the 2013 Annual comments (Appendix D).

On July 15th, AEM sent to NIRB and DFO an application (project description) for Vault Pit Expansion into Phaser Lake. On September 2nd, we received a confirmation that the expansion project will not require a NPC conformity review. AEM is presently waiting for a decision from NIRB on how to proceed.

AEM sent a wildlife research permit application to Government of Nunavut in May. AEM received the permit on July 31st to conduct regional and local wildlife surveys for the Meadowbank Gold project near Baker Lake (Appendix E).

On August 26th, the difference to the water use fees full payment for 2013 and 2014 was sent to NWB in accordance with the Freshwater Amendment made to the Water License. Payment was made in accordance with letter received on July 23rd.

Received on September 4th a non-compliance letter related to the Meadowbank OPEP prepared for Transport Canada and reviewed during the site visit on August 2nd and 3rd. A response letter was sent on September 9th and revision of the OPEP version 5 is ongoing to meet requirements listed in the TC letter (Appendix A).

The following reports were completed and submitted to regulators:

- NWB monthly reports June, July and August 2014;
- Sent the 2014 Annual Water Compensation fees and Q2 2014 Water Compensation payment to KIA on July 3rd;
- AEM 2013 Annual report comments;
- KIA Q2 2014 Production Report submitted; and
- Environment Canada 2014 Q2 MMER via electronic database.

Appendix A

Transport Canada Transports Canada

DATE: SEPTEMBER 4TH, 2014

To:

Mr. Jeff Pratt
AGNICO-EAGLE Meadowbank Division
93,rue Arseneault
Bureau 202
Val-d'Or (Quebec)
J9P0E9

SUBJECT: **NON-COMPLIANCE OF AGNICO-Eagle Meadowbank Division Oil Handling Facility –Baker Lake, NU**

Thank you for your cooperation allowing Transport Canada Marine Safety and Security (TCMSS) the opportunity to conduct a regulatory inspection of the level 2 OHF operated by AGNICO-Eagle, Meadowbank Division ,Baker Lake, NU, on August 2nd and 3rd, 2014

The inspection by TCMSS found the following Canada *Shipping Act*, 2001 (CSA 2001) requirements have not been met by AGNICO-Eagle, Meadowbank Division.

During our site visit we observed that a third party had been contracted to conduct/oversee transfer operations at site that were found to be unaware of the OPEP requirements. TCMSS would like to clarify that it is the Operator's responsibility to implement procedures outlined in the OPEP and as provided in the OHF declaration, TCMSS needs further clarification in regards to hiring of third part contractors and their role during fuel transfer. If the intention is to have third party contractors to conduct/oversee procedures during fuel transfer, AEM Meadowbank should clarify as such in the submitted OPEP including outlining measures in regards to training and implementation of OPEP.

Prior to a compliance letter being issued by TCMSS the following requirements must be met.

1. The Current Oil Pollution Prevention Plan (OPEP) submitted does not outline the specific responsibility of the terminal staff procedures during transfer to *prevent* discharges of oil during loading or unloading of a vessel. This is a requirement in the CSA 2001 paragraph 168(1)(c) The OPEP is to comply with the prescribed requirement of the regulations. AGNICO is to provide a detail description of the actions to be taken by the staff on site during transfer. On site transfer staff must be trained and be familiar with all spill prevention and inspection duties outlined in OPEP. It is recommended that this training include the familiarization with a standard ship to shore fuel transfer checklist as required in the Vessel Pollution and Dangerous Chemical Regulations.

2. The workboat operators are to have certification as per the Marine Personnel Regulation S.212

3. Workboats are to be in compliant with all associated regulations including vessel registration.

4. OPEP to include the specific location of the freshwater intake for community of Baker Lake and is to outline what preventive actions will be taken to protect the intake In the event of a spill during transfers. This information should be located in Sensitivities Section of OPEP.

5. It is recommended that OPEP include a working copy of the NT-NU spill report-form. On site transfer staff should be familiar with application of this form as part of an effective spill reporting protocol.

6. After reviewing and taking inventory of the onsite spill response equipment TCMSS recommend that equipment be stored in a manner that is organized and accessible in order to comply with regulatory requirements. Response Organizations and Oil Handling Facilities Regulations 13 (2) (b) (c) has two major milestones for OHFs to meet.

    1. Contain and Control in one hour of spill detection; and,
    2. Commence cleanup within six hours after spill detection.

7. An effective Ship to Shore check list protocol for fuel transfers is to be implemented and incorporated with the contracted shipping company.

8. The OPEP does reference that coordination with Canadian Coast Guard is required but does not specifically reference area response plans or regional contingency plans.

AGNICO-Eagle, Meadowbank Division is not in compliance with regulatory requirements under CSA, 2001.As a result, TCMS has concerns with AGNICO-Eagle, Meadowbank Division ability to respond to a marine oil pollution incident at its terminal and requests, instead of further enforcement, that your facility complies fully with the provisions of the *Canada Shipping Act 2001* and /or regulations .Please be advised that a compliant OPEP is a requirement under CSA 2001 before conducting transfer operations and there are prescribed offences under CSA 2001,if found in contravention of the regulatory requirements.

Please provide to TCMSS with an assurance and time line of how these remaining compliance issues will be achieved.

Should you have any questions concerning the above, please do not hesitate to contact Ian Salisbury Transport Canada Marine Safety and Security, Prairie and Northern at (780) 495-8360

Yours sincerely,

Ian Salisbury
Pollution Prevention Officer
Transport Canada
Marine Safety and Security, PNR
Edmonton

AGNICO EAGLE

September 9, 2014

Ian Salisbury SCMT (Hon)
Pollution Prevention Officer
Technical Services
Transport Canada - Marine-RMEB
1100-9700 Jasper Ave
Edmonton, Alberta, T5J 4E6
Telephone: (780) 495-8360
Facsimile: (780) 495-8607
Ian.Salisbury@tc.gc.ca

RE: RESPONSE TO NON -COMPLIANCE AGNICO EAGLE -MEADOWBANK-OHF INSPECTION

Mr. Salisbury,

This letter is in response to the letter issued to Agnico Eagle Meadowbank by Transport Canada on September 4, 2014. AEM appreciates the recommendations from TCMSS and the time taken to visit our facilities. During the site visit, AEM was given a positive impression from TCMSS representatives and looks forward to continuing to work with you to improve our operations. Please note the responses and actions that AEM has taken to address the requirements in the non-compliance letter. They are ordered numerically according to the requirements stated in the letter.

1) In 2014, AEM has hired an onsite supervisor for the Baker Lake barge area. This person is trained on what is required by onsite staff during fuel transfer. As discussed by TCMSS during the site visit, a ship to shore checklist has been provided to AEM by the shipping/fuel provider. This has been verified by the Baker Lake supervisor and vessel captain prior to any discharge taking place. A procedure will be created in conjunction with the contractor, Baker Lake supervisor, Environment, and Health and Safety groups to ensure compliance with the regulations. This will be completed by September 25th, 2014.

2) Many of the response staff already possess valid pleasure craft operator cards. Only these persons will be responding to an emergency situation by boat. All personnel who would be involved in a response situation will complete the pleasure craft operator's certification prior to commencing the 2015 fuel barge season. Our training department is currently seeking out an online program that we can use for training all of our boat handlers on our site.

3) The vessel that will be stationed at Baker Lake and used in an emergency by AEM, will meet all vessel regulations prior to commencing the 2015 fuel barge season. This vessel will be licensed and will have all required components for an industrial use vessel.

4) In **VERSION 5** of the *MBK Oil Pollution Emergency Plan* a map depicting the location of the Baker Lake freshwater intake will be included. As well, a preventative measures plan will be depicted for ensuring no contamination close to this intake area.

5) This recommendation is noted. AEM has a thorough internal spill reporting system that documents all spills for internal tracking. There is a copy of an internal spill report form found in the Spill Contingency Plan which internal staff are asked to fill out in a spill situation. Regardless of the volume, these spills are reported to the Environment department and if NT-NU spill limits are exceeded, the Environmental Department reviews the incident, produces a spill report and submits the NT-NU spill report to the GN, as well as to other associated agencies. If a spill is a reportable, the environmental group does an investigation) assists in the clean-up and then completes and produces the NT-NU spill report to the GN.

6) The re-organization of the spill response equipment in Baker Lake will be complete by September 25, 2014. Pictures of this will be supplied to the TMCS5 officer by this date.

7) As stated in requirement #1, A ship to shore checklist has been provided to AEM by the shipping/fuel provider. This will be verified by the Baker Lake supervisor and vessel captain prior to any discharge taking place.

8) In Appendix B of the *MBK Oil Pollution Emergency Plan Version 3,* AEM had included *The Central and Arctic Regional Response Plan (2008)* and were asked to remove this after the comprehensive review performed by Transport Canada. In **VERSION 5** of the *MBK Oil Pollution Emergency Plan* reference to these documents will be included in Section 10.1.2.

The revisions of the MBK Oil Pollution Emergency Plan version 5 has commenced and will be complete by October 31, 2014 for TCMSS review.

I trust this meets with your requirements. Should you have any questions or concerns please feel free to contact me at (867) 793-4610 ext. 6728 or by email at jeffrey.pratt@agnicoeagle.com.

Sincerely,

Jeffrey Pratt
Environmental Coordinator
Agnico Eagle Mines Ltd.
Meadowbank Division
(867) 793-4610 ext. 6728
jeffrey.pratt@agnicoeagle.com

CC: Ryan Vanengen –AEM
Stephane Robert – AEM
Erika Voyer - AEM
Jaideep Johar - TCMSS

Appendix B

Ministre des Affaires autochtones
et du développement du Nord

Minister of Aboriginal Affairs and
Northern Development

Ottawa, Canada K1A 0H4

JUL 23 2014

Mr. Lootie Toomasie
Hearing Chair
Nunavut Water Board
PO Box 119
GJOA HAVEN NU X0B 1J0

Dear Mr. Toomasie:

Thank you for your letter of June 30, 2014, which was received on July 2, 2014, conveying the amended Type "A" water licence 2AM-MEA0815 for Agnico-Eagle Mines Ltd.'s Meadowbank Gold Project.

I am pleased to inform you that I have approved the water licence as recommended by the Nunavut Water Board. The signed original is enclosed.

Sincerely,

Bernard Valcourt, PC, QC, MP

Encl.

Canada

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. SCOPE

Amend Item a

This Licence authorizes Agnico-Eagle Mines Ltd. ("AEM" or "Licensee") to the use of Waters and deposit of Waste associated with the Mining undertaking at the Meadowbank Gold Project as outlined in the Water Licence Application, submitted to the Board throughout the regulatory process.

AEM may conduct mining, milling and associated activities at the Meadowbank Gold Project in the Kivalliq Region of Nunavut, (65°01'33" N, 96°04'01" W) including, in general, as follows: (bulleted items remain unchanged).

PART B: GENERAL CONDITIONS

Amend Item 3

The amount of Water use fees shall be determined in accordance with the section 12(1)(b) of the Regulations.

Amend Item 4

Payment of fees shall be made in accordance with sections 12(2)(b) and 12(7)(b) of the Regulations.

PART E: CONDITIONS APPLYING TO WATER USE AND MANAGEMENT

Amend Item 3

The use of Waters, for all purposes as per Items 1 and 2, shall not exceed a total of 1,870,000 cubic metres per annum in 2013, followed by a maximum of 1,150,000 cubic metres per annum in subsequent years.

SCHEDULE A – Scope, Definitions, and Enforcement

Amend "Regulations"

"Regulations" means the *Nunavut Waters Regulations SOR/2013-69.*

All remaining terms and conditions of Licence 2AM-MEA0815 Type "A" dated June 9, 2008 and Licence Amendment No. 1 dated May 5, 2010, shall continue to apply.

This Licence Amendment issued and recorded at Gjoa Haven, Nunavut on June 30, 2014.

Lootie Toomasie
Nunavut Water Board
Hearing Chair

APPROVED BY:

The Honourable Bernard Valcourt
Minister of Aboriginal Affairs and Northern Development Canada

DATE LICENCE APPROVED: July 22ND 2014

Appendix C

TETRA TECH EBA

MEADOWBANK MINE, ASSAY ROAD SEEPAGE PHASE 2: ENVIRONMENTAL SITE ASSESSMENT AND ENGINEERING QA/QC

PRESENTED TO

Agnico Eagle Mines Limited

AUGUST 2014
ISSUED FOR USE
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Tetra Tech EBA Inc.
14940 - 123 Avenue
Edmonton, AB T5V 1B4 CANADA
Tel 780.451.2121 Fax 780.454.5688

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EXECUTIVE SUMMARY

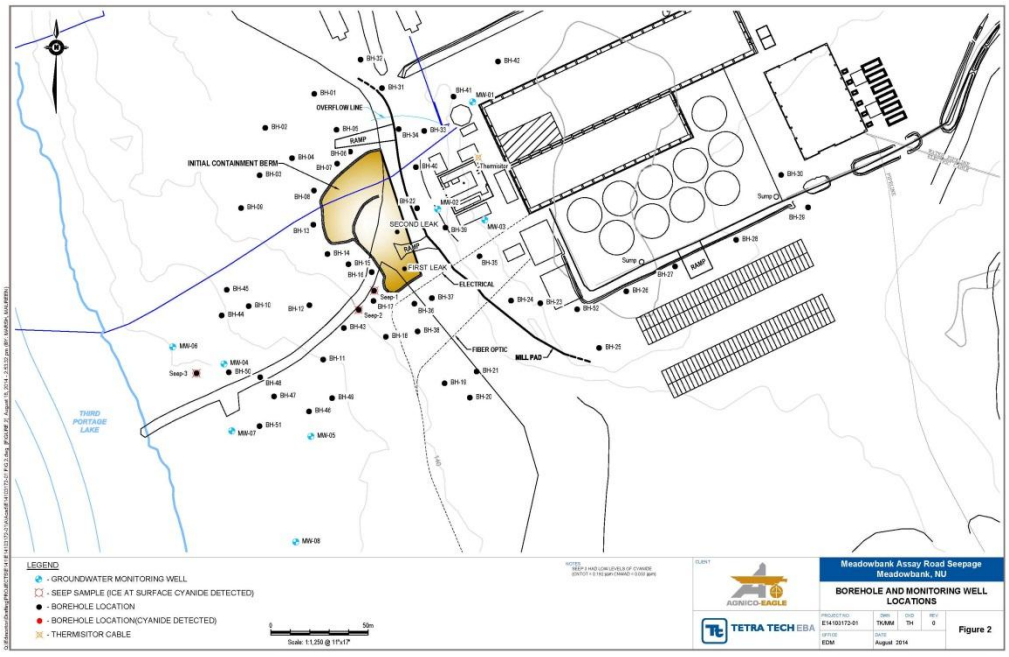
Tetra Tech EBA Inc. is pleased to provide this report to Agnico Eagle Mines (AEM) summarizing our findings from our Environmental Site Assessment of the Assay Road Seepage and the Quality Assurance/Quality Control (QA/QC) monitoring for the construction of the interception trench at the Meadowbank Mine, about 80 km north of Baker Lake, Nunavut. The purpose of this project was to identify cyanide impacted soil and groundwater; provide monitoring suggestions for cyanide impacted soil and groundwater; and perform QA/QC for the construction of an interception trench. The objectives of this work were as follows:

- Evaluate the extent of the soil impacted by the cyanide leak from the Meadowbank Mine Mill, with the goal of selecting a location for an interception trench;
- Provide recommendations for soil and groundwater monitoring after installation of the interception trench;
- Provide QA/QC services for the construction of the interception trench, and
- Provide a report summarizing the findings of the Environmental Site Assessment and the QA/QC services.

Phase 2 Environmental Evaluation

Tetra Tech EBA conducted an Environmental Site Assessment from February 19, 2014 to March 6, 2014 to investigate and evaluate the extent of ground impacted by the cyanide leak with the goal of selecting a location for an interception trench and to allow future determination of clean-up requirements of the contaminated materials.

The Environmental Site Assessment was conducted with a downhole hammer-air rotary drill without water. A total of 52 boreholes were drilled in various areas located on the tundra and pad. In addition to the boreholes, eight (8) monitoring wells were installed, three (3) on the pad and five (5) on the tundra (Figure 2). Soil samples were collected from each borehole and analysed for pH, Total (Strong Acid Dissociable) Cyanide and Weak Acid Dissociable (WAD) Cyanide. Where possible, ice or water samples were collected and analyzed for Total Cyanide and WAD Cyanide.



There are no guidelines for Total and WAD Cyanide in the Canadian Council of Ministers of the Environment (CCME), "*Soil Quality Guideline for the Protection of Environmental and Human Health*" or the Environmental Protection Division, Department of Environment, Government of Nunavut, "*Environmental Guideline for Contaminated Site Remediation*" (March 2009 Revised). Free cyanide was not analyzed in this assessment since WAD Cyanide includes free cyanide and this was an initial investigation to determine the extent of cyanide impacted soil down the grade from the Assay Lab. Therefore, the British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 4 and 6 for Total and WAD Cyanide were used to evaluate the level of contamination.

A total of 62 soil samples collected from the natural area downslope of the mill pad were submitted for analysis of Total and WAD Cyanide, of which 17 samples detected Total Cyanide with values ranging from 0.5 to 51 mg/kg. Only one location (BH-38, 51 mg/kg) was greater than the British Columbia guidelines for Total Cyanide. As for WAD Cyanide, there were only three samples where WAD Cyanide was detected, with values ranging from 0.9 to 3 mg/kg. A total of 30 soil samples were collected from the mill pad and submitted for analysis of Total and WAD Cyanide, of which there was one sample (BH-22, 1.7 mg/kg) where Total Cyanide was detected. No WAD Cyanide was detected.

A total of 6 water (ice) samples collected from the natural area outside of the mill pad were submitted for analysis of Total and WAD Cyanide. Total Cyanide was detected with values ranging from 0.192 to 2.23 ppm. All water samples analyzed, except one (Seep 3), exceed Meadowbank's Water License No. 2AM-MEA0815 for Total Cyanide in effluent. On the mill pad, there was one water sample (BH-22) submitted where Total Cyanide (24.59 ppm) and WAD Cyanide (10.6 ppm) was detected.

Phase 2 Engineering

Tetra Tech EBA agreed with AEM's suggestion that an interception trench needed to be constructed downstream of the temporary containment berms that were rapidly constructed downslope of the mill pad when the seepage was first observed. AEM designed the interception trench, with consultation by Tetra Tech EBA, and Tetra Tech EBA was selected to perform geotechnical QA/QC during its construction. The purpose of the geotechnical engineering QA/QC program was to verify that geotechnical related construction activities were undertaken in accordance with the project drawings and specifications, and that the design intent was satisfied.

The AEM design for the interception trench utilizes shallow ditches and a sump. To mitigate anticipated thaw in permafrost the final design for the interception trench included significant over excavation and replacement with thaw stable materials, and a liner and cut-off system that is keyed in deep enough below the ditch or sump bottom to be below the depth of anticipated thaw. However, to insure thermal stability, it will be essential that water not be allowed to pond in the ditches or sump.

Conclusions

During this investigation cyanide was detected at a depth of 1.68 mbgs near the location where the seep was initially identified. Down gradient of the initial containment, cyanide was detected to depths of 0.7 mbgs. Cyanide was not detected approximately 60 m from the lake (BH-47) in the soil, but was found at low levels in water (ice) that accumulated on the surface (Seep 3). Seep 3 is located about 30 m from the lakes edge and had low levels of cyanide (Total cyanide - 0.192 mg/L; WAD cyanide - 0.033 mg/L). This information suggests that the cyanide initially infiltrated into the soil close to the initial seepage area; however further away from the seepage location cyanide may have accumulated only in the topsoil with little or no penetration into the underlying till overburden or bedrock.

It was decided that the interception trench would be installed between Seep 3 and BH-47. The location of the interception trench was based on the desire to minimize disturbance to the natural tundra downslope of the mill pad, and so it would act as a barrier between areas with detected cyanide contamination and the lake, while staying at least 30 m away from Third Portage Lake. An interception trench at this location should prevent the cyanide contamination from reaching Third Portage Lake. It is recommended that any water pooling within the collection area of the interception trench be pumped out within one day.

Spills from the CIP tanks were not being contained by the secondary containment system and hence cyanide impacted water was leaking into the foundation soils below the mill building and then out through the mill pad fill materials to the natural area downslope of the mill.. In order to remove the source of contamination, AEM has taken steps to repair/reseal areas in the secondary containment that were identified to be leaking and that lead to the observed seepage. The main area of concern was the secondary containment system around the CIP tanks, which has now been repaired.

A ground temperature monitoring cable (thermistor cable) was installed near the mill to determine ground temperatures in the pad. The cable indicates that the pad fill materials and underlying native ground have refrozen and the active layer was determined to be about 1.5 m thick in June. Therefore, repairs to the containment system in the mill in conjunction with the presence of frozen ground indicate that the potential for continued seepage should be minimal.

Recommendations

AEM has established a Freshet Action Plan (April 2014), which outlines work that AEM will undertake to monitor the interception trench and the sampling protocols. AEM will conduct daily inspections of the pumping, collection systems and perimeter area and will record all pumped volumes of water from the interception trench. Any of the water collected will be pumped to the mill and discharged with the tailings to the tailings storage facility (TSF). The sampling program in this action plan states that on a monthly basis AEM will submit water samples to Multi Lab for analysis of Free Cyanide, Total Cyanide, Copper and Iron from the interception trench, monitoring wells 14MW04, 14MW05,14MW06, 14MW07, and 14MW08, the original containment area and Third Portage Lake. Bi-weekly they will collect waters twice a week from the original containment berm, the interception trench, and monitoring wells 14MW02, 14MW03, 14MW08, 201, 202, and 203 to be submitted to the AEM on-site lab for WAD cyanide analysis.

After reviewing the information from this Environmental Site Assessment and AEM's Freshet Action Plan (April 2014), the following recommendations apply:

- Continue to sample the original containment berm, interception trench, Third Portage Lake and monitoring wells 14MW01 to 14MW08, 201, 202 and 203, if water is present and not frozen, for analysis of Free and Total cyanide, Copper, and Iron;
- In monitoring wells with known detected cyanide, collect water samples once in the spring and fall for analysis of ammonium, nitrate/nitrite, and pH. The purpose for the ammonium and nitrate/nitrite is that these compounds increase in response to biodegradation of cyanide;
- If water is ponding down gradient of the interception trench, water samples should be collected and submitted for analysis of Free and Total cyanide, Copper, and Iron;
- During the investigation, no seep (water) samples or soil samples were collected within 30 m of the lake. Cyanide was detected at Seep 3, thus further sampling should be conducted down gradient of the trench in

the soil and water. Water should be analyzed for Free and Total Cyanide, Copper, and Iron, while soils should be analyzed for Free and Total cyanide;

- Depending on the results of the soil samples collected and potentially ponded water samples collected within 30 m of Third Portage Lake it is recommended that sediment samples be collected from the shore of Third Portage Lake. These sediment samples should be analyzed for Free and Total Cyanide, Copper and Iron.
- AEM should install sumps inside the original containment berm to aid in the collection of water. This water can be pumped up to the mill and discharged with the TSF. This should improve collection of water in the spring near the mill pad;
- AEM should continue with the repairs to the mill to ensure seepage sources are eliminated; and
- Collect additional soil samples on the northeast side of the mill in the direction of Tear Drop Lake to confirm if any cyanide travelled in that direction. If water is observed in a drill hole a well should be installed.

The following soil sampling recommendations should be implemented at closure of the mine:

- Soil samples should be collected and tested for Free Cyanide in the areas where known cyanide was detected, as free cyanide was not analyzed in this investigation. These areas should be delineated in order to produce a remedial action plan, if needed;

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ACRONYMS & ABBREVIATIONS

AEM	Agnico Eagle Mines
CCME	Canadian Council of Ministers of the Environment
mbgs	metres below ground surface
QA/QC	Quality Assurance/Quality Control
TSF	Tailings Storage Facility
SAD	Strong Acid Dissociable
WAD	Weak Acid Dissociable

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Agnico Eagle Mines Limited and their agents. Tetra Tech EBA Inc. (Tetra Tech EBA) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Agnico Eagle Mines Limited, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech EBA's Services Agreement. Tetra Tech EBA's General Conditions are provided in Appendix G of this report.

1.0 INTRODUCTION

Tetra Tech EBA Inc. (Tetra Tech EBA) is pleased to provide this report to Agnico Eagle Mines (AEM) summarizing our findings from our Environmental Site Assessment of the Assay Road Seepage and the quality assurance/quality control (QA/QC) monitoring of the construction of the interception trench at the Meadowbank Mine, about 80 km north of Baker Lake, Nunavut,. The purpose of this project was to identify cyanide impacted soil and groundwater; provide monitoring suggestions for cyanide in soil and groundwater; and perform quality assurance/quality control (QA/QC) during construction of an interception trench. The objectives of this work were as follows:

- Evaluate the extent of the soil impacted by a cyanide leak from the Meadowbank Mine Mill, with the goal of selecting a location for an interception trench;
- Provide recommendations for soil and groundwater monitoring after installation of the interception trench;
- Provide QA/QC services for the construction of the interception trench, and
- Provide a report summarizing the findings of the Environmental Site Assessment and the QA/QC services.

The Environmental Site Assessment was conducted in general accordance with the "*Environmental Guideline for Contaminated Site Remediation*" (Government of Nunavut 2009).

2.0 SCOPE OF WORK

2.1 Phase 2 Environmental Evaluation

Tetra Tech EBA conducted an Environmental Site Assessment from February 19, 2014 to March 6, 2014 to investigate and evaluate the extent of ground impacted by the cyanide leak with the goal of selecting a location for an interception trench and to allow future determination of clean-up requirements of the contaminated materials. During the drilling program there were some modifications made to the work plan. These changes included additional boreholes and monitoring wells and some proposed borehole locations were moved as the program progressed.

2.1.1 Scope of Environmental Site Assessment

The scope of work for the Environmental Site Assessment included the following:

- Conducting a safety meeting with AEM and Tetra Tech EBA representatives to review the Safety Plan and identify all hazards, PPE requirements, emergency contacts, and safe work practices.
- Determining where all underground utilities such as electrical and water lines are located on site prior to drilling.
- A total of 52 boreholes were drilled in various areas located on the tundra and pad. In addition to the boreholes, eight (8) monitoring wells were installed, three (3) on the pad, and five (5) on the tundra. All holes were drilled using a downhole hammer-air rotary drill without water.
- Samples were collected in most boreholes and monitoring well locations, where possible. There were some locations on the pad where soil samples could not be collected due to voids underneath or in the pad. Each borehole and monitoring well was drilled to bedrock.

- Samples were collected at the drill using either plywood or a metal pan and then scooped into plastic bags using a metal spoon. After each sample was collected, the pans, spoon, and plywood were brushed off to minimize cross contamination. In addition, before drilling each hole, the drill was purged using compressed air to clean off the drill bit. When moved from a known contaminated site on the pad to the tundra, the drill rod and drill bit where exchanged for clean rods and drill bits.
- A total of 92 soil samples were submitted to Maxxam Analytics in Montreal Quebec for analysis of Total (Strong Acid Dissociable) Cyanide and Weak Acid Dissociable (WAD) Cyanide. There were 10 samples submitted for soil pH. All soil samples were maintained below 4°C.
- Where possible, ice or water samples were collected and placed into plastic containers for analysis. A total of 7 samples were sent to Multi-Lab Direct in Val-d'Or Quebec for analysis of Total Cyanide and WAD Cyanide. All water/ice samples were maintained below 4°C. An additional sample was taken at the same time for each of the 7 water/ice samples and submitted to the on-site Assay Lab for analysis of WAD Cyanide.
- All borehole locations and monitoring well locations were determined using a handheld Trimble GPS.

2.2 Phase 2 Engineering

Tetra Tech EBA agreed with AEM's suggestion that an interception trench needed to be constructed downstream of the temporary containment berms. AEM designed the interception trench and Tetra Tech EBA performed geotechnical QA/QC during its construction. The QA/QC for the interception trench was carried out between April 24, 2014 and May 1, 2014. The purpose of the geotechnical engineering QA/QC program was to verify that geotechnical related construction activities were undertaken in accordance with the project drawings and specifications, and that the design intent was satisfied. This section provides Tetra Tech EBA's scope for the engineering work.

2.2.1 Phase 2 Engineering Scope of Work

The proposed Phase 2 engineering scope of work included the following:

- Reviewing AEM's Engineering design plan for the interception trench and providing feedback in a memo;
- Performing a visual inspection of the interception trench excavation and cleaning/preparation prior to 20 mm crushed aggregate/8% bentonite fill placement;
- Observing 20 mm crushed aggregate/8% bentonite fill placement and compaction;
- Providing geotechnical design clarifications and verification that the design intent was being achieved; and
- Overseeing the construction of the permanent interception trench in a QA/QC only capacity.

3.0 BACKGROUND INFORMATION

3.1 Site Details and Background

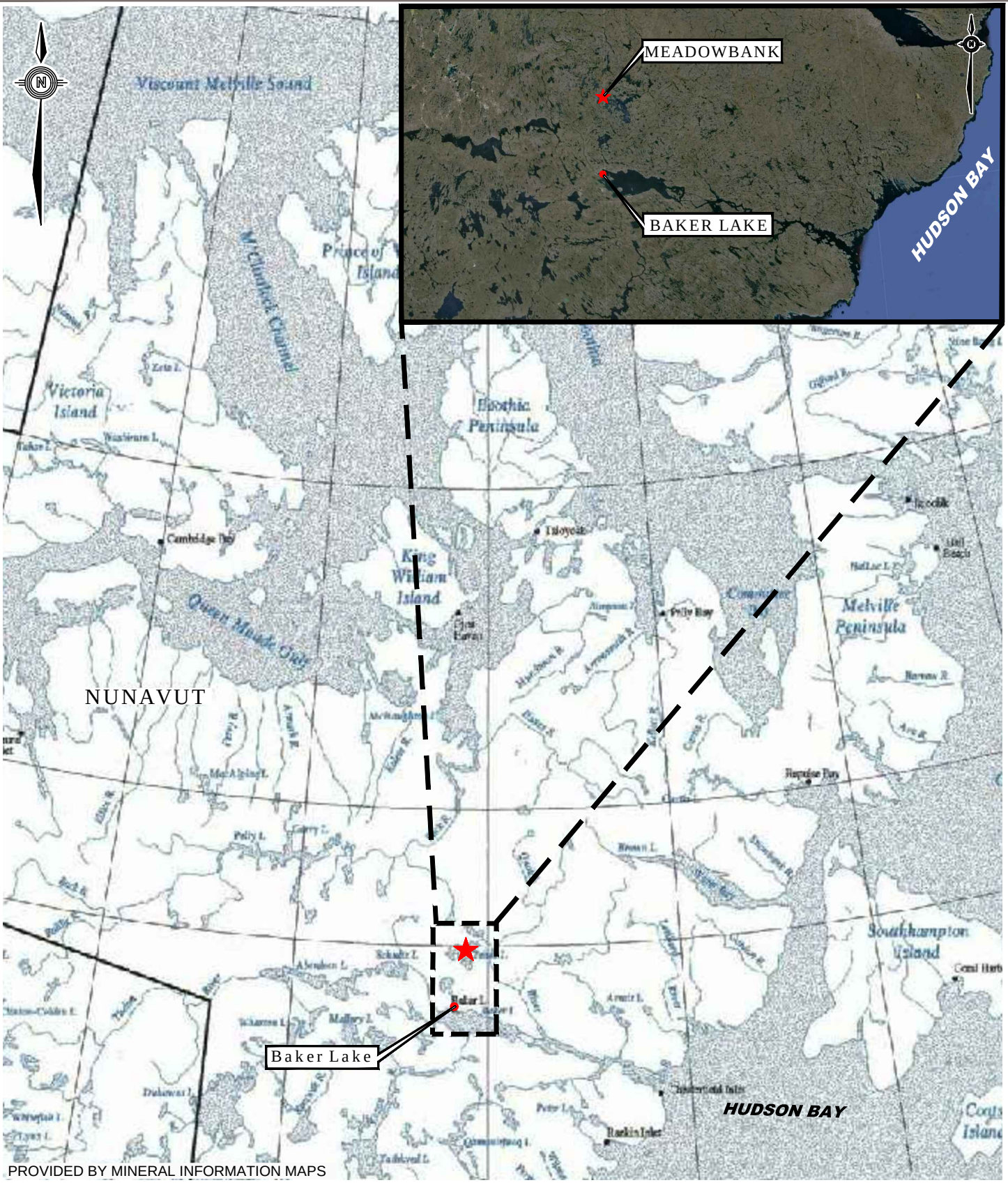
The Meadowbank Mine is located approximately 80 km north of Baker Lake, Nunavut (Figure 1) in the Kivalliq Region (formerly District of Keewatin). It is located near Third Portage Lake approximately 190 m northeast from the edge of the lake (65°1'30"N, 96°4'14"W). On November 26, 2013, Tetra Tech EBA was provided with a detailed report, "*Preliminary AEM Report – Assay Road Seepage*" (AEM, November 2013) discussing the seepage issue identified at the Meadowbank Mine. This report noted that on November 4, 2013, seepage was

first observed coming through the road embankment in front of the Assay Lab. Testing of the seepage water identified that it was process water, as indicated by the presence of cyanide, copper, and iron.

After the seepage was identified by AEM, a temporary containment berm was constructed downstream of the road to contain the water. Because of winter conditions, the seepage water froze relatively quickly and the ice was regularly removed from the containment area using a backhoe. As winter conditions continued, the amount of seepage decreased, due to freezing within the road embankment. The seepage was thought to be primarily originating from the mill, particularly from the CIP secondary containment system.

AEM drilled a number of boreholes on the mill pad, but only water samples were collected from holes that had enough water. AEM also collected water samples from groundwater wells installed by AEM (201, 202, and 203) located on the pad in front of the CIP area behind the Assay Lab. In the area where the cyanide leaked onto the ground surface downslope of the mill pad, three samples were collected from inside the temporary containment berm, along with an additional sample collected from the surface water of the lake downgrade of the leak. Cyanide was detected from the water samples collected from the wells and inside the temporary containment berm. Cyanide was not detected in the sample that was taken from the lake. Additional samples were taken from the lake near the water tank intake pipe intermittently from November 26, 2013 to May 26, 2014 and submitted to Multi Lab for analysis of Total Cyanide. Cyanide values ranged from less than 0.005 (detection limit is 0.005 mg/L) to 0.087 mg/L. These values are very low, as well, the Total Cyanide values have been below detection limits since April 1, 2014.

AEM conducted an assessment program inside the mill and determined that there were several secondary containment systems that required repair. AEM is currently undertaking an extensive repair/reseal program within the mill to ensure integrity of these containment systems that were identified to be leaking and which lead to the seepage. The main area of concern identified in this assessment program was the CIP tank secondary containment system which was designed to contain spills from the CIP tanks. This containment system has now been repaired.



PROVIDED BY MINERAL INFORMATION MAPS

DRAWING NOT TO SCALE

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TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

SITE LOCATION

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK	TH	0

OFFICE	DATE
EDM	June 2014

Figure 1

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3.2 Climate

Based on meteorological data from weather stations at Baker Lake, the mean annual temperature is -11°C. Based on 153 complete months of data at the Baker Lake Airport, the mean monthly air temperatures for Baker Lake ranged from -38.2°C in January 2004 to 13.7°C in June 2007. Total annual rainfall from 2000 to 2012 averaged 26 mm and 11 mm of snow water equivalent (Government of Canada 2014).

3.3 Site Topography and Vegetation

The Meadowbank Mine is located adjacent to Third Portage Lake in the Low Arctic ecoclimatic zone, characterized with low relief, having an elevation range of 0 to 70 m above the lake level. The site is predominantly covered in heath tundra interspersed with lichen-dominated bedrock outcroppings and boulder fields (Cumberland Resources Ltd. 2005).

3.4 Regional Bedrock Geology

The Meadowbank Mine is located on the Canadian Shield, which consists of Archean rocks. Archean rocks are greater than 2.5 billion years old and the Shield contains the largest area in the world of Archean rocks. The mine site is underlain with Archaean greenstone and metasedimentary rocks consisting of iron formation, intermediate volcanic and ultramafic rocks with quartzite in some areas. Enclosed within the greenstone are volcaniclastic sediments, felsic-to-intermediate flows and tuffs, sediments and oxide iron formations, and sericite schists. The ultramafic rocks contain serpentinite, chlorite, actinolite, and talc. There are two main faults identified in the Meadowbank Mine region, the Bay Zone Fault and the Second Portage Fault. There are areas where bedrock outcrops are found and the bedrock appears to follow the surface topography, with some local relief in the bedrock surface of 0.5 meters (Cumberland Resources Ltd. 2005).

3.5 Regional Surficial Soils

The area is partially covered with glacial till that has a sandy silty till with gravel matrix. The percent fines for silt and clay are typically 20 to 40%. Both boulders and cobbles are present in the till with the cobble content ranging from 0 to 35% with an average of 12% by volume. The colour of the till in this area ranges from dark brown to reddish brown (Cumberland Resources Ltd. 2005; Golder Associates. 2008).

3.6 Hydrogeology

The Meadowbank Mine is located near the surface water divide between the Back River basin, which flows north to northwest towards the Arctic Ocean and the Thelon River basin, which flows east to southeast into Hudson Bay. The regional deep groundwater flows northwest from the northwestern end of Third Portage Lake and in the southeast direction from the southeast end of Third Portage Lake and Second Portage Lakes.

Continuous permafrost depth extends between 450 and 550 m. Ground temperature measurements in the project area indicate an active zone thickness averaging 1.3 m in shallow overburden and up to 4 m adjacent to the lakes (Cumberland Resources Ltd. 2005). The shallow groundwater flow has little to no hydraulic connection with the groundwater regime located below the deep permafrost. Based on the regional geology and the presence of permafrost, the groundwater flow is likely complex and controlled by topography, surface water bodies, and bedrock structure. Vertical groundwater flow is limited by the permafrost. The period of groundwater flow is highly influenced by climatic conditions and flow is also likely limited to the short summer season when the active layer thaws, thus allowing water to flow in this horizon. It is expected that the surface water bodies are expressions of the water table.

Based on the site topography, it is expected that flow of water in the active layer is towards Third Portage Lake. Third Portage Lake is located approximately 190 m from the Mill Pad. From photos taken in the fall, there are areas located near the lake where water ponds, thus water in the active layer is close to surface in this area, and the grassy vegetation observed reflects wetland conditions.

3.7 Cyanide

Cyanide is a general term that refers to a group of chemicals where carbon and nitrogen combine to form compounds (CN). The chemistry of cyanide is complex, as there are different cyanide compounds, which have been grouped into five groups: free cyanide, simple cyanide compounds, weakly complexed cyanide, moderately strong complexed cyanide and strong complexed cyanide. These five groups have then been categorized into three common names: free cyanide, WAD cyanide, and Total cyanide. Most cyanide in solution combines with metals and metalloids and form dissolved complexes (Lottermoser, Bernd. 2007).

Free Cyanide

Free cyanide refers to two species: the cyanide anion (CN^-) dissolved in water and the hydrocyanic acid (HCN) formed in solution (Lottermoser, Bernd. 2007):

$$CN^-_{(aq)} + H_2O_{(l)} \longleftrightarrow HCN_{(aq)} + OH^-_{(aq)}$$

The amount of cyanide converted to hydrogen cyanide depends on the salinity and pH of the solution. At alkaline pH greater than 10.5, most of the free cyanide is present as the cyanide anion. Equal concentrations of CN and HCN are present at a pH of 9.3. At neutral to acidic pH conditions (pH < 8.3), all free cyanide is present as hydrogen cyanide. Hydrogen cyanide is volatile and can be dispersed to the atmosphere. As for the salinity, hydrogen cyanide is promoted in high saline conditions (Lottermoser, Bernd. 2007).

WAD Cyanide

Weak acid dissociable (WAD) cyanide consists of free cyanide, simple cyanide compounds, and weak to moderately strong complexes. Simple cyanide compounds are the salts of hydrocyanic acid (e.g.: NaCN, KCN, $Ca(CN)_2$, Cu(CN), Ni(CN)). These compounds exist as solid cyanides, some of which are water soluble, which can form free cyanide and dissolved cations. The weak to moderately strong complexes are metal complexes (e.g. $Zn(CN)^{-2}_4$, $Cd(CN)^-_3$, $Cu(CN)^-_2$, $Ni(CN)^{-2}_4$ and $Ag(CN)^-_2$) which create free cyanide when the pH is lowered to approximately 4.5 (Lottermoser, Bernd. 2007)

Total Cyanide

Total Cyanide consists of free cyanide, simple compounds, weak to moderately strong complexes and strong complexes. These strong complexes include complexes of gold, iron, and cobalt, and their destruction is slow under natural conditions. A change in environmental conditions such as pH, water temperature, salinity, complex concentration, oxidant concentration, and intensity of sunlight or UV radiation reduces the stability of the strong cyanide complexes (Lottermoser, Bernd. 2007).

Toxicity

Free cyanide is the most toxic cyanide form, since it causes toxicity at low concentrations. For the other cyanide species, WAD and Total, higher concentrations are required to induce toxicity. Hydrogen cyanate and cyanate ions are less toxic than hydrogen cyanide, while thiocyanate is relatively non-toxic compared to free cyanide. The stability of the cyanide influences the toxicity of the different cyanides. The more stable the cyanide, the less toxic

it is, particularly to aquatic life. Therefore, WAD cyanide is an appropriate measure for assessing potential toxicity of cyanide solutions to humans and animals (Lottermoser Bernd. 2007).

Fate and Transport in Soil

Transport and distribution of cyanide is mainly affected by volatilization and biodegradation in soils. Volatilization of cyanide increases in acidic soils and can be the dominant mechanism for cyanide loss from soil surfaces. Cyanide can also create metal complexes with heavy metals, especially iron, and precipitate out of solution. Hydrogen cyanide is not affected by photolysis in soils, but complex cyanides may rapidly photo dissociate and release free cyanide when exposed to sunlight. Cyanide can be absorbed to soil particles, particularly to clays and organic matter. The rate at which hydrogen cyanide and metal cyanide adsorb to soils in not significant when compared to volatilization and biodegradation. The high volatility of cyanide and the action of soil microbes do not permit high levels of cyanide to persist or accumulate in the soil under natural conditions. Biodegradation of cyanide in the soil by microbes tends to generate carbonates and ammonia. Cyanide in the soil will decompose to ammonia, carbon dioxide, and nitrogen (nitrate) in aerobic conditions and nitrogen (ammonium), thiocyanate, and carbon dioxide under anaerobic conditions (CCME. 1999).

Mobility of cyanide in the soil changes with stability and dissociation of the compound, soil type, soil permeability, soil chemistry, and presence of aerobic and anaerobic conditions. The following soil characteristics increase the mobility of cyanide: low pH, high negative soil charges, and low clay content. Whereas soils with neutral to alkaline pH, high clay content, high positive soil charges, presence of organic matter, iron, or other metal oxides can increase soil attenuation. Attenuation may be increased under aerobic conditions, since biodegradation is higher in aerobic conditions. Some comparisons were completed for different cyanide complexes for mobility, in that aqueous simple cyanide and ferricyanides tend to be very mobile in soil, while cyanides dissolved in leachate move slower than those in the aqueous solution. Copper, cobalt, zinc, and nickel-cyanide complexes were found to be more mobile than iron and manganese complexes (CCME. 1999).

4.0 ENVIRONMENTAL CRITERIA

The following subsections outline the rationale for the selection of applicable generic risk management guidelines for soil.

4.1 Regulatory Guidelines

The regulatory guideline documents that were consulted are summarized below. These documents provide a generic set of guidelines against which the analytical results are compared to provide a general site condition.

- Canadian Council of Ministers of the Environment, Soil Quality Guideline for the Protection of Environmental and Human Health (2007) - Wildland Land Use;
- Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for Protection of Fresh/ Marine Water Aquatic Life (2007);
- Environmental Protection Division, Department of Environment, Government of Nunavut, Environmental Guideline for Contaminated Site Remediation (March 2009 Revised) - Wildland Land Use;
- British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 4 Generic Numerical Soil Standards (2014) – Wildland Use and;
- British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 6 Generic Numerical Water Standards (2014).

4.2 Criteria for Cyanide in Soil

Currently, there are no soil guidelines for Total and WAD Cyanide under the Canadian Council of Ministers of the Environment (CCME), "*Soil Quality Guideline for the Protection of Environmental and Human Health*" or the Environmental Protection Division, Department of Environment, Government of Nunavut, "*Environmental Guideline for Contaminated Site Remediation*" (March 2009 Revised). Only free cyanide is regulated under these guidelines, in which for Wildland land use, the guideline is 0.9 mg/kg. Free cyanide was not analyzed in this assessment since WAD Cyanide includes free cyanide and this was an initial investigation to determine the extent of cyanide impacted soil downgrade of the Assay Lab.

There are guidelines under the British Columbia (BC) Environmental Management Act for Contaminated Sites Regulations, Schedule 4 for Total and WAD Cyanide. Under these guidelines there are five (5) land use categories, Agriculture, Commercial Residential, Industrial, and Urban Park (Wildlands). Below are the definitions for each land use:

- **Agricultural:** means the use of land for the primary purpose of producing agricultural products for human or animal consumption including, without limitation, livestock raising operations, croplands, orchards, pastures, greenhouses, plant nurseries and farms;
- **Commercial:** means the use of land for the primary purpose of buying, selling or trading of merchandise or services including, without limitation, shopping malls, office complexes, restaurants, hotels, motels, grocery stores, automobile service stations, petroleum distribution operations, dry cleaning operations, municipal yards, warehouses, law courts, museums, churches, golf courses, government offices, air and sea terminals, bus and railway stations, and storage associated with these uses;
- **Residential:** means the use of land for the primary purpose of a residence by persons on a permanent, temporary or seasonal basis, including, without limitation, single family dwellings, cabins, apartments, condominiums or townhouses, or institutional facilities, including, without limitation, schools, hospitals, daycare operations, prisons, correctional centres and community centres;
- **Urban Park:** means the use of urban land for the primary purpose of outdoor recreation including, without limitation, municipal parks, fairgrounds, sports fields, rifle ranges, captive wildlife parks, biking and hiking areas, community beaches and picnic areas, but does not mean Wildlands such as ecological reserves, national or provincial parks, protected wetlands or woodlands, native forests, tundra and alpine meadows;
- **Wildlands:** means the use of land for the primary purpose of supporting natural ecosystems, including the use of land for ecological reserves, national or provincial parks, protected wetlands or woodlands, native forests, tundra and alpine meadows, but does not include uses defined as urban park land use. The land use of the site is Wildlands land use when the concentration of any substance in the soil at a depth of less than 3 metres is greater than the numerical standards for soil that would apply if the land use of the site were urban park land use.

For the purposes of this comparison, the urban park (Wildland) land use values from British Columbia (BC) Environmental Management Act for Contaminated Sites Regulations, Schedule 4 for Total and WAD Cyanide were used as a guideline. Maximum Total and WAD Cyanide from this act are 50 and 10 mg/kg, respectively.

4.3 Criteria for Cyanide in Water

4.3.1 Water Licence

As per Water Licence No. 2AM-MEA0815 (see Table A below), all effluent shall not exceed the following criteria for Cyanide:

Table A – Cyanide Effluent Criteria

Parameter	Max. Average Concentration	Max. Allowable Grab Sample Concentration
Total Cyanide (mg/L)	0.5	1.0

4.3.2 General Criteria

In this investigation Total and WAD cyanide were measured on site, but not free cyanide. The reason for this is that WAD cyanide includes free cyanide. Thus, free cyanide was not included in the analysis as the purpose of this investigation was to determine the extent of the cyanide impacted material. Also, WAD cyanide is an appropriate measure for assessing potential toxicity of cyanide solutions to humans and animals.

Currently, there are no water guidelines for Total, WAD and Free Cyanide under the Under the Government of Nunavut's Contaminated Guidelines, "*Environmental Guideline for Contaminated site Remediation*" (March 2009 Revised) for water. As for CCME's, "*Canadian Water Quality Guidelines for Protection of Fresh/ Marine Water Aquatic Life*" guideline, there are only standards for free cyanide for freshwater aquatic life (5 µg/l or 0.005 mg/L). Therefore the BC Environmental Management Act for Contaminated Sites Regulations (CSR), Schedule 6-Generic Numerical Water standards were utilized as it contains standards for both Total (Drinking Water: 200 mg/L) and WAD cyanide (Aquatic Life: 50 mg/L-freshwater or 10 mg/L for marine/estuary). Therefore the water licence criteria for Total Cyanide in effluent are utilized to evaluate the results from the testing on recovered water samples.

5.0 SITE WORK

5.1 Site Safety

In accordance with AEM's policies, Tetra Tech EBA staff completed AEM's online site orientation and safety training. Pre-job hazard assessments were completed prior to going in the field, and were updated with a field-level assessment once on site. In conjunction with AEM, Tetra Tech EBA completed a job hazard analysis form (See Appendix D) prior to conducting any field work. Each day, Tetra Tech EBA, AEM, and the driller conducted a safety meeting prior to drilling and completed a Safe Work Form, which was updated and signed daily. Tetra Tech EBA participated in the staff safety meetings at the beginning of the program with various mine manager representatives to go over the job hazard analysis and to review the scope of the project. Prior to drilling, the electrical and water lines were located on site. During the course of the work, Tetra Tech EBA met with the electrical supervisor to confirm holes located near the buildings and that when drilling near electrical lines, the power to these lines were locked out and tagged out.

For the geotechnical QA/QC work, Tetra Tech EBA staff completed AEM's online site orientation and safety training. Pre-job hazard assessments were completed prior to going in the field, and were updated with a field-level assessment once on site.

5.2 Soil Sampling Program

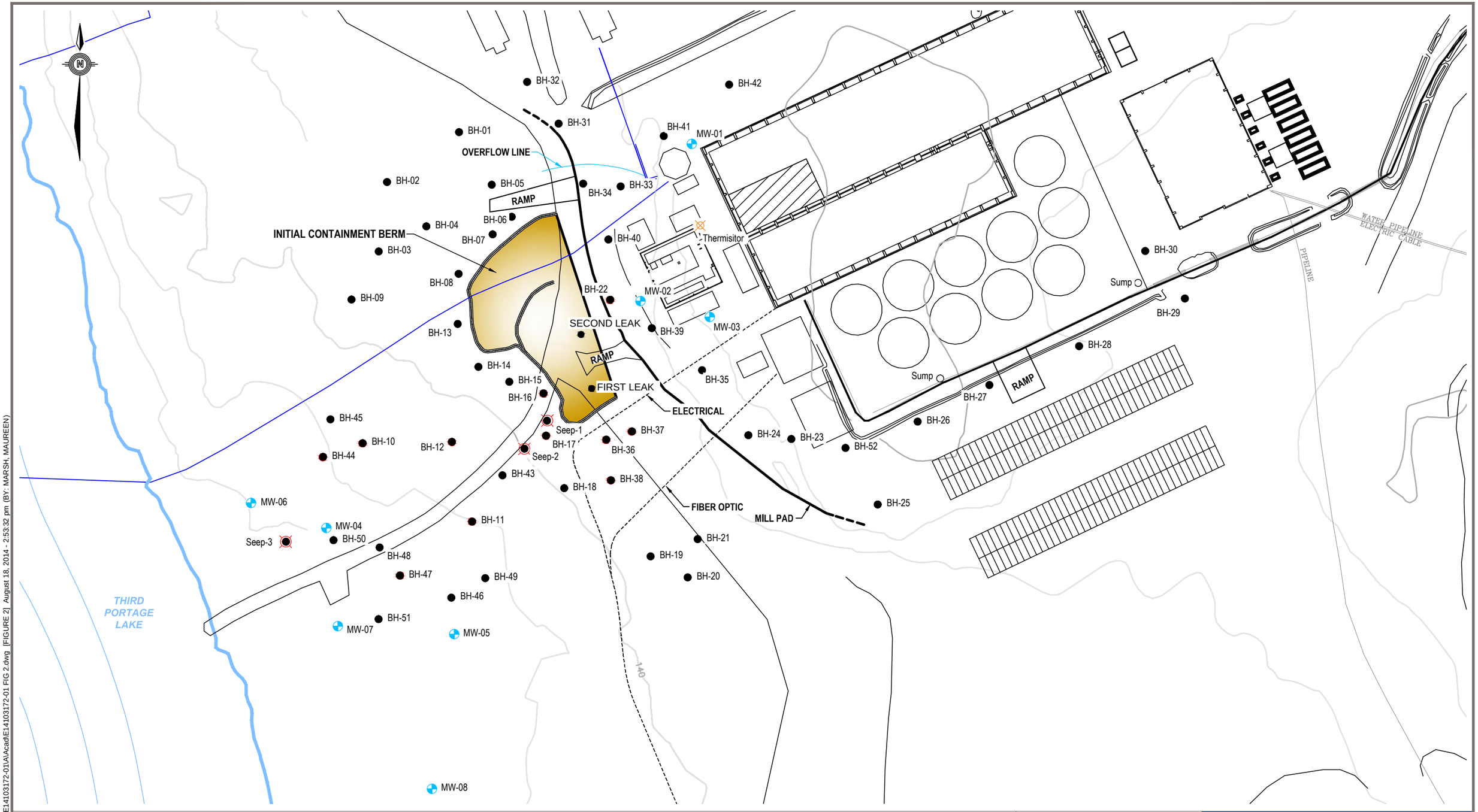
Prior to the drilling program, Tetra Tech EBA completed a walkthrough of the site with an AEM employee to explain where the leaks originated and where the water was originally coming out of the pad. After the walkthrough it was decided to begin drilling in front of the Assay Lab first then continue to drill on either side of the Assay Lab. Photos were taken throughout the drilling program (Photos 1-8).

A total of 52 boreholes were drilled in various areas (Figure 2). All holes were drilled using a downhole hammer-air rotary drill without water. Samples were collected from the drill using either plywood or a metal pan and then scooped into plastic bags using a metal spoon. After the collection of each sample, the pans, spoon, and plywood were brushed off to minimize cross contamination. In addition, before drilling each hole, the drill was purged using compressed air to clean off the drill bit. When moving from a known contaminated site on the pad to the tundra, the drill rod and drill bit were exchanged for clean rods and drill bits.

All borehole locations had the total depth recorded, and depth of refusal. The colour of the cuttings was noted at some, but not all borehole locations, during the drilling program. Cuttings collected from the pad were grey in colour, while cuttings collected from the native terrain downslope of the mill pad were brown to reddish brown in colour. There were some locations on the pad where soil samples could not be collected due to voids in the rockfill materials used to construct the pad or underneath the pad.

Soil samples were placed into plastic Ziploc bags supplied by the laboratory, stored in an insulated cooler and kept cold for transport to Maxxam Analytics International Corporation in Montreal, Quebec. Holding times for all soil samples were within acceptable limits. The temperature of the samples upon being received by the laboratory was below 4°C. No samples were broken or lost during transport.

A total of 92 samples were analyzed for Total and WAD cyanide and 8 samples were analyzed for soil pH.



LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE

0 50m

Scale: 1:1,250 @ 11"x17"

NOTES

SEEP 3 HAD LOW LEVELS OF CYANIDE
(CNTOT = 0.192 ppm CNWAD = 0.033 ppm)

CLIENT

AGNICO-EAGLE

TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

BOREHOLE AND MONITORING WELL LOCATIONS

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK/MM	TH	0
OFFICE: EDM	DATE: August 2014		

Figure 2

5.3 Water Sampling Program

Where possible, ice or water samples were collected during drilling and placed into plastic containers for analysis. Samples were stored in an insulated cooler and were kept cold for transport to Multi-Lab Direct in Val-d'Or Quebec. A total of seven samples were sent to Multi-Lab Direct for analysis of Total Cyanide and WAD Cyanide. All water/ice samples were maintained below 4°C. An additional sample was taken at the same time for each of the seven water/ice samples and submitted to the Assay Lab on site for analysis of WAD Cyanide.

In addition to the sampled boreholes, eight (8) monitoring wells were installed, three (3) on the pad and five (5) in the natural terrain downslope of the mill pad. Monitoring wells were completed with 2" PVC solid pipe with a slotted screen at the bottom. These screens vary in depth, depending on the borehole depth (See Appendix B). The screen was surrounded by a silica sand filter pack followed by bentonite to grade. There were no metal coverings placed on the wells at the time of installation. After installation, no water samples could be obtained at the time of the investigation, due to frozen ground conditions.

5.4 Thermistor Cable

A thermistor cable was installed to 15.5 mbgs behind the Assay Lab near old monitoring wells 201, 202, and 203. The thermistor cable was completed with a 3" PVC solid pipe with caps at the bottom and top. The inside of the PVC pipe was filled with fine crushed gravel to the top of the PVC pipe. Readings were taken at the time of installation and every few days afterwards to determine the ground temperature. Appendix E presents the measured ground temperature and the calibration for the thermistor cable.

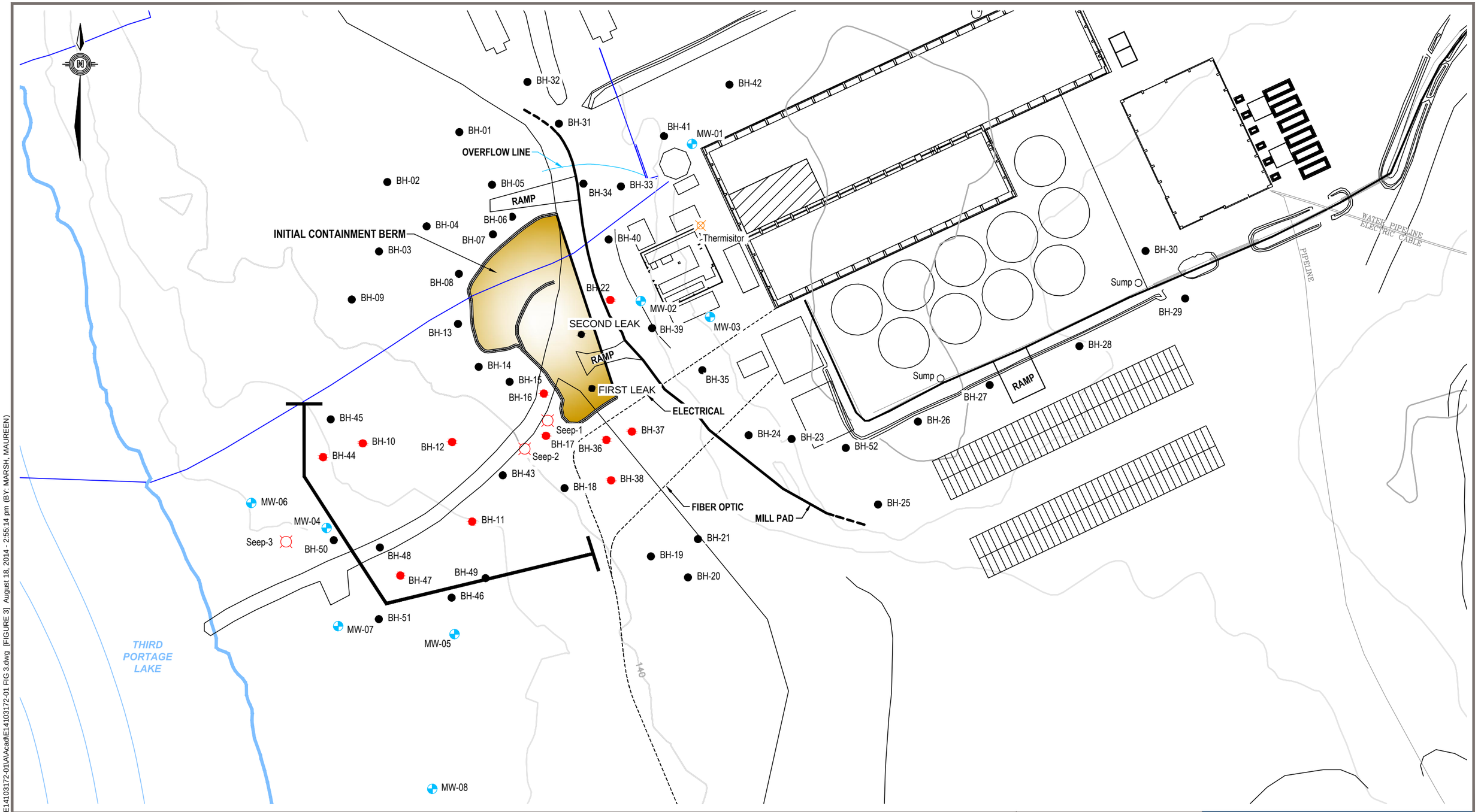
6.0 DESIGN AND CONSTRUCTION OF THE INTERCEPTION TRENCH

6.1 Interception Trench Location, Design and As-Built Construction

The interception trench design was developed by AEM with consultation by Tetra Tech EBA. The trench was located to minimize disturbance to the natural terrain, act as a barrier between detected cyanide and the lake, while staying at least 30 m away from Third Portage Lake. The approximate location of the interception trench is shown on Figure 3.

The initial design was to have a culvert within a rockfill mound and seacan placed on top for housing pumping equipment. The idea was to allow permafrost to aggrade into the bentonite material, providing a secondary impermeable boundary if water was allowed to pool in the collection area and started to slowly seep through the bentonite. This design was altered with input from Tetra Tech EBA and AEM, since the trench was over-blasted, and if the collection area was covered by rockfill to the original ground level, there was potential that the permafrost would aggrade too high and potentially freeze any pooled water before it could be pumped out. As a result, AEM committed that any pooled water in the collection area will be immediately pumped out to limit the possibility of long term pooling and seeping through the bentonite material, therefore the rockfill mound and seacan were abandoned.

Construction of the interception trench generally followed the intended design with a few changes made to "field-fit" to site conditions. As-built drawings provided by AEM are presented in Appendix C.



LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE
- INTERCEPTION TRENCH

0 50m

Scale: 1:1,250 @ 11"x17"

NOTES

SEEP 3 HAD LOW LEVELS OF CYANIDE
(CNTOT = 0.192 ppm CNWAD = 0.033 ppm)

CLIENT

AGNICO-EAGLE

TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

INTERCEPTION TRENCH LOCATION

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK/MM	TH	0

OFFICE	DATE
EDM	August 2014

Figure 3

The AEM design for the interception trench utilizes shallow ditches and a sump. To mitigate anticipated thaw in permafrost conditions, the final design for the interception trench includes significant over excavation and replacement with thaw stable materials, and a cut-off system keyed in deep enough below the ditch or sump bottom to be below the depth of anticipated thaw. However, to insure thermal stability, it will be essential that water not be allowed to pond in the ditches or sump for longer than 1 day.

6.1.1 Interception Trench Preparation

The excavation of blast debris from the interception trench was ongoing when Tetra Tech EBA arrived on site on April 24, 2014. Excavation was carried out with a Caterpillar (CAT) 365 excavator positioned parallel to the trench. Excavation removed the bulk of the blast material down to refusal on bedrock. The contractor was directed to remove all smaller rock fragments and unsound rock that remained at the bottom of the interception trench with the smaller CAT 345 backhoe equipped with a small (1 m wide) bucket fitted with “duck teeth”. Almost the entire excavation was located within sound bedrock. The bottom of the trench was somewhat irregular as a result of the inaccuracies of blasting. Photos 9 and 10 show the interception trench after the initial removal of blast material and after final cleaning, respectively.

6.1.2 Geotextile Placement

Geotextile was placed on the downstream slope of the interception trench under observation of Tetra Tech EBA. The geotextile was placed with a minimum panel overlap of 300 mm, and with approximately 1000 mm tied in at the top of the downstream slope. Photo 11 shows the geotextile on the downstream slope as it is being tied in.

6.1.3 20 mm Aggregate/8% Bentonite Material Placement

Bottom of Interception Trench

A mixture of 20 mm crushed aggregate with 8% bentonite (bentonite material) was placed on the bottom of the interception trench following inspection by Tetra Tech EBA. The bentonite material was compacted using a Wacker DPU 5045H Vibrating Plate with a minimum of four passes per lift; compaction activities are shown in Photo 12.

The aggregate/bentonite material was first placed to fill in the low (over-blasted) areas of the interception trench. Lift thicknesses between 200 and 300 mm were used. The bottom of the interception trench was built up in this manner until the desired thicknesses and grades were reached, as measured by the on-site surveyor. To meet the design intent, a minimum bentonite material thickness of 500 mm above the bedrock and minimum grades of 1.5 percent towards the collection area were achieved.

Downstream (Lake Side) Slope

Bentonite material was placed on the downstream slope of the trench in two lifts (300 mm and 200 mm) and compacted with the CAT 365 excavator bucket for a total thickness of 500 mm. Photo 13 shows the CAT 365 excavator compacting two lifts of bentonite material on the downstream slope.

Upstream (Mill side) Slope

Bentonite material was placed along the upstream slope to direct any flowing subsurface water (most likely flowing in the active layer at the overburden/bedrock contact) into the interception trench. Compaction was carried out with the CAT 365 excavator bucket. The contractor was directed to ensure there was no gap or “gutter” between the upstream wall and bentonite material. Care was taken so that the top of the bentonite material was below the overburden/bedrock contact. Photos 13 to 16 show bentonite placement on the upstream slope.

6.1.4 150 mm and Rock Fill Material Placement

The placement of the 150 mm and Rock Fill material was done after Tetra Tech EBA had left the site. This stage was not as crucial to the performance of the interception trench as the bentonite material placement. Photo 17 shows the interception trench at completion, photos courtesy of AEM.

6.1.5 Testing of 20 mm Crushed Aggregate/8% Bentonite Material

One sample (sample 1) of bentonite material was subjected to constant head hydraulic conductivity testing in Tetra Tech EBA's Edmonton laboratory in accordance with ASTM D5084. To get a sample representative of in-situ conditions, the sample was taken directly out of the bottom of the interception trench as the contractor was placing the bentonite material. In-situ moisture content prior to testing was 3.7%, moisture content after testing was 12.7%, with an average dry density of 1875 kg/m^3. The hydraulic conductivity of the bentonite material was determined to be 2.2 x 10^{-5} cm/s, which is adequate to minimize water seepage out of the interception trench. Detailed constant head hydraulic conductivity test results are presented in Appendix F.

7.0 RESULTS AND DISCUSSIONS

The results of the 2014 Meadowbank Mine Assay Seepage Environmental Site Assessment are presented in the following section and in Tables 1 to 3. The laboratory reports are in Appendix A.

7.1 Soil

Natural Terrain

There were a total of 62 soil samples submitted for analysis of Total and WAD Cyanide from the boreholes drilled in the natural terrain downslope of the mill pad. Of those 62 samples, there were 17 samples where Total Cyanide was detected, with values ranging from 0.5 to 51 mg/kg. When compared to the British Columbia (BC) Environmental Management Act: Contaminated Sites Regulations for Urban Park (Wildlands), Schedule 5, only one location (BH-38, 51 mg/kg) was greater than the BC guidelines (50 mg/kg) for Total Cyanide.

For WAD Cyanide, there were only three samples where WAD Cyanide was detected, with values ranging from 0.9 to 3 mg/kg. All of these samples were below the British Columbia (BC) Environmental Management Act: Contaminated Sites Regulations for Urban Park (Wildlands), Schedule 5 (10 mg/kg).

The pH of the soil on the tundra ranged from 6.89 to 7.20, which meets applicable guidelines.

Mill Pad

There were a total of 30 soil samples submitted for analysis of Total and WAD Cyanide from boreholes drilled through the pad. Of those 30 samples, there was one sample (BH-22, 1.7 mg/kg) where Total Cyanide was detected. No WAD Cyanide was detected. Water was observed in BH-22 and MW-02, which was located in front of the Assay Lab.

The pH of the material on the pad ranged from 8.58 to 9.38 which is greater than the applicable guidelines. This material is created mainly of crushed blast rock, which would have been pulverized during drilling. In gold mines there are issues with having waste rock having low pH causing acid drainage, thus having higher than neutral pH values is better than lower pH values. Therefore, the pH values observed in the pad should not be a concern.

7.2 Water

Natural Terrain

There were a total of 6 water (ice) samples submitted for analysis of Total and WAD Cyanide from the natural terrain downslope of the mill pad. Total and WAD Cyanide was detected at all six sample locations. Total Cyanide was detected with values ranging from 0.192 to 2.23 ppm. The Water Licence No. 2AM-MEA0815 provides effluent discharge for Total Cyanide at 0.5 ppm for maximum average concentration and 1.0 pm for maximum allowable grab sample concentration. Using this value as a guideline, all samples analyzed, except Seep 3, exceed the water License for Total Cyanide. Seep 3 is located approximately 30 m from the edge of the lake, where cyanide was detected.

The Water Licence No. 2AM-MEA0815 does not have effluent discharge values for WAD Cyanide. Using the BC guidelines as a guide, none of the water samples exceeded the BC guidelines to protect freshwater aquatic life (50 ppm).

Mill Pad

There was one water sample (BH-22) submitted for analysis of Total and WAD Cyanide from boreholes drilled in the pad. The Total Cyanide detected was 24.59 ppm and WAD Cyanide was 10.6 ppm. The Total Cyanide exceeds the effluent discharge established in the Water Licence No. 2AM-MEA0815.

Monitoring well MW-02 did contain water, but no sample was collected, as it was adjacent to BH-22.

7.3 Ground Temperature

Regular readings have been obtained from the thermistor cable between March 5, 2014 and June 16, 2014 to determine changes in the ground temperature regime and determine the thickness of the active layer. The active layer depth is approximately 1.5 mbgs and ground temperature at the depth of zero annual amplitude (approximately 12 mbgs) is -2.0°C.

8.0 CONCLUSIONS AND RECOMMENDATIONS

During this investigation cyanide was detected at a depth of 1.68 mbgs near the location where the seep was initially identified. Down gradient of the initial containment, cyanide was detected to depths of 0.7 mbgs. Cyanide was not detected approximately 60 m from the lake (BH-47) in the soil, but was found at low levels in water (ice) that accumulated on the surface (Seep 3). Seep 3 is located about 30 m from the lakes edge and had low levels of cyanide (Total cyanide- 0.192 mg/L; WAD cyanide-0.033 mg/L). This information suggests that the cyanide initially infiltrated into the soil close to the initial seepage area; however further away from the seepage cyanide may have accumulated in the topsoil with little infiltration into the mineral soil (till overburden) or bedrock.

It was decided that the interception trench be installed between Seep 3 and BH-47. The decision for the location of the interception trench was based on the premise to minimize disturbance to the natural terrain, and act as a barrier between detected cyanide and the lake, while staying at least 30 m away from Third Portage Lake. An interception trench at this location should prevent cyanide contamination reaching Third Portage Lake. It is recommended that any pooled water within the collection area of the interception trench be pumped out immediately.

In order to remove the source of contaminant, AEM has taken steps to repair/reseal the containment systems that have been identified to be leaking and lead to the seepage. The main area of concern was the CIP tank containment system, which has been repaired. A ground temperature cable (thermistor cable) was installed near

the mill to determine the ground thermal regime. The fact that the mill pad has refrozen and there is only a thin active layer in the pad indicates that the repairs to the containment system have been effective in limiting seepage to the point that the ground has refrozen as significant continued seepage would likely preclude freezing.

AEM has currently established a Freshet Action Plan (April 2014), which outlines protocols AEM will take to monitor the interception trench and sampling protocols. AEM will conduct daily inspections of the pumping, collection systems and perimeter area and will record all pumped volumes of water from the interception trench. Any of the water collected will be pumped to the mill and discharged with the tailings to the tailings storage facility (TSF). The sampling program in this action plan states that on a monthly basis AEM will submit water samples to Multi Lab for analysis of Free Cyanide, Total Cyanide, Copper and Iron from the interception trench, monitoring wells 14MW04, 14MW05, 14MW06, 14MW07, and 14MW08, the original containment area and Third Portage Lake. AEM will collect waters twice a week from the area within the original containment berm, the interception trench, and monitoring wells 14MW02, 14MW03, 14MW08, 201, 202, and 203 to be submitted to the AEM on-site lab for WAD cyanide analysis.

After reviewing the information from this Environmental Site Assessment and AEM's Freshet Action Plan (April 2014), the following recommendations apply:

- Continue to sample water ponding within the original containment berm, interception trench, Third Portage Lake and monitoring wells 14MW01 to 14MW08, 201, 202 and 203, if water is present and not frozen, for analysis by Multi Lab of Free and Total cyanide, Copper, and Iron;
- In monitoring wells with known detected cyanide, collect and submit water samples to Multi Lab once in the spring and fall for analysis of ammonium, nitrate/nitrite, and pH. The purpose for the ammonium and nitrate/nitrite is that these compounds increase with the biodegradation of cyanide;
- If water is ponding down gradient of the interception trench, water samples should be collected and submitted to Multi Lab for analysis of Free and Total cyanide, Copper, and Iron;
- During the investigation no seep (water) samples or soil samples were collected within 30 m of the lake. Cyanide was detected at Seep 3, thus further sampling should be conducted down gradient of the trench in the soil and water. Water should be analyzed by Multi Lab for Free and Total Cyanide, Copper, and Iron, while soils should be analyzed for Free and Total cyanide;
- Depending on the results of the soil samples collected and potentially ponded water samples collected within 30 m of Third Portage Lake then sediment samples should be collected from the shore of Third Portage Lake. These sediment samples should be analyzed by Multi Lab for Free and Total Cyanide, Copper and Iron.
- AEM should install sumps inside the original containment berm to aid in the collection of water. This water can be pumped up to the mill and discharged to the TSF. This should improve collection of water in the spring near the mill pad;
- If not already complete, AEM should continue with the repairs to the secondary containment systems within the mill to ensure seepage sources are eliminated; and
- Collect additional soil samples on the northeast side of the mill in the direction of Tear Drop Lake to confirm if any cyanide travelled in that direction. If water is observed in the boreholes during this recommended investigation a well should be installed.

The following soil sampling recommendations should be implemented at closure of the mine:

- Soil samples should be collected for Free cyanide in the areas where known cyanide was detected, as free cyanide was not analyzed in this investigation. These areas should be delineated in order to produce a remedial action plan, if needed;

9.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.

Prepared by:
Tyrel Hemsley, M.Sc., A.I.T.
Environmental Scientist
Environment Practice
Direct Line: 780.451.2130 x520
Tyrel.Hemsley@tetratech.com

Prepared by:
Ernest Palczewski, B.Sc., Geol.I.T.
Geologist, Arctic Region
Engineering Practice
Direct Line: 780.451.2130 x353
Ernest.Palczewski@tetratech.com

Reviewed by:
Kevin W. Jones, P.Eng.
Vice President, Arctic Development
Engineering Practice
Direct Line: 780.451.2125
Kevin.Jones@tetratech.com

Reviewed by:
Michael J. Bensing, P.Eng. (Alberta)
Team Lead - Geoenvironmental
Environment Practice
Direct Line: 780.451.2130 x500
Mike.Bensing@tetratech.com

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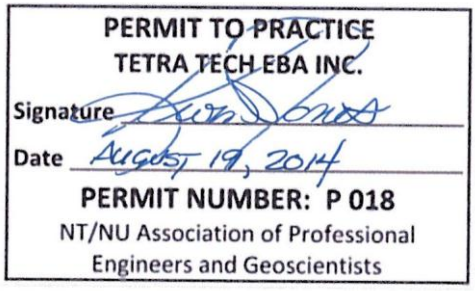

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TABLES

Table 1: Analytical Results Tundra Soil - AEM- Meadowbank Assay Seepage

Parameters	Units	Guidelines	Downgradient of the Assay Lab														
		Wildland/ Urban Park	BH-01	BH-02	BH-03	BH-04	BH-05	BH-06	BH-07	BH-08	BH-09	BH-10	BH-11		BH-12		BH-13	BH-14
			40-60	0-44	40-60	0-39	0-45	40-75	40-60	40-60	40-52	0-40	0-40	40-62	0-40	40-70	40-70	40-70
pH[2]		6 to 8								6.91			7.20					
Total Cyanide[1]	mg/kg	50	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	30	0.6	1.5	1.4	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	20	56	14	16	15	18	12	13	6.6	17	25	15	16	6.9	5.6	4.4
Laboratory Identification No.			X63656	X63657	X63658	X63659	X63660	X63661	X63662	X63663	X63664	X63665	X63666	X63667	X63668	X68074	X63669	X68075

Parameters	Units	Guidelines	Downgradient of the Assay Lab														
		Wildland/ Urban Park	BH-14	BH-15		BH-16			BH-17				BH-18		BH-19	BH-20	BH-21	BH-36
			70-112	40-70	70-100	0-40	70-100	100-140	40-70	70-100	100-140	140-168	40-70	70-100	40-59	40-70	70-90	40-70
pH[2]		6 to 8							7.12				6.89				7.93	
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	1.9	14	0.6	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	27
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3
Moisture Content	%	NG	4.2	14	9.4	11	7.9	8.2	12	9.9	7.0	3.8	13	12	3.7	6.8	2.9	9.4
Laboratory Identification No.			X63670	X63671	X68076	X68077	X63672	X68078	X63673	X68079	X68080	X63674	X63683	X68081	X63684	X63685	X63686	X68105

Parameters	Units	Guidelines	Downgradient of the Assay Lab															
		Urban Park (Wildland)	BH-36		BH-37		BH-38	BH-43			BH-44		BH-45	BH-46		BH-47	BH-48	
			70-100	100-129	40-70	70-109	0-29	0-40	70-100	100-121	40-70	70-94	40-52	40-70	100-139	0-41	40-70	100-140
pH[2]		6 to 8																
Total Cyanide[1]	mg/kg	50	1.7	0.9	1	0.9	**51**	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	4	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	1.2	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	6.3	7.4	13	6.0	30	41	6.9	9.9	9.9	6.4	16	7.6	5.6	19	9.4	7.3
Laboratory Identification No.			X68106	X68107	X68114	X68115	X68116	X71668	X71669	X71670	X71671	X71672	X71673	X71674	X71675	X71676	X71677	X71678

Parameters	Units	Guidelines	Downgradient of the Assay Lab								Monitoring Wells					
		Urban Park (Wildland)	BH-49		BH-50			BH-51			MW-04	MW-05	MW-06	MW-07	MW-08	
			40-70	70-100	0-40	70-100	100-133	0-40	70-100	100-133	70-91	70-100	70-122	40-70	40-70	70-100
pH[2]		6 to 8														
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	6.0	5.5	19	7.7	6.3	22	9.0	4.4	7.6	8.4	8.0	16	9.1	6.2
Laboratory Identification No.			X71679	X71680	X71681	X71682	X71683	X71684	X71685	X71686	X71690	X71691	X71692	X71693	X71694	X71695

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Urban Park (Wildlands). The BC guidelines are in µg/g which are equal to mg/kg

[2] Environmental Guidelines for Contaminated Site Remediation, Nunavut. Wildland

Blank-Not analyzed

NG- No Guideline

Bold - Greater than the referenced guideline

Cyanide Detected

Table 2: Analytical Results for Mill Pad Soil - AEM- Meadowbank Assay Seepage

Parameters	Units	Guidelines	North of Mill			Northwest of Assay Lab				In Front of Assay Lab					Southwest of Assay Lab			
		Urban Park (Wildland)	BH-41		BH-42	BH-33		BH-34		BH-40		BH-22	BH-39		BH-35		BH-23	BH-24
			300-350	400-450	300-350	300-350	400-450	300-350	500-577	400-450	550-645	500-550	300-350	400-450	300-350	400-450	450-500	400-450
pH[2]		6 to 8														**9.28**		
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	7.2	0.8	1.1	14	2.7	4.8	5.2	12	4.5	16	3.6	3.0	3.2	3.4	0.8	2.3
Laboratory Identification No.			X68121	X68122	X68123	X68099	X68100	X68101	X68102	X68119	X68120	X63687	X68117	X68118	X68103	X68104	X68082	X68083

Parameters	Units	Guidelines	Southwest of Assay Lab		Southwest side of Tanks								Northwest of Tanks		Monitoring Wells	
		Urban Park (Wildland)	BH-24	BH-52	BH-25			BH-26	BH-27	BH-28	BH-29		BH-30		MW-01	MW-03
			500-530	300-350	250-300	400-450	500-530	400-450	500-550	500-550	300-350	500-550	400-450	550-690	400-450	400-450
pH[2]		6 to 8			**9.30**						**8.58**			**9.38**		
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	1.2	0.3	1.9	0.8	0.5	0.8	0.2	0.8	1.0	0.3	3.3	1.0	2.2	2.4
Laboratory Identification No.			X68088	X71687	X68089	X68090	X68091	X68092	X68093	X68094	X68095	X68096	X68097	X68098	X71688	X71689

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Urban Park (Wildlands). The BC guidelines are in µg/g which are equal to mg/kg

[2] Environmental Guidelines for Contaminated Site Remediation, Nunavut. Wildland

Blank-Not analyzed

Bold - Greater than the referenced guideline

Cyanide Detected

Table 3: Water/Ice Analytical Results - AEM - Meadowbank Assay Seepage

Parameters	Unit	Guidelines			In Front of Assay Lab	Downgradient of Assay Lab-Tundra					
		Drinking Water [1]	Aquatic Life [1]	Licence No. 2AM-MEA0815	BH-22	BH-36	Seep 1	Seep 2	BH-11	BH-47	Seep 3
Total Cyanide[2]	mg/L	200	NG	0.5 (1.0)[4]	**24.59**	**2.23**	**2.31**	**1.59**	**1.76**	**1.05**	0.192
WAD Cyanide[2]	mg/L	NG	50	NG	10.6	0.644	0.944	0.935	1.48	0.101	0.033
WAD Cyanide[3]	mg/L	NG	50	NG		1.31	1.05	0.883	4.91	0.237	0.544
Laboratory Identification No.					V-32663	V-32719	V-32716	V-32717	V-32662	V-32758	V-32718

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Schedule 6 Generic Numerical Water Standards

[2] Multi-lab Direct Analytical Results

[3] Meadowbank Assay Lab Analytical Results

[4] Maximum Average Concentration (Maximum Allowable Grab Sample Concentration)

Blank-Not analyzed

Bold = Greater than the referenced guideline or Water License

Cyanide Detected

PHOTOGRAPHS

Photo 1	Southwest view of the downhole hammer-air rotary drill drilling BH-18
Photo 2	Metal containers underneath the curtain of the drill to collect soil samples
Photo 3	Ice (~12 cm thick) located at BH-11.
Photo 4	Northwest view of drill, drilling BH-39 in front of the Assay Lab
Photo 5	View from MW-04 facing northeast towards the Assay Lab
Photo 6	Northwest view of the location for the three old wells (201, 202, and 203) located in the tires and the location of the thermistor cable just southeast of the tires. This area is located between the Assay Lab and the Mill.
Photo 7	View of the North side of the Mill, illustrating the location of monitoring well MW01 behind the two cement blocks
Photo 8	View on the south side of the tank farm drilling BH-27
Photo 9	West End of Interception Trench Facing Northwest, Trench Bottom Prior to Cleaning
Photo 10	West End of Interception Trench Facing Northwest, Trench Bottom after Cleaning, Contractors Laying Geotextile on Downstream Slope
Photo 11	East End of Interception Trench Facing Northeast, Geotextile Placement with Overlap and Tie-in at Top
Photo 12	West End of Interception Trench Facing North, Contractor Filling in and Compacting Low Areas
Photo 13	West End of Interception Trench Facing Northwest, Background: CAT 365 Excavator Bucket Compacting Two Lifts of Bentonite Material on Downstream Slope. Foreground: Two Lifts of Bentonite Material Visible
Photo 14	West End of Interception Trench Facing Southeast, CAT 365 Excavator Bucket Compacting Upstream Bentonite Material Slope below the Bedrock Contact
Photo 15	East End of Interception Trench Facing Northwest, Bentonite Material on Upstream Slope below Bedrock Contact
Photo 16	West End of Interception Trench Facing Northwest, Completed Bentonite Placement
Photo 17	East End of Interception Trench Facing Southwest, Completed Interception Trench Covered in Rockfill (Photo courtesy AEM)

Photo 1: Southwest view of the down hole air hammer drill drilling BH-18.

Photo 2: Metal containers underneath the curtain of the drill to collect soil samples.

Photo 3: Ice (~12 cm thick) located at BH-11.

Photo 4: Northwest view of drill, drilling BH-39 in front of the Assay Lab.

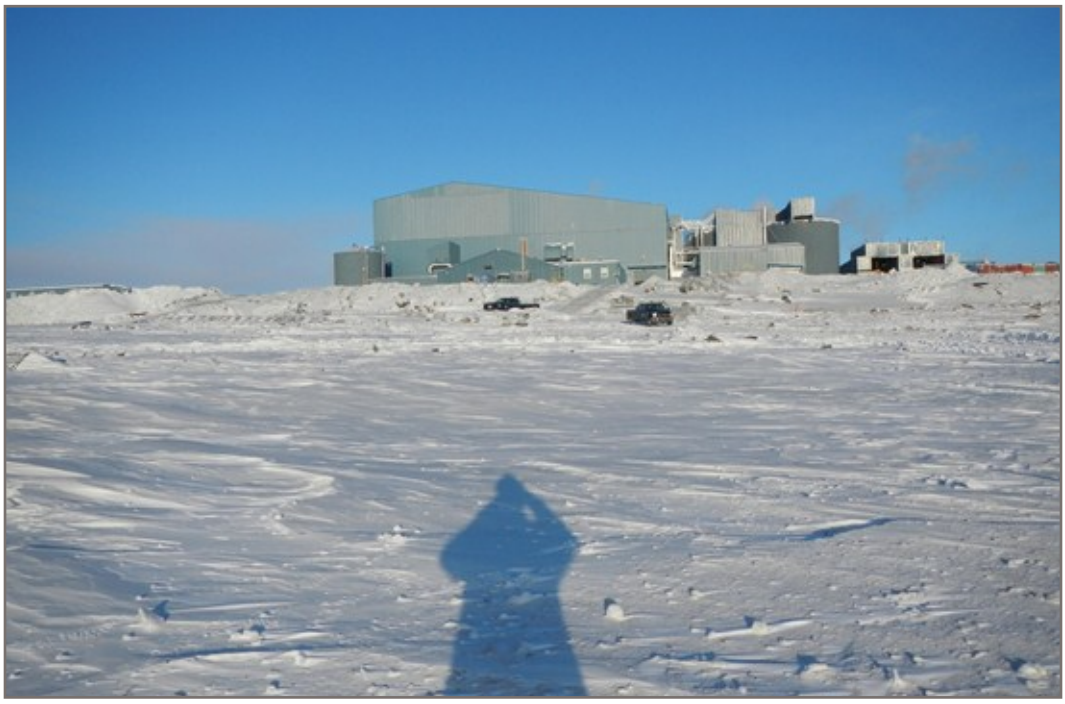

Photo 5: View from MW-04 facing northeast towards the Assay Lab.

Photo 6: Northwest view of the location for the three old wells (201, 202, and 203) located in the tires and the location of the thermistor cable just southeast of the tires. This area is located between the Assay Lab and the Mill.

Photo 7: View of the North side of the Mill , illustrating the location of monitoring well MW01 behind the two cement blocks.

Photo 8: View on the south side of the tank farm drilling BH-27.

Photo 9: West End of Interception Trench Facing Northwest
Trench Bottom Prior to Cleaning

Photo 10: West End of Interception Trench Facing Northwest
Trench Bottom after Cleaning. Contractors Laying Geotextile on Downstream Slope

Photo 11: East End of Interception Trench Facing Northeast
Geotextile Placement with Overlap and Tie-in at Top

Photo 12: West End of Interception Trench Facing North
Contractor Filling in and Compacting Low Areas

Photo 13: West End of Interception Trench Facing Northwest
Background: CAT 365 Excavator Bucket Compacting Two Lifts of Bentonite Material on Downstream Slope. Foreground: Two Lifts of Bentonite Material Visible

Photo 14: West End of Interception Trench Facing Southeast
CAT 365 Excavator Bucket Compacting Upstream Bentonite Material Slope Below the Bedrock Contact

Photo 15: East End of Interception Trench Facing Northwest
Bentonite Material on Upstream Slope Below Bedrock Contact

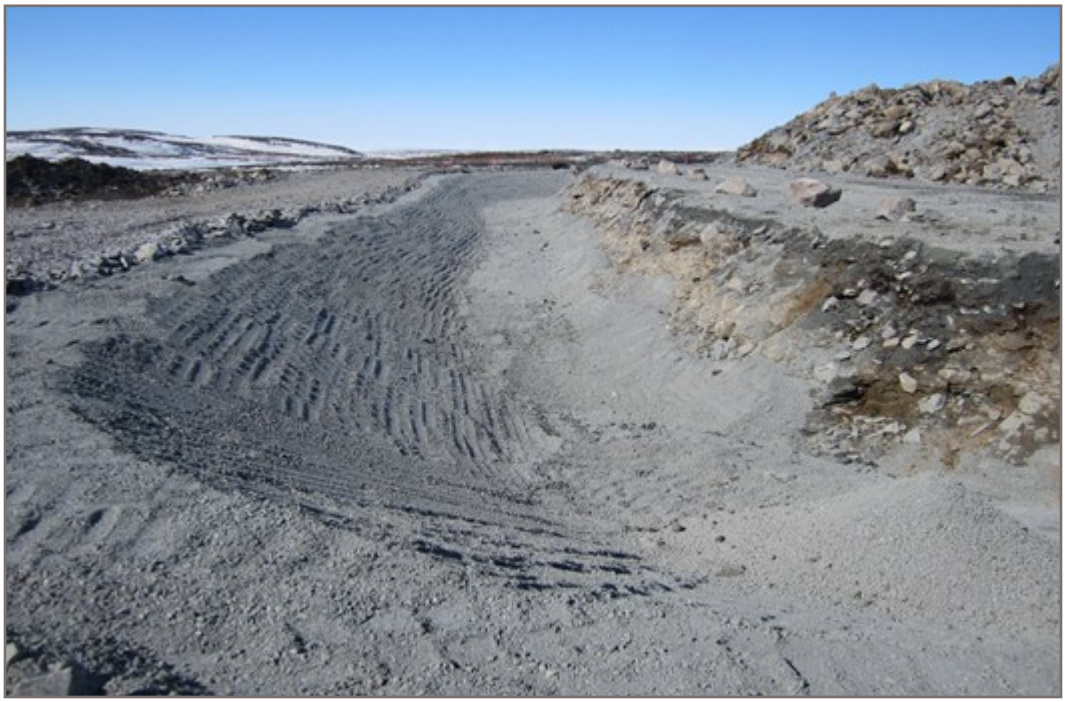

Photo 16: West End of Interception Trench Facing Northwest
Completed Bentonite Placement

Photo 17: East End of Interception Trench Facing Southwest
Completed Interception Trench Covered in Rockfill
(Photo courtesy AEM)

APPENDIX A
LABORATORY DATA

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32716

Sampling location: Seep 1
Sampling date: February 27, 2014

Sample name: Seep 1
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32716

Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.944 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	2.31 mg/L	M-CN-1.0	March 04, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32716

Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32716

Sample name: Seep 1 | Sampling date: February 27, 2014

Sampling location: Seep 1 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32716

Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32717

Sampling location: Seep 2
Sampling date: February 27, 2014

Sample name: Seep 2
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32717

Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.935 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	1.59 mg/L	M-CN-1.0	March 04, 2014

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32717

Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32717

Sample name: Seep 2 | Sampling date: February 27, 2014

Sampling location: Seep 2 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32717
Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32718

Sampling location: Seep 3
Sampling date: February 27, 2014

Sample name: Seep 3
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32718

Sample name: Seep 3 | Sampling date: February 27, 2014

Sampling location: Seep 3 | Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.033 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	0.192 mg/L	M-CN-1.0	March 04, 2014

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32718

Sample name: Seep 3
Sampling location: Seep 3
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32718

Sample name: Seep 3 | Sampling date: February 27, 2014

Sampling location: Seep 3 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32718
Sample name: Seep 3
Sampling location: Seep 3
Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32719

Sampling location: BH-36
Sampling date: March 02, 2014

Sample name: BH-36
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32719

Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.644 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	2.23 mg/L	M-CN-1.0	March 04, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32719

Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32719

Sample name: BH-36 | Sampling date: March 02, 2014

Sampling location: BH-36 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32719
Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Your P.O. #: OP-310962-J
Your Project #: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Report Date: 2014/02/28
Report #: R1834795
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B410248
Received: 2014/02/27, 08:10

Sample Matrix: SOIL
Samples Received: 24

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Weak Acid Dissociable Cyanides*	24	2014/02/27	2014/02/28	STL SOP-00035	MA. 300 - CN 1.2
Total Cyanide*	24	2014/02/27	2014/02/28	STL SOP-00035	MA. 300 - CN 1.2
pH*	5	2014/02/27	2014/02/27	STL SOP-00016	MA.100- pH1.1

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

* Maxxam is accredited as per the MDDEFP program.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Rita Kurdoghlanian, Project Manager
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63656		X63657		X63658		
Sampling Date					2014/02/21		2014/02/21		2014/02/21		
	Units	**A**	**B**	**C**	**BH-01 (40-60)**	**RDL**	**BH-02 (0-44)**	**RDL**	**BH-03 (40-60)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	20	N/A	56	N/A	14	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	0.5	<1	1	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<1	1	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X63659	X63660	X63661	X63662		
Sampling Date					2014/02/21	2014/02/22	2014/02/22	2014/02/22		
	Units	**A**	**B**	**C**	**BH-04 (0-39)**	**BH-05 (0-45)**	**BH-06 (40-75)**	**BH-07 (40-60)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	16	15	18	12	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X63663	X63664		X63665		
Sampling Date					2014/02/22	2014/02/22		2014/02/22		
	Units	**A**	**B**	**C**	**BH-08 (40-60)**	**BH-09 (40-52)**	**RDL**	**BH-10 (0-40)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	13	6.6	N/A	17	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	6.91	N/A	N/A	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	0.5	**13**	5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63666		X63667	X63668	X63669		
Sampling Date					2014/02/22		2014/02/22	2014/02/22	2014/02/22		
	Units	**A**	**B**	**C**	**BH-11 (0-40)**	**RDL**	**BH-11 (40-62)**	**BH-12 (0-40)**	**BH-13 (40-70)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	25	N/A	15	16	5.6	N/A	N/A
CONVENTIONALS											
pH	pH	**-**	-	-	7.20	N/A	N/A	N/A	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	**2**	50	500	**30**	10	0.6	1.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<0.5	<0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X63669	X63670	X63671		X63672		
Sampling Date					2014/02/22	2014/02/22	2014/02/23		2014/02/23		
	Units	**A**	**B**	**C**	**BH-13 (40-70) Lab-Dup**	**BH-14 (70-112)**	**BH-15 (40-70)**	**RDL**	**BH-16 (70-100)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	5.6	4.2	14	N/A	7.9	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	**14**	5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63673	X63674	X63683	X63683		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-17 (40-70)**	**BH-17 (140-168)**	**BH-18 (40-70)**	**BH-18 (40-70) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	12	3.8	13	13	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	7.12	N/A	6.89	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	0.5	<0.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X63684	X63685	X63686	X63687		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-19 (40-59)**	**BH-20 (40-70)**	**BH-21 (70-90)**	**BH-22 (500-550)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.7	6.8	2.9	16	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	N/A	7.93	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	<0.5	1.7	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63687		
Sampling Date					2014/02/23		
	Units	**A**	**B**	**C**	**BH-22 (500-550) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	16	N/A	N/A
CONVENTIONALS							
Total Cyanide (CN)	mg/kg	**2**	50	500	1.7	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	1275397

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

All results are calculated on a dry weight basis except where not applicable.

A,B,C: Criteria following appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". For all metals analyses in soil, the criterion A refers to " Background Level of St. Lawrence Lowlands Sector ".

For groundwaters:
The A and B criteria follow the appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". The criterion A refers to " Drinking Water " and the criterion B refers to "Seepage into Surface Water or Infiltration into Sewers ".

These criteria references are shown for visual aid only, and should not be interpreted otherwise.
- = This parameter is not part of the regulation.

CONVENTIONAL PARAMETERS (SOIL)

Please note that the results have not been corrected for QC recoveries nor for the method blank results.
Reported detection limits are multiplied by dilution factors used for sample analysis.

Results relate only to the items tested.

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Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Client Project #: E14103172-01
P.O. #: OP-310962-J
Site Location:

Quality Assurance Report

Maxxam Job Number: B410248

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units
1275318	KV1	QC Standard	pH	2014/02/27		99	%
		Spiked Blank	pH	2014/02/27		101	%
1275367	DB2	QC Standard	Total Cyanide (CN)	2014/02/28		103	%
		Spiked Blank	Total Cyanide (CN)	2014/02/28		111	%
		Method Blank	Total Cyanide (CN)	2014/02/28	<0.5		mg/kg
1275397	DB2	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/02/28		105	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/02/28	<0.5		mg/kg

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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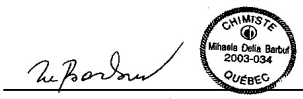
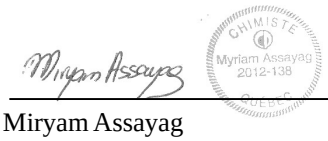
Validation Signature Page

Maxxam Job #: B410248

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Delia Barbul, B.Sc., Chemist



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27-Feb-14 08:10
Alain Lemieux
B410248
RG2 MTL-0124

Maxxam Analytique

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☐ 2690 Avenue Dalton, Sainte-Foy, Qué
☐ 737 boul. Barette, Chicoutimi, Québec

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ample Analysis and Chain of Custody Record

-9199 Toll Free: 1-877-4MA-XXAM (462-9926) Page 1 of 3

-6594

-8994

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadowbank	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda, J0Y 1C0	Address:
Contact Name: Kevin Buck	Contact Name:
Telephone: 819-759-3555 ext. 6838	Phone:
Fax: 819 (759)-3663	Fax:
Sampler: Tyrel/Tom Thomson	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:

Quotation No.: Project No.: E1410372-01

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	pH	CN TOTAL	CN, WAD
BH-01 (40-60)	X			21/02/14		1		X	X
BH-02 (0-44)	X			21/02/14		1		X	X
BH-03 (40-60)	X			21/02/14		1		X	X
BH-04 (0-39)	X			21/02/14		1		X	X
BH-05 (0-45)	X			22/02/14		1		X	X
BH-06 (40-75)	X			22/02/14		1		X	X
BH-07 (40-60)	X			22/02/14		1		X	X
BH-08 (40-60)	X			22/02/14		1	X	X	X
BH-09 (40-52)	X			22/02/14		1		X	X
BH-10 (0-40)	X			22/02/14		1		X	X

PH (Cn-Cat) | O & G Min. | O & G Tot. | VOC (EPA 624) | BTEX | MAH | Phenols (GC/MS) | Phenols (Colorx) | PAH | PCB (Congeners) (GC-MS) | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) | Metals ICP regulation - 13 ele.-soil** | 16 ele. water*** | Mercury | Selenium-soil | Others: | F | Cl | SO4 | NO2 | NO3 + NO2 | TKN | NH3 | P-Tot. | pH | Conductivity | TSS | Sulfide (SH) | Total Sulphur (S) | Tot.-CN | Ox.-CN | Free CN | COD | TOC | Turbidity | BOD5 | RDS | RMD | CUM | ART. 10 | ART. 11 | Potable Water: ORG. | INOR. | THM | COLIF (Fec.) | COLIF (Tot.) | TOTAL-PC | Explosive | EPA 8290 | EPA 8330 | Other (specify):

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3°C

Chain of Custody

Relinquished by: Marie-Pier Marcil Date: 25/02/14 Time: 9h30 Received by:

Relinquished by: Date: 2014-02-27 Time: 08:10 Received by: Robbie Ginger

Number of coolers: Temperature upon reception:

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks: Ice-yes Seal-yes

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique

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Sample Analysis and Chain of Custody Record

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address:	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: Project / Site:
Quotation No.: Project No.:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	pH	CN TOTAL	CN WAD
BH-11 (0-40)	X			22/02/14		1	X	X	X
BH-11 (40-62)	X			22/02/14		1		X	X
BH-12 (0-40)	X			22/02/14		1		X	X
[illegible]									
BH-13(40-70)	X			22/02/14		1		X	X
BH-14 (70-112)	X			22/02/14		1		X	X
BH-15(40-70)	X			23/02/14		1		X	X
BH-16(70-100)	X			23/02/14		1		X	X
BH-17 (40-70)	X			23/02/14		1	X	X	X
BH-17 (140-168)	X			23/02/14		1		X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☐ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3°1.0°

Chain of Custody

Relinquished by:	Date: 2014-02-27	Time: 08:10	Received by: [illegible] Robbie Gingras
Relinquished by:	Date:	Time:	Received by:

Number of coolers: _____ Temperature upon reception:

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☐ Courier (Specify):

Remarks: Ice-yes Seal-yes

KEENVOCFORMQE - Saint-Laurent - 07/09 — WHITE: MAXXAM ANALYTICS INC — BLUE: INVOICING — YELLOW: RETURN TO CLIENT WITH FINAL REPORT — PINK: CLIENT

Maxxam Analytique

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Sample Analysis and Chain of Custody Record

Page 3 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address:	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: Project / Site:

Quotation No.: Project No.:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample Soil	Sample Water Type	Sample Other	Sampling (date / time)	To be filtered	Number of samples	PH (C10-C50)	O & G Min. / O & G Tot.	VOC (EPA 624) / BTEX / MAH	Phenols (GC/MS) / Phenols (Color.)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals ICP regulation - 13 ele.-soil** / 16 ele. water***	Mercury / Selenium-soil / Others:	F / Cl / SO4 / NO2 / NO3 / NO2 + NO3	TKN / NH3 / P-Tot.	pH / Conductivity / TSS	Sulfide (SH2) / Total Sulphur (S)	Tot.-CN / Ox-CN / Free CN	BOD5 / COD / Turbidity / TOC	RDS / RMD	CUM ART. 10 / ART. 11	Potable Water: ORG. / INOR. / THM	COLIF (Fec.) / COLIF (Tot.) / TOTAL-PC	Explosive EPA 8095 / EPA 8330	Other (specify):	PH	CN TOTAL	CN WAD
BH-18 (40-70)	X			23/02/14		1																						X	X	X
BH-19 (40-59)	X			23/02/14		1																							X	X
BH-20 (40-70)	X			23/02/14		1																							X	X
BH-21 (70-90)	X			23/02/14		1																						X	X	X
BH-22 (500-550)	X			23/02/14		1																							X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn).
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater, Sur = Surface, P = Potable, E = Effluent, LW = Liquid Waste, C = Catchment

Applicable Regulations: ________________ (To complete)

Turnaround Time: ☐ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3 'I' O'

Chain of Custody

Relinquished by:	Date: 2014-02-27	Time: 08:10	Received by: [signature] Robbie Grégoire
Relinquished by:	Date:	Time:	Received by:

Number of coolers: ________ Temperature upon reception:

Remarks: Ice - yes, Seal - yes

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☐ Courier (Specify):

KEENVCOCFORMQE - Saint-Laurent - 07/09 — WHITE: MAXXAM ANALYTICS INC — BLUE: INVOICING — YELLOW: RETURN TO CLIENT WITH FINAL REPORT — PINK: CLIENT

Your P.O. #: OP-310962-J
Your Project #: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Report Date: 2014/03/07
Report #: R1836907
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B411247
Received: 2014/03/05, 08:10

Sample Matrix: SOIL
Samples Received: 40

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Weak Acid Dissociable Cyanides*	40	2014/03/06	2014/03/07	STL SOP-00035	MA. 300 - CN 1.2
Total Cyanide*	40	2014/03/05	2014/03/06	STL SOP-00035	MA. 300 - CN 1.2
pH*	4	2014/03/06	2014/03/06	STL SOP-00016	MA.100- pH1.1

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

* Maxxam is accredited as per the MDDEFP program.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Rita Kurdoghlanian, Project Manager
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

This report has been generated and distributed using a secure automated process.
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889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68074	X68074	X68075	X68076		
Sampling Date					2014/02/22	2014/02/22	2014/02/22	2014/02/23		
	Units	**A**	**B**	**C**	**BH-12 (40-70)**	**BH-12 (40-70) Lab-Dup**	**BH-14 (40-70)**	**BH-15 (70-100)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.9	6.9	4.4	9.4	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	1.4	1.6	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68077	X68078	X68079	X68080		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-16 (0-40)**	**BH-16 (100-140)**	**BH-17 (70-100)**	**BH-17 (100-140)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	11	8.2	9.9	7.0	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	1.9	0.6	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68081	X68082	X68083	X68088		
Sampling Date					2014/02/23	2014/02/25	2014/02/25	2014/02/25		
	Units	**A**	**B**	**C**	**BH-18 (70-100)**	**BH-23 (450-500)**	**BH-24 (400-450)**	**BH-24 (500-530)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	12	0.8	2.3	1.2	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68089	X68090	X68091	X68091		
Sampling Date					2014/02/25	2014/02/25	2014/02/25	2014/02/25		
	Units	**A**	**B**	**C**	**BH-25 (250-300)**	**BH-25 (400-450)**	**BH-25 (500-530)**	**BH-25 (500-530) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	1.9	0.8	0.5	0.5	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	9.30	N/A	N/A	N/A	N/A	1277885
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68092	X68093	X68094	X68095		
Sampling Date					2014/02/27	2014/02/27	2014/02/27	2014/02/27		
	Units	**A**	**B**	**C**	**BH-26 (400-450)**	**BH-27 (500-550)**	**BH-28 (500-550)**	**BH-29 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	0.8	0.2	0.8	1.0	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	N/A	N/A	N/A	8.58	N/A	1277885
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68096	X68097		X68098		
Sampling Date					2014/02/27	2014/02/27		2014/02/27		
	Units	**A**	**B**	**C**	**BH-29 (500-550)**	**BH-30 (400-450)**	**QC Batch**	**BH-30 (550-690)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	0.3	3.3	N/A	1.0	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	N/A	1277885	9.38	N/A	1277885
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	1277739	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	1277819	<0.5	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68099	X68100	X68101	X68102		
Sampling Date					2014/03/01	2014/03/01	2014/03/01	2014/03/01		
	Units	**A**	**B**	**C**	**BH-33 (300-350)**	**BH-33 (400-450)**	**BH-34 (300-350)**	**BH-34 (500-577)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	14	2.7	4.8	5.2	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68103	X68104		X68105		
Sampling Date					2014/03/02	2014/03/02		2014/03/02		
	Units	**A**	**B**	**C**	**BH-35 (300-350)**	**BH-35 (400-450)**	**RDL**	**BH-36 (40-70)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.2	3.4	N/A	9.4	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	9.28	N/A	N/A	N/A	1277885
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	0.5	**27**	10	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	0.5	**3**	1	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68106	X68107		X68114	X68114		
Sampling Date					2014/03/02	2014/03/02		2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-36 (70-100)**	**BH-36 (100-129)**	**RDL**	**BH-37 (40-70)**	**BH-37 (40-70) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.3	7.4	N/A	13	13	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	1.7	0.9	0.5	1	1	1	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	0.5	1.2	1.1	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68115		X68116		X68117		
Sampling Date					2014/03/02		2014/03/02		2014/03/02		
	Units	**A**	**B**	**C**	**BH-37 (70-109)**	**RDL**	**BH-38 (0-29)**	**RDL**	**BH-39 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.0	N/A	30	N/A	3.6	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	0.9	0.5	51	10	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	0.9	0.5	<0.5	0.5	<0.5	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID					X68118	X68119	X68119	X68120		
Sampling Date					2014/03/02	2014/03/02	2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-39 (400-450)**	**BH-40 (400-450)**	**BH-40 (400-450) Lab-Dup**	**BH-40 (550-645)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.0	12	12	4.5	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68121	X68122	X68123		
Sampling Date					2014/03/02	2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-41 (300-350)**	**BH-41 (400-450)**	**BH-42 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	7.2	0.8	1.1	N/A	N/A
CONVENTIONALS									
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	1277816

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

All results are calculated on a dry weight basis except where not applicable.

A,B,C: Criteria following appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". For all metals analyses in soil, the criterion A refers to " Background Level of St. Lawrence Lowlands Sector ".

For groundwaters:
The A and B criteria follow the appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". The criterion A refers to " Drinking Water " and the criterion B refers to "Seepage into Surface Water or Infiltration into Sewers ".

These criteria references are shown for visual aid only, and should not be interpreted otherwise.
- = This parameter is not part of the regulation.

CONVENTIONAL PARAMETERS (SOIL)

Please note that the results have not been corrected for QC recoveries nor for the method blank results.
Reported detection limits are multiplied by dilution factors used for sample analysis.

Results relate only to the items tested.

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Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Client Project #: E14103172-01
P.O. #: OP-310962-J
Site Location:

Quality Assurance Report

Maxxam Job Number: B411247

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units
1277739	CC6	QC Standard	Total Cyanide (CN)	2014/03/06		109	%
		Spiked Blank	Total Cyanide (CN)	2014/03/06		104	%
		Method Blank	Total Cyanide (CN)	2014/03/06	<0.5		mg/kg
1277740	DB2	QC Standard	Total Cyanide (CN)	2014/03/06		117	%
		Spiked Blank	Total Cyanide (CN)	2014/03/06		103	%
		Method Blank	Total Cyanide (CN)	2014/03/06	<0.5		mg/kg
1277816	DB2	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07		108	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07	<0.5		mg/kg
1277819	CC6	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07		106	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07	<0.5		mg/kg
1277885	KV1	QC Standard	pH	2014/03/06		100	%
		Spiked Blank	pH	2014/03/06		102	%

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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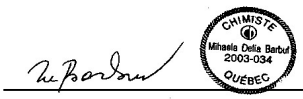
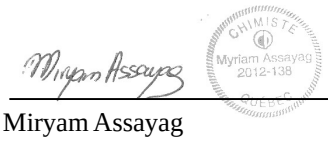
Validation Signature Page

Maxxam Job #: B411247

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Delia Barbul, B.Sc., Chemist



Miryam Assayag

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5-Mar-14 08:10
Alain Lemieux
B411247
MF5 MTL-0024

Maxxam Analytique

☒ 889 Montée de Liesse
☐ 2690 Avenue Dalton, S
☐ 737 boul. Barette, Chic

Fax: (514) 448-9199 Toll Free: 1-877-4MA-XXAM (462-9926)
Fax: (418) 658-6594
Telephone: (418) 543-3788 Fax: (418) 543-8994
www.maxxamanalytics.com

Sample Analysis and Chain of Custody Record

Page 1 of 4

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadowbank	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda J0Y 1C0	Address:
Contact Name: Kevin Buck	Contact Name:
Telephone: 819.759.3555 x6838	Telephone:
Fax: 819.759.3663	Fax:
Sampler: Tyrel / Tom	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.:
Quotation No.:
Project / Site:
Project No.: E14103172-01

Sample Identification (sampling point)	Sample: Soil	Water Type	Other	Sampling (date / time)	To be filtered	Number of samples	PH (C10-C50)	O & G Min. / O & G Tot.	VOC (EPA 624) / BTEX / MAH	Phenols (GC/MS) / Phenols (Color.)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals ICP regulation - 13 ele.-soil** / 16 ele. water***	Mercury / Selenium-soil / Others:	F / Cl / SO4 / NO2 / NO3 / NO2 + NO3	TKN / NH3 / P-Tot.	pH / Conductivity / TSS	Sulfide (SH2) / Total Sulphur (S)	Tot-CN / Oz-CN / Free CN	BOD5 / COD / Turbidity / TOC	RDS / RMD	CUM ART. 10 / ART. 11	Potable Water: ORG. / INOR. / THM	COLIF (Fec.) / COLIF (Tot.) / TOTAL-PC	Explosive EPA 8095 / EPA 8330	Other (specify):	CN TOTAL	CN WAD	PH
BH-12 (40-70)	X			Feb 22/14		1																						X	X	
BH-14 (40-70)				Feb 22/14		1																						X	X	
BH-15 (70-100)				Feb 23/14		1																						X	X	
BH-16 (0-40)						1																						X	X	
BH-16 (100-140)						1																						X	X	
BH-17 (70-100)						1																						X	X	
BH-17 (100-140)						1																						X	X	
BH-18 (70-100)				↓		1																						X	X	
BH-23 (450-500)				Feb 25/14		1																						X	X	
BH-24 (400-450)	↓			↓		1																						X	X	

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn).
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: ____________ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by:	Date:	Time:	Received by:
Tyrel Hensley Tyrel Hensley	Mar 2/14	1807	

Number of coolers: 2

Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Remarks: ICE - YES
SEAL - NO

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

2014/03/07 14:26

Mario Frasca MARIO FRASCA 2014/03/05 08:10

Sample Analysis and Chain of Custody Record

Page 2 of 4

Maxxam Analytique

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E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as Page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: _____ Project / Site: _____
Quotation No.: _____ Project No.: E14103172-01

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD	pH
BH-24 (500-530)	X			Feb 25/14		1	X	X	
BH-25 (250-300)						1	X	X	X
BH-25 (400-450)						1	X	X	
BH-25 (500-550)				↓		1	X	X	
BH-26 (400-450)				Feb 27/14		1	X	X	
BH-27 (500-550)						1	X	X	
BH-28 (500-550)						1	X	X	
BH-29 (300-350)						1	X	X	X
BH-29 (500-550)						1	X	X	
BH-30 (400-450)	↓			↓		1	X	X	

Columns: PH (Cn-Cw) ☐ | O & G Min. ☐ | O & G Tot. ☐ | VOC (EPA 624) ☐ | BTEX ☐ MAH ☐ | Phenols (GC/MS) ☐ | Phenols (Colour) ☐ | PAH ☐ | PCB (Congeners) (GC-MS) ☐ | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) ☐ | Metals ICP regulation - 13 ele.-soil** ☐ | 16 ele. water*** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: ☐ | F ☐ | Cl ☐ | SO4 ☐ | NO2 ☐ | NO3 ☐ | NO3 + NO2 ☐ | TKN ☐ | NH3 ☐ | P-Tot. ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Sulfide (SH) ☐ | Total Sulphur (S) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BOD5 ☐ | COD ☐ | TOC ☐ | Turbidity ☐ | RMD ☐ | RDS ☐ | CUM. ART. 10 ☐ | ART. 11 ☐ | Potable Water: ORG. ☐ | INOR. ☐ | THM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive: EPA 8095 ☐ | EPA 8330 ☐ | Other (specify):

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater, Sur = Surface, P = Potable, E = Effluent, LW = Liquid Waste, C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 2/14	Time: 1807	Received by:
Relinquished by:	Date:	Time:	Received by:

Number of coolers: 2 — Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks: ICE - YES SEAL - NO

KEENVCOCFORMQE - Saint-Laurent - 07/09 — WHITE: MAXXAM ANALYTICS INC — BLUE: INVOICING — YELLOW: RETURN TO CLIENT WITH FINAL REPORT — PINK: CLIENT

Marc Frisch MARC FRISCH 2014/03/05 08:10

Maxxam Analytique

Sample Analysis and Chain of Custody Record

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☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4 — Telephone: (418) 658-5784 — Fax: (418) 658-6594
☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4 — Telephone: (418) 543-3788 — Fax: (418) 543-8994
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E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address:	Address:
Same as Page 1	
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: _____ Project / Site: _____

Quotation No.: _____ Project No.: E141031 72-01

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD	pH
BH-30 (550-690)	X			Feb 27/14		1	X	X	X
BH-33 (300-350)				Mar 1/14		1	X	X	
BH-33 (400-450)						1	X	X	
BH-34 (300-350)						1	X	X	
BH-34 (500-577)						1	X	X	
BH-35 (300-350)				Mar 2/14		1	X	X	
BH-35 (400-450)						1	X	X	X
BH-36 (40-70)						1	X	X	
BH-36 (70-100)						1	X	X	
BH-36 (100-129)						1	X	X	

PH (Cn-Cn) ☐ | O & G Min. ☐ | O & G Tot. ☐ | VOC (EPA 624) ☐ | BTEX ☐ | MAH ☐ | Phenols (GC/MS) ☐ | Phenols (Colour) ☐ | PAH ☐ | PCB (Congeners) (GC-MS) ☐ | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) ☐ | Metals ICP regulation - 13 ele.-soil** ☐ | 16 ele.-water*** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: | F ☐ | Cl ☐ | SO4 ☐ | NO3 ☐ | NO2 + NO3 ☐ | TKN ☐ | NH3 ☐ | P-Total ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Sulfide (SH) ☐ | Total Sulphur (S) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BOD5 ☐ | COD ☐ | Turbidity ☐ | TOC ☐ | RDS ☐ | RMD ☐ | CUM ☐ | ART. 11 ☐ | ART. 19 ☐ | Potable Water: ORG. ☐ | INOR. ☐ | THM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive ☐ | EPA 8260 ☐ | EPA 8095 ☐ | Other (specify): ☐

* LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 2/14	Time: 1807	Received by:
Relinquished by:	Date:	Time:	Received by:

Number of coolers: 2 Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks:
ICE-4/5
SLMC-NO

KEENVCOCFORM0E - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

2014/03/07 14:26

Mario Fraser MARIO FRASER 2014/03/05 08:10

Maxxam Analytique

Sample Analysis and Chain of Custody Record

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www.maxxamanalytics.com

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as Page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: _____ Project / Site: _____

Quotation No.: _____ Project No.: E14103172-01

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	PH (Cn-Cn)	O & G Min.	O & G Tot.	VOC (EPA 624)	BTEX	MAH	Phenols (GC/MS)	Phenols (Colorc)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (ICP regulation - 13 ele.-sol)**	16 ele. water***	Mercury	Selenium-soil	Others:	F	Cl	SO4	NO3	NO2 + NO3	TKN	NH3	P-Tot.	pH	Conductivity	TSS	Sulfide (SH-)	Total Sulphur (S)	Tot.-CN	Ox.-CN	Free CN	BODs	COD	Turbidity	TOC	RDS	RMD	CUM. ART. 10	ART. 11	Potable Water: ORG.	INOR.	THM	COLIF (Fec.)	COLIF (Tot.)	TOTAL-PC	Explosive	EPA 8330	Other (specify):	CN TOTAL	CN WAD	pH
BH-37 (40-70)	X			Mar 2/14		1																																														X	X	
BH-37 (70-109)	↓			↓		1																																														X	X	
BH-38 (0-29)						1																																														X	X	
BH-39 (300-350)						1																																														X	X	
BH-39 (400-450)						1																																														X	X	
BH-40 (400-450)						1																																														X	X	
BH-40 (550-645)						1																																														X	X	
BH-41 (300-350)						1																																														X	X	
BH-41 (400-450)						1																																														X	X	
BH-42 (300-350)	↓			↓		1																																														X	X	

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hensley Tyrel Hensley	Date: Mar 2/14	Time: 1807	Received by:
Relinquished by:	Date:	Time:	Received by:

Number of coolers: 2 Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks: ICE-YES SEAL-NO

KEENVCOCFORM08 - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

2014/03/07 14:26

Maria Fraska MARIA FRASKA 2014/03/05 08:10

Votre # de commande: OP-310962-J
Votre # du projet: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Date du rapport: 2014/03/12
 # Rapport: R1838755
Version: 1

CERTIFICAT D'ANALYSES

 # DE DOSSIER MAXXAM: B412113
Reçu: 2014/03/10, 08:00

Matrice: SOL
Nombre d'échantillons reçus: 28

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Référence Primaire
Cyanures disponibles*	28	2014/03/10	2014/03/12	STL SOP-00035	MA. 300 - CN 1.2
Cyanures Totaux*	28	2014/03/10	2014/03/11	STL SOP-00035	MA. 300 - CN 1.2

Notez: Les données brutes sont utilisées pour le calcul du RPD (% d'écart relatif). L'arrondissement des résultats finaux peut expliquer la variation apparente.

* Maxxam détient l'accréditation pour cette analyse selon le programme du MDDEFP.

clé de cryptage

Veuillez adresser toute question concernant ce certificat d'analyse à votre chargé(e) de projets

Rita Kurdoghlanian, Chargée de projets
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

Ce rapport a été produit et distribué en utilisant une procédure automatisée sécuritaire.
Maxxam a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à la section 5.10.2 de la norme ISO/CEI 17025:2005(E). Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71668	X71669	X71670	X71671	X71671		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-43 (0-40)**	**BH-43 (70-100)**	**BH-43 (100-121)**	**BH-44 (40-70)**	**BH-44 (40-70) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	41	6.9	9.9	9.9	9.9	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.6	0.6	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71672	X71673	X71674	X71675		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-44 (70-94)**	**BH-45 (40-52)**	**BH-46 (40-70)**	**BH-46 (100-139)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	6.4	16	7.6	5.6	N/A	N/A
CONVENTIONNELS										
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71676		X71677	X71678	X71679		
Date d'échantillonnage					2014/03/03		2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-47 (0-41)**	**LDR**	**BH-48 (40-70)**	**BH-48 (100-140)**	**BH-49 (40-70)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	19	N/A	9.4	7.3	6.0	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	**4**	1	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71680	X71681	X71682	X71683	X71683		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-49 (70-100)**	**BH-50 (0-40)**	**BH-50 (70-100)**	**BH-50 (100-133)**	**BH-50 (100-133) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	5.5	19	7.7	6.3	6.3	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71684	X71685	X71686	X71687	X71688		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/04		
	UNITÉS	**A**	**B**	**C**	**BH-51 (0-40)**	**BH-51 (70-100)**	**BH-51 (100-133)**	**BH-52 (300-350)**	**MW-01 (400-450)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	22	9.0	4.4	0.3	2.2	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71689	X71690	X71691	X71692	X71693		
Date d'échantillonnage					2014/03/04	2014/03/05	2014/03/05	2014/03/05	2014/03/05		
	UNITÉS	**A**	**B**	**C**	**MW-03 (400-450)**	**MW-04 (70-91)**	**MW-05 (70-100)**	**MW-06 (70-122)**	**MW-07 (40-70)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	2.4	7.6	8.4	8.0	16	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71694	X71695	X71695		
Date d'échantillonnage					2014/03/05	2014/03/05	2014/03/05		
	UNITÉS	**A**	**B**	**C**	**MW-08 (40-70)**	**MW-08 (70-100)**	**MW-08 (70-100) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	9.1	6.2	6.2	N/A	N/A
CONVENTIONNELS									
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

REMARQUES GÉNÉRALES

État des échantillons à l'arrivée: BON

Tous les résultats sont calculés sur une base sèche excepté lorsque non-applicable.

A,B,C: Ces critères proviennent de l'Annexe 2 de la « Politique de protection des sols et de réhabilitation des terrains contaminés ». Pour les analyses de métaux(et métalloides) dans les sols, le critère A désigne la « Teneur de fond Secteur Basses-Terres du Saint-Laurent ».
A,B-eau souterraine: A=Critère pour fin de consommation; B=Critère pour la résurgence dans les eaux de surface ou infiltration dans les égouts.
Ces références ne sont rapportées qu'à titre indicatif et ne doivent être interprétées dans aucun autre contexte.

- = Ce composé ne fait pas parti de la réglementation.

PARAMÈTRES CONVENTIONNELS (SOL)

Veuillez noter que les résultats n'ont pas été corrigés ni pour la récupération des échantillons de contrôle qualité, ni pour le blanc de méthode.
Les limites de détections indiquées sont multipliées par les facteurs de dilution utilisés pour l'analyse des échantillons.

Les résultats ne se rapportent qu'aux échantillons soumis pour analyse

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Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Votre # du projet: E14103172-01
P.O. #: OP-310962-J
Adresse du site:

Rapport Assurance Qualité

Dossier Maxxam: B412113

Lot Num	Lot Init	Type CQ	Groupe	Date Analysé aaaa/mm/jj	Valeur	Réc	UNITÉS
1279232	DB2	MRC	Cyanures Totaux	2014/03/11		96	%
		Blanc fortifié	Cyanures Totaux	2014/03/11		109	%
		Blanc de méthode	Cyanures Totaux	2014/03/11	<0.5		mg/kg
1279273	CC6	Blanc fortifié	Cyanures disponibles (CN-)	2014/03/12		109	%
		Blanc de méthode	Cyanures disponibles (CN-)	2014/03/12	<0.5		mg/kg

MRC: Un échantillon de concentration connue préparé dans des conditions rigoureuses par un organisme externe. Utilisé pour vérifier la justesse de la méthode.
Blanc fortifié: Un blanc, d'une matrice exempte de contaminants, auquel a été ajouté une quantité connue d'analyte provenant généralement d'une deuxième source. Utilisé pour évaluer la précision de la méthode.
Blanc de méthode: Une partie aliquote de matrice pure soumise au même processus analytique que les échantillons, du prétraitement au dosage. Sert à évaluer toutes contaminations du laboratoire.
Réc = Récupération

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Page des signatures de validation

Dossier Maxxam: B412113

Les résultats analytiques ainsi que les données de contrôle-qualité contenus dans ce rapport furent vérifiés et validés par les personnes suivantes:

Delia Barbul, B.Sc., Chimiste

==========

Maxxam a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à la section 5.10.2 de la norme ISO/CEI 17025:2005(E). Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Analytique

☒ 889 Montée de Liesse, Ville St-Laurent, Québec H4T 1P
☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4
☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4

10-Mar-14 08:00
Alain Lemieux
B412113
ICB MTL-0084

Analysis and Chain of Custody Record

: 1-877-4MA-XXAM (462-9926) Page 1 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadow Creek	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda J0Y 1C0	Address:
Contact Name: Kevin Bach	Contact Name:
Telephone: 819.759.3555 x6838	Telephone:
Fax: 819.759.3613	Fax:
Sampler: Tyrel / Tom / Martin	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:
Quotation No.: Project No.: E14103172-01

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	Other (specify):		
BH-43 (0-40)	X			Mar. 3/14		1	X	CN Total	
BH-43 (70-100)						1	X	CN WAD	
BH-43 (100-121)						1	X	X	
BH-44 (40-70)						1	X	X	
BH-44 (70-94)						1	X	X	
BH-45 (40-52)						1	X	X	
BH-46 (40-70)						1	X	X	
BH-46 (100-139)						1	X	X	
BH-47 (0-41)						1	X	X	
BH-48 (40-70)	V			V		1	X	X	

PH [Cn-Cc] ☐ | O & G Tot. ☐ | O & G Min. ☐ | VOC (EPA 624) ☐ | BTEX ☐ | MAH ☐ | Phenols (GC/MS) ☐ | Phenols (Colour) ☐ | PAH | PCB (Congeners) (GC-MS) | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) | 16 ele. water*** ☐ | Metals (ICP regulation - 13 ele.-soil** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: | F ☐ | Cl ☐ | SO4 ☐ | NO2 ☐ | NO3 ☐ | NO3 + NO2 ☐ | TKN ☐ | NH3 ☐ | P-Tot. ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Sulfide (S2-) ☐ | Total Sulphur (S) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BOD5 ☐ | COD ☐ | Turbidity ☐ | TOC ☐ | RBS ☐ | RMD ☐ | CUM ☐ | AST. 10 ☐ | AST. 11 ☐ | Potable Water ☐ | INOR. ☐ | ORG. ☐ | TKM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive ☐ | EPA 6005 ☐ | EPA 8330 ☐

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☐ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:
ICE NO
seal NO

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 5/14	Time: 1824	Received by:
Relinquished by:	Date: 2014/03/10	Time: 08:00	Received by: CATALINA BORGEA
Number of coolers: 2	Temperature upon reception:		2° 2° 2° 1° 1° 1°
Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):			

Remarks:

KEENVCOCFORM0E - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique

☒ 889 Montée de Liesse, Ville St-Laurent, Québec H4T 1P5 Telephone: (514) 448-9001 Fax: (514) 448-9199 Toll Free: 1-877-4MA-XXAM (462-9926)
☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4 Telephone: (418) 658-5784 Fax: (418) 658-6594
☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4 Telephone: (418) 543-3788 Fax: (418) 543-8994
www.maxxamanalytics.com

Sample Analysis and Chain of Custody Record

Page 2 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.:
Quotation No.:
Project / Site:
Project No.: E14031 72-01

Sample Identification (sampling point)	Sample: Soil	Water Type	Other	Sampling (date / time)	To be filtered	Number of samples	PH (C10-C50)	O & G Min. / O & G Tot.	VOC (EPA 624) / BTEX / MAH	Phenols (GC/MS) / Phenols (Colour)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (ICP regulation - 13 ele.-soil** / 16 ele. water***)	Mercury / Selenium-soil / Others:	F / Cl / SO4 / NO2 / NO3 / NO2 + NO3	TKN / NH3 / P-Tot.	pH / Conductivity / TSS	Sulfide (SH2) / Total Sulphur (S)	Tot.-CN / Ox.-CN / Free CN	BOD5 / COD / Turbidity / TOC	RDS / RMD	CUM ART. 10 / ART. 11	Potable Water: ORG. / INOR. / THM	COLIF (Fec.) / COLIF (Tot.) / TOTAL-PC	Explosive EPA 8095 / EPA 8330	Other (specify):	CNTOTAL	CNWAD
BH-48 (100-140)	X			Mar. 3/14		1																						X	X
BH-49 (40-70)						1																						X	X
BH-49 (70-100)						1																						X	X
BH-50 (0-40)						1																						X	X
BH-50 (70-100)						1																						X	X
BH-50 (100-133)						1																						X	X
BH-51 (0-40)						1																						X	X
BH-51 (70-100)						1																						X	X
BH-51 (100-133)						1																						X	X
BH-52 (300-350)						1																						X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: ______ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: ______

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: ICE NO
Seal NO

Chain of Custody

Relinquished by: Tyrel Hensley Tyrel Hensley	Date: Mar 5/14	Time: 1824	Received by:
Relinquished by:	Date: 2014/03/10	Time: 08:00	Received by: CATALINA BORGEA

Remarks:

Number of coolers: 2

Temperature upon reception: 2° 2° 2° / 1° 1° 1°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

KEENVCOCFORMDE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique

Sample Analysis and Chain of Custody Record

Page 3 of 3

E-

[X] 889 Montée de Liesse, Ville St-Laurent, Québec H4T 1P5 Telephone: (514) 448-9001 Fax: (514) 448-9199 Toll Free: 1-877-4MA-XXAM (462-9926)
[ ] 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4 Telephone: (418) 658-5784 Fax: (418) 658-6594
[ ] 737 boul. Barette, Chicoutimi, Québec G7J 4C4 Telephone: (418) 543-3788 Fax: (418) 543-8994
www.maxxamanalytics.com

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as	Address: Page 1
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.:
Quotation No.:
Project / Site:
Project No.: E14(03172-01

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Analysis columns: PH (Cx-Cn); O & G Min. / O & G Tot.; VOC (EPA 624) / BTEX / MAH; Phenols (GC/MS) / Phenols (Color); PAH; PCB (Congeners) (GC-MS); Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn); Metals ICP regulation - 13 elt.-soil** / 16 elt. water***; Mercury / Selenium-soil / Others:; F / Cl / SO4 / NO2 / NO3 / NO2 + NO3; TKN / NH3 / P-Tot.; pH / Conductivity / TSS; Sulfide (SH2) / Total Sulphur (S); Tot.-CN / Or.-CN / Free CN; BOD5 / COD / Turbidity / TOC; RDS / RMD; CUM ART. 10 / ART. 11; Potable Water: ORG. / INOR. / THM; COLIF (Fec.) / COLIF (Tot.) / TOTAL-PC; Explosive EPA 8095 / EPA 8330; Other (specify): CN Total; CN WAD

Sample Identification (sampling point)	Soil	Water Type	Other	Sampling (date / time)	To be filtered	Number of samples	CN Total	CN WAD
MW-01 (400-450)	X			Mar 4/14		1	X	X
MW-03 (400-450)	↓			↓		1	X	X
MW-04 (70-91)	↓			Mar. 5/14		1	X	X
MW-05 (70-100)	↓			↓		1	X	X
MW-06 (70-122)	↓			↓		1	X	X
MW-07 (40-70)	↓			↓		1	X	X
MW-08 (40-70)	↓			↓		1	X	X
MW-08 (70-100)	↓			↓		1	X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: ________ (To complete)

Turnaround Time: [X] 24h [ ] 48h [ ] 72h [ ] Regular [ ] Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: Seal NO / Ice NO

Chain of Custody

Relinquished by: Tyrel Hensley Tyrel Hensley Date: Mar. 5/14 Time: 1824 Received by:

Relinquished by: Date: 2014/03/10 Time: 08:00 Received by: CATALINA BORGEA

Number of coolers: 2 Temperature upon reception: 2° 2° 2° / 1° 1° 1°

Remarks:

Sample Transport: [ ] By Client [ ] MAXXAM Personnel [X] Courier (Specify):

KEENVCOCFORMOE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32662

Sampling location: BH-11
Sampling date: February 22, 2014

Sample name: BH-11
Sampling hour: N/D

Sampled by: Tom Thomson / Tyrel
Date received: February 26, 2014

Matrix: Water

Drinking water distribution:

Reported on: February 28, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Total Cyanide (CNt)	1.76 mg/L	M-CN-1.0	February 26, 2014
Cyanide W.A.D.	1.48 mg/L	Sous-traitance\Multilab Direct	February 26, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32662

Sample name: BH-11 | Sampling date: February 22, 2014

Sampling location: BH-11 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0800
	Accuracy	98.2%
	Limit	0.0693 - 0.0937

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

There was no bottle for the analysis of pH.

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32663

Sampling location:	BH-22	Sampling date:	February 23, 2014
Sample name:	BH-22	Sampling hour:	N/D
Sampled by:	Tom Thomson / Tyrel	Date received:	February 26, 2014
Matrix:	Water		

Drinking water distribution:

Reported on: February 28, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Total Cyanide (CNt)	24.59 mg/L	M-CN-1.0	February 26, 2014
Cyanide W.A.D.	10.6 mg/L	Sous-traitance\Multilab Direct	February 26, 2014

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32663

Sample name: BH-22 | Sampling date: February 23, 2014

Sampling location: BH-22 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0800
	Accuracy	98.2%
	Limit	0.0693 - 0.0937

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

There was no bottle for the analysis of pH.

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stephane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32758

Sampling location: BH-47
Sampling date: March 03, 2014

Sample name: BH-47
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 07, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 10, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32758

Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.101 mg/L	Sous-traitance\Multilab Direct	March 07, 2014
Total Cyanide (CNt)	1.05 mg/L	M-CN-1.0	March 07, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32758

Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32758

Sample name: BH-47 | Sampling date: March 03, 2014

Sampling location: BH-47 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0820
	Accuracy	99.4%
	Limit	0.0693 - 0.0937

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32758
Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

APPENDIX B
BOREHOLE NOTES AND MONITORING WELL LOGS

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-01
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW01	Depth (ft)
0	FILL - grey, frozen to 1.90 metres						0
1							5
2							
3							10
4							
5	BEDROCK						15
	END OF BOREHOLE (5.23 metres) Monitoring well installed to 5.23 metres						
6							20
7							
7.5							25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 5.23 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-02
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW02	Depth (ft)
0	FILL - frozen to 2.40 metres					0
1						5
2						
3						10
	- water at installation					
4						
5						15
6						20
	BEDROCK					
7	END OF BOREHOLE (6.50 metres) slough - 5.43 metres at 0 hrs. Monitoring well installed to 5.43 metres					
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 6.5 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-03
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW03	Depth (ft)
0	FILL - grey, frozen to 2.70 metres						0
1							5
2							
3							10
4							
5							15
	BEDROCK						
	END OF BOREHOLE (5.29 metres) Monitoring well installed to 5.29 metres						
6							20
7							
7.5							25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 5.29 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-04
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID; 20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW04	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1	BEDROCK					5
	END OF BOREHOLE (1.03 metres) Monitoring well installed to 1.03 metres					10
2						
3						15
4						
5						20
6						
7						25
7.5						

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.03 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-05
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID; 20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW05	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.32 metres) Monitoring well installed to 1.32 metres					
2						
3						10
4						
5						15
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.32 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-06
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) / UNC. COMPRESSIVE STRENGTH (kPa) / POCKET PEN. (kPa)	MW'06	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.36 metres) Monitoring well installed to 1.36 metres					
2						
3						10
4						
5						15
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.36 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-07
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW07	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen						0
1							5
	BEDROCK						
	END OF BOREHOLE (1.62 metres) Monitoring well installed to 1.62 metres						
2							
3							10
4							
							15
5							
6							20
7							
7.5							25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.63 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-08
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID; 20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW08	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.33 metres) Monitoring well installed to 1.33 metres					
2						
3						10
4						
						15
5						
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.33 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

APPENDIX C
INTERCEPTION TRENCH AS-BUILT DRAWINGS

Site Service building

Wing 12

Wing 7

Assay lab

First containment

Freshwater pipe

Interception trench

Electric cable

Collection point

BH-01 BH-02 BH-03 BH-04 BH-05 BH-06 BH-07 BH-08 BH-09 BH-10 BH-11 BH-12 BH-17 BH-18 BH-19 BH-20 BH-21 BH-22 BH-23 BH-24 BH-25 BH-26 BH-31 BH-32 BH-33 BH-34 BH-36 BH-37 BH-38 BH-39 BH-40 BH-41 BH-43 BH-44 BH-45 BH-46 BH-47 BH-48 BH-49 BH-50 BH-51 BH-52

MW-01 MW-02 MW-03 MW-04 MW-05 MW-06 MW-07

Seep-1 Seep-2 Seep-3

A A' B B' C C' D D'

LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE

REV	DESCRIPTION	DATE	BY

REVISIONS

AGNICO EAGLE MEADOWBANK

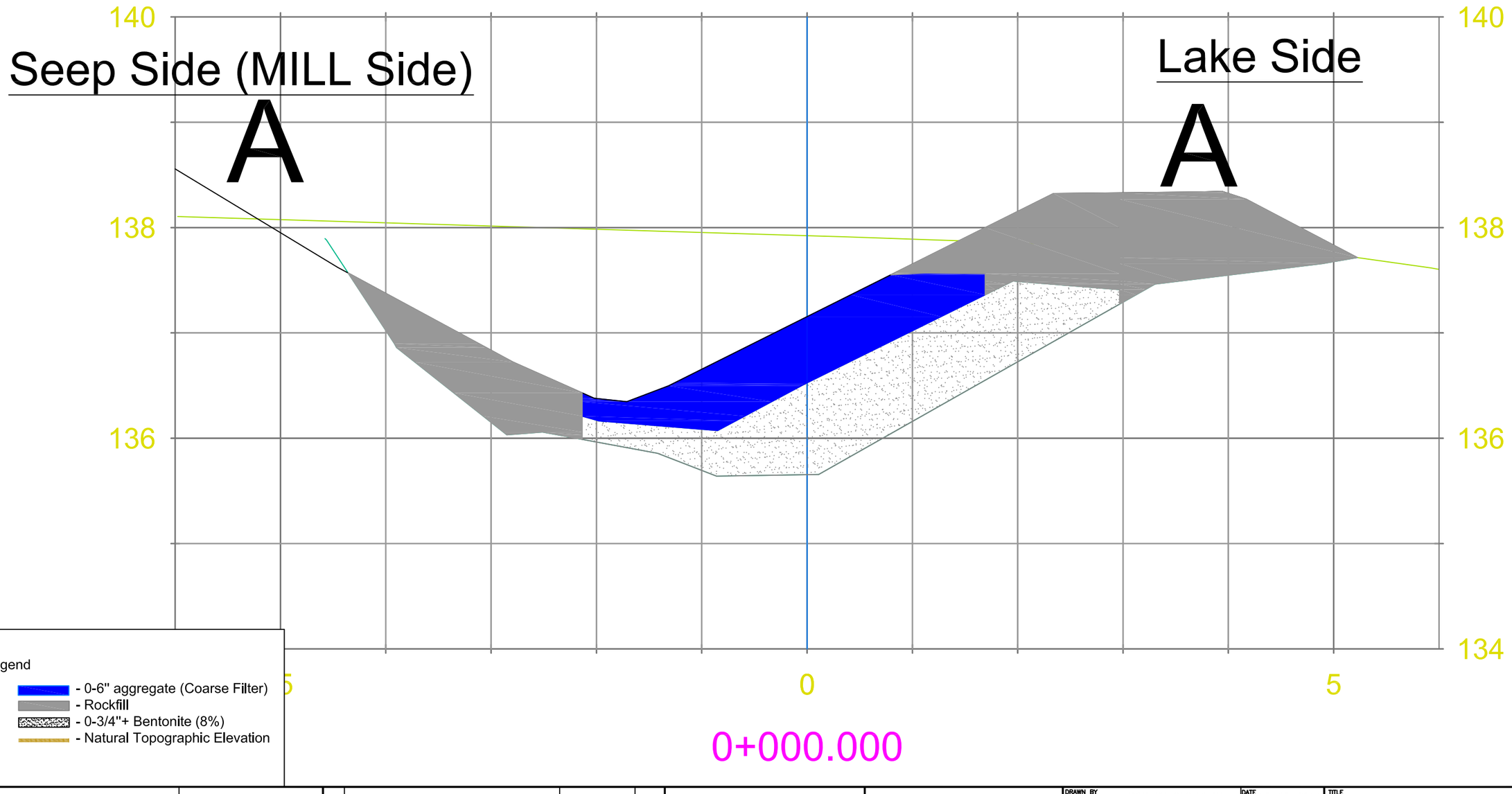
DRAWN BY	ROBERT CLOUATRE	DATE	15–05–2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
PLAN VIEW

SCALE	FILE
N.T.S.	.DWG

DRAWING NO.	REVISION	SHEET
		7 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014



TITLE	# DWG	REV	DESCRIPTION	DATE	BY
REFERENCE DRAWINGS		REVISIONS			

AGNICO EAGLE
MEADOWBANK

DRAWN BY	ROBERT CLOUATRE
DATE	15-05-2014
CHECKED BY	
APPROVED BY	
PROJECT NO.	
DATE	

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION A–A'

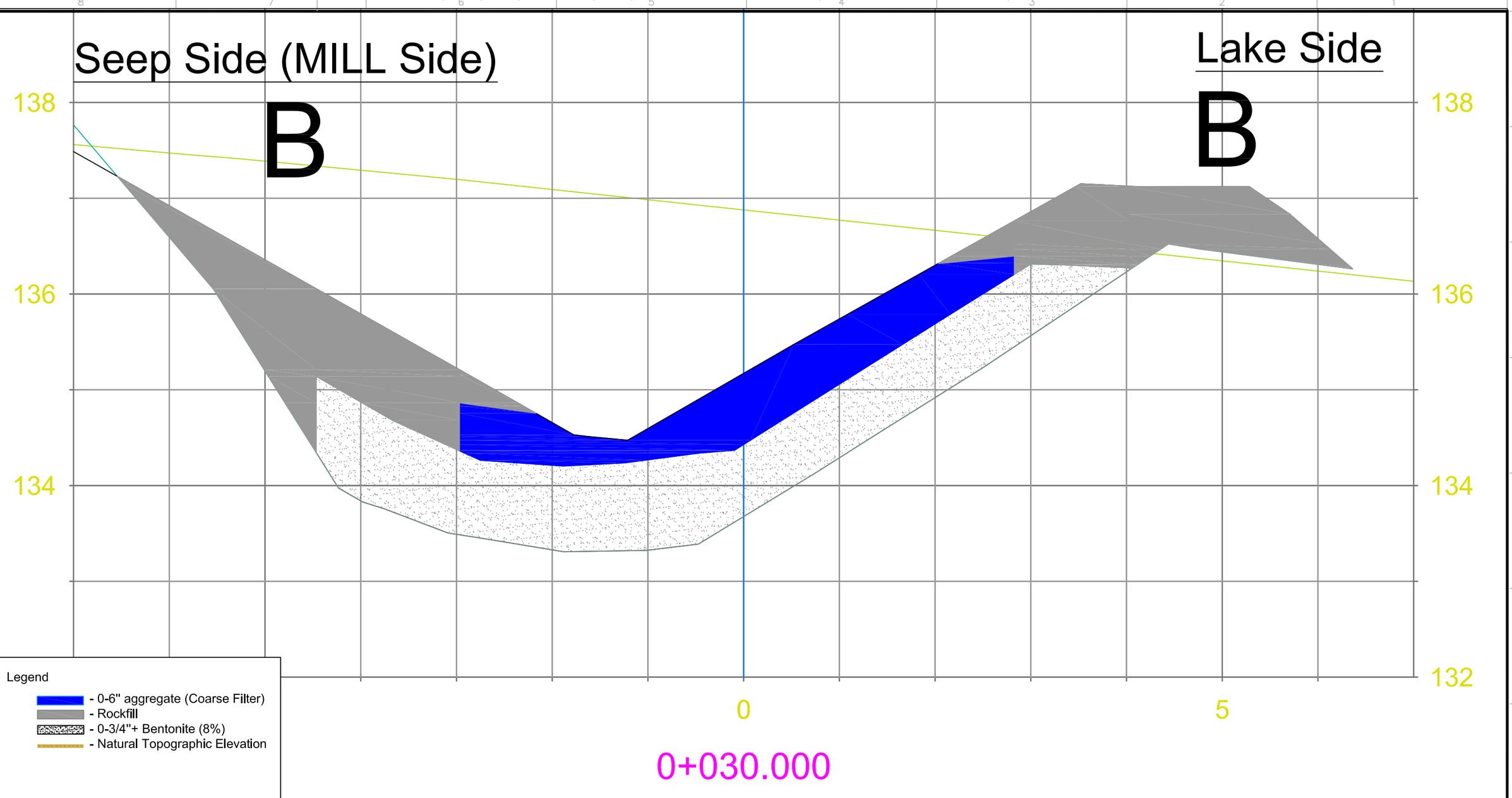
SCALE	FILE	DRAWING NO.	REVISION	SHEET
N.T.S.	.DWG			2 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

FORMAT ANSI B – LANDSCAPE

Seep Side (MILL Side)

Lake Side



TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

DRAWN BY	ROBERT CLOUATRE	DATE	15-05-2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION B–B'

SCALE	FILE	REVISION	SHEET
N.T.S.	.DWG		3 / 7

DRAWING NO.

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

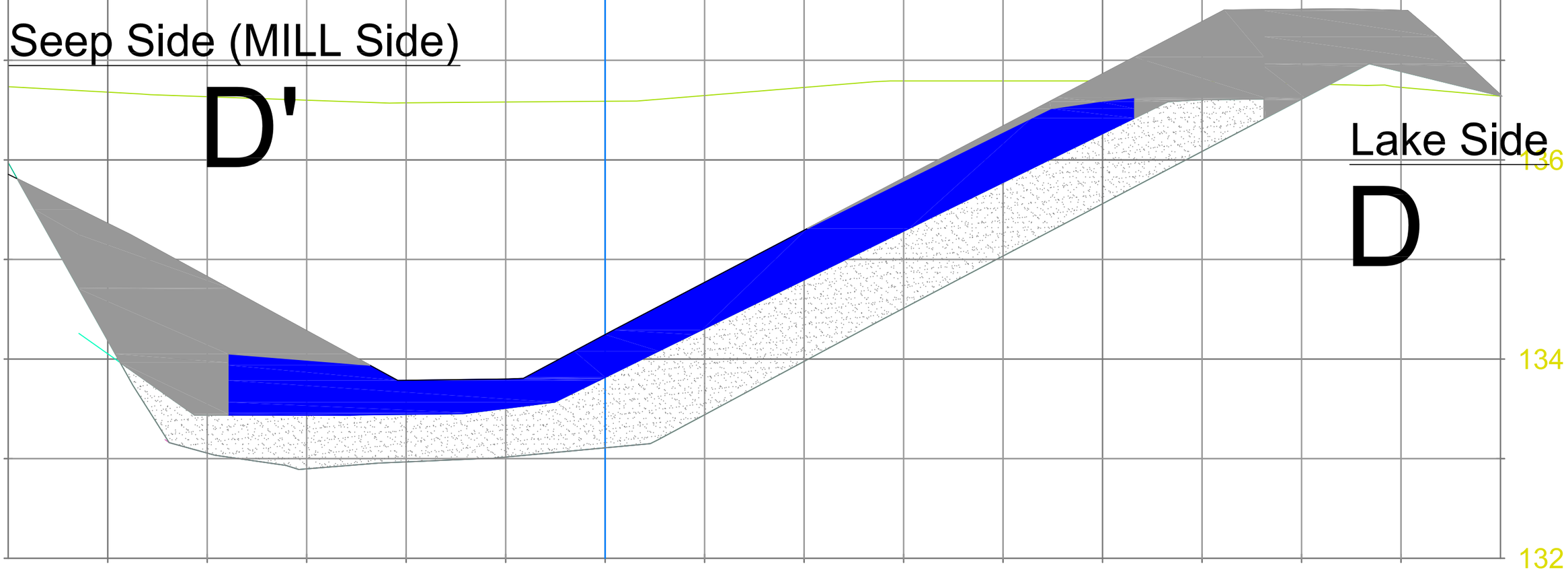
FORMAT ANSI B – LANDSCAPE

Seep Side (MILL Side)

D'

Lake Side

D



0+070.000

Legend

- 0-6" aggregate (Coarse Filter)
- Rockfill
- 0-3/4"+ Bentonite (8%)
- Natural Topographic Elevation

TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

DRAWN BY	ROBERT CLOUATRE	DATE	15-05-2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION D–D'

SCALE	FILE
N.T.S.	.DWG

DRAWING NO.	REVISION	SHEET
		5 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

APPENDIX D
JOB HAZARD ANALYSIS

AGNICO EAGLE
MEADOWBANK

JOB HAZARD ANALYSIS WORKSHEET

Form

DRAFT Rev 0

FACILITY / SITE:	Meadowbank	**DATE:**	09-02-2014
DEPARTMENT:	ENG/ENV/MINE/SITE SERVICE/ ELEC	**REVIEW DATE(S):**	As needed
JOB BEING ANALYSED:	Drilling Investigation – Assay Road Leakage	**TEAM LEADER:**	Tom Thomson/ Ryan VanEngen/ Jeff Pratt

Step	Describe Job Steps	Hazards/Potential Incidents	Risk Control Methods Required
	List the natural steps of the job (not too broad and not too fine)	*What can happen at each step? Can an employee be struck by/caught on/contacted by/struck against/contact with/caught between?*	*Describe how hazards will be managed or removed. Consider elimination/substitution, engineering controls, administrative controls, personal protective equipment.*
1	Check the bootlegs before stake out of the holes.	1.1 Hit an old drilled hole.	1.1 Surveyor will validate the position of the holes to be drilled to ensure that there are no old holes in the vicinity of them. If yes, the regulation 14.52 of the mine act should then be apply (No drilling to be conducted within 1 m. of a bootleg)
2	Remove snow from drill locations.	2.1 Get equipment stuck, in deep snow 2.2 Slip, trips, and Falls in deep snow.	2.1 Site Services will remove snow a day or two prior to the drill program along mill, leach pad and tundra locations. 2.2 ensure stable footing and use proper ppe
3	Close the Road.	3.1 Equipment going through the road while drilling. 3.2 Access for emergency vehicles in assay lab and mill	3.1 Site service will close the road before staking out the holes. Site service will send an e-mail to all Meadowbank about the closure of the road. 3.2 Pick up trucks w keys will be placed and red-tap will be installed to indicate road closure.
4	Stake out the holes and electrical cables (surveyor)	4.1 Slips Trips and Falls 4.2 Weather – dress accordingly and take necessary breaks to warm up	4.1 Watch footing. 4.2 See Cold weather Manual.
5	Power off on electrical cable close to the drilling area	5.1 **Electrocution - death**	5.1 Power will be shut-off by electrical group and the **Driller will lockout the power supply before drilling.** *NOTE: If electrical group is unavailable to shut off power, drilling in the vicinity of power lines will

			not occur. Drilling in vicinity of electrical lines will be put off until February 24th. Electrical department is aware of the plan and will assist Environment on February 24th with power shut down
6	Drilling	6.1 Dust and potential exposure to CN gases and liquids 6.2 Electrical cables and building 6.3 Communication cable 6.4 Grounding cable 6.5 Noise 6.6 Working outside mill doors	6.1 Wear dust mask at all time when close to the drill (within 10 meters) and ensure multi gas vapour cartridges are used; wear Tyvek suits, nitrile gloves and goggles at all times; use mill decontamination area at all times; no eating or drinking while near the contamination site. Be sure to take your time and stay warm under cold conditions – use decontamination for warming up. Wash-up after work is complete. 6.2 Underground electrical cable to be stake-out by surveyor. Power cable to be power-off before drilling. Minimal distance between a hole and an electrical cable fix at 3 meters. Before starting drilling, the Environmental Technician in charge will have to wait for the confirmation from the electrical group that the power has been shut down and driller is locked out the power supply. **All work near electrical cable will be completed on February 24th** 6.3 Minimal distance between a hole and a communication cable fix at 3 meters. 6.4 Minimal distance between a hole and a grounding cable fix at 3 meters if possible but must be greater than 1.5 meters. 6.5 Wear hearing protection at all time when close

			to the drill (within 10 meters) 6.6 When drilling outside any of the access doors to the mill the inside of the man door or overhead door will need to be taped off with RED DANGER TAPE, so no one exits the door. This will be completed and coordinated with Mill employees.
7	Moving the drill in between each holes	7.1 Collision in between drill and Environment technician 7.2 Overhead collisions and drill mast balance issues	7.1 Always have a good communication between the driller and the Environment Technician when moving. Communication will be on Surface Channel 5 or with loud verbal communication. Environment technician should always be at a minimal distance of 10 meters of the drill when moving. 7.2 Ensure mast of drill is in a safe position while moving.
8	Environment technician drilling follow-up	8.1 Heavy equipment running (drill) that could injure the Environment Technician.	8.1 Always keep a minimal distance of 5 meters from the drill when drilling. Always have good communication between the driller and the Environment Technician when drilling. Communication will be on Surface Channel 5 or loud verbal communication.
9	Sample of water/cuttings (Environment Technician)	9.1 Heavy equipment running (drill) that could injure the Environment Technician. 9.2 DUST 9.3 CN gases or liquid contaminate exposure	9.1 The drill must stop any activity when the Environment Technician will perform his sampling. Always have a good communication between the driller and the Environment Technician when drilling. Communication will be on Channel 5. 9.2 Fine samples will contain dust that could potentially contain Asbestos, so a half mask must be worn when sampling.

			9.3 Use Tyvek suit at all times, nitrile gloves, goggles and face mask with multi gas vapour cartridges. Be sure to use decontamination area and wash up after work is completed.
10	Fill-up of the holes with steaming	10.1 Heavy equipment running (loader); 10.2 Lifting and digging with hand held shovel	10.1 A spotter should be there at all time when the loader will perform is job. The Road will remain closed at that time as well. 10.2 Use proper techniques for shoveling and stay within your means. If needed a loader could be made available around the mill. On the tundra, it is preferable to complete the filling by hand to avoid disturbing the tundra.
11	Turning power back after drilling near electrical cable is completed	11.1 Electrical hazard	11.1 Before putting the power back, the Environmental Technician in charge will advise the electrical group that the drilling is completed in the vicinity of the electrical cable. The driller will then remove lock from lock out.
12	Keep departments aware of drilling plan	12.1 Create a busy work area with too many groups working in one area. 12.2 Create a stop in production for mill if certain areas are blocked off and they cannot plan around it.	12.1 Relay work locations at morning management meeting to all departments. ~~12.2 Attend Mill morning meeting 7:15 a.m. in mill boardroom to relay the drill locations for the day.~~

AGNICO EAGLE
MEADOWBANK

JOB HAZARD ANALYSIS WORKSHEET

Form

DRAFT Rev 0

Permits Required (check all that apply)

LOTO:	X	Confined Space	
Hot work		Pre Excavation	Review Drilling pattern and follow it. Meet with Mill and Electrical department.
Electrical Work		Lift Permit	

PPE (check all that apply)

Safety Glasses	X	Safety Boots	
Hardhat	X	Face shield	
Gloves	X	Welding helmet	
Kevlar Gloves		Earplugs X	
Chemical gloves		Ear muffs	
Apron		Chemical clothing	Tyvek suits
Goggles		Respirator X	Half mask respirator with P100 filters if exposed to dust. 6000 3m multigas and 5000s

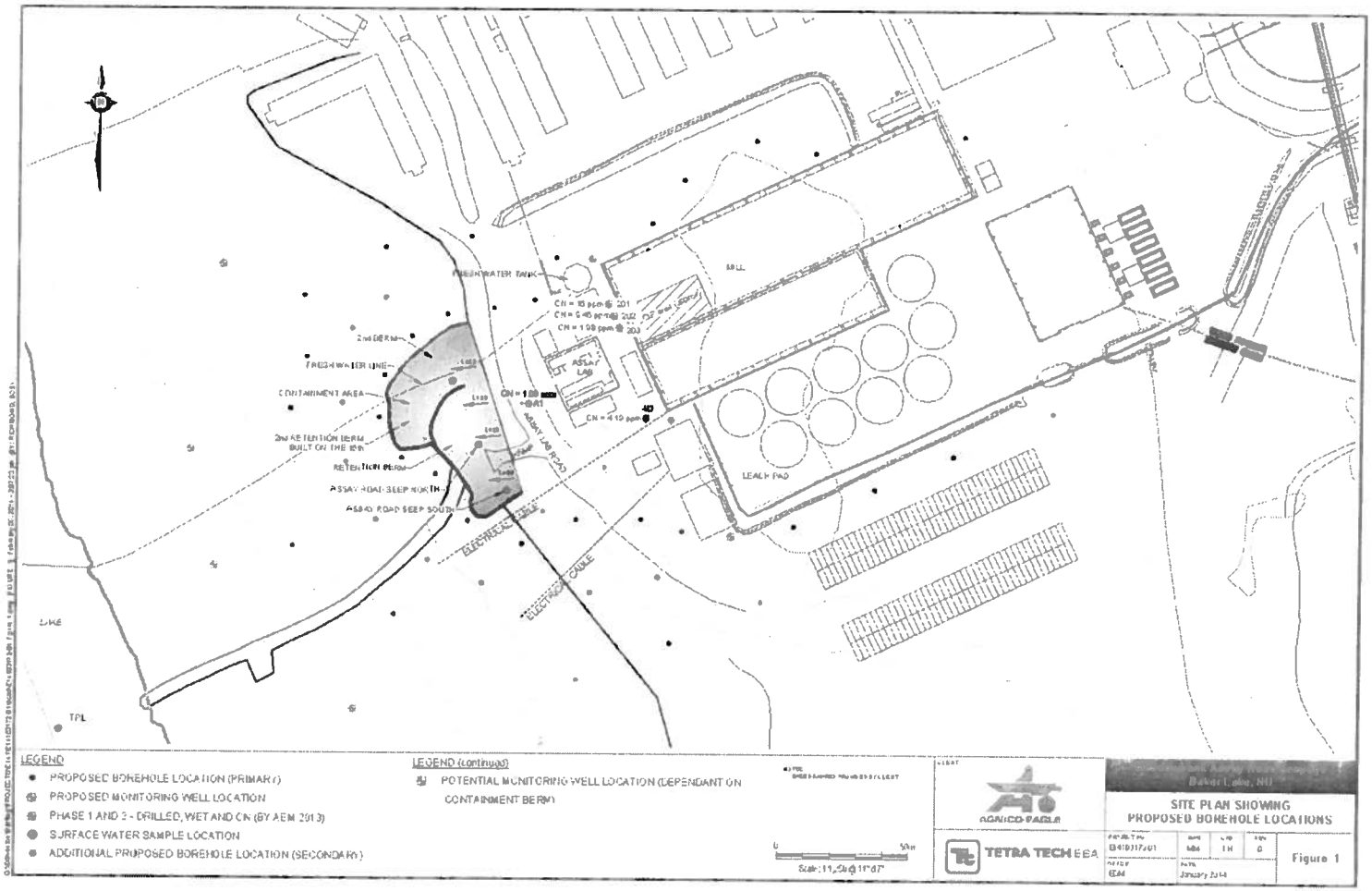
Emergency Information :

Evacuation Route:	
Evacuation Signal:	Fire alarm or While on channel 5 switch to Channel 3 "Code 1, Code 1, Code 1"
Assembly Point:	Arctic corridor
Location of Eyewash/shower:	
Emergency phone number:	6911
First aid location:	Medical Center

Note: LOTO acronym for Lock out tag out

Team Member	Tom Thomson	Signature	
Team Member	Tyrel Hemsley	Signature	Tyrel Hemsley Feb 21/14
Team Member	Jon Oliver	Signature	
Team Member	STEPHEN POTVIN	Signature	
Team Member	DOUGLAS PICARD	Signature	
Team Member	Martin Thériault Médérick Gagnon	Signature	

Team Member		Signature	
Supervisor	RYAN VANENGEN	Signature	
H&S Coordinator		Signature	
H&S Superintendent		Signature	



APPENDIX E
GROUND TEMPERATURE DATA

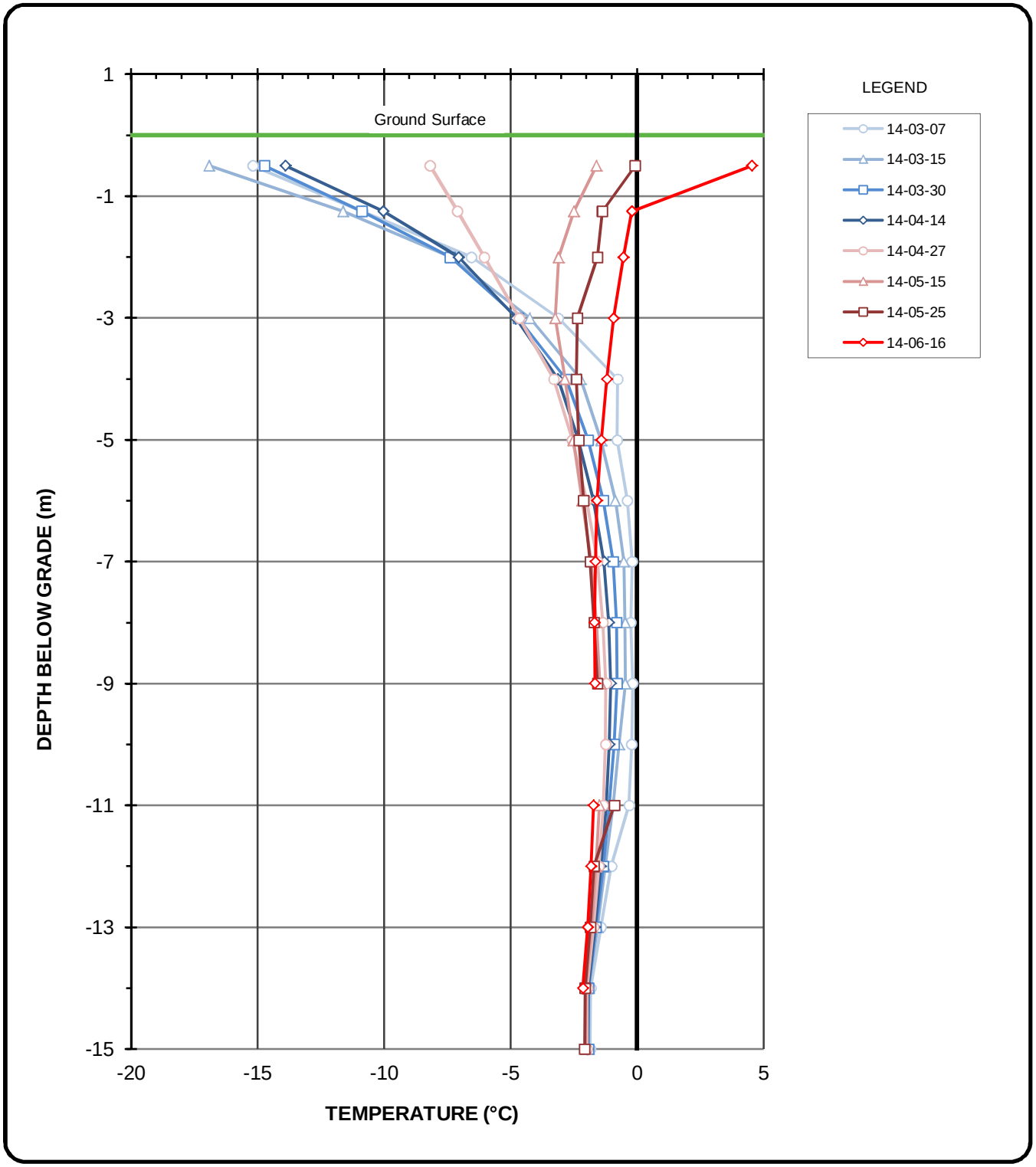
THERMISTOR STRING CALIBRATION

Project:	GTC Fabrication	Thermistor String No.:	2496
Project No.:	E14103172-01	Client String No.:	
Client:	Agnico-Eagle Mines Limited	Location of Installation:	
Attention:		Calibration Temp.:	0.02
Email:		Date of Calibration:	February 18, 2014

Depth of Thermistor (meters)	Colour of Wire	Plug Letter	Calibration Resistance (kΩ)			Temperature (ºC)	Calibration Factor (ºC)
			Trial 1	Trial 2	Trial 3		
0.5	Black	A	16.31	16.32	16.32	0.00	0.02
1.25	Purple	B	16.29	16.30	16.30	0.03	-0.01
2.0	Tan	C	16.32	16.32	16.32	0.00	0.02
3.0	Grey	D	16.33	16.34	16.34	-0.02	0.04
4.0	Red	E	16.34	16.34	16.34	-0.02	0.04
5.0	Brown	F	16.34	16.35	16.35	-0.03	0.05
6.0	Pink	G	16.30	16.31	16.31	0.02	0.00
7.0	Blue	H	16.32	16.32	16.32	0.00	0.02
8.0	Green	J	16.29	16.30	16.30	0.03	-0.01
9.0	Yellow	K	16.37	16.38	16.38	-0.07	0.09
10.0	Silver	L	16.31	16.31	16.31	0.02	0.00
11.0	Orange	N	16.33	16.34	16.34	-0.02	0.04
12.0	Orange/White	P	16.31	16.32	16.32	0.00	0.02
13.0	Black/White	R	16.30	16.30	16.30	0.03	-0.01
14.0	Brown/White	S	16.30	16.31	16.31	0.02	0.00
15.0	Red/White	T	16.35	16.35	16.35	-0.03	0.05
	White	M					

Lead Length: 1.5m

Carrier:		Date Shipped:	
W/B Number:		Shipped by:	


Ground Surface
DEPTH BELOW GRADE (m)
TEMPERATURE (°C)
1
-1
-3
-5
-7
-9
-11
-13
-15
-20
-15
-10
-5
0
5
LEGEND
14-03-07
14-03-15
14-03-30
14-04-14
14-04-27
14-05-15
14-05-25
14-06-16

APPENDIX F

CONSTANT HEAD PERMEABILITY TEST RESULTS, 20 MM CRUSHED AGGREGATE/8% BENTONITE

CONSTANT HEAD HYDRAULIC CONDUCTIVITY TEST REPORT

ASTM D5084

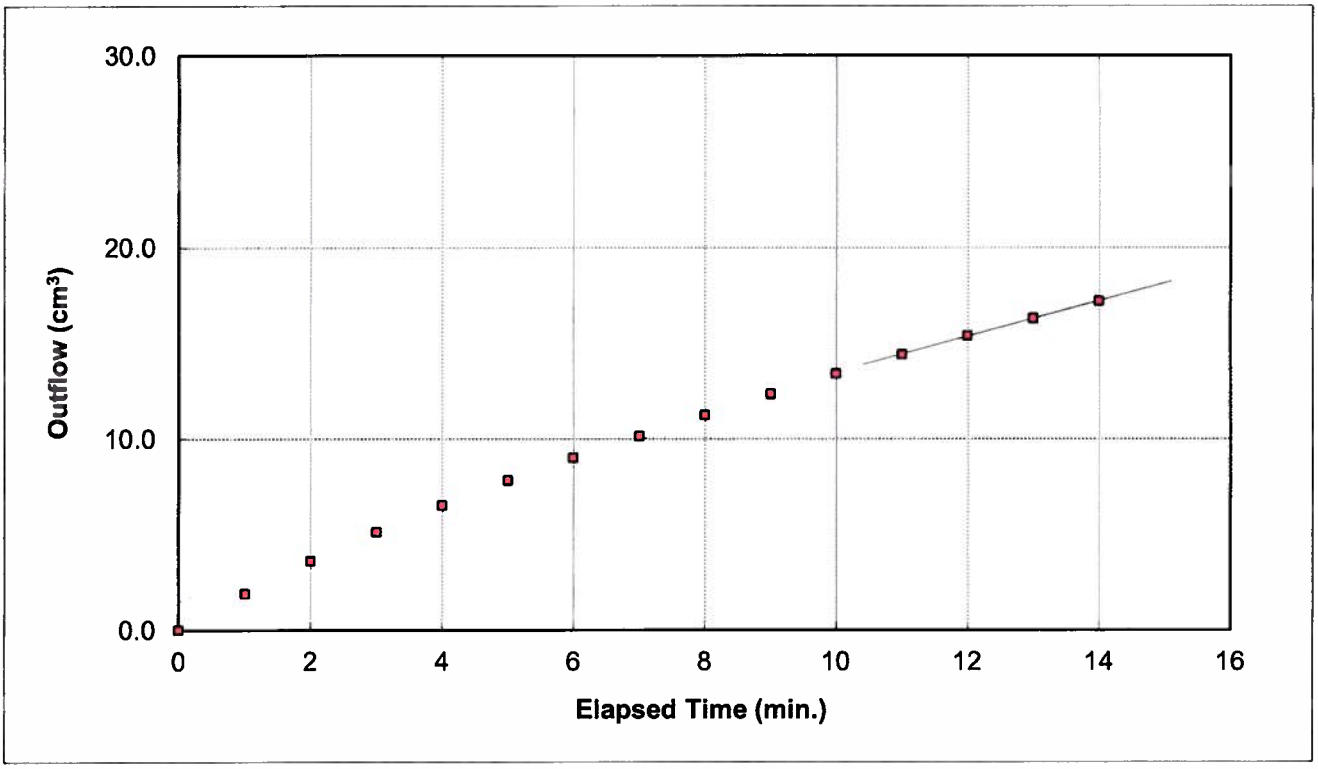
Project:	Assay Road Seepage Trench	Test No.:	P-1
Project No.:	E14103172-01.003	Sample No.:	1
Client:	Agnico-Eagle Mines Ltd.	Sample Depth:	
Attention:		Date Tested:	May 20, 2014
		Tested By:	SK

Soil Description: SAND & GRAVEL, 20 mm max., some silt with 8% bentonite

	Initial	Final
Moisture Content (%)	3.7	12.7
Dry Density (kg/m3)	1875	1875
Compaction SPD (if applicable)	NA	NA

Sample Height =	17.02	cm
Sample Diameter =	9.86	cm
Head Differential =	15	kPa
Flow Q =	0.016	cm^3/sec
Hydraulic Gradient i =	8.99	
Area of Sample A =	76.28	cm^2
Slope =	0.015	cm^3/sec

Hydraulic Conductivity k_{20} = **2.2E-05** **cm/sec**



Remarks: Sample remolded at moisture content as received

Reviewed By: Nafisul Islam P.Eng.

APPENDIX G

TETRA TECH EBA GENERAL TERMS AND CONDITIONS

GENERAL CONDITIONS

GEOTECHNICAL REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of Tetra Tech EBA’s Client. Tetra Tech EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than Tetra Tech EBA’s Client unless otherwise authorized in writing by Tetra Tech EBA. Any unauthorized use of the report is at the sole risk of the user.

2.0 ALTERNATE REPORT FORMAT

Where Tetra Tech EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed Tetra Tech EBA’s instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by Tetra Tech EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of Tetra Tech EBA’s instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Tetra Tech EBA. Tetra Tech EBA’s instruments of professional service will be used only and exactly as submitted by Tetra Tech EBA.

Electronic files submitted by Tetra Tech EBA have been prepared and submitted using specific software and hardware systems. Tetra Tech EBA makes no representation about the compatibility of these files with the Client’s current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, Tetra Tech EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

4.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. Tetra Tech EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

5.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

6.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. Tetra Tech EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

7.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

8.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

9.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

10.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

11.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

12.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

13.0 SAMPLES

Tetra Tech EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

14.0 INFORMATION PROVIDED TO TETRA TECH EBA BY OTHERS

During the performance of the work and the preparation of the report, Tetra Tech EBA may rely on information provided by persons other than the Client. While Tetra Tech EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, Tetra Tech EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

Appendix D

AGNICO EAGLE

August 15th, 2014

Ms. Heather Rasmussen
Monitoring Officer
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, Nunavut X0B 0C0
(867) 983-4606

Re: NIRB 03MN107: Comments Received for Agnico Eagle Mines Ltd.'s "Meadowbank Gold Project 2013 Annual Report

Dear Ms. Rasmussen,

The following information is provided in response to comments and recommendations made by Government of Nunavut, Aboriginal Affairs and Northern Development Canada, Environment Canada, Fisheries and Oceans Canada, Health Canada and Transport Canada June 9th, 2014, regarding the Meadowbank Gold Project 2013 Annual Report.

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,

Stéphane Robert
stephane.robert@agnicoeagle.com
819-763-0229
Manager Regulatory Affairs Nunavut

Ryan Vanengen MSc.
ryan.vanengen@agnicoeagle.com
819.651.2974
Environment Superintendent - interim

AGNICO EAGLE

Transport Canada (TC) Comments and Recommendations

1- **Appendix E1 Hazardous Waste Shipping Manifest Movement Document;**
The proponent is reminded of the requirements of the Transportation of Dangerous Goods (TDG) Regulations Part 3 Documentation. The information displayed on the Hazardous Waste Shipping Manifest Movement Documents does not comply with all the requirements of Part 3 of the TDG Regulations. TC TDG Prairie Northern Region will contact AEM to give recommendations for addressing the non-compliances.

In addition to hiring a qualified hazardous waste disposal contractor, AEM and our contractors transporting goods from Baker Lake to Meadowbank have undergone training in TDG in 2014. We look forward to having a discussion with TC TDG Prairie Northern Region and welcome feedback to ensure compliance with Part 3 of TDG Regulation for the next barge season.

2- **Appendix F1 Report: GN Spill Reports;**
The proponent is reminded of the requirements of the TDG Regulations Part 8 Accidental Release and Imminent Accidental Release Report Requirements. A 30 day follow-up report is required by Transport Canada for the quantities of dangerous goods displayed in the table in Section 8.1 of the TDG Regulations. TC TDG Prairie Northern Region will contact AEM to obtain more information regarding the dangerous goods spills and give recommendations, if required, for their course of action.

AEM looks forward to discussions with TC TDG Prairie Northern Region to get recommendation and ensure compliance with Part 8 of the TDG Regulation.

Environment Canada Comments and Recommendations

1- **EC recommends that there be ongoing follow-up monitoring of Lake NP-2. Following on the seepage issue described in Appendix G3 of the Report, it would be appropriate to conduct a water quality and biological survey in 2014 of Lake NP2 to evaluate the fish population status.**

As in 2013, AEM will continue to monitor water quality in Lake NP-2. Furthermore, AEM has committed to conduct monthly open water sampling in downstream waterbodies NP-1, Dogleg and Second Portage Lake. Additionally, we have added CN analysis to the CREMP monitoring. During the winter period, AEM conducted weekly inspections of the area and when safe to do so, took samples in NP-2. As soon as the freshet began, AEM conducted daily visual inspections and take bi-weekly sampling using the onsite laboratory (not accredited) for CN WAD analysis at ST-16 and in the nearshore areas of NP2. Given the proactive mitigation of building a cut-off in 2013, continuous monitoring and pumping of sump ST-16, freshet action plan inspections and water quality results of 2013 and 2014, no follow-up field biological surveys will be completed in NP2 in 2014, rather follow-up laboratory toxicity testing will confirm the results of 2013. AEM has reviewed the baseline fish population data which provides species assemblages and presence/absence data, but will not provide a reference to evaluate "fish population status" at NP2 (i.e. the data does not have high repeatability and was not collected in support of population estimates using CPUE). In consultation with EC, depending on our water quality findings and toxicological laboratory testing, AEM will conduct additional biological surveys in 2015 as needed.

2- EC notes that Appendix A of the Report: 2013 Core Receiving Environment Monitoring Program, which lists thresholds and trigger values does not include one for cyanide. This parameter should be added to routine analyses in exposure and reference lakes, as well as have a trigger level developed.

AEM has added Total and Free Cyanide analyse to the CREMP in 2014 and will develop appropriate trigger levels based on applicable threshold limits.

3- With respect to groundwater, the monitoring program has been limited by the success of well installations. Use of brine has confounded the total dissolved solids (TDS) analyses, so EC is substantially limited to information on metals. Well MW-11-02 (tailings facility) will be replaced this year, and is proposed to be sited along the west margin of the Portage Attenuation Pond. EC concurs with the plans to address well failure.

AEM acknowledges ECs comments.

4- Concerning Table 4.2 of the Report:
EC requests that the Proponent please clarify how parameters are being expressed. In the Third Portage Pit table, is "ammonia" in mg N/L intended to refer to the NH3 fraction, and the "ammonia nitrogen" in mg N/L referring to the total ammonia? This seems to be the case from the magnitudes of the values but as the NH3 fraction would be determined by pH and temperature this doesn't make sense.

Ammonia refers to NH3 in mg N/L and ammonia-nitrogen refers to total ammonia (NH3-NH4) in mg N/L. These analyses are performed by an accredited laboratory and pH/temperature are taken into account when the analysis is performed. In Table 4.2, results presented for ammonia and ammonia-nitrogen are an average, therefore AEM does not think applying the CCME table with pH and temperature to find the portion of the NH3 fraction is a valid approach.

Are metal values expressed as total metals? Modeling was done using dissolved metals, while lab measurements typically are of total metals, so the values used would affect comparability.

Yes, metal values in Table 4.2 of the 2013 Annual report are expressed as total metals. This was a clerical error by AEM, as we used the total metal values instead of dissolved metal values. We appreciate the thoroughness of ECs review. Overall, the conclusions in this section of the report and the explanation expressed in Section 4.4 of the 2013 Annual Report remain the same. AEM will take care next year to use dissolved metals when conducting this comparison.

5- As above, concerning Table 8.6 of the Report, are metals concentrations for total or dissolved metals?

Metal concentration for Saddle Dam 1 Seepage (ST-S-2) in Table 8.6 are expressed as total metal as requested by NWB Water License for seepage.

6- Table 8.10 shows a drop in cyanide concentrations in the tailings reclamation pond water of 4 orders of magnitude between June and July – how is this accounted for?

Cyanide concentration in the tailings pond had decreased significantly between June and July 2013 due to the optimisation of the cyanide destruction system, the freshet water volume inflow into the TSF (which caused significant dilution) and mainly due to the increase of UV destruction of CN as ice cover thawed and daylight hours were at their maximum. This trend has been observed in previous years as the concentrations of cyanide will increase once the freshet period is done and the daylight decreases. As an example, in July 2013, CN concentration was 0.01 mg/L and at the end of December 2013 CN concentration had increased to 3.99 mg/L.

Government of Nunavut Comments and Recommendations

Appendix G17: 2013 Wildlife Monitoring Summary Report

1- Caribou Sensory Disturbance (Section 6.7)

The Proponent has indicated that mine activities have not lead to sensory disturbance of caribou. The following threshold was set (TEMP Ref. 4.4.2.2):

> ***Mine-related construction and operation activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 500 m of mine buildings, facilities and roads*.**

The Proponent indicated that this threshold was not exceeded; however, the presence of caribou within 500 m of mine operations does not indicate wildlife are not subject to noise disturbance. Although caribou have been observed in the Local Study Area (LSA), the collaring results provide evidence of caribou entering the Regional Study Area (RSA) and diverting their route away from mine operations (Figure 9.10). Caribou may be affected by noise disturbance over distances greater than 500 m. In addition, impacts are not limited to exclusion from suitable habitat, but can also be related to wildlife health (e.g. increased energy expenditure) or behaviour. Further investigation is warranted on disturbance caused by mine operations. The GN recommends the Proponent revise the above threshold to examine noise disturbance on a broader scale.

It is important to note that the noise target is based on a recommendation made by Environment Canada's "Environmental Code of Practice for Metal Mines" (2009):

> *"In residential areas adjacent to mine sites, the equilibrium sound pressure level (Leq) from mining activities should not exceed 55 dBA during the day and 45 dBA at night. Ambient noise can also affect wildlife, so sites in remote locations should also work to meet these objectives for off-site ambient noise levels."*

In 2013, no Leq values exceeded target sound levels of 55 dBA (daytime) and 45 dBA (nighttime), so we can assumed that mine activities, based on the target, do not preclude Caribou from using suitable habitat near the mine site. AEM looks forward to discussing this recommendation with the GN Wildlife Biologist and together we will determine the best approach to document if the caribou are affected by noise disturbance on a broader scale caused by the mine activities.

2- Wildlife Mortality (Section 7.6.3)

The Proponent indicated that five caribou were killed in 2013 following a collision with a grader on the all-weather access road (AWAR). The accident occurred under poor visibility conditions due to fog. This exceeds the Proponent's following threshold (TEMP Ref. 4.4.2.3):

> ***Caribou and Muskoxen will not be killed or injured by vehicle collisions. Threshold level of mortality is one individual per year.***

The Proponent has indicated that protocols have been developed to minimize the risk of future vehicle-related mortalities due to poor visibility. The GN requests the Proponent provide further information on new mitigation measures.

This incident resulted in a thorough investigation with the driver to identify the factors contributing to the cause of the accident (which was mainly due to poor visibility and the fault of the driver). The seriousness of this accident and the subsequent investigation has reminded all drivers on the road that wildlife have the right of way at all times. AEM continues to take steps to advise all drivers on the road to use extra caution during adverse conditions and to remind drivers to further reduce speeds if the weather or visibility deteriorates. In addition to weekly monitoring by trained wildlife observers from Baker Lake and incidental reporting of wildlife by road operators, new mitigative measures include working closely with the GN wildlife EIS technicians who provide real-time telemetry data on approaching caribou. This has allowed AEM to send proactive reminders and notices to all AEM and contractors in advance of large herds migrating near the road. Furthermore, between October and December, during the main caribou migration, AEM increases AWPAR wildlife surveys from weekly to biweekly or sometimes three times weekly. In combination with in-field monitoring and telemetry data, AEM environment and the security department take all efforts to avoid any caribou collisions. Frequent use of convoys or road closures during peak migrations has also been implemented as a mitigation.

3- Hunter Harvest Study (Section 8.5)
The following threshold was set by the Proponent to measure impacts of the AWAR on caribou hunting activities (TEMP Ref. 4.4.2.3):

> ***The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou kills by Baker Lake hunters. Changes will not exceed 20% of current harvest activities correlated to use by the road.***

The Proponent has compared 2013 caribou harvest levels within 5 km of the AWAR to harvests levels prior to road construction with data from the Nunavut Wildlife Harvest Study. The percentage of harvests recorded within 5 km of the AWAR has more than doubled (18% to 48%, Table 8.2) since road construction. This exceeds threshold levels set by the Proponent and warrants further mitigation measures.

Results from the 2013 Hunter Harvest Study illustrate that caribou harvests were centered along the AWAR, extending further than 5 km from the road (Figure 8.4). An area extending as far as 15 km from the road seems more descriptive of the current harvest activities. As such, the GN recommends the Proponent examine harvest

levels within 15 km of the AWAR. It is anticipated that the impact of the AWAR on harvest activities will be better demonstrated at this scale.

The 5 km corridor was established in collaboration with GN wildlife biologists during the 2005 NIRB EIS and was based on the available data and literature at that time. AEM will discuss changing the width with GN wildlife biologists, as AEM is concerned that this may compromise the comparison of future data to historical data.

The Proponent has indicated that the increased harvest along the AWAR will be discussed with the Baker Lake HTO and that hunters would be reminded of the no shooting zone around the AWAR. The GN requests clarification on the extent of the no shooting zone from the AWAR and its suitability for mitigating impacts on hunting activities centered along the AWAR. The Proponent has also indicated that further monitoring and communication with the Baker Lake HTO and the GN will be required to evaluate management and mitigation decisions. The GN welcomes discussions on implementing further mitigation measures.

AEM agrees with the GN and will work with the GN and HTO to discuss the implementation of further mitigation measures along the AWPAR.

4- Caribou Satellite-Collaring Program (Section 9.6)
The Proponent indicated that two collared caribou were located in the Local Study Area (LSA) and the Regional Study Area (RSA) during calving season (Figure 9.2). The GN recommends further mitigation measures be developed to minimize impacts to caribou during this critical period.

AEM will discuss and work with the GN Wildlife Biologist to determine the best strategy in the future.

5- Appendix G19: Report: Archaeological Impact Assessment Meadowbank Exploration:
With reference to Appendix G19: Report: Archaeological Impact Assessment Agnico Eagle Meadowbank 2013 Exploration Studies, an archeological impact assessment study was conducted in 2013. The final report was submitted to CH on March 31, 2014. While CH considers that the proponent has complied with the requirements set out by our department, geo-spatial clarification is required with regards to the additional surveyed areas to the north, west and east of the Priority Areas (Areas 1 and 2).

<u>Context of information request:</u>
The goals of the Exploration Studies were:

1) **Inspection of five proposed drilling locations in Priority Areas (Areas 1 and 2); and**
2) **Additional assessment of areas with moderate to high archaeological potential within the Priority Areas (Areas 1 and 2).**

As stated in Appendix G9:

"the assessment of these Priority Areas was expanded to include additional areas to the north, west and east". Section 5.2 p. 5-5.

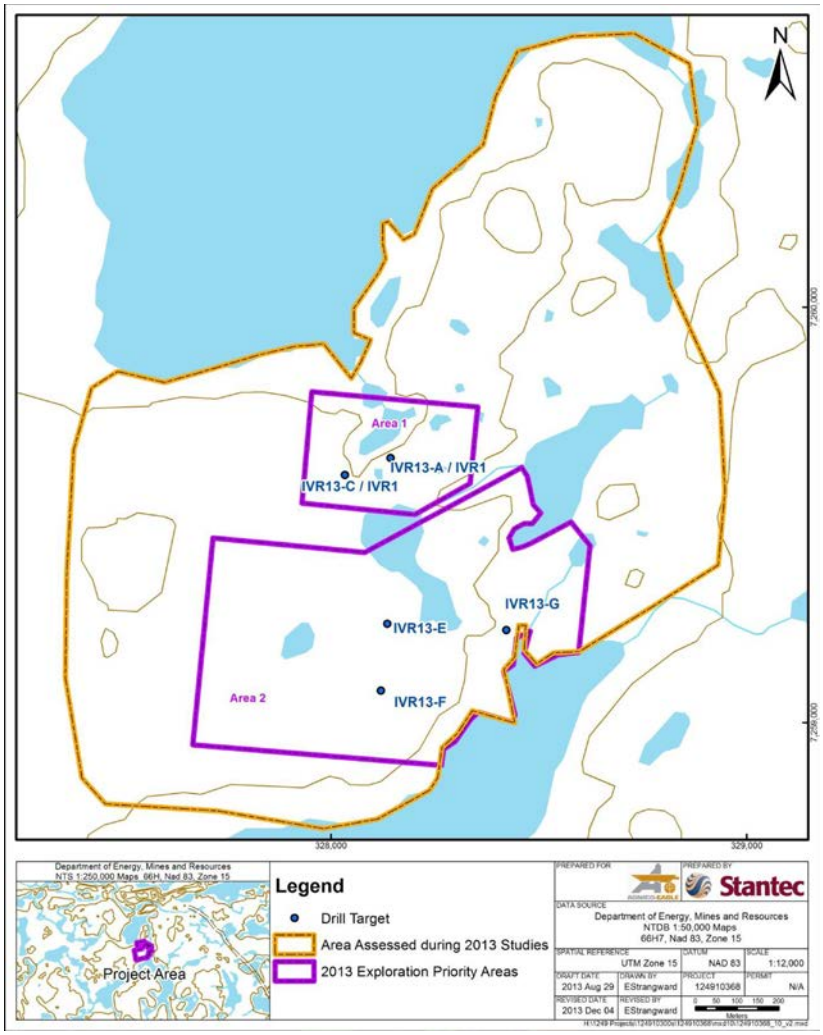
To confirm the department's approval of the report, can the Proponent confirm that the latter areas are included (shown) in Figure 1-3 and that they are contained within

the boundaries of Areas 1 and 2 as shown? If not please provide an adequate explanation as to why they were excluded.

The Priority Areas (purple boundary – Areas 1 & 2) were created and examined for archaeological sites mainly because the five drill locations (blue dot) are within these Priority Areas. As more time was available to the field, AEM archaeologists extended this area to ensure the terrain surrounding the Priority Areas was also evaluated to prevent any future disruption (illustrated on Figure 1-3). These areas are within the orange boundary in the Figure below. The locations of these additional terrains are:

- *To the north of Priority Area 1;*
- *The area to the west of Priority Areas 1 and 2; and*
- *Area extending east of the Priority Areas.*

In summary, all the terrain within the "Areas Assessed during 2013 studies" (orange boundary) were visited and inspected for archaeological sites. This included the five proposed drill locations (blue dots) and the assessment of the exploration Priority Areas (purple boundary). No archaeological sites were identified.



6. **Kivalliq SEMC and Meadowbank Socio-Economic Monitoring Program**
   The GN understands that AEM will establish a Meadowbank socio-economic monitoring program, as outlined in the Terms of Reference submitted by AEM to the NIRB on June 29, 2007 to satisfy Term and Condition #64 of the Meadowbank Gold Project Certificate. Since 2010, the GN has been in continuous communication with AEM to discuss the establishment of a project-specific monitoring program. Without a finalized Meadowbank socio-economic monitoring program, the Kivalliq SEMC reports do not include comprehensive project-specific data that monitor the Meadowbank FEIS predictions. Accordingly, the report should not qualify as the submission of monitoring results for the Meadowbank socio-economic monitoring program, as indicated on page 95 of the Meadowbank annual report. It is the view of the GN, however, that with the establishment of a project-specific monitoring program, the Kivalliq SEMC reports could become an acceptable channel to report monitoring results if desired. The GN expects to continue communication with AEM, and contribute to the development of the monitoring program that will satisfy Term and Condition #64.

   AEM acknowledges the GN's comments and looks forward to developing the monitoring program that will satisfy NIRB Condition #64.

Health Canada Comments and Recommendations

AEM acknowledges Health Canada's comments.

AANDC Comments and Recommendations

1. **In Section 12 of the Meadowbank 2013 Annual Report relating to the evaluation of impact predictions, there are several tables that speak to each of the valued ecosystem components and associated potential impacts and monitoring. While AANDC finds this format and data useful, in many cases it is unclear how observed impacts may relate to predictions. For example, many previously identified potential impacts are evaluated currently as either 'no observed impacts' or 'no exceedance of license limits', however, that does not speak directly to how they compare to FEIS predicted values. It would facilitate the review if there was a column that directly compared the predicted to the measured values. In each case where actual values have exceeded predictions (and in appropriate cases where they are rapidly approaching predictions), there should be a description of any steps taken and rationale provided for those steps. It is recognized that in many cases much of this information exists elsewhere, however, adding a detailed reference in these tables would provide for a much more effective review of the material.**

   As noted by AANDC, in all cases a detailed description of steps taken are provided in other sections of the annual report. AEM followed the objectives of the Project Certificate Appendix D and believes the intention of PEAMP is as a high level overview. AEM takes note of AANDC's recommendations and will discuss ways to improve the presentation of information with AANDC, without creating redundancy in the annual report.

2. **In the tables described above, AEM lists both proposed monitoring and applicable monitoring. While this is a useful comparison, there is no description or rationale provided where the applicable monitoring in 2013 is different than the FEIS proposed monitoring. This rationale should be provided so that reviewers may determine if the current monitoring, if different than proposed, is appropriate.**

   This request is not one of the objectives of the PEAMP outlined in the NIRB project certificate Appendix D. Furthermore, the FEIS plans were reviewed by agencies during the EIS process and as stated in many of the original FEIS supporting documents, monitoring plan development and execution are an iterative process. AEM has worked with applicable agencies and reviewers to develop monitoring plans that reflect changes to the mine planning and meet the conditions of our authorizations, licenses and permits. As an example, as a condition of the Type A water license, monitoring plans are submitted to the NWB prior to approval. These plans are reviewed annually by AEM, revised as needed and recommendations of reviewers are integrated into the plans prior to final approval by the NWB. Ultimately the reviewer will make recommendations and AEM will make adjustments to ensure the plans meet the conditions of the NWB Type A license.

3. **In table 12.3, AEM states '…poor water quality observed in nearshore areas of NP-2, however no observed impacts.' Given that water quality itself is a valued ecosystemic component, it is unclear how poor water quality was observed and yet there are no observed impacts. AANDC recommends that AEM further explain this impact determination.**

   This statement reflects the fact that during the July inspection AANDC inspectors and AEM personnel observed water quality changes (described in the text as "poor water quality") in the nearshore area of NP-2 adjacent to ST-16. Later it was determined that this "poor water quality" was due to seepage from the waste rock pile that seeped through the road into NP-2. However, the magnitude and duration of this water quality change was not significant and there are no known impacts to the receiving environment. Aside from WQ, no other impacts were observed; this is why the statement "there are no observed impacts" was made. The text was written to reflect that AEM acknowledged the occurrence and for transparency, AEM reported it in Table 12.3 VECs evaluation as per Appendix D objectives.

4. **In table 12.3, monitoring proposed for tailings contamination of groundwater through taliks is to monitor permafrost development in the underlying talik. However, the described applicable monitoring in 2013 does not seem to include monitoring of the talik. AANDC recommends that AEM describe how current monitoring is sufficient to capture potential contaminants flowing through the underlying talik into groundwater, where permafrost has not yet fully developed.**

   Monitoring of the freezeback of the talik includes thermistor and groundwater monitoring data collection to ensure that no groundwater is contaminated by tailings through the talik. To monitor the permafrost aggradation and talik beneath Second Portage Lake, AEM installed a thermistor (T90-2) in the North Cell tailings and a single deep thermistor (T147-1) at the downstream toe of Stormwater Dike in 2012. The thermistor T147-1 is being utilized to monitor the freeze back of the talik, and in the future will be used to monitor the thermal regime beneath the tailings in the South Cell. Overall, thermistor T147-1 shows the existence of a frozen crust of material from El. 120 m to El. 115 m that stayed frozen during the summer of 2013. Below El. 115 m, the temperature varied between 0.8°C and 0.1°C from the beginning of March 2013 to the end of August 2013 indicating a slow cooling of the

near surface talik. Thermistor T90-2 is installed within the talik of the former lakebed inside the North Cell of the TSF. Temperatures below 0 degrees Celsius were recorded in 2013 which seems to indicate that the tailings are continually frozen at this location. Please refer to Section 5.3.3 of the Annual report for a complete review of the thermistor monitoring in 2013.

All the results from thermistors installed in the periphery of the tailings storage facility have provided an indication of the permafrost aggradation in the former lakebed of SPL. In conjunction with the ground water monitoring data taken from the wells and wall seepage, thermistor data provides a very good indication that tailings are not impacting groundwater quality through the talik.

5. **Table 12.6 shows that vehicle collisions with caribou have exceeded the threshold. AANDC recommends that AEM clarify if there are further measures being put into place in 2014 to reduce collisions.**

   As previously stated under GN annual report comments, this incident resulted in a thorough investigation with the driver to identify the factors contributing to the cause of the accident (which was mainly due to poor visibility and driver error). The seriousness of this accident and the subsequent investigation has reminded all drivers on the road that wildlife have the right of way. AEM continues to take steps to advise all drivers on the road to use extra caution during adverse conditions and to remind drivers to further reduce speeds if the weather deteriorates. In addition to weekly monitoring by trained wildlife observers from Baker Lake and incidental reporting of wildlife by road operators, the environmental department is working closely with the 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 and contractors in advance of large herds migrating near the road. Furthermore, between October and December, during the main caribou migration, AEM increases AWAR wildlife surveys from weekly to biweekly or sometimes three times weekly. In combination with in-field monitoring and telemetry data AEM environment and the security department take all efforts to remind travellers, thus avoiding any caribou collisions. If high numbers of caribou are using the road, convoys or road closures are organized during these peak migrations.

6. **With regards to socio-economic Terms and Conditions #63 and #64, AANDC has worked with AEM and the Government of Nunavut (GN) on the regional Kivalliq Socio-Economic Monitoring Committee (SEMC). AANDC has also had considerable collaborative discussion with the GN and AEM regarding a Meadowbank socio-economic monitoring program. This program has yet to be finalized, but is anticipated to include monitoring of FEIS predictions as well as other socio-economic indicators of importance to the SEMC.**

   The most recent Kivalliq SEMC report provided regional socio-economic trend information, as well as discussions pertaining to how resource development initiatives have impacted the Kivalliq region. While the report does include a number of socio-economic indicators provided by AEM during the most recent Kivalliq SEMC, it is the view of AANDC that this report does not yet fully meet the requirements of Term and Condition 64 with regards to a Meadowbank specific socio-economic monitoring program.

AANDC anticipates continued collaboration with AEM and the GN in working towards a Meadowbank socio-economic monitoring program to satisfy Term and Condition #64.

AEM acknowledges AANDC's comments and looks forward to collaborating with AANDC and the GN to develop the monitoring program that will satisfy NIRB Condition #64.

DFO Comments and Recommendations

1. **Authorization NU-03-0190 AWPAR / 5.3 Photographic Record every other years: Not completed – No photographic records provide in 2013. AEM please clarify why this was not completed.**

   Thank you for bringing this to our attention as this was an oversight in our reporting. Typically the annual report includes photo documentation of the monitoring and all future reports will include them. Below you will find pictures of the R02 AWAR compensation features taken in summer 2013 with larval drift traps in the foreground.

2. **Authorization NU-08-0013 Western Channel Crossing / Monitoring of habitat shoal 2013, 2015, 2020 via annual report March 31.**

   Not completed - Monitoring of Western Channel Crossing to be included in Habitat Compensation Monitoring Reporting along with Authorizations NU-03-0191.3 and .4. DFO could not locate mention of Western Channel Crossing Monitoring in the Annual Report. AEM Please clarify.

   As previously discussed by DFO and AEM, and further agreed upon during our teleconference on June 19, 2014, as of 2012, the Western Channel Crossing authorization is not valid as it is incorporated into NU-03.0191.3 (as it was consumed by mining operations in the Portage Pit in 2011 and accounted for in the revised NNLP). Therefore, no monitoring was completed. For clarification, the Western Channel Crossing is not related to the Vault Authorization NU-03-191.4.

3. **Authorization NU-03-0191.3 Portage Pit and Bay-Goose Pit, Dewatering of 2nd and 3rd Portage Lakes / 3.1 Annual Monitoring due March 31.**

   As per p.3 and p.4 of AEM's Habitat Compensation Monitoring Report 2013, AEM did not conduct monitoring in support of Authorization NU-03-0191.3; "*the only monitoring conducted in 2013 was for the AWAR compensation feature.*"

   As per authorization NU 03-0190, AEM will monitor the habitat compensation features along the AWPAR every other year (as stated in the HCMP Version 3) and for authorizations NU 03-0191.3 and NU-03-0191.4, fisheries monitoring will follow the schedule of the original habitat compensation monitoring as outlined in Table 1-5 in the Final Habitat Compensation Monitoring Plan (HCMP Version 3) and discussed in the subsequent responses.

   As discussed with DFO on June 19, 2014 teleconference, there was no monitoring scheduled for 2015 as per the final HCMP Version 2 submitted on June 6th, 2013 to comply with Condition 6.3 NU 03-0191.3 and NU 03-0191.4. AEM submitted the HCMP version 2 which included changes to the monitoring frequency, following discussions with DFO in 2012 and a meeting with DFO on February 19, 2013 in Ottawa; at this time AEM believed that DFO was amenable to these updates. The plan was submitted by AEM in June, reviewed by DFO and NIRB in the months following. By the time we had feedback, the field season had passed and changes in the Fisheries Act were rolled out. In December 2013, DFO advised AEM that the changes in monitoring frequency would prompt a complete review of the authorization under the new act and would likely require AEM to overhaul the Meadowbank NNLP, which was just revised and accepted by DFO in 2012. As a result, AEM withdrew the request and re-revised the HCMP to align with the original monitoring schedule and submitted the HCMP, Version 3 on March 20, 2014. As per follow-up conversations with DFO, it is AEM's intention to remain in compliance with the conditions of the DFO authorizations and therefore AEM will conduct the next round of fisheries monitoring according to the HCMP Version 3.

   Condition 2 of Authorization re: mitigation measures – AEM, please clarify whether any construction took place in 2013 to which the mitigation measures apply.

   No construction took place in 2013 related to Authorization NU-03-191.3.

As DFO understands according to the Nov 2013 NNLP Construction Schedule, in basin habitat improvements are to be constructed ongoing until reflooding – AEM, please clarify as to why this was not yet initiated?

All of the in basin habitat improvements (i.e. boulder garden platforms, roads and caps) were completed ahead of schedule in 2012. No new in basin construction was completed in 2013 as much of the focus of habitat construction was in the backfilling of the Portage central pit. In the future, AEM will improve the clarity in reporting of constructed features as requested by DFO.

DFO notes that AEM exceeded the blast limit on 12 occasions for lakes near the mine during egg incubation period.

AEM notes DFO's comments. Of the 12 exceedances during eggs incubation, 4 were in Vault, 1 in Portage Pit South and 7 in Goose Pit. The 4 exceedances in Vault occur in winter from November to December 2013 when Vault Lake was dewatered and fishout completed, so the exceedance did not have any impact on the egg incubation. The other exceedances at Goose Pit and Portage Pit South station were close to the 13mm/s and are not expected to cause any effects based on Faulkner et al. (2006).

4. **Authorization NU-03-0191.4 Vault Lake / 2.3-2.5 Mitigations Measures**

DFO is uncertain if any activities took place to which the mitigation measures would apply as no monitoring reporting on Vault Lake operations was provided to DFO. AEM, please confirm/clarify.

All of the information is presented in the annual report. In summary, Wally Lake water quality monitoring was not required during the Vault Dike construction because the dike was constructed under frozen conditions to reduce any potential impacts to fish and fish habitat. In 2013, AEM proceeded to the dewatering of Vault Lake into Wally Lake to permit the beginning of the mining operation in 2014. The mitigation measures taken in 2013 regarding the dewatering were to respect the criteria limit associated to the NWB Water License Part D, Item 6 and the MMER Regulation. During the fishout, mitigation measures were to follow the "2014 Vault Lake Fishout Work Plan" as approved by DFO and to decrease mortality rates by transferring as many fish as possible to Wally Lake. AEM also made sure that all materials and equipment used for the purpose of site preparation are operated and stored in a manner that prevents any erosion or any deleterious substance from entering the Vault (during the fishout) and Wally waterbodies.

5. **Authorization NU-03-0191.4 Vault Lake / 4.1 Compensation reflooding Vault Pit and Phaser Basin; access for ARCH to Wally Lake and channel to Dogleg Pond**

According to NNLP Construction schedule and most recent version of the Habitat Compensation Monitoring Plan (V.3 March 2014), construction of NP-2 Channel and Dogleg North Pond were to begin in 2013 and continue until closure. Was this not yet started? Please confirm/clarify.

The construction of the connection channel between NP-2 and Dogleg North Pond was completed at the end 2012 (see Photo 1 and 2 below).

Photo 1: Channel between NP-2 Lake and Dogleg North Pond

Photo 2: Channel entering in Dogleg North pond

6. **Habitat Compensation Monitoring Plan V.3 March 2014:**

Cover Page of Version 3 states Version 2 June 2013 when it should state Version 3 March 2014. Page iii also references an effective date of June 2013. As Version 2 was not agreed upon by DFO, please reference scheduling as per the conditions of the Authorizations. Please correct to clarify between versions for accurate referencing.

AEM appreciates the feedback and the thoroughness of DFO's review. Attached in Appendix A is version 3 with corrections. Version 3, March 2014, submitted in the annual report is the latest version of the HCMP. The scheduling conforms with the original Habitat Compensation Plan (Version 1).

Table 3 indicates monitoring scheduling as follows: 2015, 2017, 2019, 2021 and 2025 with reflooding in 2023. This leaves only one season of monitoring interstitial water quality, periphyton, fish use and structure for the east dyke, Bay Goose dyke and finger dykes. For Central dyke, Table 3 indicates sampling to start after flooding (2023), so monitoring 2025 and 2030. Essentially one monitoring season following the completion of such major construction activities seems inadequate to prove successful creation and use of end pit lakes. Please elaborate on this choice and how AEM feels they can successfully meet habitat compensation requirements.

The habitat compensation monitoring plan consists of confirming physical structures that AEM has built based on specifications outlined in the NNLP (i.e. depth and substrate type – coarse, mixed or fine which are related through a model to fish habitat requirements), evaluating metal leaching potential to ensure habitat is suitable for fish life histories, confirm periphyton growth as a primary food source and confirmation of fish use. The habitat compensation monitoring plan is designed to confirm that the structures are designed and functioning as outlined in the NNLP. This was the intent of the original HCMP (version 1), stated in the authorization and therefore was carried forward in the latest HCMP version 3. Given the successful results of the first 2 sampling years along the East dike (completed in 2009 and 2011), where water quality was suitable for fish, periphyton growth increased and adult and juvenile fish were collected, AEM believes the methods and frequency of sampling presented in the HCMP version 3 are rigorous and meet the condition of the authorization.

As outlined in Table 3 columns "completed sampling" and "sample schedule" AEM intends to complete a total of 6 monitoring events of the East Dike, 6 monitoring events of Bay Goose Dike and 5 monitoring events of the Finger Dikes. Based on the preliminary data, AEM is confident the structures will continue to perform as intended and AEM will continue to build a data set, for which a comparisons can be made with newer structures. Overall, the newer structures will follow a similar structural design (e.g. interior of the dikes will be similar to the exterior and boulder gardens will be akin to finger dikes) and therefore should follow similar trends. AEM will monitor all of the new structures in 2025 and 2030 and will consult with the DFO to ensure the structures that are built to provide suitable fish habitat, are functioning as intended. AEM believes the 2025 and 2030 sampling events (similar to our findings along the East dike, see AEM, 2011 annual report) will confirm that "all fish habitat compensatory works shall be completed and functioning according to the Meadowbank NNLP" Condition 5 of NU 03-0191.3 and NU 03-0191.4.

Table 4, 5 and 6 indicate an estimated dyke breach in 2025, and sampling in 2025 and 2030 for fish use. Assuming the dyke is breached in 2025, this leaves only one season to monitor fish use following. While angling, cameras and nets may uncover fish presence within the reflooded basin in 2030, can AEM elaborate on how use will be confirmed? What parameters will be established and why does AEM feel one season will be sufficient?

As stated above, AEM will monitor all of the reflooded structures to determine if all fish habitat compensatory works are completed and functioning in 2025 and 2030, compare these results to the broader data set and will consult with the DFO to ensure the structures are built according to the NNLP. AEM is confident the 2 events will provide confirmation that the structures are functioning as intended; but if not, will consult with the DFO to determine the next steps as per the authorization. Furthermore, water quality monitoring in the reflooded pits will occur during the open water season according to the CREMP to ensure pit water quality is suitable for aquatic life prior to breaching. The CREMP monitoring will

continue in the open water season until 2040 and will provide additional assurance that the fish habitat is functional both inside and outside of the breached area.

7. **AEM should have notified DFO prior to the August 2013 site visit when they had knowledge of the leak of waste water from the TSF/Waste Rock pile into fish bearing NP2. Should AEM have any questions about their requirements for compliance under the Fisheries Act, please contact the undersigned.**

   AEM acknowledges DFO's comments and will take necessary action to notify DFO if a similar situation occurs in the future.

AGNICO EAGLE

APPENDIX A
Habitat Compensation Monitoring Plan, Version 3 March 2014

AGNICO EAGLE

MEADOWBANK GOLD PROJECT

Habitat Compensation Monitoring Plan

In Accordance with Fisheries Authorization NU- 03.0190, NU-03-0191.3 and NU-03-0191.4

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

Version 3
March 2014

EXECUTIVE SUMMARY

General Information

This Habitat Compensation Monitoring Plan (HCMP) defines the sampling methods and criteria for success of the fish habitat compensation features described in Meadowbank's No Net Loss Plan (October 2012). In consultation with DFO, this HCMP is designed to meet DFO authorizations: All Weather Road NU 03.0190 (Condition 5 –monitoring), Meadowbank Mine Site Authorization NU 03.0191.3 (Condition 3 and 6 – monitoring and reporting) and Meadowbank Mine Vault Area Authorization NU 03.0191.4 (Condition 3 and 6 – monitoring and reporting).

Record of Changes

A record will document all significant changes that have been incorporated in the HCMP subsequent to the latest annual review. The record will include the names of the persons who made and approved the change, as well as the date of the approval.

Distribution List

Agnico-Eagle Mines Limited will maintain a distribution list for the HCMP, providing information about all parties that receive the plan including mine personnel, departments, and outside agencies.

IMPLEMENTATION SCHEDULE

As required by the original Meadowbank Fisheries Authorizations (NU-03-0191 and NU-03-0190), and in the updated Fisheries Authorizations (2013; NU-03-0191.3 and NU-03-0191.4), the implementation schedule for this plan is effective immediately (March 2014) subject to any modifications proposed by DFO as a result of the review and approval process.

DISTRIBUTION LIST

AEM - Environmental Superintendent

AEM – Environmental Coordinator

AEM – General Mine Manager

AEM – Site Services Superintendent

AEM – Field Services Supervisor

AEM – Engineering Superintendent

DFO Arctic Region Representative

DOCUMENT CONTROL

Document Control

Version	Date (YMD)	Section	Page	Revision
1	05/08			Initial document (Azimuth Consulting Group Inc.)
	26/03/09			Further detail by technical memorandum (Azimuth Consulting Group Inc.)
2	06/13	All	All	Document re-written to reflect updated NNLP (AEM, 2012b)
3	03/14	Added Section 4.3	15, 22-29	In consultation with DFO, AEM changed timing and frequency of monitoring back to the original DFO authorization timing.

Version 3

Prepared By: Meadowbank Environment Department

Approved By: _____

Kevin Buck
Environmental Superintendent

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SECTION 1 • INTRODUCTION

1.1 BACKGROUND

Agnico Eagle Mines Limited (AEM) Meadowbank Division currently operates an open pit gold mine located on Inuit-owned land in the Kivalliq Region of Nunavut. The mine site is approximately 70 km north of the hamlet of Baker Lake. Mining rights for this site were obtained by AEM from Cumberland Resources Ltd. in 2007.

Since mining activities at this site result in the harmful alteration, disruption and destruction of fish habitat, a DFO Fisheries Authorization application was required. In 2006, Cumberland Resources Ltd. developed a No Net Loss Plan (NNLP) in support of this application. This plan quantified losses to fish habitat that were expected to occur, and described the habitat gains that would be achieved through compensation measures.

The first DFO Fisheries Authorization (NU-03-0190) issued was for the All Weather Access Road, in 2007. Shortly thereafter, a Habitat Compensation Monitoring Plan was developed by Azimuth Consulting Group Inc. on behalf of AEM in order to describe a specific program for monitoring the effectiveness of the fish habitat compensation features identified in the NNLP.

In May 2008, the Habitat Compensation Monitoring Plan for the mine site was developed by Azimuth Consulting Group Inc. on behalf of AEM, and at the request of DFO. A DFO Fisheries Authorization (NU-03-0191) was then issued for the Portage lakes area (main mine site) on July 30, 2008.

As a result of discrepancies between the original NNLP and the issued mine site Authorization, as well as changes to construction feasibility and mine site designs, Meadowbank's NNLP was updated in October, 2012. An updated Fisheries Authorization for the Portage lakes area was provided in March, 2013 (NU-03-0191.3), and a new Authorization for the Vault Lake area was provided in May, 2013 (NU-03-0191.4).

Since changes in compensation features are included in the updated NNLP, the HCMP is required to be updated, as described in NU-03-0191.3, Condition 6.3, which states:

"The stability and successful utilization of all fish habitat compensation features shall be assessed according to the methodology and schedule detailed in the Habitat Compensation Monitoring Plan, version 4, dated May 2008 and the No Net Loss Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 08, 2008 to be updated by June 1, 2013."

and NU-03-0191.4, Condition 6.1 which states:

"The Proponent shall conduct monitoring of the compensation habitat according to the Habitat Compensation Monitoring Plan, version 4, dated May 2008 and the No Net Loss Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 08, 2008", and will be updated in June 2013.

1.2 OBJECTIVES

The development of onsite, like-for-like fish habitat is the method of compensation preferred by DFO. In general, habitat gains at Meadowbank are achieved through constructed features such as dike faces and roads that act as reefs, access enhancements for isolated fish populations, and land-to-lake conversions. Based on the conditions in the Authorizations described above, assessment of the structure and successful utilization of these features by fish are the primary goals of the monitoring program.

This work will be carried out as a targeted monitoring plan under the Meadowbank Aquatic Effects Monitoring Program (AEMP).

The objectives of this plan are:

1. To provide an overview of habitat compensation features at Meadowbank
2. To summarize the habitat compensation monitoring conducted to date
3. To describe the physical and ecological monitoring methods for each feature
4. To describe the quality assurance and control measures to be included in the monitoring program
5. To define the criteria for success
6. To present the monitoring frequency and reporting schedule

SECTION 2 • HABITAT COMPENSATION FEATURES

In the 2006 NNLP, habitat gains for the Meadowbank site were largely to be obtained from re-flooding of dewatered basins and excavated pits. The construction of boulder gardens, reef and shoal features within the dewatered basins were proposed to increase habitat value. In addition, large (19 ha) finger dikes and habitat mounts were planned for in-water construction in Second and Third Portage Lakes (outside the dikes) to provide supplementary habitat gains pre-closure.

Re-flooding of the dewatered areas remains the primary compensation measure to be implemented at Meadowbank (AEM, 2012b). However, based on the experience of AEM with in-water dike construction, the supplementary compensation projects proposed previously were found to be technically challenging to construct without possible short-term impacts on the aquatic system. The updated habitat compensation plan therefore includes

similar features, with modifications for improved constructability and reduced potential for impact to the receiving environment. A current schedule of completion for the habitat compensation features is provided in Table 1.

2.1 RE-FLOODING OF DEWATERED BASINS AND PITS

As previously stated the major compensation measure proposed for the Meadowbank site is the re-flooding of dewatered basins and associated pits following mining activities. In order to provide the greatest gain:loss ratio possible, considerations for improving fish habitat have been incorporated into the basin and pit designs (e.g. boulder gardens, backfilling of deep pits).

2.1.1 Portage Lakes Area (DFO Authorization NU 03-0191.3)

Post-closure, the Bay-Goose dike will be breached and the impounded area will be gradually re-flooded to re-gain the temporarily lost habitat. The portion of Second Portage Lake between the East Dike and the Central Dike will become part of Third Portage Lake, due to the land-to-lake conversion resulting from the Portage Pit construction. The East Dike will not be breached in order to maintain the current 1 m difference in elevation between Second Portage and Third Portage Lakes.

Prior to re-flooding, a number of habitat improvement measures will be implemented to increase the productive capacity of this area (Figure 1). Construction of a boulder garden feature along the west side of the soft-sediment Bay-Goose Basin will increase habitat suitability in this area. This feature will consist of at least 2.97 ha of heterogeneous, coarse substrate habitat in the <4 m depth zone, just west of the Goose Island Pit. Further, construction of mine-related features (pit caps, roads and dikes) from coarse rock material throughout the basin will create shoals and reefs after re-flooding. In addition, approximately 30% of the area of Portage Pit will be backfilled to a depth of 4-10 m during the construction phase, reducing the amount of ultra-deep water areas, and increasing habitat suitability in this area.

2.1.2 Vault Lake Area (DFO Authorization NU 03-0191.4)

After mining, Vault Pit will connect Vault Lake (and if mined Phaser Lake) to Wally Lake, and the Vault Dike will be breached to allow both lakes to gradually re-fill. Post-closure alterations to Vault and Phaser Lakes[1] will result from construction of pits, pit caps, roads and dikes. Both lakes will be expanded as a result of land-to-lake conversion in the Vault Pit (as shown in Figure 2). Backfilling of a portion of the pit (3.94 ha) in Phaser Lake to 2-4 m depth will reduce the amount of ultra-deep areas. However, the un-filled portion of the pit will provide improved overwintering habitat, which is limited in these relatively shallow lakes.

[1] Although Phaser Lake is not authorized nor part of the most recent Life of Mine, consideration was made in AEM (2012b) to include a conceptual Vault Pit extension that includes a likely HADD of Phaser Lake. As a result, compensation monitoring of the Vault area (including Phaser Lake habitat losses) are considered

Further habitat improvements in these lakes will be made through development of shoals due to permanent roadway construction, areas of mixed substrate from temporary haul roads, and the improvement of the connecting channels between Vault and Wally Lakes, and Vault and Phaser Lakes, to allow fish movement. In particular, the connection to Wally Lake will provide access for arctic char (after further connection to W3 – see Section 2.4), which currently are not present in Vault and Phaser Lakes. Improvement of the connection to Wally Lake will involve deepening the channel inside the Vault Dike to a depth of at least 3 m, while the lake is dewatered, to allow fish passage year-round after removal of the dike.

2.1.3 Dogleg System (DFO Authorization NU 03-0191.3)

Dogleg Pond and the "North Portage" ponds, Dogleg North Pond and NP-2, are isolated ponds located near the waste rock area, just north of Second Portage Lake. They are shallow ponds, with a maximum depth of 11 m in Dogleg Pond. Dogleg North Pond reaches about 3.8 m in depth, and NP-2 has a small area of about 5 m depth. The project described below was not specifically developed as compensation, but has integrated habitat compensation with water management to result in a small net gain of fish habitat.

NP-2 formerly drained into the TSF area of Second Portage Lake, while Dogleg and Dogleg North drain towards the main body of Second Portage Lake. Since drainage of NP-2 became blocked by the waste rock pile on the northern edge of the TSF, a connecting channel was excavated to direct flow from NP-2 to Dogleg North, effectively increasing the drainage area of Dogleg and Dogleg North Pond. The accompanying increase in wetted area is estimated at 5% for Dogleg Pond, 15% for Dogleg North Pond, and 5% for NP-2.

Through construction of the diversion channel, connectivity between the ponds has been improved, and previously inaccessible habitat in Dogleg North Pond will be available for use by lake trout and round whitefish currently inhabiting Dogleg Pond and NP-2. Eventually these ponds may be seasonally accessible from Second Portage Lake. This connection would theoretically provide access for arctic char to the Dogleg system, but because it is deemed unlikely due to the shallow, ephemeral nature of the connections, access for char is conservatively excluded from habitat gain calculations.

2.2 FINGER DIKES (TAILINGS STORAGE FACILITY- MMER)

In keeping with the original NNLP, a number of finger dikes are proposed to be built, extending from the Bay-Goose Dike into Third Portage Lake. While the original NNLP proposed 19 ha of finger dikes, AEM has found that the method described for construction to pose safety concerns, as well as potential concerns with elevated TSS during settling of material. Therefore, the new finger dikes will be 1 ha in total at their base. Potential locations for each finger dike are shown in Figure 1. Specific locations will be chosen prior to construction. These changes will not alter the monitoring techniques described in Section 4 and 5.

Legend

Post-Closure Features

- Capped roadways
- Dike to remain
- Finger dike
- Breach in dike
- Free dump boulder garden
- Mixed substrate basin
- Pit
- Pit capping

Bay Goose Basin
Conceptual Drawings

POST-CLOSURE FEATURES

DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South • Guelph ON N1E 5R3
T 519.822.1609 • F 519.822.5389 • www.dougan.ca

PROJECT: DA11-062-02

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

	DATE: OCTOBER 2012
	SCALE: NTS
	DRAWN BY: MAY
	CHECKED BY: RV

W S N
m
UTM Zone 14 NAD83

FIGURE:

1

Wally 4

Wally Lake

Wally 3

Vault Lake

Phaser Lake

0 0.5 1 2

Kilometres

Legend

- Study Lakes
- Dike
- Dike Base
- Roads
- Pit
- Pit Cap
- Lake Basin

Features
Vault Lake Area

DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South • Guelph ON N1E 5R1
T 519.822.1609 • F 519.822.5389 • www.dougan.ca

PROJECT: DA11-062-02

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

N W E S
UTM Zone 14 NAD83

DATE: OCTOBER 2012

SCALE: 1:29,531

DRAWN BY: LC

CHECKED BY:

FIGURE:

2

2.3 WALLY LAKE ACCESS (DFO AUTHORIZATION NU 03-0191.4)

Wally Lake is a 532 ha lake connected to Vault Lake (see Figure 2) via a seasonally passable channel. Fish movement between these lakes is currently almost nil and this channel will be diked prior to de-watering of Vault Lake. Information in baseline studies indicates that the only large bodied fish in Wally, Vault and Phaser Lakes are lake trout and round whitefish. In 2012, follow-up studies were completed which confirmed these results.

Wally 3 (W3) is a smaller lake (approximately 100 ha), which seasonally is hydraulically connected to Wally Lake via an impassable channel. No fish were found to use this corridor in baseline studies. Follow-up studies conducted in 2011 used fine mesh index gill nets to quantitatively determine the species composition, size and catch-per-unit-effort in the southern basin. Lake trout, round whitefish and arctic char were found to inhabit this relatively small but deep lake.

Topographical surveys conducted in this area indicated that water levels in Wally Lake and W3 are similar (within cm), and therefore slight deepening of the connecting channel through selective substrate removal and excavation during winter would provide access to Wally Lake for the isolated arctic char population in W3.

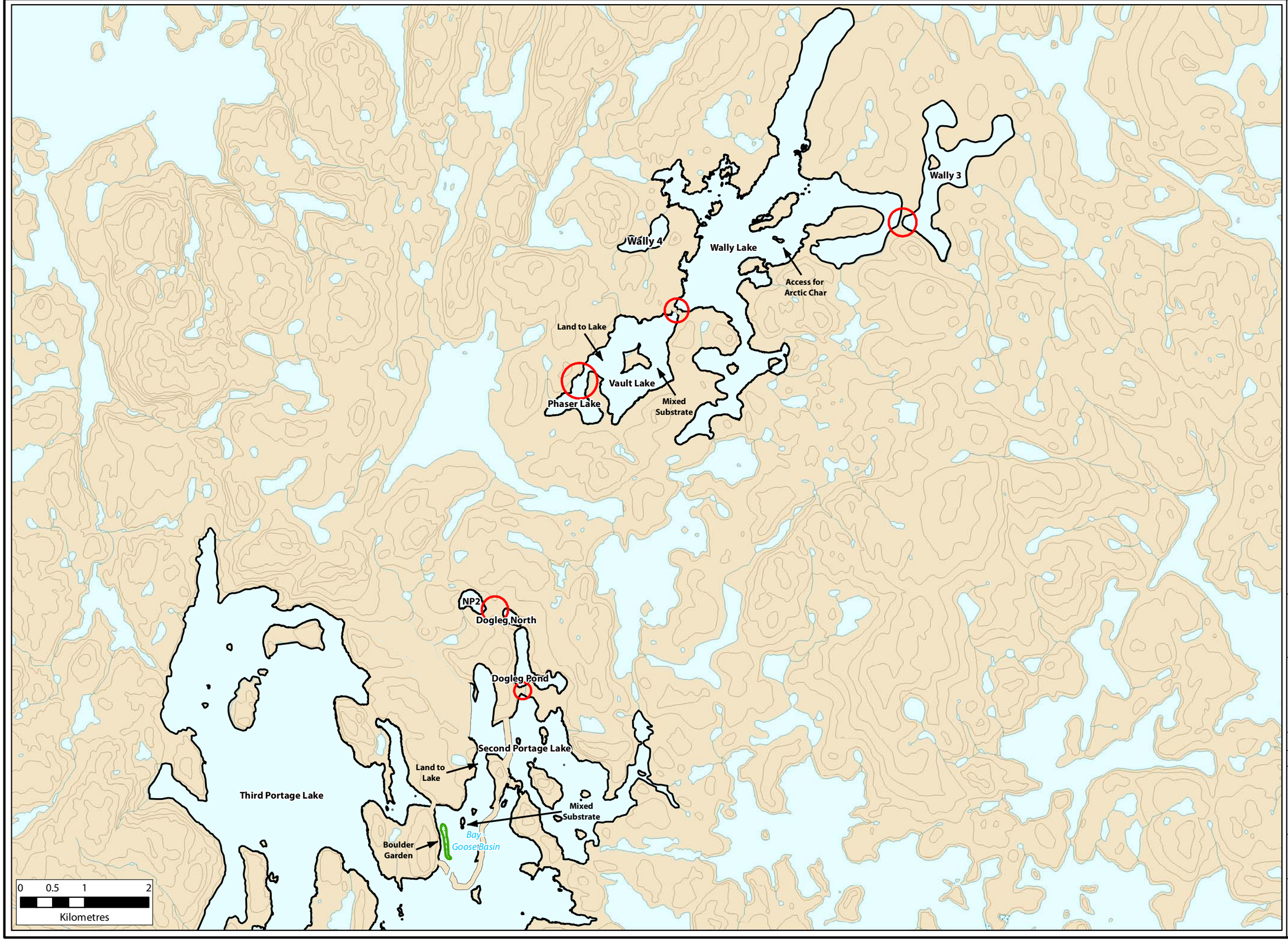
In addition, improvement of the channel between Wally Lake and Vault Lake, post-closure, would further allow movement of char into Vault and Phaser Lakes (as Phaser Lake will be connected to Vault Lake through the Vault Pit). In order to make this channel passable year-round and provide access to newly created deep habitat in the Vault Pit, a passage will be excavated while Vault Lake is dewatered.

As discussed in the NNLP, it is suspected that the lack of char in Wally, Vault and Phaser Lakes is due to historical isolation and the lack of deep-water habitat, which is preferred by this species. Pit development in the Vault Lake area will provide a significant quantity (approximately 45 ha) of this deep-water habitat, which is limited in the Vault Lake Area, but is prevalent in all nearby char-bearing lakes.

2.4 AWAR FISHERIES COMPENSATION

As part of the habitat compensation plan for construction of the roadway between Baker Lake and the mine site, a spawning pad was constructed in 2009 near bridge crossing R02 (Figure 3). This habitat compensation project was constructed according to design specifications that met biological criteria aimed at enhancing arctic grayling productivity in this stream system. The construction focused on creating high value spawning and nursing habitat to compensate for the loss of the low and medium value habitat affected by bridge abutment construction at the four crossings. An overview of the Meadowbank area post-closure, incorporating all compensation features, is shown in aerial photo below.

Figure 3- Aerial Photo of R02 Habitat Compensation Feature- Taken in September 2009



Legend

- Study Lakes (Post-Closure)
- Improved Access

Meadowbank Minesite
Post-Closure

DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South • Guelph ON N1E 5R3
T 519.822.1609 • F 519.822.5389 • www.dougan.ca

PROJECT: DA11-062-02

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

N W E S
UTM Zone 14 NAD83

DATE: OCTOBER 2012

SCALE: 1:55,000

DRAWN BY: LC

CHECKED BY:

FIGURE:

4

SECTION 3 • HISTORICAL MONITORING

Until now, monitoring has proceeded according to the 2008 HCMP (Azimuth, 2008). Based on construction to date, this includes monitoring of the East and Bay-Goose Dikes. Since construction of the East Dike in 2008, two rounds of monitoring have been reported (Azimuth 2010a, AEM 2012a). One round of monitoring has been reported since completion of the Bay-Goose Dike in 2010 (AEM 2012a). These monitoring reports focus on the ecological components of the HCMP. Although monitoring the structural integrity of the compensation features is a component of the 2008 HCMP, results of this analysis are detailed in the as-built reports, sent to NWB on December 17, 2009 (East Dike), May 14, 2013 (Bay-Goose Dike) and June 12, 2009 (AWAR).

3.1 INTERSTITIAL WATER QUALITY

Water samples were collected from between the rocks of the dike face using a tube sampler and electronic pump, and were analyzed for conventional parameters (hardness, conductivity, pH, and total dissolved and suspended solids), anions (alkalinity, chloride and sulfate), nutrients (ammonia, nitrate, nitrite, total Kjeldahl nitrogen, orthophosphate and total phosphate), organic parameters (chlorophyll-a, dissolved and total organic carbon) and total and dissolved metals at an accredited facility. While TSS was elevated in 2009, this was likely due to sediment re-entrainment during sampling. The dissolved aluminum guideline was exceeded in one sample in 2009 due to marginally low pH, but this trend did not recur with additional sampling. Total phosphorus concentrations exceeded CCME guidelines in both years, but since orthophosphate was at or below detection, no potential ecological concerns were identified.

3.2 PERIPHYTON COMMUNITY

Density, biomass and composition of the periphyton community were measured in the shallow zone by collecting a sample from the rock face with a specialized scrubber. Underwater video imagery was used to qualitatively examine periphyton growth in the deep zone. Periphyton was found to colonize rocks in shallow areas in the first year after construction of both dikes, and increasing likeness to reference stations (in both density and composition) was evident year over year.

3.3 FISH USE

In 2009, a variety of methods were tested to monitor fish use of the dike face, including hydroacoustic surveys, minnow traps, gill nets and visual observation. Only gill nets were found to be effective, and this method alone was used in 2011. Fish use of the dike faces

was documented at rates no lower than reference stations, even in the first year after construction.

3.4 AWAR MONTORING

Length and weight measurements and maturity identifications of adult fish captured in hoopnets have been recorded at AWAR crossings since 2005 (prior to construction). Nets are set to capture both upstream and downstream movements, and are set as soon as ice conditions allowed. Flow speed and water temperature measurements are also conducted at each crossing. Additionally, larval drift catches have been collected at crossing R02 since 2005, where the compensation feature was constructed in 2009.

Generally, condition factors of adult fish, population size distributions and timing of upstream and downstream movements did not change pre- and post-construction of the AWAR crossings. Flow speeds at all crossings were within published arctic grayling sustained or prolonged speeds, indicating the bridge structures likely are not physically affecting ability of grayling to move upstream. It is suspected that the primary upstream migration occurs below ice cover or immediately at ice-off, since arctic grayling larval drift has been consistently caught within 1-3 days of study initiation.

An examination of the history of arctic grayling populations at R02 indicates that the constructed spawning pad may be allowing an increase in successful spawning runs, with increasing larval drift collected at all drift trap locations beginning in 2009. The increasing proportion of immature arctic grayling since that time also suggests that more fish are being recruited into the population than pre-construction.

SECTION 4 • MONITORING COMPONENTS AND METHODS

Habitat gains at Meadowbank are derived through both physical improvements to existing habitat (e.g. creation of reefs), and the facilitation of access to new habitat (e.g. previously fishless or underutilized areas). As per the original fisheries authorization, regardless of the type of compensation, both physical and ecological components are included in the monitoring plan, to record whether each feature is constructed and is functioning as intended.

This updated monitoring program maintains the major elements of the 2008 version (structure, water quality, periphyton and fish use), while modifying timelines and methods based on past experience, new compensation features (AEM, 2012b), current life-of-mine designs and to meet the conditions of the updated Fisheries Authorizations.

4.1 PHYSICAL COMPONENTS

Since the habitat evaluation procedure focuses on quantifying losses and gains to habitat, based on physical characteristics (area, depth and type of substrate), physical structure is arguably the most important component to monitor in cases where habitat compensation is derived from constructed features (such as reefs or boulder gardens).

All compensation structures will be assessed post-construction to determine whether they meet the assumptions of the 2012 NNLP. These include area, depth and substrate characteristics. For each feature, a comparison will be made to the specifications described for these characteristics in the NNLP, to determine whether expected habitat gains are achieved in the as-built state. This analysis is separate to as-built reports, which are required under NU-03-0191.4, Condition 6.3, but may make use of information provided in those reports. Analysis reported under the HCMP report will, however, include the photographic evidence (pre-, during and post-construction) of compensation features, as described under NU-03-0191.3, Condition 6.4 and NU-03-0191.4, Condition 6.2. Photographic evidence for the AWAR compensation feature has previously been included in annual AWAR monitoring reports (e.g. AEM, 2010).

In addition to the analysis of depth, area and substrate in the dry basins, structural integrity will be qualitatively assessed after re-flooding for features in the de-watered basins, to record any movement occurring during this process.

Methods of evaluation will depend on the specific compensation feature, as detailed in Tables 3 - 7. In general, methods will include:

On-the-ground photos – photos will be taken of the compensation feature pre-, during and post-construction and included in HCMP reports.

Air photos – will be taken of dry basins just prior to re-flooding, to compare areal extents of compensation features with NNLP predictions. Differences will be estimated visually or by GIS.

Visual observation – conducted to ground-truth substrate types for confirmation in air photos.

Field survey – conducted in the dry to determine depth-below-surface of compensation features.

Bathymetric survey – conducted to determine the final depth contours of compensation features that are constructed in-water.

Underwater video – conducted post-flooding to qualitatively examine structural integrity of constructed features.

Results will be recorded for each compensation feature and compared to the 2012 NNLP estimate in an annual HCMP report, as in the example in Table 2.

The proposed schedule of monitoring is described for each feature in Tables 3 - 7. Analysis of the physical components will occur in the dry for features constructed in de-watered basins, in order to facilitate ground-truthing of substrate and total area. This analysis will occur just prior to re-flooding, such that features are in their final condition. As-built reports will first be consulted to determine if the required information is available. For features constructed in-water (finger dikes, access enhancements), analysis of the physical components will be conducted in the years after construction.

4.2 ECOLOGICAL COMPONENTS

Since successful utilization of the compensation features is also a component of the monitoring requirements under Meadowbank's Fisheries Authorizations, ecological monitoring elements are included for both constructed features and access enhancements.

The major constituents and basic sampling methods for the main components of the monitoring program are maintained from the 2008 HCMP, with some modifications based on field experience. Ecological monitoring components include interstitial water quality, open basin water quality, periphyton community biomass and fish use.

4.2.1 Interstitial Water Quality

Modeling during the EIA process indicated that metals leaching from quarried rock would not significantly impact the aquatic environment. Nevertheless, interstitial water quality of constructed habitat compensation features will be assessed through the HCMP to verify these predictions.

In order to collect a representative sample from the bioactive zone between the rocks, an electric diaphragm pump with food-grade silicon tubing will be used, as in previous years. Samples will be taken at depths between 1 and 4 m, and analyzed in an accredited laboratory for total suspended solids, and total and dissolved metals. Results will be compared to background concentrations and CCME guidelines where available.

4.2.2 Open Basin Water Quality

Modeling during the EIA process indicated that water quality in re-flooded pits and basins would support healthy fish populations. Because the re-flooded areas form part of Meadowbank's habitat compensation, water quality will be monitored as part of the HCMP and in conjunction with the Core Receiving Environmental Monitoring Program (CREMP) in order to determine when breaching of the dike to allow fish access is appropriate. Sampling will be based on procedures and parameters analyzed in the CREMP (Azimuth, 2010b). Analyses will generally be repeated once per sampling event in each pit basin (Goose

Island, Portage and Vault pits), with specific locations determined by experienced field technicians. Analyses will include vertical depth profiles of temperature, DO and conductivity to a representative depth. Secchi depth and surface pH will also be determined at each sampling location. Water samples will be collected from approximately 3 m depth by pumping lake water using weighted flexible (food-grade silicone) tubing, and a diaphragm pump connected to a 12 volt battery. A depth of 3 m is chosen for consistency across all basins and seasons (i.e., sampling at 3 m is still possible in the winter under ice). The lakes are never thermally stratified and are well mixed; given the uncertainty in the end pit water quality, varying depths of samples will be taken. An inline filter is connected to the end of the outflow tube when filling bottles for dissolved metals and dissolved organic carbon analyses.

Water samples will be analyzed by an accredited facility for conventional parameters (hardness, conductivity, pH, turbidity, and total dissolved and suspended solids), anions (alkalinity, bromide, chloride, fluoride, silicate and sulfate), nutrients (ammonia, nitrate, nitrite, total Kjeldahl nitrogen, orthophosphate and total phosphate), organic parameters (chlorophyll-α, dissolved and total organic carbon) and total and dissolved metals. Results will be compared to background concentrations, CREMP trigger or threshold levels and CCME guidelines where available.

4.2.3 Periphyton Community

The periphyton community consists of a collection of microorganisms, including algae, that grow attached to or in very close proximity to submerged substrate. Colonization of the community occurs over time, with rates depending on nutrient and light availability. Periphyton is an important food source for benthic invertebrates, so colonization will be monitored to ensure that quarried rock substrate provides habitat that is as suitable at this level of the food chain as natural substrate.

A specialized scrubber will be used to collect periphyton samples from a prescribed area of rock face, in order to calculate biomass ($\mu g/cm^2$). Results will be compared to baseline data, and historical monitoring programs.

4.2.4 Fish Use

4.2.4.1 Mine Site Monitoring

The ultimate goal of NNL planning is to provide suitable habitat for fish populations. Although fish use of a specific feature may be difficult to determine quantitatively, the presence of fish around habitat features would indicate no behavioural tendency to avoid these areas. Fish presence in the vicinity of constructed dikes, in re-flooded basins and in connecting channels of access enhancement projects will therefore be verified.

Since the use of gill nets has historically been found to result in elevated incidences of mortality, angling and underwater motion camera techniques will be used to establish fish presence around the constructed compensation features and in open basins. Catch per unit effort and physical characteristics (species, length, weight, maturity) will be recorded. If

these techniques are not successful, a DFO representative will be contacted and the use of gill nets may need to be included. Hoopnets, which consist of either a 4 ft (1.22 m) or 3 ft (0.9 m) diameter front hoop will be deployed in the W3 connecting channel to determine whether Arctic char are moving into Wally Lake, and at dike breaches to assess fish movement into the re-flooded basins. Hoopnets have interior hoops and traps that prevent fish from escaping but provide enough space in the cod end for fish to survive. Wings are attached to the front hoop to direct fish into the hoopnet.

4.2.4.2 AWR R02 Compensation Monitoring

Monitoring fish use of the compensation structure at R02 will continue as previously. This monitoring program consists of sampling adult fish populations using hoopnets, and assessing reproductive activity using larval drift traps.

As described above, hoopnets consisting of either a 4 ft (1.22 m) or 3 ft (0.9 m) diameter front hoop will be used to target arctic grayling. The captured fish are gently removed by field technicians from the nets using dip nets, placed in large tubs filled on location with stream water for biological processing and then placed in a recovery tub. The fish are released up or downstream of the hoopnets (depending on the fish's migration direction) following handling. Biological processing includes measurement of fork length, weight and maturity.

Hoopnets are placed adjacent to the habitat compensation area, in a riffle/ side channel area upstream of the bridge and downstream of the compensation area, and immediately upstream of the culverts. Nets are set with the goal of capturing the maximum number of fish moving beyond the R02 bridge crossing, but also to assist in determining effectiveness of the R02 habitat compensation area.

Larval drift traps were placed in representative, high to moderate flow sections of the stream, both upstream and downstream of the habitat compensation feature. These traps consist of a square sided cone with a ridged frame that funnels into a 0.5 mm nitex mesh bag. Attached at the back of the nitex bag was a Nalgene®-type container where the drift is collected. The frame is submerged at least halfway under water and secured by poles on each side. Drift traps will be checked at least every other day. Larval drift will be identified in the field and preserved in vials of diluted formalin.

4.3 FREQUENCY

Previously, monitoring for interstitial water quality, periphyton growth and fish use was proposed for years 1, 3, 5 and 10 post-construction of each feature (Azimuth, 2008). Under the current plan, the frequency of these monitoring events is proposed for every other year following construction, until 2021, with additional sampling in 2025 (all areas) and 2030 (Vault area and central dike only). The sampling schedule and general locations are

described in Tables 3 - 7. Specific sampling locations will be determined in the field by a qualified environment technician or biologist.

SECTION 5 • QA/QC AND CRITERIA FOR SUCCESS

5.1 LABORATORY QA/QC

Water Quality – Data Quality Objectives (DQOs) are numerically definable measures of analytical precision and completeness. Analytical precision is a measurement of the variability associated with duplicate analyses of the same sample in the laboratory. Completeness for this study is defined as the percentage of valid analytical results. Duplicate results will be assessed using the relative percent difference (RPD) between measurements.

The laboratory DQOs for this project are:

Analytical Precision = 25% RPD or less for concentrations that exceed 10x the method detection limit (MDL).

Completeness = 95% valid data obtained.

Periphyton Community – Laboratory analyses for periphyton samples will be conducted by experienced scientists following a standardized procedure (i.e., quality assurance), internal quality control samples (e.g., duplicate counts) will be included to document analytical variability.

5.2 FIELD QA/QC

Water Sampling – Field QA/QC standards during water sampling will be maintained for every sample. The standard QA/QC procedures include thoroughly flushing the flexible tubing and pump to prevent cross-contamination between stations and thoroughly rinsing the sample containers with site water prior to sample collection. Trip blanks and field duplicates will be collected (approximately 1 per 10 samples). Field duplicates assess sample variability and sample homogeneity; a RPD of 50% or less for concentrations that exceed 10x the MDL is considered acceptable.

Periphyton Community – Standard procedures will be used to collect biota samples. All sampling gear will be thoroughly rinsed between sampling stations to ensure that there was no inadvertent introduction of biota from one station to another. A field duplicate will be collected for phytoplankton at one sampling station per sampling event to assess sampling variability and sample homogeneity. Due to large natural variability and the qualitative

nature of this component, no specific RPD acceptability criterion is recommended for density and biomass.

Fish Use – These study components will be conducted in accordance to the general practices listed previously. All relevant spatial and depth information will be recorded. Fish biological data will be recorded as will reference spatial information. Field notebooks or field sheets will be used to compile notes and observations relevant to the studies. Fishing will be carried out by experienced technicians or biologists who are very familiar with this kind of work. Video/photo survey data will be conducted carefully to provide representative images of target communities. All relevant spatial and depth information will be recorded and identified by the time stamp (or photo number) and tape number (or memory card number).

5.3 CRITERIA FOR SUCCESS

The intent of NNL planning is to replace HADD-related habitat losses and to maintain the productive capacity of the system. Consistent with the original habitat compensation monitoring plans, since lakes in the Meadowbank area are ultra-oligotrophic and productivity is nutrient-limited rather than habitat-limited, criteria for success will be focused primarily on capability to support fish, rather than on actual use.

The following success criteria will be used to evaluate this capability.

5.3.1 Physical Structure

In order to provide the required habitat gains, constructed features should meet the specifications described for area, depth and substrate in the NNLP. Where specifications are not met, the total habitat units afforded by the feature in its as-built state should be calculated. If there is a deficiency in habitat units site-wide, DFO will be consulted.

5.3.2 Interstitial Water Quality

Water chemistry results will be compared to reference locations, CCME water quality guidelines. Since analysis of large in-water features (dikes) to date has not indicated any significant adverse effects on water quality, success criteria are expected to be met in the future. However, if necessary, follow-up sampling will be conducted as soon as practical (next ice-free season). If water quality criteria do not meet background or CCME guidelines after two monitoring events, risk-based toxicity reference values will be compared, and additional testing, such as laboratory toxicity tests will be considered. Because onsite experience indicates that adverse effects are unlikely, any additional testing would be determined in consultation with DFO in the unlikely situation that it is required.

5.3.3 Open Basin

Long-term water quality predictions made during the initial planning phase of the project (Cumberland, 2005) indicated that although some water quality parameters in the Vault and

Portage Pit lakes may exceed CCME criteria in year 10 post-closure, they would be within the same order of magnitude, which was recognized as the sensitivity limit of the modelling exercise. In particular, CCME exceedances were predicted for cadmium, zinc and arsenic in the Bay-Goose/Portage area, and for aluminum, arsenic, cadmium, copper, fluoride, mercury, and unionized ammonia (NH_3) in the Vault area. In addition, a temporary chemocline was predicted to occur 100 m below water surface in the Portage pit. Since pit backfilling is now prescribed for that area, this may not be a factor.

Since the pits are to be flooded with water from adjacent lakes, chemistry is expected to be similar. During HCMP monitoring of the re-flooded basins, water chemistry results will be compared to reference locations, CREMP trigger/ threshold levels, and CCME guidelines where available. The dike will be breached to allow mixing with adjacent lakes and fish entry once water quality meets these criteria during three sequential sampling events.

5.3.4 Periphyton Community

Since lakes in the Meadowbank region are ultra-oligotrophic and ice-covered for the majority of the year, periphyton development is expected to be slow and no specific criteria are provided for this monitoring component. However, based on experience to date, the periphyton community is expected to be visible on new substrate within the first year after deposition.

5.3.5 Fish Use

5.3.5.1 Mine site monitoring

The premise of NNL planning is that habitat compensation will increase the productive capacity of water bodies. Since it is recognized that factors other than habitat quantity or quality may limit fish population growth, no specific criteria for success are prescribed for this metric. Observations of the East and Bay-Goose Dikes have indicated fish presence around these features is no lower than in reference areas, so this trend is expected to continue.

5.3.5.2 AWR R02 Compensation Monitoring

As above, no specific criteria are established for determining success of the spawning pads constructed at R02 based on fish use metrics (hoopnet catch, larval drift). Based on results to date, however, the number of successful spawning events has increased in this reach relative to pre-construction.

SECTION 6 • REPORTING AND PLAN REVIEW

As required according to Table 3, Habitat Compensation Monitoring Plan reporting will be included in the annual AEMP report for the monitoring events occurring in the previous year.

The HCMP will be reviewed as required by the Meadowbank Environment Superintendent in consultation with the Mine General Manager, and updated as necessary based on changes to mine site designs. All changes will be provided to DFO for approval.

SECTION 7 • REFERENCES

Azimuth, 2008. Habitat Compensation Monitoring Plan, Meadowbank Gold Project. Prepared by Azimuth Consulting Group Inc. for Agnico-Eagle Mines Ltd. May, 2008.

Azimuth. 2010a. Aquatic Effects Monitoring Program – Habitat Compensation Monitoring 2009, Meadowbank Gold Project. Report prepared by Azimuth Consulting Group Inc. for Agnico-Eagle Mines Ltd. January 2010.

Azimuth, 2010b. Core Receiving Environment Plan Monitoring Program. 2010 Plan Update. Prepared for Agnico-Eagle Mines Ltd. June, 2010

AEM, 2010. 2009 All Weather Private Access Road Fisheries Report. Agnico-Eagle Mines Ltd. January 2010.

AEM. 2012a. Aquatic Effects Monitoring Program – Habitat Compensation Monitoring 2011, Meadowbank Gold Project. Report prepared by Azimuth Consulting Group Inc. for Agnico-Eagle Mines Ltd.

AEM, 2012b. No Net Loss Plan. Agnico-Eagle Mines – Meadowbank Division. October 15, 2012.

Cumberland, 2005. Meadowbank Gold Project - Water Quality Predictions. October, 2005.

TABLES

Table 1. Estimated timeline for the construction of fish habitat structures (adapted from Table 4-10 in AEM, 2012b).

Lake	Feature Name	Date of Completion
Second and Third Portage Lakes	In-basin habitat improvements	Ongoing until re-flooding
	Re-flooded basins and pits	2014- closure
	Finger dikes	2015- closure
Vault and Phaser Lakes*	In-basin habitat improvements	2014 until re-flooding
	Re-flooded basins and pits	Closure and reclamation (2018 – 2023)
	Access for arctic char	Closure and reclamation (2018 – 2023)
Dogleg System	NP-2 channel	2013
	NP-2 (increase in area)	2013- closure
	Dogleg North Pond (increase in area and access)	2013- closure
	Dogleg Pond (increase in area)	2015- closure
Wally Lake	Access for arctic char	2016- closure

Table 2. Example comparison of NNLP designs and as-built physical properties of habitat compensation features.

Feature	Assessment Metric*	Method	Design	As-Built
Boulder garden	Area	Air photo	2.97 ha	3.5 ha
	Substrate	Visual observation	Coarse	Coarse
	Depth	Field survey	> 4 m	> 4 m
	Stability	Underwater video	-	Minor movement

*Area, depth, substrate type or stability

Table 3. Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for dike faces and finger dikes (under MMER Schedule II TSF and DFO NU-03-0191.3). *Dike as-built designs were incorporated into the 2012 NNLP. Flooding is estimated to be completed in 2023

Compensation Feature	Component	Reason	Method	Parameters	Completed Sampling	Number of Samples	Sampling Schedule
East Dike	Interstitial water	Possible metals leaching	Tube sampler	TSS Total and dissolved metals	2009 2011	2 locations (exterior) and 2 locations (interior, post-flooding)	2015, 2017, 2019, 2021 (Odd-numbered years until 2021) 2025
	Periphyton	Base of food chain	Periphyton sampler	Biomass	2009 2011	2 locations (exterior) and 2 locations (interior,	As above

Compensation Feature	Component	Reason	Method	Parameters	Completed Sampling	Number of Samples	Sampling Schedule
						post-flooding)	
	Fish use	Confirm use by fish	Angling Underwater motion camera	CPUE, physical characteristics	2009 2011	2 locations (exterior) and 2 locations (interior, post dike breach)	As above
	Structure	Design intent met	As-built designs	Area, substrate, depth zone	2012*	-	-
		Stability	Underwater camera	Qualitative observations	2009 2011	Vertical transects at 5 locations	-
Bay Goose Dike	Interstitial water	Possible metals leaching	Tube sampler	TSS Total and dissolved metals	2011	3 locations (exterior) and 3 locations (interior, post flooding)	Odd-numbered years until 2021; 2025
	Periphyton	Base of food chain	Periphyton sampler	Biomass	2011	3 locations (exterior) and 3 locations (interior, post flooding)	As above
	Fish use	Confirm use by fishing	Angling Underwater motion	CPUE Physical characteristics	2011	3 locations (exterior) and	As above

Compensation Feature	Component	Reason	Method	Parameters	Completed Sampling	Number of Samples	Sampling Schedule
			camera			3 locations (interior, post flooding)	
	Structure	Design intent met	As-built designs	Area, substrate, depth zone	2012*	-	-
		Stability	Underwater camera	Qualitative observations	2011	Vertical transects at 10 locations	-
Finger Dikes	Interstitial water	Possible metals leaching	Tube sampler	TSS Total and dissolved metals	-	2 locations	Odd-numbered years until 2021 2025
	Structure	Design intent met	Photos Field survey	Area, substrate, depth zone	-	-	Upon construction
		Stability	Underwater camera	Qualitative observations	-	One vertical transect of each dike	Upon construction
Central Dike	Interstitial water	Possible metals leaching	Tube sampler	TSS Total and dissolved metals	-	2 locations	After flooding, odd-numbered years until 2021 2025 2030
	Structure	Design intent	As-built	Area, substrate,	-	-	Prior to

Compensation Feature	Component	Reason	Method	Parameters	Completed Sampling	Number of Samples	Sampling Schedule
		met	designs	depth zone			flooding
		Stability	Underwater camera	Qualitative observations	-	Vertical transects at 5 locations	2025 (post flooding)

Table 4. Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for compensation features constructed in the Portage basin (Under MMER Schedule II and DFO NU-03-0191.3). Year of re-flooding completion est. 2023 (F). Year of dike breach est. 2025.

Compensation Feature	Component	Reason	Method	Parameters	Number of Samples	Sampling Schedule
Basin	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding
	Open basin water quality*	Possible metals leaching, anoxia	Tube sampler Grab samples Depth profiles	Conventional parameters; Anions; Nutrients; Organic parameters; Total and dissolved metals	1 per pit area	3 x yr from F until dike breach Afterwards, as per CREMP
	Fish use	Confirm use (re-flooded basin and at dike breach)	Angling Underwater motion camera Hoopnets	CPUE Physical characteristics	TBD by field staff	2025 2030
Roads	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding
		Stability	Underwater camera	Qualitative observations	Representative transects TBD by field staff	2025 (post flooding)
Pits	Structure	Design intent met	Air photos	Area, substrate, depth zone	-	Prior to flooding

Compensation Feature	Component	Reason	Method	Parameters	Number of Samples	Sampling Schedule
			Field survey			
Boulder garden	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding
		Stability	Underwater camera	Qualitative observations	Representative transects TBD by field staff	2025 (post flooding)

*Monitoring and sampling protocols will be developed and conducted in-line with CREMP sampling

Table 5. Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for compensation features constructed in the Vault and Phaser basins (Under DFO NU-03-0191.4). Year of re-flooding completion est. 2023 (F). Year of dike breach est. 2025.

Compensation Feature	Component	Reason	Method	Parameters	Number of Samples	Sampling Schedule
Basin	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding
	Open basin water quality*	Possible metals leaching, anoxia	Tube sampler Grab samples Depth profiles	Conventional parameters; Anions;Nutrients; Organic parameters;Total and dissolved metals	1 per basin	3x yr from F until dike breach Afterwards, per CREMP
	Fish use	Confirm use (re-flooded basin and at dike breach)	Angling Underwater motion camera Hoopnets	CPUE Physical characteristics	TBD by field staff	2025 2030
Roads	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding
		Stability	Underwater camera	Qualitative observations	Representative transect TBD by field staff	2025 (post flooding)
Pits	Structure	Design intent met	Air photos Field survey	Area, substrate, depth zone	-	Prior to flooding

*Monitoring and sampling protocols will be developed and conducted in-line with CREMP sampling

Table 6. Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for access enhancement compensation features (Under DFO NU-03-0191.3 and DFO NU-03-0191.4).

Feature	Component	Reason	Method	Parameters	Number of Samples	Sampling Schedule
Dogleg Ponds	Structure	Design intent met (monitor water levels, especially access to Dogleg North)	Bathymetric survey	Area of ponds, depth of access channels	All three ponds and connecting channels	2015, 2017, 2019, 2021 (Odd-numbered years); 2025
	Fish use	Confirm use by fish	Angling Underwater motion camera	CPUE Physical characteristics	TBD by field staff	Odd-numbered years until 2021; 2025
W3 Access	Structure	Design intent met (W3 passage constructed as intended)	Bathymetric survey	Width, depth of excavation	-	Upon completion
	Fish use	Confirm movement of Arctic char into Wally Lake	Hoopnets at channel	CPUE Physical characteristics	TBD by field staff	Odd-numbered years after completion 2025 2030

Table 7. Summary of monitoring methods, analytical parameters, sampling frequency and number of samples for All Weather Private Access Road R02 (bridge 1) habitat compensation features.

Feature	Component	Reason	Method	Parameters	Completed Sampling	Sampling Schedule
Spawning pads	Structure	Design intent met	As-built report	Area, substrate	2009	-
		Stability	Visual observation	Qualitative observations	2010 2011 2013	Every-other year (Odd-numbered years) until 1 year after the road is decommissioned (last monitoring estimated in 2031)
	Fish use	Confirm use by Arctic grayling	Hoopnets set downstream and upstream Larvae traps	CPUE Physical characteristics	2009 2010 2011 2013	As above

Appendix E

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Avatiligiyiit
Department of Environment
Ministère de l'Envrionnmen

01-Aug-14
Ryan VanEngen
Angico Eagle Mines Ltd.
PO Box 540
Baker Lake , NU

Wildlife Research Permit WL 2014-055

Re: Wildlife Surveys for the Meadowbank Gold Project near Baker Lake

This wildlife research permit authorizes you to carry out the proposed research as indicated in your wildlife research permit application.

As per application. Ground surveys along all weather access road of Meadowbank Gold Mine to document the presence of terrestrial wildlife and critical habitat areas. Surveys will be conducted via ATV, snowmobile, or motor vehicle. All animals and any animal sign encountered will be recorded. Raptor nest surveys may be conducted along AWAR and at select locations. All known raptor nests will be monitored. Bird checklist surveys will estimate the total number of individuals and species recorded within an identified area or linear length of travel. Report must be submitted upon completion of project.

The Nunavut Wildlife Management Board has requested that any reports or publications generated by your research be submitted to them for their records. The Department of Environment also requires receiving a copy of materials generated from your work for our records, and we encourage you to follow up with the communities involved by making information and material on your research available to them.

This permit will **expire on 7/31/2015** Under the Wildlife License and Permits Regulations section 16. (3), Wildlife Research Permits can only be issued for up to one year.

Please be aware that the Arctic Institute of North America is compiling information on research projects in the arctic. We will be providing them with information on the research in Nunavut, which we have permitted. If you have any objections to the release of information on your project please let us know.

Sincerely,
Caleb MacDonald

Legislation and Management Technician
Wildlife Management Division
Government of Nunavut

P.O. Box 209
Igloolik, NU X0A 0L0
867.934.2178
867.934.2190

Department of Environment
Ministére de l'Environment

Pursuant to the Wildife Act/En vertu de la Loi Sur la Faune

WL 2014-055

WILDLIFE RESEARCH PERMIT
FAUNE-PERMIS DE RECHERCHE

Name/Nom

Ryan VanEngen

Date Issued/émis le

8/1/2014

Organization/Organisatio

Angico Eagle Mines Ltd.

This permit is valid
Ce permit est valide

From/Du 8/1/2014
To/Au 7/31/2015

Address

PO Box 540

City/Ville

Baker Lake

Phone No./No. de telephone

(819) 651-2974

Prov/Terr

NU

Postal Code Postal

X0C 0A0

Permit Condition

As per application. Ground surveys along all weather access road of Meadowbank Gold Mine to document the presence of terrestrial wildlife and critical habitat areas. Surveys will be conducted via ATV, snowmobile, or motor vehicle within accessible areas. All animals and any animal sign encountered will be recorded. Raptor nest surveys may be conducted along AWAR and locations within the regional study area. All known raptor nests will be monitored to determine status during the 2014 breeding season. Bird checklist surveys will estimate the total number of individuals and species recorded within an identified area or linear length of travel. Report must be submitted upon completion of project.

Is hereby authorised to conduct research as approved by the Superintendent of Wildlife.
Est autorisé par le présent à mener une recherche telle qu'approvée par le Superintendant de la faune.

Permit Holder Signature/Titulaire du Permis	Superintendent of Wildlife/ Surintendant le Faune
31/07/14	30-07-2014
RYAN VAN ENGEN	

MEADOWBANK DIVISION

Production Lease KVPL08D280

2014 Fourth Quarter Report

January 2015

TABLE OF CONTENTS

List of Appendices

SECTION 1 • SUMMARY OF ACTIVITIES

Agnico Eagle Mines Limited - Meadowbank Division (AEM) is required under condition 5.10 of Production Lease KVPL08D280 to deliver quarterly reports to the KIA detailing its activities on leased land. The following sections summarize activities during the fourth quarter (Q4) from October to December 2014.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 86,648 oz. of gold;
- Mined 7,476,497 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1,026,690	4,129,143
Gold Grade (g/t)	2.84	3.61
Gold Produced (oz.)	86,648	452,739

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	0	336,966
Waste Rock Production (t)	6,441,830	28,332,627
Ore Production (t)	1,034,667	3,987,856
Total Blasting (t)	6,651,102	35,234,905
Total Drilling (m)	159,162	953,995

1.4 DIKE CONSTRUCTION ACTIVITIES

No dike construction during the fourth quarter. Central Dike construction will resume in Q2 2015.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2014 Mine Plan V1*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 6th, 2014. Following discussion with KIA, a version 2 of the 2014 Mine Plan was done to included information on RSF Seepage and Assay Road Seepage. The "*2014 Mine Plan V2*" was submitted to KIA on February 5th, 2014.

On August 20th, AEM sent a request to KIA to include the Vault Pit Expansion into Phaser Lake into the Mine Plan of the KIA Production Lease KVLP08D280.

SECTION 3 • INSPECTION REPORTS

During the current quarter, no (0) inspections were conducted by regulators.

AEM received November 19th the 2014 NIRB Inspection report as part of the 2013-2014 Monitoring Report and Board Recommendations (Appendix A).

Received on December 1st, the TDG inspection report (Appendix B) for the August 25th, 2014 inspection. AEM had a call with the Transport Canada Inspector on December 8th to discuss the non-compliance and sent an email on December 16th to advise TC of our action plan regarding these non-compliances. As per the action plan discussed with the TC representative, a revised TDG form was sent for review along with additional outstanding items listed in the report on December 23rd.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There were no (0) exceedences of the Water License during Q4.

Nine (9) spills occurred at the site; no (0) spills were reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the fourth quarter, 9 spills occurred at the site. No (0) spills were required to be reported to the Government of Nunavut. Most spills were between 20L and 60L due to operation, broken hose, human error, mechanical issues and weather condition.

Soil sampling of Quarry 5 was completed on June 25th, 2014. All the results passed the CCME industrial guideline. Sampling of Quarry 22 was completed on July 9th. However, some results did not pass the CCME Guideline so remediation work will continue next year. A detailed contaminated soil report for Q5 and Q22 will be provided as part of the 2014 Annual Report.

After investigation, incinerator ash chromium exceedances for July and September were caused by unnecessary burning of pop cans. As a result, operators were instructed to not incinerated the cans and an email was sent to appropriate departments to continue recycling the cans and dispose of them appropriately. As per the Incinerator Waste Management Plan, ash has been disposed into the TSF instead of landfill from July to December. Analytical results from October to December were below guidelines; therefore, as per the management plan, starting in January 2015 ash will be disposed of in landfill instead of TSF. AEM will continue monitoring the ash quality quarterly which is an increase in sampling frequency which was formerly once per year (as per our management plan).

Hydrostatic tests conducted on September 15th on the fuel line between tank farm and power house did not pass. The line was immediately decommissioned. The excavation of the pipe for air tests will be deferred until next spring as specialized cutting tool arrived in late November and snow and freezing conditions did not permit excavation. A replacement aboveground piping system was installed and will be commissioned in Q1 of 2015.

The last diesel and Jet-A delivery was completed at the beginning of October.

4.2 WATER MANAGEMENT

Total freshwater used for the quarter was 280,948m^3 for a total year to date of 1,096,829 m^3 which represent 95% of the freshwater use amendment limit of 1,150 000 m^3 for 2014. The total amount of reclaim water used in the mill was 644,435 m^3 in the fourth quarter.

As planned, on November 17th, the reclaim water intake was moved from TSF North Cell and on November 19th was moved to the TSF South Cell. As per the NWB Water License, the sampling station ST-21 change location from North Cell to South Cell.

Cycle 2 EEM Biological Study field study began at the end of August and was completed during the first week of September. As per MMER requirements, the interpretive report is being completed and will be submitted to Environment Canada by July 1st, 2015.

Two (2) CREMP monitoring events occurred during the quarter in November and the other in December. Results of this monitoring will be presented in the annual report.

A new groundwater monitoring well was installed adjacent to the Central Dike in October. The sampling of this new well ST-GW-14-01 was completed on October 20th. The 2014 groundwater monitoring results will be submitted as part of the 2014 annual report due March 31st.

4.2.1 NWB Water License Renewal

On July 23rd, AEM submitted an application to the NWB for a Type A Water License Renewal. The current license expires on May 31st, 2015. On September 30th, AEM received the NWB review for completeness that included recommendations from AANDC, EC, KIA and DFO. AEM responded to these comments on October 14th. On November 28th, AEM held a WebEx meeting with AANDC to discuss the renewal application – discussion was primarily on closure. On November 28th, the NPC conformity review was received advising that no further review would be needed. As requested by AANDC, on December 4th, a revised closure cost estimated using Reclaim V7.0 was sent to AANDC and NWB. The technical review comments from NWB and the interveners AANDC, EC, KIA and DFO were received on December 24th. AEM submitted responses to these comments to the NWB on January 7th, 2015. The pre-hearing conference and technical meeting was held in Baker Lake on January 14th-15th. In the days leading up to the technical meetings and during the meetings AEM and the regulators came to an agreement on all of the 97 technical comments. The final hearing is scheduled to occur in April.

4.2.2 RSF Seepage

During the quarter, no seepage water was pumped from ST-16 sump to the North Cell TSF. The total year to date of 32,169 m^3 was pumped.

AEM continued to complete weekly inspections at the RSF and NP-2 Lake during the quarter. Water in the sump began to freeze, as a result, monitoring water quality for CN WAD at these locations stopped. Ice conditions permitted technicians to go on NP-2 Lake to take a monthly sample in November and December. This was the last sampling event for 2014 on NP-2 Lake and 2015 monitoring will begin in the spring as per the Freshet Action Plan.

As per our Freshet Action Plan, AEM submitted a progress report or update to regulatory agencies regarding the RSF Seepage. This report "*Follow up AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16*" can be found in Appendix A of the NWB November monthly report submitted on December 22nd. This report provides an update and a summary of the actions taken and results of the 2014 monitoring program in the downstream lakes. In summary, 2014 monitoring results and mitigation indicate that seepage from ST-16 that reached the NP-2 pond in 2013 was short in duration, low in volume and limited to the nearshore area. Monitoring data in 2014 indicated that the 2013 seepage event did not affect the water quality of the downstream in NP-1, Dogleg and Second Portage Lakes.

4.2.3 Assay Road Seepage

The water in the interception sump and original sump was pumped back to the mill only during the month of October for a total of 1,043 m^3. After that, water in the interception trench and the original containment berm and sumps froze and were not pumped back to the mill. However, November and December water from well MW-203 was pumped back to the mill for a total of 842m^3 and 871 m^3 respectively for a total of 2,756m^3 during the quarter. Total year volume that has been pumped from well and containment sump is 14,698 m^3. Weekly inspections of the area were conducted. Well monitoring for CN downstream of the trench, has also ceased as all the water in the wells are frozen. Repairs to the containment areas and sumps inside the mill were completed on December 31st, 2014.

4.2.4 Portage Attenuation Pond Discharge

July 5th, 2014 was the last day of discharge from the Portage Attenuation Pond. Total year to date is 207,813 m^3 of water discharged into Third Portage Lake.

As of November 19th, AEM is no longer using the Portage Attenuation Pond (South Cell) as an attenuation pond, rather tailings are deposited and reclaim water is being recirculated from the South Cell tailings storage facility.

4.2.5 Vault Attenuation Pond Discharge

Vault Attenuation Pond discharge was completed on August 14th, 2014. Total year to date (including dewatering water) discharge volume was 329,101 m^3.

4.2.6 East Dike Seepage Discharge

During the quarter, a total of 51,214 m^3 was discharged thru a diffusor into Second Portage Lake. Total year to date discharged was 143,638 m^3.

TSS results did not exceed the maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 4 and are in compliance with MMER regulation.

4.3 WILDLIFE MANAGEMENT

During the quarter, some wolverine, caribou, wolf, muskox, one red fox and other arctic foxes were observed on site, at Vault and along the AWAR.

Twenty-seven (27) AWAR Wildlife Surveys conducted during the quarter.

On October 19th, a common loon was reported to be injured in the Vault Pit. The loon was rescued and sent to the wildlife officer in Baker Lake. An incident report was sent on October 25th.

From October 23rd to 26th, the AWAR was closed due to the annual caribou migration. On October 24th, a convoy of vehicles were safely escorted by security and the environment department through the caribou herd. The road was closed on the night of November 25th to allow for a large herd of caribou between KM 46 and 80.

Wolves were observed on Third Portage Lake trailing caribou on the week of November 24th.

Numerous wolverine sightings around the site and particularly on the East Dike, TSF and sewage dump were reported during the month of December. GN Wildlife Officer was advised of the situation at the beginning of December.

Baker Lake Hunter Harvest Study was completed in September.

4.4 PERMITTING

AEM sent a written renewal request to AANDC on November 12th for the AWAR Quarry Lease 66A/8-72-2. This request must be submitted at least two years prior to the expiry of this lease on December 31st, 2016.

AEM received questions from the KIA consultant on November 4th regarding the 2014 water quality monitoring results for NP-2 and TPL and benchmarks used to determine if Seprotech and LJ-Mix are working well. A report was completed and responses were submitted to the KIA on December 22nd.

AEM received on November 19th the 2013-2014 NIRB Monitoring Report and Board Recommendations. AEM submitted responses to NIRB on December 18th (Appendix A).

On July 15th, AEM sent to NIRB and DFO an application (which included a supporting document that described the project) for Vault Pit Expansion into Phaser Lake. On November 18th, NIRB requested interested parties to provide comments on AEM's application by December 2nd, 2014. Comments were received on December 4th. Subsequently, the NIRB submitted an additional request for clarification by the DFO and NWB on January 2nd, 2015.

In follow-up to a site visit on August 2 and 3rd, on September 4th a non-compliance letter related to the Meadowbank OPEP prepared for Transport Canada. The OPEP Version 5 was sent to Transport Canada and DFO – Canadian Coast Guard on November 2nd. No additional comments have been received from Transport Canada Inspector.

The following reports and payments were completed and submitted to regulators:

- NWB monthly reports September, October and November 2014;
- East Dike Seepage Diffusor As-built report submitted to NWB on October 7th;
- Q3 2014 Water Compensation payment to KIA on October 10th;
- Production Lease KVPL08D280 2014 Q3 report sent to KIA on October 22nd;
- Environment Canada 2014 Q3 MMER via electronic database on October 23rd.
- 2015 Annual Rents on Lease 66A/8-71-2 and 66A/8-71-2 to AANDC sent on December 5th;
- Sent payment to GN for our annual contribution to the caribou monitoring program and satellite collaring as per the GN/AEM MOU signed last year;
- 2015 Annual Mine Plan sent to KIA on December 16th; and

- 2015 AWAR Rent and Compensation Fees as per lease KVRW06F04 and the AWAR Water Compensation Agreement Condition 10 sent to KIA on December 26th.

Appendix A

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.

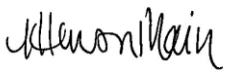
Pursuant to NLCA Sections 12.7.2 and 12.7.3, the NIRB will continue to work with AEM and other agencies in order to provide the required evaluation of monitoring efforts, results and compliance as outlined within the Board's project-specific monitoring program and in accordance with the requirements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

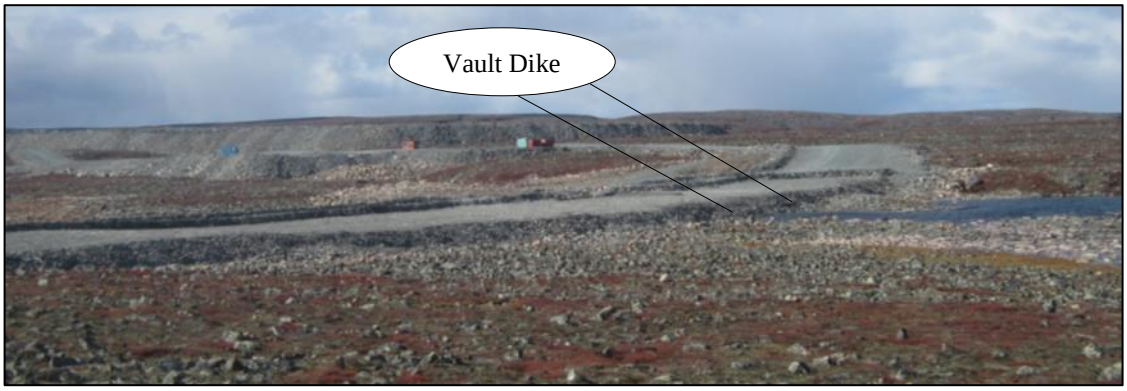


Photo 15: Vault Dike with Wally Lake on the right.

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.

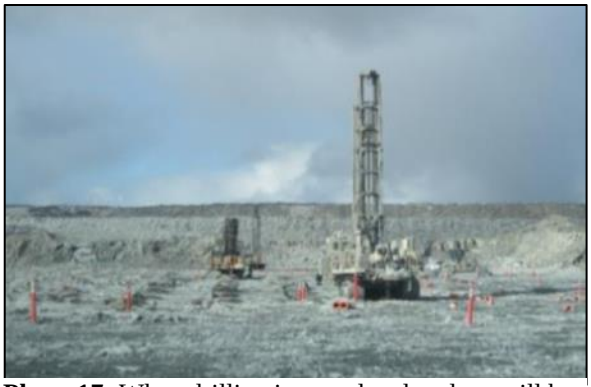


Photo 17: When drilling is completed, pylons will be overturned and placed in the holes.

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).

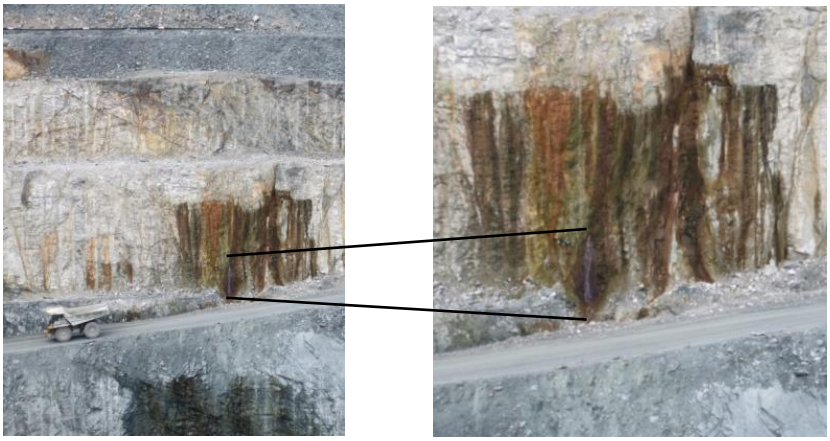


Photo 30: Seepage in the south wall of the Bay-Goose pit.

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.

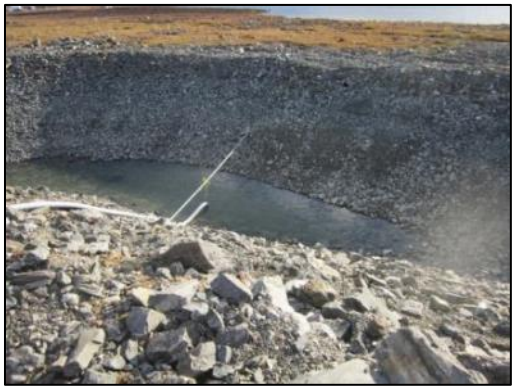


Photo 43: Point of seepage through the road at the Assay lab, located to the bottom right of Photo 42.

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.

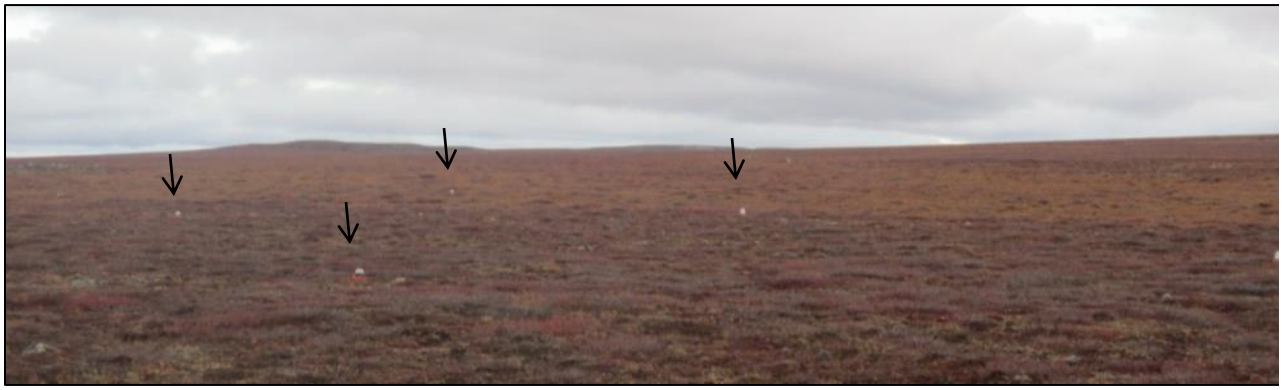


Photo 51: Dust sampling stations along the AWAR.

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.

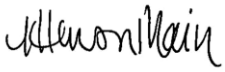
Condition 59 requires that the Proponent consult with Elders and the HTOs to design and implement deterrence measures to impede caribou from tailings ponds. While the wildlife tracks noted by the Monitoring Officer at the tailings storage facility did not appear to be those of caribou, the tracks did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

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

Stéphane Robert
stephane.robert@agnicoeagle.com
819-763-0229
Manager Regulatory Affairs Nunavut

Ryan Vanengen, MSc.
ryan.vanengen@agnicoeagle.com
819-651-2974
Environment Superintendent

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.*

Appendix B

Transport Canada / Transports Canada

File - Dossier
Z-4072-24-2-261114114756

TRANSPORT DANGEROUS GOODS INSPECTION REPORT
TRANSPORT DES MARCHANDISES DANGEREUSES - RAPPORT D'INSPECTION

REGION - RÉGION Prairie and Northern Region

PART - PARTIE 1

Name - Nom	Contact person - Personne - ressource
AGNICO EAGLE MINES LIMITED	VANENGEN, RYAN
Address - Adresse (No., street, city, province -N°, rue, ville province) PRIVATE MINE ROAD, BAKER LAKE NU X0C0A0	Position - Poste ENVIRONMENT SUPERINTENDENT
	Telephone no - N° de téléphone: (819) 759-3555 / Fax no. - N° de télécopieur: / Cell no. - N° de cellulaire: (819) 651-2974
	Email - Courriel ryan.vanengen@agnicoeagle.com

Class - Classe	0	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
Bulk IN Entrée grand contenant								✓			✓						✓			✓	
Package IN Entrée petit contenant		✓							✓		✓				✓					✓	
Bulk OUT Sortie gand contenant								✓			✓									✓	
Package OUT Sortie petit contenant									✓		✓				✓					✓	

Modes

	In / Entrée	Out/Sortie
Road / Routier	☑	☑
Air / Aérien	☑	☑
Rail / Ferroviaire	☐	☐
Marine / Maritime	☑	☑

24 hr. telephone no. -N° de téléphone 24 h	ERAP ref. no. - N° du PIU	ERAP activation telephone no. Numéro de téléphone d'activation du PIU	Equivalency Certificate numbers Numéros de certificat d'équivalence
(613) 996-6666	2-1919	800-567-7455	SUL 11422

PART - PARTIE 2

An inspection was conducted at this facility at time and date as indicated below, pursuant to the *Transportation of Dangerous Goods Act 1992 and Regulations*. You are hereby notified of the following areas of non-compliance.

Une visite a été effectuée en ces lieux à la date et à l'heure indiquée ci-dessous, en vertu de la *Loi sur le transport des marchandises dangereuses* et de son règlement. La présente vous indique que vous n'êtes pas en conformité avec la loi et le règlement dans les domaines suivants.

Act/Regulations section Dispositions du règlement/loi	Remarks - Remarques
2.3 / REG	Failing to use shipping name shown in column 2 of Schedule 1.
3.4(2) / REG	Dangerous goods information on shipping document with non-dangerous goods not displayed as per paragraphs 3.4(2)(a) to (c) of the TDG regulations.
3.5(1)(a) / REG	Consignor name and address in Canada not displayed on shipping document.
3.5(1)(c) / REG	Description of dangerous goods not displayed in proper order on shipping document.
3.5(1)(d) / REG	Quantity and/or unit of measure of each dangerous good not displayed on shipping document.
3.6(1)(a) / REG	Shipping document not indicating ERAP reference number.
3.6(1)(b) / REG	Shipping document not indicating ERAP telephone number.
4.1 / REG	Offer for transport, transport or import a means of containment of dangerous goods without displaying all required safety marks on same.
5.14(1)(a) / REG	Handle, Offer for Transport or Transport dangerous goods in Class 3, 4, 5, 6.1, 8 or 9 for transport by road in large means of containment not manufactured, selected or used in accordance with safety standard or IMDG code.
6.1(2) / REG	Employer directing or allowing employee to handle offer for transport or transport dangerous goods when not holding a training certificate in accordance with Part 6 and/or not in presence and under direct supervision of a person holding a training certificate.

VANENGEN, RYAN was briefed on the legislative and regulatory requiremens and must come into compliance
a été informé sur les exigences législatives et réglementaires et doit se conformer

with the Transportation of Dangerous Goods Act and Regulations.
à la Loi sur le transport des marchandises dangereuses et du Règlement s'y rapportant.

☐ No violation of the Transportation of Dangerous Goods Act and Regulations were noted in the context of the inspection conducted at this facility.
Aucune infraction à la Loi sur le transport des marchandises dangereuses et du Règlement s'y rapportant n'a été noté dans le cadre de l'inspection de ces

Inpector's comments (extra comments on form 16-0024B) - Observations de l'inspecteur (autres observations sur formulaire 16-0024B)

Agnico Eagle Mines is to advise Inspector Mohammed as to corrective action taken regarding non-compliance issues identified on this inspection report. Agnico Eagle Mines is required to provide:

DISTRIBUTION - **COPY 1 / COPIE 1** **REGION / RÉGION** **COPY 2 / COPIE 2** **RECIPIENT / RÉCIPIENDAIRE**

Canada

-the test and inspection report for the highway tank TRL27.
-a copy of a shipping document used for the transportation of UN1863.
-a copy of a shipping document for the transportation of dangerous goods to and from the barge area located in Baker Lake, NU.
-a copy of the TDG Certificate for the driver(s) of the highway tank TRL27.

Inspector's Name - Nom de l'inspecteur	Inspector Credentials - Pièces d'identité		Inspector's signature - Signature de l'inspecteur
	RIN No. - N° RIN	Badge No. - N° d'insigne	
Zeena Mohammed	99900926	5002	Zeena Mohammed
Local time (24 hr.) - Heure locale (24h)	Telephone no - N° de téléphone		Date (dd-mm-yyyy / jj-mm-aaaa)
	(204) 983-3508		25-08-2014

PART - PARTIE 3

Type of inspection / Type d'inspection
☐ Scheduled / Planifiée ☐ Follow-up / Suivi ☑ Triggered / Déclenchée ☐ Targeted / Visée ☐ Off-site / Hors site

Type of Site
☐ 0 - Do not handle DG / 0 - Ne manutentionnne pas des MD
☐ 1 - At initial point of entry for DG / 1 - Au point d'entrée initial des MD
☑ 2 - Transitory handling of DG / 2 - Manutention transitoire de MD
☐ 3 - Retailers/Receivers of DG, Joint inspections / 3 - Détaillants/Consignataires de MD, Inspections conjointes

Manager's initals - Initiales du gestionnaire	Date (yyyy-mm-dd / aaaa-mm-jj)