Appendix A1

Report: 2013 KIA Quarterly Reports

MEADOWBANK DIVISION

Production Lease KVPL08D280

2013 First Quarter Report

April 2013

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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 2013.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 81,905 oz. of gold;
- Mined 8,195,970 tonnes of waste rock, ore, overburden and re-handling.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1, 018,761	1, 018,761
Gold Grade (g/t)	2.70	2.70
Gold Produced (oz.)	81,905	81,905

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	0	0
Waste Rock Production (t)	7, 054,736	7, 054,736
Ore Production (t)	628,899	628,899
Total Blasting (t)	8, 509,775	8, 509,775
Total Drilling (m)	204,754	204,754

1.4 DIKE CONSTRUCTION ACTIVITIES

The construction of Vault Dike was completed. The Vault dewatering preparation (pipe, WTP installation, etc) was also started during that period.

At the end of February 2013, the reclaim barge was shut down due to a water deficit at the reclaim pond. Since the end of February, the Mill is only using fresh water for the process plant. An action plan is under development with different departments – Engineering, Mill, Electrical, and Environment- to correct the situation and to be put in place in April.

Following the 60 days notification, Airstrip Extension construction has begun end of March.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2013 Mine Plan*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 2013.

There was no planned variation from the "*2013 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current Quarter, no (0) inspection has been held by regulators.

AEM received KIA audit report prepared by EEM on December 14th, 2012. An action plan was sent to KIA on February 26th, 2013; response to 3rd party audit conducted by EEM (Oct 1-4, 2012) on behalf of KIA.

AEM response by email to AANDC Inspector on February 13th regarding inspection done on July 12, 2012.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

No exceedance during the quarter.

33 spills were found on the site; one (one) spill was reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the first quarter, 33 spills were found on the site. One (1) spill was reported to the Government of Nunavut:

- 22 Kg of Cyanide were spilled outside of the mill while loading.

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 545,625 m^3. The total amount of reclaim water used in the mill was 469,881 m^3.

On January 3rd, 2013, AEM sent a letter to NWB regarding the reduction of freshwater consumption; AEM did reach license limit. However with changes in Water Management Plan and mill project AEM will need an amendment of the license for a freshwater increase. The water management plan was finalized in March and will be send with the amendment in April.

In February 2013, the reclaim water barge became unusable as a result of accidental shifting and intake of excess solids (mill slurry). This was also due to an overall lack of water in the reclaim pond. On February 21, 2013, ore processing began using fresh water only. Attempts were made to repair the barge, but were not successful, and due to frozen conditions, repositioning of the barge at this time was not possible. As a result of these conditions, fresh water use is anticipated to be higher than predicted in 2013.

Meadowbank's current NWB License (2AM-MEA0815) permits Agnico Eagle Mines Ltd. (AEM) to obtain 700,000 m^3 per year of fresh water for domestic camp use, mining, milling and associated uses. Despite significant success at engineering solutions to optimize fresh water use, requirements are projected to continue to exceed the permitted rate. Increased fresh water 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. Agnico Eagle Mines (AEM) Meadowbank Division will send in April 2013 a request to the Nunavut Water

Board for an amendment to the freshwater use rate at the Meadowbank Gold Project Water License # 2AM-MEA0815.

During the 1st Quarter no effluents continue through the diffuser in the Third Portage Lake (ST-9).

Agnico Eagle Mines (AEM) will also apply in April 2013 for a modification to the Type A water license part F, item 4 to include East dike seepage water as non-contact water effluent. Non-contact water (receiving environment water from Second Portage Lake), is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage attenuation pond. AEM is proposing to discharge seepage water from Second Portage Lake pump through a separate sump collection system and diffuser, back to Second Portage Lake prior to contact with mining activity (thus minimizing site contact water). The overriding premise of this application for a modification is to pump clean lake water back to Second Portage Lake before it is affected by mine contact water. AEM is proposing to install a diffuser to control erosion and disturbance of the bottom sediment. Based on discharge modelling presented in the application, the discharge water quality is not expected to cause adverse effects to aquatic environment. Nevertheless, monitoring programs will follow Type A water license requirements including non-contact water monitoring, MMER sampling (if applicable) and Core Receiving Environment Monitoring Program.

4.3 WILDLIFE MANAGEMENT

At the end of February, 200 caribou were seen adjacent to AWPR. No issues were report.

Deterrence practices on wolverines and caribou were effectives and site monitoring is still ongoing. Despite the deterrence, a wolverine had to be killed on January 27th due to safety concerns. The GN officer was informed on January 28th, 2013 and the written report was sent on January 29th, 2013. The carcass was delivered to Wildlife Officer in Baker Lake on February 1st.

On March 6th, 5 caribou were killed by the grader on AWPR and report to GN and KIA. The carcasses were taken to Baker Lake Wildlife Officer.

On March, a wolverine was stuck in grease trap building at Exploration Camp but escape by his self. The environmental department has given recommendations to seal building.

A toolbox meeting was held with Maintenance department on January 13th to explain our politic on feeding animal around site. Also, a memo was sent to all staff employees.

Nunavut Environment began the 2013 hunter Harvest Study in Baker Lake during the quarter.

Updated Aquatic Effect and Core Receiving Environment Monitoring Plans (AEMP/CREMP) was finalized and send to regulator in accordance with our License.

~~4.4~~ PERMITTING

Vault Fishout Work plan being developed in collaboration with DFO and a final version will be send for approval in April. AEM received the revised Fisheries Authorizations (NU-03-0191.3) for the Meadowbank project (Appendix A). The fisheries Authorization for Vault will be received in April.

Modification request for the Airstrip Extension was submitted on January 27th 2012 as per water license. Following the 60 days notification, Airstrip Extension construction has begun end of March. Monitoring of turbidity and TSS on Third Portage Lake (TPL) at the airstrip extension has begun during the week on March 18th, 2012. No increase of turbidity was found.

AEM received from Environment Canada a compliance order dated October 11th, 2012 for the Baker Lake Fuel Storage Facility regarding registration #'s not posted, no monthly visual inspection form, secondary containment at ship to shore fuel transfer area, single walled pipe underground outside secondary containment. Items have been addressed. First compliance date is November 1st, 2012 for confirmation that registration #'s posted at site and monthly visual inspection form completed and program implemented (complete). Subsequent compliance dates (December 15th, 2012) plans for implementation of secondary containment at ship to shore fuel transfer area and plan to permanently withdraw single walled piping outside secondary containment. AEM sent response to Environment Canada on November 28th, 2012 and February 25th, 2013 regarding the compliance order issue in October (Appendix B).

Environment Canada provided a response to ‘’EEM Cycle 1 Interpretive Report, Meadowbank Division” submitted on July 1st, 2012; the Technical Advisor Panel determined that the report meets the requirements of the MMER-EEM and AEM is preparing a response to comments (Appendix C).

The Nunavut Impact Review Board’s 2011-2012 Annual Monitoring Report for Meadowbank Gold Project and Board’s Recommendations were received on December 7th. Environment department are responding to recommendations internally and submit responses on January 10th, 2013 (Appendix D).

The following reports were completed and submitted to regulators:

- 2013 Annual Mine Plan;
- Status of the fresh water consumption to NWB;
- Vault dike construction drawings and MDRB reports to NWB;
- 2012 Annual Geotechnical Inspection and Action plan to NWB;
- Detailed engineering of Vault Dike to NWB;

- Spill Training records sent to Transport Canada Inspector for Oil Pollution Emergency Plan;
- KIA Q4 2012 Production Report submitted;
- KIA Q4 2012 report detailing water usage and fees plus payment submitted;
- Updated Aquatic Effects and Core Receiving Environment Monitoring Plan (AEMP/CREMP) sent to NWB
- Oil Pollution Emergency Plan (OPEP) sent to Transport Canada for review;
- Landfarm/Contaminated Soil Facility submitted to Regulatory Affairs (include in the annual report);
- Reviewed Sewage Treatment Plan Operating Manual(include in the annual report);
- Nunavut Water Board Monthly reports were sent each month.
- MMER annual report via electronic database;
- EEM annual report via electronic database;
- EEM annual report addendum including QAQC activities.

Appendix A

DFO File No.: 03-HCAA-CA7-00191
Authorization No.:NU-03-0191.3

FISHERIES ACT AUTHORIZATION

Authorization issued to:

Agnico Eagle Mines Ltd. *(hereafter referred to as the "Proponent")*
Meadowbank Division
Regional Office 20, Route 395
Cadillac, QB
J0Y 1C0

Location of Proposed Development

Nearest community (city, town, village): Baker Lake
Municipality, district, township, county: Kivalliq Region
Province: Nunavut
Name of watercourse, waterbody: Second and Third Portage Lakes
Longitude and latitude, UTM Coordinates: Longitude 96°03'27", Latitude 65°01'18", Zone 14, Easting 639368, Northing 7213024

Valid Authorization Period for Impacts to Fish and Fish Habitat

The valid period of this authorization for the harmful alteration or disruption, or destruction of fish habitat pursuant to paragraph 35(2)(b) and the destruction of fish pursuant to paragraph 32(2)(c) includes:

From	To
Date of Issuance	December 31, 2017

The valid authorization periods for other conditions of this Authorization are set out below as **Conditions of Authorization**.

Description of Proposed Development

The proposed development impacting on fish and fish habitat involves:

The construction of Portage Pit in Second Portage Lake. A portion of Portage Pit is separated from the remainder of the Lake by the East Dike, and from each other by the Central Dike.

The construction of Bay-Goose Pit in Third Portage Lake which is separated from the Lake by Bay-Goose Dike and South Camp Dike.

Second Portage and Third Portage Lakes will undergo partial dewatering to facilitate excavation activities.

Description of Authorized Impacts to Fish and Fish Habitat

Authorized impacts to fish and fish habitat resulting from the works, undertakings, operations or activities associated with proposed development described above include:

Location	Work or Undertaking	Habitat Units Lost (HU's)
Second Portage Lake	Dewatering; excavation, road and dike footprint (east and central dikes); and, in water placement of coarse material.	26.46
Third Portage Lake	Dewatering; excavation, road footprint; Bay Goose and South Camp dike footprints; and, in water placement of coarse material	39.68
Total		66.14

Conditions of Authorization

1. Conditions that relate to the **Proponent's Plan**:

1.1 The conditions of this Authorization notwithstanding, should the above authorized impacts to fish and fish habitat in the opinion of the Fisheries and Oceans Canada (DFO) be greater than previously assessed, then DFO may suspend any works, undertakings, activities and/or operations associated with the proposed development, to avoid or mitigate adverse impacts to fish and fish habitat. DFO may also direct the Proponent and its agents, and contractors, to carry out at the Proponent's expense any modifications, works or activities deemed necessary by DFO to avoid or mitigate further adverse impacts to fish and fish habitat. In circumstances where DFO is of the view that greater impacts may occur than were contemplated by the parties DFO may also modify or rescind this authorization. If the authorization is to be changed the Proponent will be given an opportunity to discuss any proposed modifications or

rescission.

1.2 The Proponent confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent and acknowledges that they are solely responsible for all design, safety and workmanship aspects of all the works associated with this Authorization.

1.3 The works, undertakings, activities and operations must comply with the means and conditions as identified within this Authorization. Impacts to fish and fish habitat other than that specifically identified within this Authorization are not permitted.

1.4 Works and undertakings shall be conducted in accordance with the practices outlined in the following reports:

- Core Receiving Environment Monitoring Program (CREMP): Design Document 2012 – Meadowbank Division. Prepared by Agnico-Eagle Mines Ltd. – Meadowbank Division, dated December 2012.
- Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012
- No Net Loss Plan Implementation Cost Estimate and Construction Schedule – Meadowbank Gold Mine Project, Revision 1, prepared by Agnico-Eagle Mines Ltd. – Meadowbank Division, dated July 8, 2008 **to be updated by June 1, 2013**
- Technical Memorandum – Fish Out Program for the Meadowbank Gold Project, prepared by Ryan Hill and Gary Mann (Azimuth Consulting Group Inc.), dated May 30, 2008
- Application for Authorization for Works or Undertakings Affecting Fish Habitat, signed by Rachel Gould (Agnico-Eagle Mines Ltd.) dated May 28, 2008
- Proposed Water Quality Monitoring and Management Plan for Dike Construction and Dewatering at the Meadowbank Mine, Ver.6, prepared by Agnico-Eagle Mines Ltd., dated April 2008
- Meadowbank Type A Water License – Response to Pre-Hearing Commitments, signed by Rachel Gould (Agnico-Eagle Mines Ltd.), dated March 7, 2008
- Meadowbank Gold Project – Type A Water License Application, prepared by Meadowbank Mining Corporation, dated August 2007
- Report Addendum Detailed Design of Dewatering Dikes Meadowbank Gold Project, 3 Volumes, Document No.492, Ver.0, prepared by Golder Associates, dated July 12, 2007
- Final Report Detailed Design of Dewatering Dikes Meadowbank Gold Project, 3 Volumes, Document No.342, Ver.0, prepared by Golder Associates, dated March 13, 2007

2. Conditions that relate to the **mitigation** of potential impacts to fish and fish habitat:

2.1 A qualified biologist or environmental inspector shall be on site during all in-water construction, compensation and restoration works to ensure implementation of the designs as intended in the proponent plan and conditions of this Authorization.

2.2 Fish salvage methods shall be implemented as per the approved Fish-Out Program at the Meadowbank Property for removing fish in the diked off portions of Second Portage Lake and Third Portage Lake.

2.3 All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, debris, etc) from entering the water.

2.3.1 Any stockpiled materials shall be stored and stabilized above the ordinary high water mark of any water body.

2.3.2 Vehicle and equipment re-fuelling and maintenance shall be conducted above the ordinary high water mark of any water body.

2.3.3 Any part of equipment entering the water shall be free of fluid leaks and externally cleaned/degreased to prevent any deleterious substance from entering the water.

2.4 Only clean material free of fine particulate matter shall be placed in the water.

2.5 Sediment and erosion control measures shall be implemented prior to work, and maintained during the work phases, including decommissioning and restoration phases, to mitigate impacts to fish habitat.

2.5.1 All disturbed areas shall be stabilized upon completion of work and restored to a pre-disturbed state or better.

2.6 The Proponent shall develop and enforce a policy that prohibits fishing on Second Portage Lake and Third Portage Lake and surrounding lakes and streams by individuals on the mine site in a capacity as mine employee, contractor or visitor during all phases of mining activities, unless otherwise agreed to by DFO.

2.6.1 This Policy shall be made available and understood by individuals on the mine site in a capacity as mine employee, contractor or visitor during all phases of mining activities.

3. Conditions that relate to monitoring and reporting of Authorization conditions:

3.1 The Proponent shall undertake monitoring and report to DFO annually, by March 31st, whether works, undertakings, activities or operations for the mitigation of potential impacts to fish and fish habitat were conducted according to the conditions of this Authorization, by:

3.1.1 Providing dated photographs and inspection reports to demonstrate effective

implementation and functioning of mitigation works undertakings, activities or operations described above as mitigation conditions.

3.1.2 Providing details of any contingency measures that were followed to prevent impacts greater than allowed by this Authorization in the event that mitigation measures did not function as described in the Proponent Plan.

4. Conditions that relate to the **compensation** for the authorized impacts to fish and fish habitat:

4.1 111.08 Habitat Units (HU's) of compensatory fish habitat shall be created by re-flooding Second Portage, Third Portage, and Vault Lakes; creating access to Wally Lake; and, creating shoals and boulder gardens in Second Portage Lake.

5. All fish habitat compensatory works shall be completed and functioning according to the *Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012*

5.1 If at any time the Proponent becomes aware that the compensatory habitat is not completed and/or functioning according to the above criteria, the Proponent shall carry out any works which are necessary to ensure the compensatory habitat is completed and/or functioning as required by this Authorization.

5.2 The Proponent confirms that they shall leave the compensatory habitat undisturbed. After the compensatory habitat has been created the Proponent shall not carry on any work, undertaking, activity or operation that will adversely disturb or impact the compensatory habitat.

6. Conditions that relate to monitoring and reporting of **compensation** (described above):

6.1 The Proponent shall conduct monitoring of the compensatory habitat according to the approved schedule and criteria below:

6.2 The Proponent shall report to DFO that the compensation works were conducted according to the conditions of this Authorization by providing the following:

6.3 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 Plan Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 08, 2008* **to be updated by June 1, 2013**.

6.4 A photographic record of before, during and after construction, during decommissioning and post-restoration, shall indicate that all works and undertakings have been completed according to the approved proponent plan and conditions of this Authorization.

6.4.1. The photographic record shall include, but not be limited to, a record of the sediment and erosion control measures and the fish habitat compensation measures.

6.4.2. The photographs for each pre-construction, during construction, post-construction,

decommissioning and post-restoration time periods shall be taken from the same vantage point(s) and general direction.

6.4.3. All photographs shall be clearly labelled as to date and vantage point(s). The photographic vantage point(s) and viewing directions shall be indicated, and clearly indexed to the photographs, on a plan view drawing of the construction site(s).

6.5 A written report and photographic record summarizing the results of the Monitoring Program shall be submitted to the Iqaluit, Nunavut office of Fisheries and Oceans Canada by March 31 of each year following the monitoring year detailed in the *No Net Loss Plan Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 8, 2008* **to be updated by June 1, 2013**.

7. Conditions that relate to the **financial security**:

7.1 The Proponent shall provide DFO with an updated irrevocable Letter of Credit as security for the completion and performance by the Proponent with regard to all of its obligations under this Authorization, including the required fish habitat compensation and monitoring, reporting, and additional work determined by DFO if required, according to the following schedule

7.1.1 The Proponent shall provide DFO an updated Letter of Credit by a June 1, 2013.

7.2. The Proponent shall provide DFO with the following items at the time of the Contingency Plan submission as per the *Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012*:

7.2.1. A cost estimate report of the amount to cover the Contingency Plan's implementation costs.

7.2.2. If the cost estimate for the implementation of the Contingency Plan exceeds the amount in the irrevocable Letter of Credit according to condition 7.1, the original irrevocable Letter of Credit shall be amended to reflect the greater amount and shall be submitted to the Iqaluit, Nunavut office of Fisheries and Oceans Canada– Fish Habitat Management, Eastern Arctic Area within two (2) weeks of DFO approval of the Contingency Plan.

7.3. The security deposit provided by the Proponent must be in a form agreed to by DFO.

7.4. The Proponent shall maintain the deposited amounts until all of the Proponent's obligations under this Authorization are satisfied.

7.5. At the discretion of DFO, the amount of the security deposit may be adjusted annually to account for fish habitat compensation completed or to accomplish additional work that DFO may require to satisfy the objectives of fish habitat compensation.

7.6. DFO shall be able to call on the security deposit unconditionally if the Proponent does not meet any of the requirements outlined within this Authorization, as determined solely by DFO.

7.7. To the extent not prohibited by law, the Proponent shall have the right to audit, from time to time with reasonable notice to DFO and at the Proponent's expense, any expenditure of funds withdrawn by DFO.

7.8. Once the Proponent has completed to the satisfaction of DFO all studies, reports and works required by DFO, DFO shall return to the Proponent any unused portion of the security

deposit.

Authorization Limitations and Application Conditions

The holder of this authorization is hereby authorized under the authority of paragraph 32(2)(c) and/or paragraph 35(2)(b) of the Fisheries Act. R.S.C., 1985, c.F. 14 to carry out the works, undertakings, activities and/or operations as described herein. This authorization is valid only with respect to fish and fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This Authorization does ***not*** permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish except under conditions that can only be authorized by regulations made by Governor in Council.

At the date of issuance of this Authorization, no aquatic SARA listed species were identified. In the event that a SARA listed species is identified or an aquatic species becomes listed under SARA, this authorization does not permit harm, harassment or killing of any species at risk (SARA section 32), the damage or destruction of residence (SARA section 33) or the destruction of critical habitat (SARA section 58).

Failure to comply with any condition of this authorization may result in charges being laid under the *Fisheries Act*.

This authorization should be held on site and work crews should be made familiar with the conditions attached.

The Proponent shall advise DFO in advance if the ownership or responsibility for the conditions of this authorization changes.

Date of Issuance: MAR 0 5 2013

Approved by:

David Burden
A/Regional Director General
Central & Arctic Region
Fisheries and Oceans Canada

Transmittal for Review and Signature as per Decision Protocol for Habitat Management Decisions under the *Fisheries Act* for C & A Region

Major Project Authorization

To:	David Burden	Date :	MAR 0 5 2013
Project Title/ Description:	Meadowbank Gold Mine Project		
Originating Area/Office:	Iqaluit Office	DFO File No:	NU-03-0191.3
		PATH No:	03-HCAA-CA1-00191
Assessor:	Elizabeth Patreau	Phone Number:	867-979-8019

***Fisheries Act* Authorizations:**

☒	Subsection 35(2) – Authorization of harmful alteration, disruption or destruction of fish habitat, with or without s.32	☐	Amendment to Subsection 35(2) Authorization with or without s.32 considerations or S. 32 Authorization		
☐	Section 32 – Authorization of the destruction fish by means other than fishing				
☐	CEAA EA process complete (S. 20) Determination Date entered in PATH Determination Date:	☐	CEAA/EA process exempt (Exclusion Regulations)	☐	(CEAA/EA process exempt S. 7 Emergency/National security)
☒	EA (MVRMA or NIRB) process complete				

Background/Issues:

☐	Criteria and Issues as identified below	☒	No issues Identified

Request Transmittal/Approval Via:

Title	Reviewed	Date
Habitat Team Leader – Derrick Moggy	☒	February 25, 2013
Director, Northern Operations – Larry Dow	☒	February 25,2013
Regional Manager – Julie Dahl	☒	February 28, 2013
Regional Director – Dale Nicholson	☒	1st March 2013

Fisheries and Oceans Canada
Pêches et Océans Canada

Central and Arctic Region
520 Exmouth Street
Sarnia, Ontario
N7T 8B1

Région du centre et de l'arctique
520 rue Exmouth
Sarnia (Ontario)
N7T 8B1

Our file *Notre référence*
NU-03-0191.3

Agnico Eagle Ltd.
Meadowbank Division
c/o Stéphane Robert
Regional Office 20, Route 395
Cadillac, QB
J0Y 1C0

Dear Mr. Robert:

Subject: *Fisheries Act* Authorization

Pursuant to paragraphs 32(2)(c) and 35(2)(b) of the amended *Fisheries Act*, Fisheries and Oceans Canada (DFO) is providing the attached revised *Fisheries Act* Authorization for impacts to fish and fish habitat arising from the Meadowbank Gold Mine Project, Second Portage and Third Portage Lake components.

Failure to comply with all the conditions of the attached Authorization may lead to prosecution under the *Fisheries Act*.

Please notify this office at least 10 days before starting the work, undertaking, operation or activity. A copy of this Authorization should be kept on site while the work is in progress. Work crews should be familiar with and able to adhere to the conditions. In addition, under the new *Fisheries Act*, there is a requirement to notify DFO of any harmful alteration or disruption, or any destruction, of fish habitat that has not been authorized. Such notifications should be directed to this office.

If you or anyone conducting work on your behalf have any questions please contact Elizabeth Patreau at our Iqaluit office at (867)979-8019, by fax at (867)979-8039, or by email at Elizabeth.Patreau@dfo-mpo.gc.ca.

Sincerely,

David Burden
A/Regional Director General
Central and Arctic Region
Fisheries and Oceans Canada

Canada

Appendix B

Environment Canada Environnement Canada

ENFORCEMENT BRANCH
Environmental Enforcement

DIRECTION GÉNÉRALE DE L'APPLICATION DE LA LOI
Application de la loi en environnement

ENVIRONMENTAL PROTECTION COMPLIANCE ORDER AUTHORITY

This Environmental Protection Compliance Order is issued under section 235 of the *Canadian Environmental Protection Act, 1999 (CEPA,1999)*.

NEMISIS FILE NUMBER: 4408-2012-07-31-002

NAME OF PERSONS TO WHOM ORDER IS DIRECTED

This Order is directed to the following persons:

Agnico-Eagle Mines Ltd.
Meadowbank Division
93, Rue Arseneault, Bureau 202,
Val-d'or, Quebec, JP90E9
Tel: 819 759-3555

Kevin Buck
Environment Superintendant
Agnico-Eagle Mines Ltd.
Meadowbank Division
PO Box 540
Baker Lake NU X0C 0A0
819-759-3555 x6838
kevin.buck@agnico-eagle.com

Stephane Robert
Manager Regulatory Affairs Nunavut
Agnico-Eagle Mines Ltd.
93, Rue Arsenault, Bureau 202
Val-d'or, Quebec, JP90E9
stephane.robert@agnico-eagle.com

The persons listed above are referred to as "you" in this document.

PROVISION OF ACT OR REGULATIONS THAT IS ALLEGED TO HAVE BEEN OR WILL BE CONTRAVENED

I have reasonable grounds to believe that the following provisions of *CEPA, 1999 and* the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* have been contravened and are continuing to be contravened:

Storage Tanks Systems for the Storage of Petroleum Products and Allied Petroleum Products Regulations

10. (1) Subject to subsection (2), the owner or operator of a storage tank system that has single-walled underground piping, other than one described in subsection 3(3), that is installed before the coming into force of these Regulations must, within four years after the day on which these Regulations come into force,

> (a) temporarily withdraw that system from service in accordance with section 43, permanently withdraw that piping from service in accordance with section 44, remove it in accordance with section 45 and replace it in accordance with section 14; or
>
> (b) permanently withdraw that system from service in accordance with section 44, and
>
> > (ii) in the case of a storage tank system that has field-erected aboveground tanks or vertically-oriented underground tanks, remove all piping and other components that are outside the tanks in accordance with section 45.

(2) The owner or operator is not required to comply with subsection (1) if, on the day on which these Regulations come into force, that piping has

> (a) in the case of steel piping, cathodic protection and leak detection, groundwater monitoring wells, vapour monitoring wells, single vertical check valves or mechanical line leak detection devices; and
>
> (b) in the case of non-metallic or copper piping, leak detection, groundwater monitoring wells, vapour monitoring wells, single vertical check valves or mechanical line leak detection devices.

14. (1) The owner or operator of a storage tank system that installs the system or any component of the system on or after the day on which these Regulations come into force must ensure that the system or the component conforms to the applicable requirements set out in the following provisions of the CCME Code of Practice:

(*a*) Part 3, subject to the following:

> (i) excluding Section 3.2, Clause 3.3.1(1)(c), Article 3.3.2, Clause 3.4.1(1)(c), Article 3.4.3, Clauses 3.5.1(1)(a) and 3.6.1(1)(l), Section 3.7, Clause 3.9.2(2)(a), Articles 3.9.4 and 3.10.1, and
>
> (ii) in Subclause 3.9.2(1)(a)(ii), the reference to "Aboveground Secondary Containment Tanks" must be read as a reference to "Secondary Containments for Aboveground Flammable and Combustible Liquid Storage Tanks";

Part 3, Section 3.3.1, Field-erected Storage Tank Systems, of the CCME Code of Practice provides the following applicable requirements:

3.3.1(1) A field-erected *storage tank system* shall:

(a) have *corrosion protection* in conformance with Section 3.8;

(b) have a *secondary containment* system in conformance with Section 3.9

~~(c) have *leak detection* in conformance with Part 6~~ **[clause 3.3.1(1)(c) is excluded]**

(d) have *containment sumps*, as applicable;

(e) be provided with overfill protection;

(i) for pipeline delivery, in the form of an alarm system that will automatically alert pipeline or terminal personnel so that action can be taken to prevent the *storage tank* from being overfilled;

(ii) for truck, rail, ship or barge deliver, in the form of a visual and audible alarm system for detecting a high level that will activate and alert personnel in enough time to terminate the flow of the product to the storage tank and prevent an overfill (see Appendix B, note B.3.3.1(1)(e)(ii));

or

(iii) in conformance with API RP 2350-96, "Overfill Protection for Storage Tanks in Petroleum Facilities": and

(f) have piping in conformance with Part 5, as applicable

Appendix B, note B.3.3.1(1)(e)(ii) of the CCME Code of Practice, referred to in paragraph (e) above, provides as follows:

(e)(ii) The overfill alarm system required shall be in addition to the alarm or gauging system that is routinely used. This system shall be used as a back-up system when the primary means of detecting a high level has failed.

(7) The owner or operator of a storage tank system must comply with the applicable requirements before any petroleum products or allied petroleum products are first transferred into that system.

15. (1) The owner or operator of a storage tank system must ensure that petroleum product and allied petroleum product transfer areas are designed to contain spills that occur during the transfer process.

(2) Subsection (1) applies to storage tank systems installed before the coming into force of these Regulations four years after the day on which these Regulations come into force

23. (1) The owner or operator of a storage tank system installed before the coming into force of these Regulations that has aboveground piping without secondary containment must visually inspect the walls of that piping within two years after the day on which these Regulations come into force to determine if the piping is leaking and after that inspection they must

(*a*) immediately

(i) use continuous external aboveground pipe leak monitoring for that piping, or
(ii) implement a corrosion analysis program for that piping, developed and conducted by a corrosion expert, that includes at least an annual inspection;

(*b*) once each month, visually inspect that piping; or

(*c*) annually perform a piping precision leak detection test of that piping in accordance with section 24.

(2) The continuous external aboveground pipe leak monitoring must

(*a*) be carried out using a sensor cable system designed either for installation on the bottom of the piping or for placement on the ground underneath the piping;

(*b*) be capable of detecting a leak rate of at least 0.38 L/h within 96 hours after the onset of the leak at the lowest expected soil temperature at the site where the sensor cable system is installed;

(*c*) be capable of locating the leak with an accuracy of ± 1 m;

(*d*) be capable of continuously monitoring sensor cable system integrity; and

(*e*) have an alarm located at a place of work where it can be readily heard and seen.

27. The owner or operator of a storage tank system that has tested or inspected any component of the system for leaks under sections 16 to 26 must keep a record that includes the following information:

(*a*) the test or inspection date;

(*b*) the storage tank system identification number;

(*c*) the allied petroleum product or the type of petroleum product stored in the system;

(*d*) the test or inspection results;

(*e*) the testing method;

(*f*) the name and address of the individual and, if applicable, the company that performed the test or inspection; and

(*g*) the components of the corrosion analysis program referred to in subparagraph 23(1)(*a*)(ii). SOR/2012-99, s. 24.

28. (4) The owner or operator must display the identification number in a readily visible location on or near the storage tank system for which the number was issued.

RELEVANT FACTS

I, Ian Rumbolt, an Enforcement Officer (EO) employed by Environment Canada, and Tim Morton an Enforcement Officer (EO) employed by Environment Canada did on July 26, 2012 conduct an on-site inspection of the Agnico-Eagle Mines Ltd.(AEM) Bulk Fuel Storage Facility located in Baker Lake, NU

I have reasonable grounds to believe that these are the relevant facts surrounding the alleged contravention:

1. THAT the AEM Bulk Fuel Storage Facility located at 64°18'36"N and longitude 95° 58'04"W in Baker Lake, NU is owned, operated and maintained by the AEM.

2. THAT our inspection determined that AEM Bulk Fuel Storage Facility is located on Commissioners Lands and contains a petroleum product.

3. THAT the *Canadian Environmental Protection Act,1999* (CEPA) defines "federal land" as "land, including any water, that belongs to Her Majesty in the right of Canada, or that Her Majesty in right of Canada has the right to dispose of, and the air and all layers of the atmosphere above the subsurface below that land."

4. THAT section 49 of the *Nunavut Act* provides that lands vested in Her Majesty in right of Canada include public land, the admin and control of which has been transferred to the Commissioner. "Lands vested in Her Majesty in right of Canada" has the same meaning as "land that belongs to Her Majesty in right of Canada". Therefore, federal lands regulated under CEPA 1999 include public lands under the admin and control of the Commissioner.

5. THAT the inspection determined that the AEM Bulk Fuel Storage Facility contains fuel storage systems capable of holding fuel in quantities of 2500L or more that were installed before the entry into force of the Regulations (i.e. June 12, 2008), as well as fuel storage systems that were installed after the Regulations came into force. These fuel storage systems are located on federal land and are therefore subject to regulation by the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.*

6. THAT the inspection revealed that there is one operating storage tank system (diesel fuel) located in the AEM Bulk Fuel Storage Facility.

7. THAT the inspection determined that the fuel storage tank system located on site was in operation but has not been accurately identified pursuant to section 28 of the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* in that no identification number had been obtained and posted at the time of the inspection. Since the inspection, AEM has identified the system in the FIRSTS on August 28, 2012 and obtained an Environment Canada Identification number EC00025772 for the bulk storage facility.

8. THAT the inspection revealed that there are sections of single-walled piping which are buried and/or go underground that are in use in contravention of Section 10(1)a of the

Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

9. THAT the inspection revealed that there are sections of single-walled piping located within the tank farm and sections of single-walled piping running toward the laydown area which are without secondary containment, that while in use have not been subjected to routine visual inspection, monitoring or leak detection which is a contravention of Section 23 of the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*
10. THAT routine visual inspections were being completed on most of the above ground piping, however, records could not be produced at the time of the inspection as per Section 27 of the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.*.

11. THAT the design of the transfer area is insufficient to contain spills that occur during the transfer process, which is in contravention of section 15 of the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*

12. THAT at the time of the inspection an Emergency Plan was not readily available for review; however AEM provided the emergency plan on August 24, 2012.

Therefore, based upon the aforementioned facts, I have reasonable grounds to believe:

That AEM did not withdraw and remove single walled underground piping, did fail to have a sufficient product transfer area designed to contain spills that occur during the transfer process, have not visibly displayed the identification number at a readily visible location on or near the storage tank system, and did fail to keep records for visual inspections of the single walled piping, all contrary to the aforementioned provisions of the *Storage tank Systems for Petroleum Products and Allied Products Regulations and CEPA 1999*, and that these provisions continue to be contravened.

MEASURES TO BE TAKEN

I direct you to take the following measures to comply with the *Storage Tank Systems for Petroleum Products and Allied Products Regulations* made pursuant to CEPA 1999

Single Walled Underground Piping

1) On or before December 15, 2012 AEM is to provide Environment Canada a plan that identifies timelines and activities to carry out the permanent withdrawal, removal and replacement of the single walled underground piping associated with the system identified as EC00025772 in accordance with Section 10(1)(a) (removal) and Section 14 (installation) and Section 44 (permanent withdrawal) of the Regulations. The approved plan for the permanent withdrawal, removal, and replacement of single walled underground piping must be completed before any future petroleum products are transferred into the storage tank system.

Transfer Area Containment

2) On or by December 15, 2012 you must design and provide a schedule to implement a sufficient product transfer area designed to contain spills that occur during the transfer process as

required by 15(1) of the *Storage tank Systems for Petroleum Products and Allied Products Regulations*

Display EC Identification Number

3) On or by November 1, 2012 you must provide confirmation to Environment Canada that the identification number EC00025772 is displayed in a readily visible location at or near the storage tank system in accordance to subsection 28(4) of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations*

Monthly Visual Checklist

4) On or by November 1, 2012, you must prepare and implement a leak detection method for all single walled aboveground piping as required by section 23 of the of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations.* The leak detection must consist of monthly visual inspections, continuous monitoring or annual testing. Information on routine leak detection must be documented in records of the applicable required items set out in Section 27 of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations*

5) On or by March 15, 2013, provide a report to Environment Canada that includes:

a) progress on the plan to address single walled underground piping
b) confirmation of the schedule for ensuring that the design of the product transfer area is sufficient to contain spills prior to the next fuel transfer into the facility
c) Provide leak detection inspection records as required by section 27 of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations for the period* starting November 5, 2012 until this report is submitted.

Submission of Reports and Documents

Reports and documents are to be submitted in writing to the following address:

Environment Canada

PO Box 1870, Qimugjuk Building

Iqaluit NU X0A 0H0

Attention: Ian Rumbolt

DURATION OF ORDER

This order is effective until the date on which the above identified measures are met, with acknowledgement from Environment Canada, or until April 9th, 2013.

REVIEW BY CHIEF REVIEW OFFICER

You may request the Chief Review Officer to review this order within 30 days from the day you received a copy of this order by notice in writing to:

Alan Pope

Chief Review Officer
Environmental Protection Review Canada
240 Sparks Street
1st floor West Tower
Ottawa, Ontario K1A 1A1

Compliance with this EPCO is mandatory, whether you request a review or not.

This Order is issued on October 11, 2012 at the City of Iqaluit in the Territory of Nunavut by:

Ian Rumbolt
Enforcement Officer
Northern District
Prairie and Northern Region
Enforcement Branch
Environment Canada
PO Box 1870
Qimugjuk Building
Iqaluit, Nunavut X0A 0H0
Phone (867) 975-4637
Fax (867) 975-4594
Ian.Rumbolt@ec.gc.ca

cc.
Craig Broome
Operations Manager
Enviroment al Enforcement Directorate
Prairie and Northern Region
Enforcement Branch
Yellowknfie, NT

Michael Bell
Regional Director
Environmental Enforcement Directorate
Prairie and Northern Region
Enforcement Branch
Environment Canada
Edmonton AB

Heather McCready
Manager of Operations Support
Environmental Enforcement Directorate
Enforcement Branch
Environment Canada
Gatineau, Québec

IMPORTANT

COMPLIANCE AND PENALTIES

Section 238 of the *Canadian Environmental Protection Act,* 1999 requires you to comply with this order. Failure to comply with the Order is an offence under paragraph 272(1)(*a*) of that Act.

Subsection 272(2) of the *Canadian Environmental Protection Act,* 1999 provides the following penalties for contravening this order:

(a) on conviction on indictment, a fine not exceeding $1,000,000 or imprisonment for a term not exceeding three years, or both; and

(b) on summary conviction, a fine not exceeding $300,000 or imprisonment for a term not exceeding six month, or both.

If you fail to take any of the measures specified in this order, an enforcement officer may take those measures or have them taken. An enforcement officer or other person authorized or required to take those measures may enter and have access to any place or property and may do any reasonable things that may be necessary in the circumstances.

Her Majesty in right of Canada may recover the costs and expenses of and incidental to any of the measures taken to ensure compliance with this order by suing for such costs and expenses within five years from the date on which the events occur or become evident to the Minister of the Environment, whichever is later.

The issuance of and compliance with this order is not a bar to any proceedings against you under this or any other act in relation to the alleged contravention.

Environment Canada may conduct future inspections to verify compliance with this order.

November 28, 2012

Ian Rumbolt
Enforcement Officer
Northern District; Prairie and Northern Region
Enforcement Branch; Environment Canada
PO Box 1870
Qimugjuk Building
Iqualuit, Nunavut X0A 0H0
Phone (867) 975-4637
Fax (867) 975-4594
Ian.Rumbolt@ec.gc.ca

RE: E.C. ENVIRONMENTAL PROTECTION COMPLIANCE ORDER AUTHORITY.
NEMSIS FILE NUMBER: 4408-2012-07-31-002

Mr. Rumbolt,

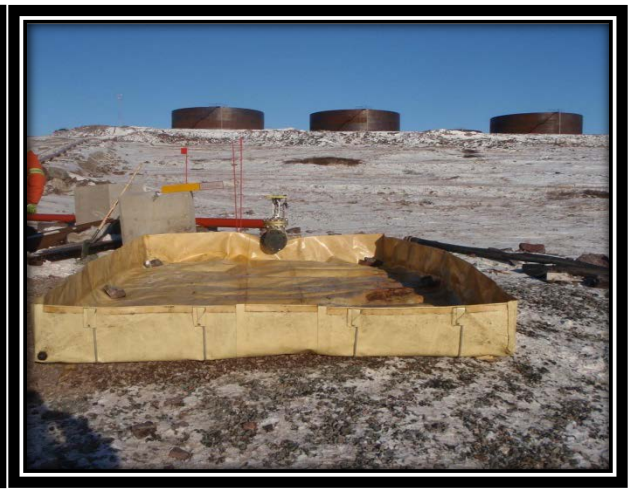
As you are aware I previously sent you correspondence, dated November 19, 2012, regarding compliance with the Environmental Compliance Order referenced above. Please accept this as an update to my previous letter.

1. SINGLE WALLED UNDERGROUND PIPING

The single walled pipes outside of secondary containment have been removed from underground use and are now above ground to allow for visual inspection of these pipes. It is our belief these actions bring us into compliance, and that this system can now have petroleum products transferred into the storage tank system in 2013.

2. TRANSFER AREA CONTAINMENT

Secondary containment for the transfer area has been installed. Need to refer to the email he sent acknowledging that this meets the regulations – you should have a copy.



3. DISPLAY EC IDENTIFICATION NUMBER

The EC identification signs have been installed in two locations. The first one is at the intake i.e. where the boat is connecting when delivering the fuel. The second one is at the loading area. As per your email received by Kevin Buck on November 1, 2012, this meets the requirement of the regulations.

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

4. MONTHLY VISUAL CHECKLIST

As mentioned in section 1. SINGLE WALLED UNDERGROUND PIPING, all transfer pipes outside of secondary containment structures at the site have been exposed so that the monthly visual inspections can be done. The monthly inspection will be under Site Services responsibilities and consist of a two part inspection. The first is on a monthly basis and consists of a complete installation visual inspection of the fuel farm in Baker Lake. AEM is considering an Annual Leak detection test. AEM will be engaging a person with expertise in corrosion protection to prepare a corrosion protection program for single walled piping outside of secondary containment in 2013. I have attached a copy of the monthly visual checklist. You advised our Environment Superintendent, Kevin Buck in an email dated November 8, 2012 that the form meets the requirements of the Regulations.

5. REPORT TO EC BEFORE MARCH 15TH, 2012

A full management plan regarding the following points will be provided to ENVIRONMENT CANADA prior to March 15th.

- progress on the plan to address single walled underground piping
- confirmation of the schedule for ensuring that the design of the product transfer area is sufficient to contain spills prior to the next fuel transfer into the facility
- Provide leak detection inspection records as required by section 27 of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations for the period* starting November 5, 2012 until this report is submitted

I trust this meets with your requirements. 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

February 25, 2013

Ian Rumbolt
Enforcement Officer
Northern District; Prairie and Northern Region
Enforcement Branch; Environment Canada
PO Box 1870
Qimugjuk Building
Iqualuit, Nunavut X0A 0H0
Phone (867) 975-4637
Fax (867) 975-4594
Ian.Rumbolt@ec.gc.ca

RE: E.C. ENVIRONMENTAL PROTECTION COMPLIANCE ORDER AUTHORITY.
NEMSIS FILE NUMBER: 4408-2012-07-31-002

Mr. Rumbolt,

Please accept the attached report as requested in item #5 of the Compliance Order issued to Meadowbank Mine Site on October 11, 2012.

I trust this meets with your requirements. 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

AGNICO-EAGLE

MEADOWBANK DIVISION

Management Program - Summary Report

February 2013

NEMSIS FILE NUMBER: 4408-2012-07-31-002

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BACKGROUND

On October 11, 2012 Agnico Eagle Mines (AEM), Meadowbank Division, was issued an Environmental Protection Compliance Order, NEMSIS FILE NUMBER: 4408-2012-07-31-002. This order was issued under section 235 of the Canadian Environmental Protection Act, 1999. This order was provided after an inspection performed by Ian Rumbolt Enforcement Officer, Environment Canada.

On November 28, 2012 AEM submitted a response to the compliance order. This response is attached as Appendix 1. The response outlined the immediate actions taken by AEM in regards to the order.

Within this order item #5 stated the following:

> *On or by March 15, 2013, provide a report to Environment Canada that includes:*
>
> *a) progress on the plan to address single walled underground piping*
> *b) confirmation of the schedule for ensuring that the design of the product transfer area is sufficient to contain spills prior to the next fuel transfer into the facility*
> *c) Provide leak detection inspection records as required by section 27 of the Storage Tank Systems for Petroleum Products and Allied Products Regulations for the period starting November 5, 2012 until this report is submitted.*

This report addresses the points in item #5 of Compliance Order NEMSIS FILE NUMBER: 4408-2012-07-31-002.

PROGRESS PLAN

The single walled pipes outside of secondary containment were removed from underground use on October 19, 2012 and are now above ground to allow for visual inspection of these pipes as stated in Appendix 1. It is our belief these actions bring us into compliance, and that this system can now have petroleum products transferred into the storage tank system in 2013. AEM has also taken action to engage the services of an expert in corrosion control to examine the single walled piping outside of secondary containment prior to our next fueling season or during 2013, as per Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations Section 23(1)(a)(ii).

PRODUCT TRANSFER AREA DESIGN

The product transfer facilities in use are designed to have sufficient containment for spills. Fuel transfer areas (i.e. valves, connections, etc.) are all supplied with either permanent or portable spill containment equipment to collect any spilled fluids.

LEAK DETECTION INPSECTION

AEM has developed a bi-weekly visual inspection program that has been in place since the EC inspection. Records of the inspections are attached in Appendix 2.

APPENDIX 1 – RESPONSE TO EC NEMSIS FILE NUMBER 4408-2012-07-31-002 V2

November 28, 2012

Ian Rumbolt
Enforcement Officer
Northern District; Prairie and Northern Region
Enforcement Branch; Environment Canada
PO Box 1870
Qimugjuk Building
Iqualuit, Nunavut X0A 0H0
Phone (867) 975-4637
Fax (867) 975-4594
Ian.Rumbolt@ec.gc.ca

RE: E.C. ENVIRONMENTAL PROTECTION COMPLIANCE ORDER AUTHORITY.
NEMSIS FILE NUMBER: 4408-2012-07-31-002

Mr. Rumbolt,

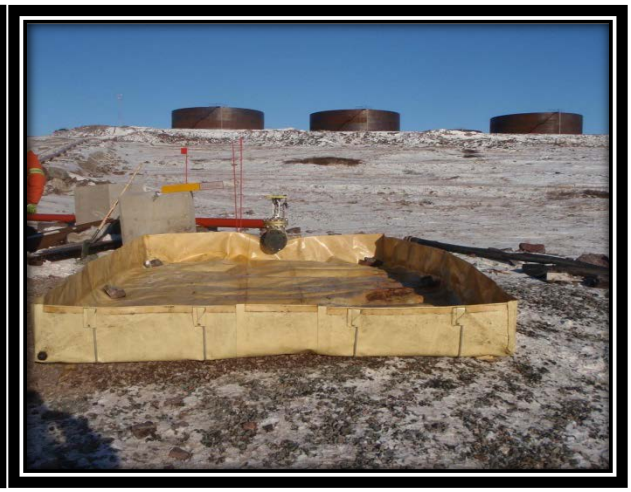
As you are aware I previously sent you correspondence, dated November 19, 2012, regarding compliance with the Environmental Compliance Order referenced above. Please accept this as an update to my previous letter.

1. SINGLE WALLED UNDERGROUND PIPING

The single walled pipes outside of secondary containment have been removed from underground use and are now above ground to allow for visual inspection of these pipes. It is our belief these actions bring us into compliance, and that this system can now have petroleum products transferred into the storage tank system in 2013.

2. TRANSFER AREA CONTAINMENT

Secondary containment for the transfer area has been installed. Need to refer to the email he sent acknowledging that this meets the regulations – you should have a copy.



3. DISPLAY EC IDENTIFICATION NUMBER

The EC identification signs have been installed in two locations. The first one is at the intake i.e. where the boat is connecting when delivering the fuel. The second one is at the loading area. As per your email received by Kevin Buck on November 1, 2012, this meets the requirement of the regulations.

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P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

4. MONTHLY VISUAL CHECKLIST

As mentioned in section 1. SINGLE WALLED UNDERGROUND PIPING, all transfer pipes outside of secondary containment structures at the site have been exposed so that the monthly visual inspections can be done. The monthly inspection will be under Site Services responsibilities and consist of a two part inspection. The first is on a monthly basis and consists of a complete installation visual inspection of the fuel farm in Baker Lake. AEM is considering an Annual Leak detection test. AEM will be engaging a person with expertise in corrosion protection to prepare a corrosion protection program for single walled piping outside of secondary containment in 2013. I have attached a copy of the monthly visual checklist. You advised our Environment Superintendent, Kevin Buck in an email dated November 8, 2012 that the form meets the requirements of the Regulations.

5. REPORT TO EC BEFORE MARCH 15TH, 2012

A full management plan regarding the following points will be provided to ENVIRONMENT CANADA prior to March 15th.

- progress on the plan to address single walled underground piping
- confirmation of the schedule for ensuring that the design of the product transfer area is sufficient to contain spills prior to the next fuel transfer into the facility
- Provide leak detection inspection records as required by section 27 of the *Storage Tank Systems for Petroleum Products and Allied Products Regulations for the period* starting November 5, 2012 until this report is submitted

I trust this meets with your requirements. 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 2 – INSPECTION RECORDS

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : 9 NOV 2012 **TIME :** 1 PM

Inspection done by : [signature]

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	√		EC-000 25 772
Diesel Fuel unloading / distribution area	√		
Diesel Fuel piping	√		
Diesel Fuel piping connections	√		
Baker Lake Diesel fuel tank #1	√		
Baker Lake Diesel fuel tank #2	√		
Baker Lake Diesel fuel tank #3	√		
Baker Lake Diesel fuel tank #4	√		
Jet A tank identification #	X		EC-000
			Have the sign need to be
Jet A piping	√		install, will be done
Jet A piping connections	√		in the next couple of day's
Baker Lake Jet A tank #1	√		
Baker Lake Jet A tank #2	√		
Baker Lake Jet A tank #3	√		
Baker Lake Jet A tank #4	√		
Baker Lake Jet A tank #5	√		
Baker Lake Jet A tank #6	√		
Baker Lake Jet A tank #7	√		
Baker Lake Jet A tank #8	√		
Corrosion program : **Program will be underway in 2013.**			

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

AGNICO-EAGLE

Work Order

Unit Number	6174BLD01

Order Number	724342

Equipment Description:
FUEL STATION BAKER LAKE

Location BAKER LAKE

Estimates:
Est. Hours
Estimated Downtime Hours

People :
Crew 15037 Team Surface Maintenance Meado
Lead Craft Mechanic
Supervisor
Assigned To
Requester 65573 Morin, Donald
Originator 65573 Morin, Donald

Description PM FUEL STATION BAKER LAKE MONTHLY INSPECTION

Order Type WM
Type 6 Preventive Maintenance WO
Priority 3 REQUESTED DATE
Status 70 In Execution

Parent W.O. No 00724342
Business Unit 61542
Subsidiary

Dates :
Order Date 2012-11-20
Requested Finish Date
Planned Start Date 2012-12-01
Planned Finish Date 2012-12-01

Actual Start Date :
Start time :

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date End Time	Employee	Downtime

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : Nov 29/12 **TIME :** 3:30pm

Inspection done by : TREVOR ATTUNGALA

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	✓		EC-000 25772
Diesel Fuel unloading / distribution area	✓		
Diesel Fuel piping	✓		
Diesel Fuel piping connections	✓		
Baker Lake Diesel fuel tank #1	✓		
Baker Lake Diesel fuel tank #2	✓		
Baker Lake Diesel fuel tank #3	✓		
Baker Lake Diesel fuel tank #4	✓		
#5 + #6	✓		
Jet A tank identification #			EC-000 26142
Jet A piping	✓		
Jet A piping connections	✓		
Baker Lake Jet A tank #1	✓		
Baker Lake Jet A tank #2	✓		
Baker Lake Jet A tank #3	✓		
Baker Lake Jet A tank #4	✓		
Baker Lake Jet A tank #5	✓		
Baker Lake Jet A tank #6	✓		
Baker Lake Jet A tank #7	✓		
Baker Lake Jet A tank #8	✓		
Corrosion program : **Program will be underway in 2013.**			

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

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Tel: 867-793-4610 Fax: 867-793-4611

AGNICO-EAGLE

Work Order

Unit Number	6174BLD01

Order Number	724342

Equipment Description:
FUEL STATION BAKER LAKE

Location BAKER LAKE

Estimates:
Est. Hours
Estimated Downtime Hours

People :
Crew 15037 Team Surface Maintenance Meado
Lead Craft Mechanic
Supervisor
Assigned To
Requester 65573 Morin, Donald
Originator 65573 Morin, Donald

Description PM FUEL STATION BAKER LAKE MONTHLY INSPECTION

Order Type WM
Type 6 Preventive Maintenance WO
Priority 3 REQUESTED DATE
Status 70 In Execution

Parent W.O. No 00724342
Business Unit 61542
Subsidiary

Dates :
Order Date 2012-11-20
Requested Finish Date
Planned Start Date 2012-12-02
Planned Finish Date 2012-12-02

Actual Start Date :
Start time :

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date
End Time
Employee
Downtime

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : 13 Dec 2012 TIME : 11 : 00 AM

Inspection done by : Sylvain Coté

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	✓		EC-000 25772
Diesel Fuel unloading / distribution area	✓		
Diesel Fuel piping	✓		
Diesel Fuel piping connections	✓		#5 NEED TO BE #16 ADDED ON check list
Baker Lake Diesel fuel tank #1	✓		
Baker Lake Diesel fuel tank #2	✓		
Baker Lake Diesel fuel tank #3	✓		
Baker Lake Diesel fuel tank #4	✓		
Jet A tank identification #	✓		EC-000 26142
Jet A piping	✓		
Jet A piping connections	✓		
Baker Lake Jet A tank #1	✓		
Baker Lake Jet A tank #2	✓		
Baker Lake Jet A tank #3	✓		
Baker Lake Jet A tank #4	✓		
Baker Lake Jet A tank #5	✓		
Baker Lake Jet A tank #6	✓		
Baker Lake Jet A tank #7	✓		
Baker Lake Jet A tank #8	✓		
Corrosion program : Program will be underway in 2013.			

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Tel: 819-825-3744

Baker Lake Office:
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Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

Work Order

Unit Number	6174BLD01

Order Number	740367

Equipment Description:
FUEL STATION BAKER LAKE

Description PM FUEL STATION BAKER LAKE MONTHLY INSPECTION

Order Type WM
Type 6 Preventive Maintenance WO
Priority 3 REQUESTED DATE
Status 70 In Execution

Location BAKER LAKE

Estimates:
Est. Hours
Estimated Downtime Hours

Parent W.O. No 00740367
Business Unit 61542
Subsidiary

People :
Crew 15037 Team Surface Maintenance Meado
Lead Craft Mechanic
Supervisor
Assigned To
Requester 65573 Morin, Donald
Originator 65573 Morin, Donald

Dates :
Order Date 2012-12-24
Requested Finish Date
Planned Start Date 2013-01-01
Planned Finish Date 2013-01-01

Actual Start Date :

Start time :

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date	Employee	Downtime
End Time		

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : 6 Jan 2013 **TIME :** 11 Am

Inspection done by : Sylvain Coté

Equipment	Type of inspection		Comments / Results
	Visual	Other :	
√ = compliant X = non-compliant			
	✓		
Diesel fuel tank identification #			EC-000 25772
Diesel Fuel unloading / distribution area	✓		
Diesel Fuel piping	✓		
Diesel Fuel piping connections	✓		
Baker Lake Diesel fuel tank #1	✓		
Baker Lake Diesel fuel tank #2	✓		
Baker Lake Diesel fuel tank #3	✓		
Baker Lake Diesel fuel tank #4	✓		
Baker Lake Diesel fuel tank #5	✓		
Baker Lake Diesel fuel tank #6	✓		
Jet A tank identification #	✓		EC-000 2642
Jet A piping	✓		
Jet A piping connections	✓		
Baker Lake Jet A tank #1	✓		
Baker Lake Jet A tank #2	✓		
Baker Lake Jet A tank #3	✓		
Baker Lake Jet A tank #4	✓		
Baker Lake Jet A tank #5	✓		
Baker Lake Jet A tank #6	✓		
Baker Lake Jet A tank #7	✓		
Baker Lake Jet A tank #8	✓		

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AGNICO-EAGLE

Work Order

Unit Number	6174BLD01

Order Number	752287

Equipment Description:
FUEL STATION BAKER LAKE

Location BAKER LAKE

Estimates:
Est. Hours
Estimated Downtime Hours

People :
Crew 15037 Team Surface Maintenance Meado
Lead Craft Mechanic
Supervisor
Assigned To
Requester 65573 Morin, Donald
Originator 65573 Morin, Donald

Description PM FUEL STATION BAKER LAKE MONTHLY INSPECTION

Order Type WM
Type 6 PREVENTIVE MAINTENANCE WO
Priority 3 REQUESTED DATE
Status 70 In Execution

Parent W.O. No 00752287
Business Unit 61542
Subsidiary

Dates :
Order Date 2013-01-21
Requested Finish Date
Planned Start Date 2013-02-01
Planned Finish Date 2013-02-01

Actual Start Date :
Start time :

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date	Employee	Downtime
End Time		

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : 2013/01/27 **TIME :** 16H00

Inspection done by : S.LAROSE 60965

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	√		EC-000 25772
Diesel Fuel unloading / distribution area	X		LOADING ARM IS DRIPPING BY 1 JOINT
Diesel Fuel piping	√		
Diesel Fuel piping connections	√		
Baker Lake Diesel fuel tank #1	√		
Baker Lake Diesel fuel tank #2	√		
Baker Lake Diesel fuel tank #3	√		
Baker Lake Diesel fuel tank #4	√		
Baker Lake Diesel fuel tank #5	√		
Baker Lake Diesel fuel tank #6	√		
Jet A tank identification #	√		EC-000 26142
Jet A piping	√		
Jet A piping connections	√		
Baker Lake Jet A tank #1	√		
Baker Lake Jet A tank #2	√		
Baker Lake Jet A tank #3	√		
Baker Lake Jet A tank #4	√		
Baker Lake Jet A tank #5	√		
Baker Lake Jet A tank #6	√		
Baker Lake Jet A tank #7	√		
Baker Lake Jet A tank #8	√		

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AGNICO-EAGLE

Work Order

Unit Number	6174BLD01

Order Number	752287
Description	PM FUEL STATION BAKER LAKE MONTHLY INSPECTION

Equipment Description:
FUEL STATION BAKER LAKE

Location	BAKER LAKE

Estimates:

Est. Hours	
Estimated Downtime Hours	

People :

Crew	15037 Team Surface Maintenance Meado
Lead Craft	Mechanic
Supervisor	
Assigned To	
Requester	65573 Morin, Donald
Originator	65573 Morin, Donald

Order Type	WM
Type	6 PREVENTIVE MAINTENANCE WO
Priority	3 REQUESTED DATE
Status	70 In Execution
Parent W.O. No	00752287
Business Unit	61542
Subsidiary	

Dates :

Order Date	2013-01-21
Requested Finish Date	
Planned Start Date	2013-02-01
Planned Finish Date	2013-02-01
Actual Start Date :	
Start time :	

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date	**Employee**	**Downtime**
End Time		

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : feb. 10. 2013. **TIME :** 13:30

Inspection done by : Alexandre Arcand #69729

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	√		EC-000 25772
Diesel Fuel unloading / distribution area	√		-need to change all the inspection TAG on fire extinguisher. (year 2013)
Diesel Fuel piping	√	755710	- loading arm leaking (Job on going)
Diesel Fuel piping connections	X	755710	- few small leaks inside (Job on going)
Baker Lake Diesel fuel tank #1	X		need new fire extinguisher
Baker Lake Diesel fuel tank #2	√		
Baker Lake Diesel fuel tank #3	√		
Baker Lake Diesel fuel tank #4	√		
Baker Lake Diesel fuel tank #5	√		
Baker Lake Diesel fuel tank #6	√		
Jet A tank identification #	√		EC-000 76142
Jet A piping	X	755710	- the hose has been bented
Jet A piping connections	X		- there's no leak - we need to change the part bented. (Job ongoing)
Baker Lake Jet A tank #1	√		
Baker Lake Jet A tank #2	√		
Baker Lake Jet A tank #3	√		
Baker Lake Jet A tank #4	√		
Baker Lake Jet A tank #5	√		
Baker Lake Jet A tank #6	√		
Baker Lake Jet A tank #7	√		
Baker Lake Jet A tank #8	√		

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AGNICO-EAGLE

Work Order

Unit Number	**6174BLD01**

Order Number	**765880**
Description	PM FUEL STATION BAKER LAKE MONTHLY INSPECTION
Order Type	WM
Type	6 PREVENTIVE MAINTENANCE WO
Priority	3 REQUESTED DATE
Status	70 In Execution
Parent W.O. No	00765880
Business Unit	61542
Subsidiary	

Equipment Description:
FUEL STATION BAKER LAKE

Location BAKER LAKE

Estimates:
Est. Hours
Estimated Downtime Hours

People :

Crew	15037 Team Surface Maintenance Meado
Lead Craft	Mechanic
Supervisor	
Assigned To	
Requester	65573 Morin, Donald
Originator	65573 Morin, Donald

Dates :

Order Date	2013-02-18
Requested Finish Date	
Planned Start Date	2013-03-01
Planned Finish Date	2013-03-01
Actual Start Date :	
Start time :	

Work to be done

MONTHLY INSPECTION OF FUEL FARM SYSTEM
PIPING,TANKS,CONNECTIONS,
RECORD INSPECTION IN THE LOG BOOK
*
SCAN THE WORK ORDER WITH COMMENTS AND FILE FILL
* SEND IT TO PLANNER SITE SERVICE.

Work Done

Actual Finish Date	**Employee**	**Downtime**
End Time		

AGNICO-EAGLE

BAKER LAKE TANK FARM
Monthly inspection sheet

DATE : 2013/08/25 TIME : 8H30

Inspection done by : S.LAROSE 60965

Equipment	Type of inspection: Visual	Type of inspection: Other :	Comments / Results
√ = compliant X = non-compliant			
Diesel fuel tank identification #	√		EC-000 25772
Diesel Fuel unloading / distribution area	√		
Diesel Fuel piping	√		
Diesel Fuel piping connections	√		
Baker Lake Diesel fuel tank #1	√		
Baker Lake Diesel fuel tank #2	√		
Baker Lake Diesel fuel tank #3	√		
Baker Lake Diesel fuel tank #4	√		
Baker Lake Diesel fuel tank #5	√		
Baker Lake Diesel fuel tank #6	√		
Jet A tank identification #	√		EC-000 26142
Jet A piping	√		
Jet A piping connections	√		
Baker Lake Jet A tank #1	√		
Baker Lake Jet A tank #2	√		
Baker Lake Jet A tank #3	√		
Baker Lake Jet A tank #4	√		
Baker Lake Jet A tank #5	√		
Baker Lake Jet A tank #6	√		
Baker Lake Jet A tank #7	√		
Baker Lake Jet A tank #8	√		

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Appendix C

Environment Canada | Environnement Canada

Prairie & Northern Region
Environmental Protection Operations Directorate
Room 200, 4999-98th Avenue NW
Edmonton, AB T6B 2X3

February 27, 2013

File: 7834-3-37/A350-2

Mr. Stephane Robert
Agnico-Eagle Meadowbank Division
Environment Superintendent
Box 540
Baker Lake, Nunavut X0C 0A0

Dear Mr. Robert,

Subject: Metal Mining Effluent Regulations – Evaluation of 2012 Environmental Effects Monitoring (EEM) Interpretative Report, Meadowbank Division, Nunavut

This letter is to advise you that the report entitled, 'Environmental Effects Monitoring (EEM): Cycle 1 Interpretative Report, Meadowbank Division, Nunavut', submitted by July 1, 2012, has been evaluated and meets the requirements specified in the Metal Mining Effluent Regulations of the *Fisheries Act* for environmental effects monitoring studies. The evaluation is based on the review of the report by a Technical Advisory Panel consisting of representatives from Environment Canada, Fisheries and Oceans Canada, Nunavut Water Board, and Aboriginal Affairs and Northern Development Canada.

The compiled review comments are appended. These comments should be addressed in the form of a simple addendum to the 2012 Interpretative Report.

Please be reminded that an EEM Study Design must be submitted in writing at least 6 months before the next biological monitoring study is conducted.

If you have any questions concerning the evaluation of your 2010 EEM Interpretative Report, please contact Paula Siwik, the EEM Coordinator for this facility [Email: Paula.Siwik@ec.gc.ca, Tel: (780) 951-8824, Fax: (780) 495-2758].

Yours truly,

Cheryl Baraniecki
Regional Director
MMER Regional Authorization Officer

cc.

Paula Siwik	Environment Canada, Edmonton
Chris Baron	Fisheries and Oceans Canada, Winnipeg
Paula Smith	Environment Canada, Iqaluit
David Honstein	Nunavut Water Board
David Abernathy	AANDC

Ecologo® Paper / Papier Eco-Logo®

Technical Advisory Panel Review of "Environmental Effects Monitoring (EEM): Cycle 1 Interpretative Report Meadowbank Division, Nunavut

1. Overall this is a well written and thorough report. The figures and maps aided the review and the BACI and weight of evidence assessment provided valuable context.

2. p. 9: Duplicate samples of effluent collected at DD-FD1 on August 24, 2011 had relative percent difference of 93 and 100% for aluminum and iron respectively. Did the laboratory provide any explanation for these values?

3. p. 10: Mercury in effluent did exceed the regulatory limit of 0.1 ug/L in August 2011 (2.93 ug/L). The TAP acknowledges that mercury measured in the trip blank was 2.5 ug/L. Assuming contamination was consistent, that could result in an effluent concentration of approximately 0.4 ug/L. The TAP would like to continue discussions on this issue in the next study design submission.

4. p. 16: Are other parameters monitored in effluent in addition to those required under the MMER? There may be patterns in the effluent that correlate with the different results of the August 2011 sublethal tests.

5. p. 17: The TAP acknowledges the unique nature of the effluent being discharge during this study and the challenges that this poses. Is it possible to determine how many benthic stations may have been located in the plume during this study?

6. p. 33: Sediment concentrations of arsenic and chromium are high in all lakes but particularly in the reference lakes. While the concentration of iron also seems higher in reference lakes and may influence the bioavailability of the arsenic and/or chromium, the TAP would appreciate some more discussion on the suitability of INUG and PDL as reference areas. If this discussion has already been presented in a different document, please provide the reference.

7. p. 42: While not required, the TAP would appreciate some comparison of overall catch per unit effort for lake trout between lakes.

8. p. 48: The comparison between the pectoral and otolith age estimates is very informative and appreciated.

9. p. 65: It appears that Table 4.3-3 reflects the data available from mature adults. Please confirm.

10. p. 60: Table 4.3-8 shows 43 LKTR from TPN with internal condition assessed. Were liver weights only collected on mature adults? Acknowledging that fish may be juvenile and/or resting, TAP would appreciate a summary of all the liver data collected in this study.

11. p. 98: The TAP appreciates the additional analyses and context provided for the benthic invertebrate section.

12. p. 113: The TAP appreciates the supplemental analysis and discussion provided in this report.

13. p. 116: Please confirm that samples collected in TPN and other lakes used in the BACI were proximate to where samples were collected for the EEM program and at similar depths, substrates etc.

14. p. 148: The result of the fish survey should also include indicators of reproduction. As it appears the reproductive endpoints associated with a typical non lethal survey may be challenging, are there other possibilities that could be explored in order to meet this requirement?

15. p. 148: Assuming internal examinations will continue to be done on all incidental mortalities, The TAP would appreciate that the liver data associated with these fish be analyzed and presented.

16. p. 149: Mines in northern Canada typically include 3 to 5 benthic sub samples per station due to the low density and diversity in the benthic community. Density was marginally significant in the EEM analyses and a pattern of lower density is seen when larger CREMP dataset is used (Fig 5.4-8). In addition, samples at TPN tend to be collected at lower depths and at sites with relatively lower fines and TOC (both of which were identified as significantly different among sample areas). The TAP is not willing to consider reducing the number of subsamples until further discussion on some of the other variables and sampling considerations takes place.

Appendix D

AGNICO-EAGLE
MEADOWBANK DIVISION

January 9, 2013

Via email

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 2011 – 2012 Annual Monitoring Report for the Meadowbank Gold Project and Board Recommendations

The following information and comments are provided to address the directives outlined in the NIRB report dated December 7, 2012, entitled *'The Nunavut Impact Review Board's 2011 – 2012 Annual Monitoring Report for the Meadowbank Gold Project and Board Recommendations'* made in accordance with the conditions of Project Certificate No.004.

Recommendation #1
The Board requires AEM to 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).

AEM has provided an annual report to the NIRB which has met the conditions of the project certificate since the project began construction in 2008. Within the annual report submission, detailed monitoring reports are submitted that are specifically designed to evaluate the impacts of mine related activities and were originally developed during the NIRB project screening and meet the conditions of the NIRB Project Certificate. AEM believes that the detailed monitoring studies/reports, which are dictated by the management plans submitted during the screening, are routinely conducted and are annually reported by third party consultants or qualified environmental practitioners. Extensive discussions are provided in accordance with commitments listed in the FEIS and the Project Certificate. As per Appendix D of the NIRB Project Certificate, the objectives of these studies as reported in the annual report, submitted on an annual basis, include:

a) Measure the relevant effects of the project on the ecosystemic and socioeconomic environment(s). These effects may be measured through

biophysical and socioeconomic monitoring programs undertaken by the Proponent or by other means as described in the Project Certificate;

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

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

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

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

AEM firmly believes that the annual report meets these objectives, however acknowledges the need for further clarification from the NIRB on how best to present the data and summarizes the results. AEM has worked closely with regulatory agencies and continually refines and updates monitoring programs to reflect changes to the mine site and to ensure the effectiveness of the monitoring studies to evaluate and predict mine related impacts. These studies are routinely used to implement mitigation or adaptive management (an example of this is dike construction monitoring and targeted effects assessment studies in 2008 and 2010). In consultation with stakeholders and enforcement agencies (i.e. NWB, EC, DOE, DFO and HTO), AEM has improved monitoring plans and studies to increase their ability to detect mine-related impacts. An example of this (and in fulfillment of the Type A Water License 2AM-MEA0815 Part I Section 1 requirements) AEM has recently submitted a revised and updated Aquatic Effects Monitoring Program (AEMP) Meadowbank Mine and Core Receiving Environmental Monitoring Program (CREMP): Design Document 2012. In consultation with the Nunavut Water Board and NIRB, in 2013, AEM will submit a 2012 AEMP annual report which will provide a complete summary of the related aquatic monitoring programs. All results will be integrated and AEM will propose a structure of reporting that summarizes the data in a means that meets the expectations of the NIRB.

Recommendation #2

The Board requests that AEM provide a full analysis of thresholds against the actual results of surveys conducted in 2011, specifically pertaining to raptor nest surveys, mine site ground surveys, hunter harvest surveys, and the caribou radio-collaring program.*

AEM has completed a comparison of the wildlife survey results and this was submitted to the NIRB in the Meadowbank Mine 2011 Wildlife Monitoring Summary Report by Nunavut Environmental (2012). In this report a full comparison to FEIS thresholds were made according to the Terrestrial Ecosystem Management Plan (Cumberland 2005).

For raptors (refer to section 6.7 of the Meadowbank Mine 2011 Wildlife Monitoring Summary Report),

A summary of the impact predictions identified in the TEMP (Cumberland 2006) is provided in Table 6.3. The 2011 raptor monitoring data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

Table 6.3: Accuracy of Impact Predictions – Healthy Prey Populations (for Raptors) and Disturbance to Nesting Raptors along the AWPAR

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Healthy Prey Populations	Healthy raptor prey populations (small mammals and breeding birds) will be maintained at the Meadowbank site by ensuring that the integrity and health of habitats are maintained.	NO	NO	Annual PRISM Plot surveys ELC Habitat Classification	4.7.2.1
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by mine-related activities. Threshold is one nest failure per year.	NOT ANTICIPATED (No nests present prior to quarry development)	YES recommendations made to road and quarry activities to accommodate nesting raptors (refer to Section 6.7 for details). Development of appropriate management plan(s).	AWPAR Surveys Waterbird Nesting Surveys Dedicated Raptor Nest Surveys Daily / Weekly Systematic Mine Site Ground Surveys	4.7.2.2

For hunter harvest surveys (see section 10.6 of the Meadowbank Mine 2011 Wildlife Monitoring Summary Report),

Table 10.3 provides a summary of the impact predictions identified in the TEMP (Agnico-Eagle, 2006). The 2011 HHS data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

Table 10.3: Accuracy of Impact Predictions – Baker Lake Hunter Harvest Study

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Hunting by Baker Lake Residents	The AWPAR 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.	NO	Road access regulated, safety measures enforced and training required. No shooting zone instated around the AWPAR.	Hunter Harvest Study	4.4.2.3
Hunting by Baker Lake Residents	Caribou herds will not be significantly affected by year-round access to the RSA.	NO	YES; AWPAR Access Protocols	Satellite-collaring data Hunter Harvest Study	

For caribou monitoring (see section 11.8 of the Meadowbank Mine 2011 Wildlife Monitoring Summary Report),

A summary of the impact predictions identified in the TEMP is provided in Table 11.2. The 2011 satellite-collaring data were compared to the impact

prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

Table 11.2: Accuracy of Impact Predictions – Radio collaring Data

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Sensory Disturbance	Mine related construction and operations activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 500 m of mine buildings, facilities and roads. Threshold is unnatural caribou use patterns beyond 1,000 m.	NO	YES	Satellite-collaring data Daily and weekly mine-site ground surveys AWPAR Road Surveys	4.4.2.2
Hunting by Baker Lake Residents	Caribou herds will not be significantly affected by year-round access to the RSA.	NO	YES; AWPAR Access Protocols	Satellite-collaring data Hunter Harvest Study	

For breeding birds (see section 4.7 of the Meadowbank Mine 2011 Wildlife Monitoring Summary Report),

The breeding bird plot monitoring program is an instrumental component in accurately evaluating the wildlife abundance, richness and diversity impact predictions identified in the TEMP (Cumberland 2006) and reproduced in Table 4.4. The cumulative PRISM plot data set was compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. To date, no thresholds of bird abundance, richness and diversity have been exceeded, suggesting that significant project-related effects are not occurring.

Table 4.4: Accuracy of Impact Predictions (Based on PRISM Plot Analysis) – Local Breeding Bird Abundance and Diversity

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Changes in Breeding Bird Composition	Mine-related reduction in local breeding bird abundance and diversity will not occur. Threshold of >20% function between mine and reference plots.	NO	NO	Annual PRISM Plot surveys	4.3.2.3
Healthy Prey Populations	Maintenance of healthy prey populations (breeding birds and small mammals) to ensure integrity and health of raptor habitats. Thresholds are qualitative, and can be achieved through management and maintenance of vegetation and healthy prey communities.	NO	NO	Annual PRISM Plot surveys ELC Habitat Mapping	4.7.2.1

and waterbirds (see section 7.7 of the Meadowbank Mine 2011 Wildlife Monitoring Summary Report)

A summary of the impact predictions identified in the TEMP (Cumberland 2006) is provided in Table 7.6. The 2011 and cumulative waterbird nest dataset was compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. No threshold levels were exceeded in 2011.

Table 7.6: Accuracy of Impact Predictions – Disturbance of Nesting, Roosting or Moulting Waterfowl along the AWPAR and for the Mine Site LSA

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Disturbance of Nesting, Roosting or Moulting Waterfowl	Mine facilities and activities will not impact the breeding success of waterfowl occurring in the area or disturb large concentrations of roosting or moulting waterbirds. Threshold level is one nest failure per year.	NO	NO	Waterbird Nest Surveys Daily / Weekly Systematic Mine Site Ground Surveys	4.8.2.2

Mine site ground surveys are conducted as a general surveillance of the mine site to ensure activities are not causing any unpredicted harm to wildlife, to evaluate waste management procedures and evaluate spills. As a result, there are no specific thresholds to be compared to, as this survey is for operational due diligence and not specified in the original TEMP.

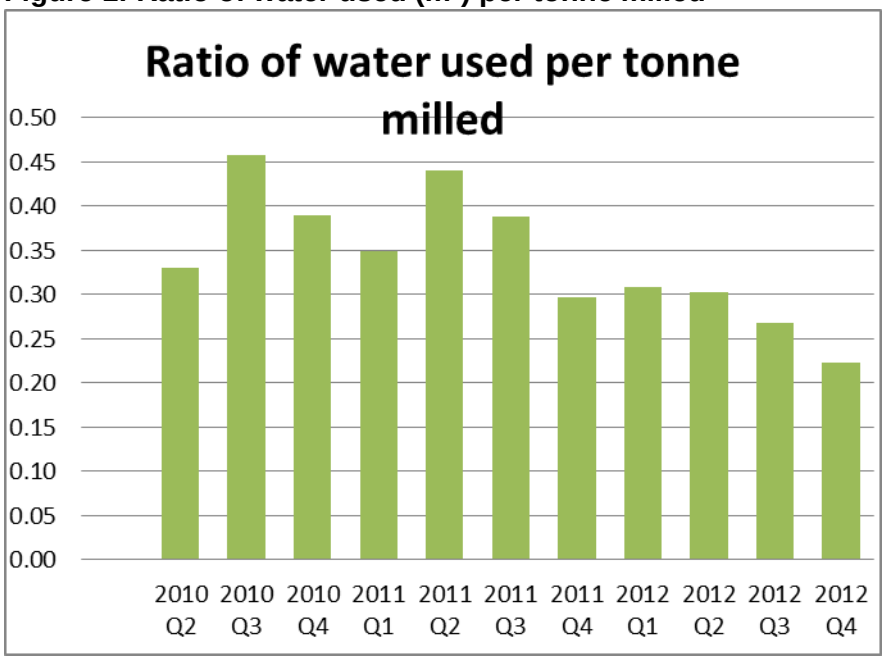
Recommendation #3

It is requested that AEM indicate what next steps it would pursue in regards to its on-site water management practices, once the results of its investigations are available.

It is the intent of AEM to minimize freshwater use at the Meadowbank site. For the previous 6 months Process Plant personnel have been investigating and designing methods to reduce freshwater usage. The Process Plant uses app 90% of the freshwater pumped by Meadowbank. We finalized the implementation of our action plan in mid-December 2012. This included a new cooling system, installed and put into operation, using reclaim water for the SAG mill. Since the summer, 2012, we have increased our recirculation of reclaim water to 80% (72% in the second quarter of 2012) which has reduced our fresh water consumption by almost 40 m^3/hr (which represents a reduction of 350,000 m^3 per year). Figure 1 indicates that the ratio of water used (m^3) per tonne milled decreased significantly, by 24 m^3/tonne (46 m^3/tonne, Q3 2010, to 22 m^3/tonne in Q4 2012). This information was submitted to the Nunavut Water Board on Jan 4, 2013.

With the completion of this action plan, AEM should be able to achieve our current limit of 700,000 m3 /year in 2013 and no amendment for the increase of the fresh water use should be needed. We will continue, during the year, to investigate other measures to reduce our water consumption of fresh water.

Figure 1: Ratio of water used (m^3) per tonne milled



Recommendation #4

The Board requests that AEM provide a plan of action to ensure future contamination of sampling bottles does not occur. This could include updating site procedures to require the replacement of sampling bottles more frequently in order to avoid CN contamination, and working with the laboratory contracted to determine the source of CN at the mine site.

AEM has updated procedures and replaces sample bottles on a monthly basis to ensure that shelf life at the site is minimal. We have had no additional instances of increased levels of Cyanide in our effluent to Third Portage Lake during 2012.

Recommendation #5

The Board requests that AEM keep the NIRB informed on the development of the contaminated soil storage/pilot remediation site and that copie of the revised landfarm management plan or any other related plans be provided to the NIRB.

A revised Landfarm Design and Management Plan with the final drawing was submitted to the NWB on October 22, 2012 (Appendix A). The contaminated soils located in Quarry 5 have been removed and were placed at our Landfarm. We have started the sorting process in Q22 but due to freezing temperatures recently and equipment availability we have to wait until next summer to complete the clean-up of this site.

Recommendation #6

The Board requests that AEM provide a plan including an estimated date by which the defective wells are expected to be replaced or re-established in order to collect the robust groundwater quality data intended by, and required for the comprehensive monitoring program which resulted from the environmental assessment and subsequent licensing stages of the Project. In addition, the Board requests that AEM provide the NIRB with a summary of the number of wells to be installed, and an updated map showing where the wells would be installed in relation to other project components and in proximity to water bodies.*

For recommendation #'s 6 to 9 refer to Appendix B.

Condition # 8 of the NIRB project certificate requires the mine operator to resample the wells to verify the data obtained over two seasons of sampling (2003 and 2004) of the existing operable wells. Recalling the NIRB technical hearings, from which intervener comments were issued and were developed into the conditions of the NIRB certificate, the concerns on groundwater quality regarded 2 distinct issues:

- Monitoring of the natural salinity of talik groundwater seeping into the Portage and Goose open pits in order to validate the ability of the proposed water management and treatment plans to attenuate salinity in the effluent prior to release to receiving waters; and
- Monitoring of groundwater in the vicinity of the tailings storage facility (TSF) located in Second Portage Arm in order to detect potential seepage of tailing process water through fractures in the bedrock below the TSF to the Portage open pit.

Effect of Groundwater Seepage Quality on Water Management and Treatment Plans

Sampling of groundwater in the talik at Portage and Goose open pits since 2003 (figure 1) and open pit sump water quality monitoring has provided extensive information on the quality and salinity of groundwater below the base of the open pits; water that is predicted to seep into the open pits as mining advances. Historical groundwater quality trends for salinity parameters (chloride, TDS and calcium) are provided in Figures 2A, 2B and 2C (attached). These figures show that groundwater at the monitoring wells has consistently had a low salinity and low trace metal concentrations. Salinity, represented by total dissolved solids (TDS), has been less than 1900 mg/L, generally around 500 to 800 mg/L TDS. The salinity of groundwater at well MW11-01 is addressed in the response to recommendation 8. These values (NW11-01) are lower than the salinity of pit sump waters collected from the Goose Pit to date (between 86 mg/L and 432 mg/L total dissolved solids or TDS). Furthermore, the chemistry of open pit sumps monitored to date is less saline than the predicted groundwater salinity seeping into the open pits (groundwater salinity predicted to be between 460 and 850 mg/L TDS; Golder, 2004). Consequently neither mine water management nor water treatment plans are or would be affected by the small volume of low salinity seepage observed to date.

Although not all wells continue to be functional and some wells that are blocked have not yet been repaired, the monitoring conducted to date achieves the purpose of the first part of the NIRB certificate condition number 8, which is to evaluate the consequence of pit water quality on the effectiveness of water management and treatment plans. Monitoring of the sump water quality in Goose and Portage open pits also achieves this purpose.

Monitoring of Groundwater Quality at the TSF

The use of the groundwater well at Second Portage Arm (MW11-02) will continue in order to monitor for the presence of mine process water in groundwater. Actions will be taken in 2013 to remove the blockage in this well caused by the WaTerra® tubing and the fitting located at 28 metres in MW11-02 to allow sampling of this well. A recommended approach to remove the blockage in MW11-02 could include (but may not be limited to) advancing a minimum 30 metre length of RW drill rod (27.8 mm outer diameter) equipped with a fitting containing an external thread into the 40.4 mm inner diameter well casing using a drill rig operated by Orbit Garant Drilling. The action of successfully advancing the drill rods into and/or beyond the blockage may enable the WaTerra® tubing to become dislodged and recovered during the removal of the drill rods. The monitoring of this well achieves the purpose of the second part of the NIRB certificate condition number 8, which is to evaluate the potential seepage of tailing process water through fractures in the bedrock below the TSF to the Portage open pit. If the blockage cannot be removed, the well will be replaced.

Recommendation #7

It is recommended that AEM keep the NIRB informed of the status of the re-evaluation of the groundwater well monitoring program in order to monitor ongoing compliance to the requirements of Condition 8.

For recommendation #'s 6 to 9 refer to Appendix B.

The groundwater monitoring program was conducted in July 2012. Monitoring well MW08-02 was successfully sampled in triplicate. Monitoring well MW08-03 could not be sampled because of an ice bridge inside the well pipe that could not be removed. This prevented formation groundwater from entering the well. Monitoring well MW11-01 was damaged in spring 2012 and was deemed inoperable, therefore no groundwater samples were collected and the well was subsequently decommissioned in July 2012. Monitoring well MW11-02 located east of the tailings storage facility could not be sampled due to a blockage comprised of well development tubing which prevented access to the formation groundwater.

Collecting groundwater samples from monitoring wells only partially achieves the purpose of monitoring of salinity and quality of open pit seepage. Monitoring wells provide groundwater information at one specific location that represents one or a small set of more less impermeable fractures in rock at a distance from where seepage will daylight in the Goose or Portage open pits. Given the very low hydraulic conductivity of the bedrock at 150 meters (2×10^{-8} m/s in the bedrock mass, and up to 10^{-6} m/s in the

Second Portage Fault; Golder, 2004), the groundwater sampled in the wells is far in distance and time from reaching the open pit.

The advantage of the well, being the ability to repeatedly sample a same location, is undermined by its fragility in an arctic environment where frost action can damage even robust wells. At Meadowbank, monitoring of talik water means the well collars must be positioned close to the open pit crest to reach the talik. Vehicular traffic and blasting pose both a constant threat to equipment (like well MW11-01 damaged in 2011) and to the safety of personnel carrying out the monitoring program.

AEM is committed to recovering operable wells that are blocked (monitoring wells MW11-02 and MW08-03) in 2013. However, instead of replacing the wells that have been destroyed, AEM is considering using alternate methods to more effectively achieve the purpose of condition 8 of the NIRB certificate for salinity of water reporting to the open pit. Methods currently being considered include, but may not be limited to, the following:

- Collecting samples from the groundwater that infiltrated into production holes at the base of open pits (Goose, North Portage, Third Portage);
- Collecting samples of groundwater from horizontal borehole that could be drilled at the base of open pit walls where seeps are observed, and/or from groundwater seeps into open pits;
- Measuring conductivity of groundwater in-situ (without sampling groundwater) through the installation of conductivity probes in boreholes drilled to the talik. These probes measure water conductivity (and therefore salinity) in real time.

Production holes are used for blasting and drilled to approximately 8.5 metres depth with a 0.17 metre diameter bore. A groundwater sample could be collected from a production hole that contains water prior to the addition of explosives in the hole. Instrumenting a horizontal borehole with a piezometer could also facilitate monitoring of inflow to the open pit, although this may not be needed if groundwater is flowing in the horizontal borehole. If water is flowing into a horizontal borehole, a sample would be collected after an adequate volume of water has been flushed out of the borehole. The location of horizontal boreholes would need to be designed to target locations and geological features that augment the likelihood of encountering water. For both production holes and horizontal boreholes, new holes would be drilled as the pit expands.

The installation of conductivity probes can be an effective method of monitoring the in-situ groundwater salinity in real time in arctic environments (Martin *et al*., 2013).

The target dates for the Groundwater Plan will be August/September, 2013. Results of sample analysis will be compared to historical values.

Recommendation #8

It is recommended that AEM conduct further studies to accurately determine the source of the contamination in the well MW11-01, especially with a focus as to

determining whether the increased values are be related to the movement of groundwater through the formation within the Goose Island Pit.

For recommendation #'s 6 to 9 refer to Appendix B.

The source of the apparent contamination at monitoring well MW11-01 in 2011 will not be further investigated. The contamination at this well have occurred during well installation partly from the well grout (causing the elevated pH) and by brine addition during drilling (causing the high salinity). The monitoring well was installed in a borehole drilled with heated lake water as drilling fluid between September 12 and 17, 2011, however brine (calcium chloride base) was added to the borehole on September 16 to prevent freezing as no night shift was available. Actions were taken to flush the brine out of the borehole on September 17 prior to the installation of the monitoring well which was completed on September 18. Energized heat trace cables and the injection and re-circulation of heated lake water into the well were also required as ice had formed in the well following the installation. Monitoring well MW11-01 was developed for four days, where approximately 214 Litres (2.6 well volumes) of water were removed in addition to the water introduced during thawing prior to being sampled.

Conductivity measurements collected throughout the development of well MW11-01 (Table 1) indicated that the brine solution was not completely removed at the time of sampling, also shown as the elevated concentrations of dissolved chloride, TDS and calcium (Figures 2A, 2B and 2C). The water sampled at MW11-01 in 2011 represents formation water with some portion of calcium chloride brine remaining in the pocket of formation water sampled.

The elevated pH noted during development (up to pH of 12, see Table 1) is characteristic of grout which has transferred to the development water during installation. The pH did re-establish itself to a circum-neutral value once the grout set at the end of the development carried out in 2011.

Dewatering of the Bay Goose impoundment area occurred between July 25 and November 14, 2011 and resumed in spring of 2012 immediately following the freshet. The Goose pit was not yet in operation during the groundwater monitoring program completed in September 2011. Therefore, the observed contamination of groundwater at MW11-01 in 2011 is unlikely related to the activities of the mine or groundwater flow from the TSF. Furthermore, groundwater quality impacts in the vicinity of the Goose pit as a result of the TSF are not anticipated given the hydraulic gradient and distance the TSF is situated from the Goose pit.

This well was to be further developed in 2012 however this could not be carried out because the well was damaged during 2012 site operations and subsequently decommissioned by Golder to seal it properly. Follow up monitoring to complete development and obtain a verification sample at this location are no longer possible (see alternates methods in Recommendation #9 for future groundwater evaluation in the Goose Pit.

Recommendation #9

It is recommended that AEM provide the Board with a more detailed discussion regarding the mitigation measures to be put into place in order to address the observed higher values recorded at well MW11-01.*

For recommendation #'s 6 to 9 refer to Appendix B.

The Goose pit began operation in April 2012. Monthly monitoring of sump water quality at Goose pit was initiated in June 2012. The water accumulating in the open pit includes water from the Goose pit and trace seepage from the Bay Goose dike. This water is subsequently pumped to the Attenuation Pond. The locations of the sumps are not permanent and depend on operations and mine planning. The available water quality data for Goose pit and dike seeps provides evidence that concentrations of TDS and chloride (samples were not analyzed for calcium) are low and representative of a mixture of formation water and lake water and not highly saline as compared to water quality observed at MW11-01 (as shown in Figures 2A and 2B). No mitigation measures will be put in place to address the elevated calcium chloride pocket at well MW11-01 since this is not anticipated to cause a noticeable increase in salinity concentrations of pit sump waters. Monitoring of sump water quality at Goose pit will continue in order to replace damaged monitoring well MW11-01.

Recommendation #10

The Board requests that AEM provide a discussion of the exceedances observed for the duplicate samples, as well as an indication as to whether further studies are planned in order to address the results observed for the QAQC monitoring.

In accordance with the Type A License, the Meadowbank mine developed a Quality Assurance / Quality Control (QA/QC) Plan submitted on January 2009 (AEM, 2009) which requires that samples are collected by qualified technicians and field duplicates are submitted to ensure QA/ QC is adequate. Results of the laboratory and field duplicates are assessed annually by measuring the relative percent difference (RPD) between original and duplicate measurements. A field duplicate sample is an independent collection of water samples at the same time and location as the original, as a measure of consistency in sampling methodology and heterogeneity of chemical parameters at discrete locations. According to the AEM (2009) QA/QC sampling protocol, the number of field duplicates taken is approximately 10% of original samples. RPD values may be either positive or negative, and ideally should provide a mix of the two, clustered around zero. Consistently positive or negative values may indicate a bias. Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are very low and approaching the detection limit.

Although the QA/QC plan was followed and samples were collected by qualified technicians or biologists, few field duplicate samples exceeded the RPD threshold. Given the high number of samples collected in 2011, it is common to have few RPD

exceedances as result of the discrete differences in the original and field duplicate. Given the variability of these exceedances (occurring with different parameters, on different dates for different sampling programs; i.e. for samples taken from the STP-April 4 and SW-RSF -August 1) and the high number of successful samples, it is evident that field QA/QC standards during water sampling were maintained during sampling in 2011. In the future, AEM technicians will continue to follow standard QA/QC procedures (AEM, 2009) for surface water sampling that requires the use of sample bottles that are provided by an accredited laboratory, proper handling and storage of bottles to prevent cross-contamination between areas and if appropriate thoroughly rinsing the sample containers with site water prior to sample collection. AEM will also review and update the QA/QC plan in consideration of the NIRBs recommendations.

Recommendation #11

The Board requests that AEM provide information on the type of deterrents it plans to use in the future to deter falcons and ravens at the Meadowbank site and at the Baker Lake bulk fuel storage facility, and to provide discussion as to the effectiveness of such deterrents at these sites and any alternatives that may be considered.

Peregrine falcon activity and nesting has increased along the AWAR as compared to baseline since 2008 due to the construction of ideal perch and protected nesting sites in the region. No deterrent methods will be used at quarries not in operation.

In 2012, for the first time, peregrine falcons were observed nesting near mine operations. As a result, AEM consulted Nunavut Environmental for advice and developed a Peregrine Falcon Management and Protection Plan (see appendix C).

AEM recently involved Dr. Alastair Franke from the University of Alberta. Dr. Alastair Franke has been conducting research on raptors in Nunavut since 2003. He has extensive knowledge of falcon behavior and is recognized by the Government of Nunavut, Department of Environment (DOE) as a raptor expert for the territory. If falcon activity is observed near mine operations, AEM will immediately consult with Alastair and he will provide site specific protective measures and if needed deterrence recommendations to ensure falcon protection.

AEM has installed owl decoys at the Baker Lake Fuel farm to deter ravens from continuing to nest and will be sure to continue to monitor these potential nest sites during routine fuel inventory monitoring and Baker Lake site inspections. AEM personnel will continue to discourage nesting at the fuel storage area by walking up the stairs and prior to establishing a nest. If a nest is observed, AEM will immediately contact the DOE.

Recommendation #12

The Board requires AEM to provide a monitoring plan for the spill at kilometre 22, requesting specifically, that AEM provide information on what conditions must be met to discontinue monitoring of this area in 2 years.

With respect to a plan of action and adaptive management, AEM has prepared and implemented a comprehensive spill prevention strategy for vehicles travelling along the AWPR. Our main focus is controlling the speed of all vehicles to prevent rollovers and/or accidents. The speed limit along the AWPR has been reposted, all vehicular traffic is timed for travel between gatehouses and our security team patrols the road regularly (including using radar). The second focus is increased road maintenance and safety procedures which ensure that surfaces remain flat to prevent "washboard" conditions and that the road is closed during inclement weather conditions. In addition to this TDGA training has been received by our fuel contractors, Arctic Fuels, onsite training on AWPR use is given to all AEM employees and contractors and sea-cans containing spill clean-up equipment have been placed at all water crossings along the AWPR. Of note – there were no spills along the AWPR during 2012.

The clean-up of spill residues at Km 23 on the AWPR was completed in the fall 2012. Approximately 550,000 liters of water was treated at the site in 2012. The water met our Water License criteria (no detect for parameters of concern) and the excavated areas used to capture the residual contamination were refilled and contoured back to the original state. Previously, in 2011, app 1500 m3 of soil was excavated from this area (stored at Quarry 5 and since removed to Meadowbank Landfarm also in 2012). Maritime barriers will remain in the watercourse through the 2013 freshet as a precaution and sample monitoring will be conducted in the spring and fall of 2013. It should be noted that results of monitoring in the watercourse in 2012 revealed no detection for any hydrocarbon material. It is also our intent to continue monitoring the watercourse in 2014. If levels of hydrocarbons are detected then remedial measures will be undertaken – cut off trenches, further source investigation, water treatment, etc.

All information regarding the clean-up and remediation has been reported to the AANDC Water Inspector as required (see appendix D).

Recommendation #13

The Board requests that AEM develop and put into place an action plan designed to prevent wind-blown debris from the waste piles and/or to establish additional on-site waste management practices.* The Board also requires AEM to report on the effectiveness of this waste management action plan in its annual reporting to the NIRB.

AEM staff use their best efforts to prevent windblown debris by ensuring that any bulk waste not going to the incinerator is bagged. All organic (food) waste is stored in close top bins to eliminate being blown around.

After freshet in the spring a site cleanup is preformed every year to collect any accidental wind-blown debris from winter storms and strong winds. It is also regular practice for field crews to pick up wind-blown materials when they are seen. The Meadowbank site has improved its waste handling immensely as noted by regulators who frequent the site.

Recommendation #14

The Board reminds AEM that its future annual reports are expected to speak to the amended Condition 32. Further, the Board requires that AEM provide information on the compliance status to Condition 32(e) and 32(f) for the 2011 year and provides record of consultation with the community of Baker Lake in 2011 as to the private nature of the access road and the non-mine access that is allowed for traditional Inuit activities.*

Annually, AEM holds a meeting in the Hamlet of Baker Lake to explain to the community the Policies and Procedures of the All Weather Private Road from Baker Lake to the Meadowbank Mine site. In 2011, the meeting was held on October 3 and the minutes of the meeting are available in the 2011 NIRB annual report. A copy of the minutes of the meeting is located in Appendix E. AEM also conducts quarterly meetings with the Bake Lake Community Liaison Committee and issues related to the use of the AWPR are discussed regularly.

Also, during the caribou migration (September-October), we place notices on the local radio station (see example in Appendix F).

Recommendation #15

It is also recommended that AEM provide information on the authorized non-mine use of the road as required under Condition 32(g). The Board request that AEM provide an assessment of the environmental and socio-economic impacts of the access road as spoken to in Condition 33 […2. to facilitate monitoring of the environmental and socio-economic impacts of the private road and undertake adaptive management practices as required,...]. The assessment should include a discussion on whether or not road usage had increased since the development of the access road, whether an increase in harvesting has been observed and whether that may be attributed in whole or in part to the use of the road, whether the development of the access road has had an impact on traditional activities in the area, and the potential socio-economic impacts of the public use of the access road.

AEM procedures for non-mine uses of the road requires that any local users report to the Baker Lake Gatehouse and sign a form that describes the safety protocol while on the road. The road is used by local hunters using ATV's. Daily records are kept. Unfortunately all records for the first quarter of 2011 were lost due to the fire at Meadowbank in March, 2011. After that our focus was to rebuild the kitchen while continuing mine operations. As a result there are limited records for 2011, however, as an example I am providing a summary of the non-mine authorized road use for Sept/Oct, 2011 (see Table below). In 2012 we have implemented the use of electronic records to prevent any future loss of hardcopy records. AEM is confident that our current procedures and protocols provide for the safety of the local public while using the road either for hunting access or for general recreational opportunities. There have been no accidents to date involving mine related truck traffic and locals using ATV's.

2011 AWPAR ATV USAGE RECORDS

Date	# of ATV's	Date	# of ATV's
4-Sep-11	2	1-Oct-11	32
5-Sep-11	29	2-Oct-11	30
6-Sep-11	15	3-Oct-11	24
7-Sep-11	12	4-Oct-11	25
8-Sep-11	6	6-Oct-11	20
9-Sep-11	8	7-Oct-11	29
11-Sep-11	20	8-Oct-11	34
12-Sep-11	5	9-Oct-11	23
13-Sep-11	19	10-Oct-11	46
14-Sep-11	14	11-Oct-11	2
15-Sep-11	9	12-Oct-11	14
16-Sep-11	10	13-Oct-11	27
17-Sep-11	34	14-Oct-11	24
18-Sep-11	4	15-Oct-11	11
19-Sep-11	19	16-Oct-11	7
20-Sep-11	15	17-Oct-11	6
21-Sep-11	15	18-Oct-11	16
22-Sep-11	16	19-Oct-11	4
23-Sep-11	14	20-Oct-11	3
24-Sep-11	59	22-Oct-11	5
25-Sep-11	16	23-Oct-11	5
26-Sep-11	5	24-Oct-11	3
27-Sep-11	23	25-Oct-11	10
28-Sep-11	12	27-Oct-11	6
29-Sep-11	12	29-Oct-11	2
30-Sep-11	18	1-Nov-11	1

As reported in the NIRB annual report (see Appendix H section 10.4 of the NIRB annual report), at the end of 2011, hunting data had been collected via the Hunter Harvest Study (HHS) from 46 participants (an increase from 2010 when 39 calendars were returned). The estimated 10% of Baker Lake hunters participating in the HHS continues to be used as the estimate of overall participation based on the 2008 HTO member list and an assumption that there is an increase in overall number of hunters in the community.

The hunters participating in the HHS appear to be representative of the hunting population in Baker Lake, consisting of male, female, casual, regular and intensive

hunters. Estimates from HHS data to- date suggest that the 10% of hunters participating in the HHS account for 10-15% of total Caribou harvests in the Hamlet of Baker Lake, assuming that the participating hunters are likely those that are more actively involved in hunting.

In most years, within 5 km of the AWPAR, a higher proportion of Caribou (i.e., 55% across all years) are taken during the growing season than in the winter season. Given the improved hunting access along and adjacent to the road during the snow free period, this higher proportion was not unexpected and has not increased since 2009. Interestingly, the road also appeared to be important to hunters in the winter season, despite relatively unrestricted access to unroaded areas in the Baker Lake area. Factors such as ease of access and security may be factors in a hunter's decision to hunt in an area.

In 2011, 283 Caribou (42% of total) were harvested within 5 km of the AWPAR, the highest count to date; however, although increases have been seen each consecutive year since AWPAR construction, the total harvests per participant within 5 km of the AWPAR has increased only marginally (Figure 10.8), from 6.9 Caribou per participant in 2008 to 7.1 Caribou per participant in 2011. When comparing Caribou harvests within 5 km of the road from the HHS to historical NWMB data, there does appear to be an increased harvest along the AWPAR (Table 10.2).

Counts remained low for Muskox and Wolverine, precluding any interpretation of potential mine- related effects. Low densities of Muskox and Wolverine and general aversion to human activities require hunters to explore areas well outside areas occupied by the AWPAR; therefore, the AWPAR is anticipated to have little effect on Muskox and Wolverine hunting patterns.

Figure 10.8: Caribou Harvests (Total Harvest and Average by Participant) Along the AWPAR (2007
to 2011).

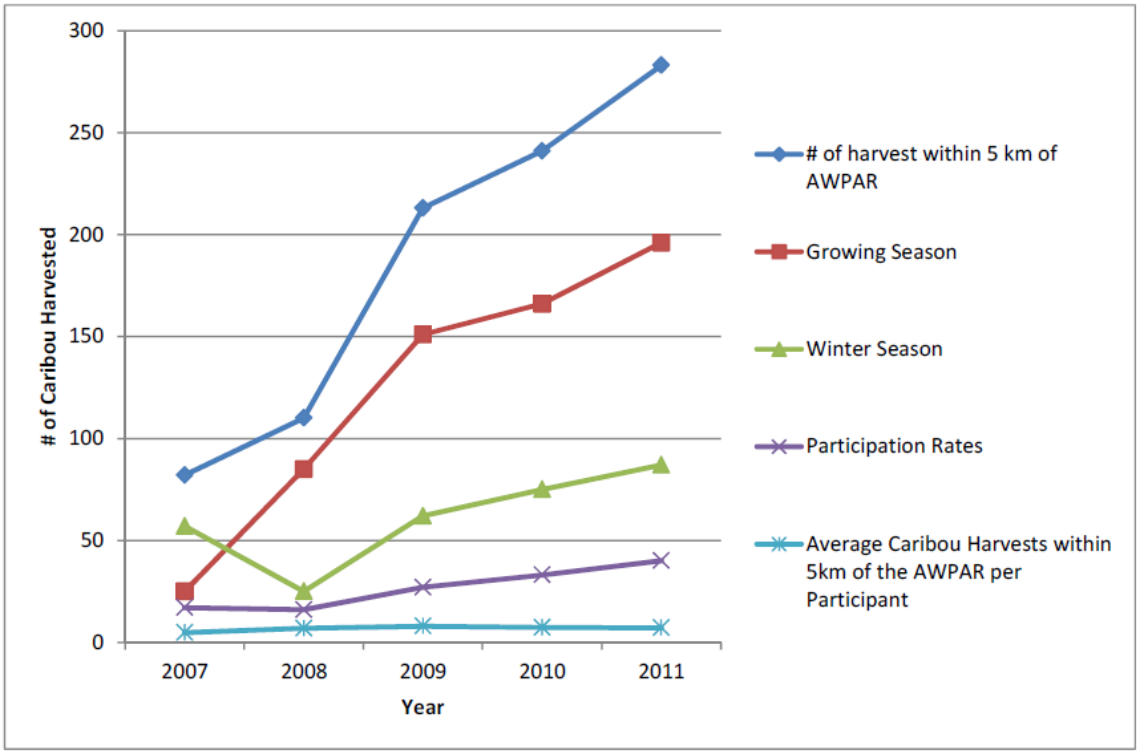


Table 10.2: Caribou Harvest Distribution along the AWPAR and within the Meadowbank LSA and RSA (1996/2001, and 2007 to 2011)

Study	% of harvest within 5 km of Meadowbank Road	% of harvest within Meadowbank LSA	% of harvest within Meadowbank RSA
NWMB 1996 - 2001	18%	7%	67%
Baker Lake HHS 2007-2010	38%	22%	75%
Baker Lake HHS 2007	34%	12%	79%
Baker Lake HHS 2008	37%	28%	73%
Baker Lake HHS 2009	36%	20%	78%
Baker Lake HHS 2010	38%	22%	73%
Baker Lake HHS 2011	42%	25%	74%

Recommendation #16

The Board invites Health Canada1 to provide comments on the results of both the WSLRA and PQRA reports as provided by AEM, and to indicate whether or not further information may be required with respect to the monitoring program as outlined in Condition 67.

As per Condition 67, AEM agrees with the NIRB recommendations and will consult with NIRB and Health Canada for the monitoring of contaminants in country foods.

Recommendation #17
It is recommended that AEM notify the NIRB of any plans for follow-up studies that may be conducted as a result of the PQRA report recommendations.

This is dependent on consultation with Health Canada's and their response to the PQRA. As per the TEMP, AEM will complete another SLRA in 2014 (i.e. every 3 years). During this re-evaluation and analysis, the chromium levels at reference and mine-site stations will be re-assessed and if necessary, additional samples may be collected (to evaluate chromium speciation).

Recommendation #18
Based on the information and results provided from the 2011 dust monitoring program and given the limited amount of data collected, it is recommended that the monitoring stations be kept in place until more data is collected, and prior to new locations being selected by AEM. If AEM, in consultation with EC, determines that a more suitable location for dust monitoring have been located, the Board requires that the Proponent provide a description of the new location for the atmospheric monitoring station, including an updated map showing where the station would be installed in relation to other project components (including roads) and in proximity to water bodies.

The location of the station was determined in consultation with EC in July 2011. Station #4 was installed before the beginning of the construction of the Vault road. During the construction, the realignment of the Vault road placed the station within 10 feet of the road. Therefore, AEM re-positioned Station #4 100 m east of the road to be indicative of the original intended location (approximately 100 meters from the road). The other stations were not changed from the initial location agreed upon with EC.

Recommendation #19
The Board requests that AEM provide a discussion and rationale as to why the two out of the four stations monitored exceeded the maximum allowable concentrations of total fixed dust fall during the months of November/December.*

During November and December, the Vault road construction was ongoing and these stations were affected. This was considered as a onetime incident for the construction period only.

Recommendation #20
The Board requests that AEM provide the information as requested by EC.*

AEM, in response to EC's request to provide information regarding the incinerator not achieving sufficient temperatures in the secondary chamber on a "few occasions " to ensure "complete combustion…", has determined that there were some initial

operational problems during the use of the incinerator. During the first 1.5 years of incinerator operation (June, 2009 – through 2010), staff turnover and proper training on the correct waste mix and correct charging procedure of the incinerator taking longer than anticipated were the likely causes of the insufficient temperature being reached on the few occasions referenced by EC. Since that time AEM committed to proper training and operation of the unit. Stack testing results from 2012 sampling indicated emissions were below EC's criteria for Dioxins, Furans and Mercury. These results illustrate that the unit temperatures are maintained to ensure complete combustion of wastes. It is important to note also that the waste stream being incinerated has not changed since the incinerator was put into use.

Recommendation #21
The Board requires that AEM address the dust control issue for the access road.*

As part of the Meadowbank air quality impact assessment (Cumberland, 2005), a detailed modeling of a 7.5 km long road between Vault mine and the processing plant was conducted as this roadway will be the most frequently used road. The model showed that the worst case level of air pollution (mainly fugitive dust) will be in the range of, or less than, the air quality objectives. Evaluation and monitoring of fugitive dust along the AWAR was not required, because much lower traffic volumes were predicted for this route.

At Meadowbank, AEM has implemented a road dust control program that is focused as follows:

1. Ensure road safety by controlling dust to ensure safe visibility during mine operations – this involves controlling dust whenever road safety or worker safety is threatened by dust emissions from road traffic; and

2. Protect the environment and public health – this involves controlling dust whenever there is a potential for harm from road dust to human health or to the receiving environment.

Under Item 1 above, the highest traffic volume is on the mine site (caused by the heavy mining haul trucks and the higher volume of traffic) and therefore the highest safety priority is on the mine site itself. The section of the road between the Meadowbank mine and the exploration camp also has the highest volume of road traffic and therefor has been the focus of dust control. To address these areas of greatest risk at the mine site we have two water trucks operating throughout the day controlling dust emissions.

Under item 2, air quality monitoring, and ecological effects monitoring results as part of Condition 67 and bird surveys around the mine site have not demonstrated any significant changes due to mine related road dust emissions. As reported in the annual report, no significant harm to the environment, either to vegetation, to wildlife or to the aquatic environment has been reported.

The GN Guidance ton dust suppression states that he only acceptable chemical dust suppressants are calcium chloride and bituminous oil (heavy oil like bunker C). At Meadowbank we have used calcium chloride but find that it only has a short term benefit on dust suppression which is quickly lost through the heavy truck traffic. Therefore effective management of dust would require very large volumes of calcium chloride which in our opinion will cause other adverse environmental effects via run off during freshet and rain events.

Last year we did receive complaints of dust emissions from the Hamlet of Baker Lake. These emissions were associated with the increase in road traffic from the AEM Baker Lake port site to the Baker Lake Gatehouse that occurred during the summer sealift period. In response we provided the Hamlet with Calcium Chloride that they applied to the section of road between the AEM port and the Gatehouse.

To treat the full length of the Meadowbank AWAR with calcium chloride (110 km with two applications per year) we estimate that it would require 2.8 million litres of 29.6% liquid calcium chloride. This is a very large volume of material that could cause adverse environmental impacts and it is not guaranteed that two applications would be sufficient nor make a difference based on the modeling presented in the EIS. The AWPR needs to be graded regularly to ensure that haulage of materials like fuel and oils can be done safely. Purchase and shipping cost alone for this amount of suppressant would be very costly (order of several millions per year) and we are not sure that two applications per year would be adequate. AEM is not willing to this spread or introduce this amount of calcium chloride into the local receiving environment on an annual basis until we know what the potential environmental effects of this CaCl are and until we know that the dust currently generated along the AWAR is actually causing harm. As previously stated, our monitoring studies have not identified dust deposition as a potential concern to the terrestrial or aquatic environment.

Another method of suppression being evaluated is the slowing of traffic, during barge season, to minimize dust generation.

Recommendation #22

It is recommended that AEM to provide a plan which details the future dust monitoring studies that would be conducted along the access road including a discussion of potential adaptive management strategies that may result from these studies.*

In 2013, AEM will continue to monitor air quality around the mine site and additionally, is proposing to conduct a study to evaluate dustfall at selected locations along Vault Pit Road, along the AWAR between the exploration camp and the mine site, and along 3 additional sections of the AWAR. Dust deposition will be evaluated over one or two months (July-August and August- September 2013) when the highest levels of dust generation is expected (due to limited precipitation and no snow cover). The objectives of the proposed study will be to evaluate dustfall adjacent to the AWAR and mine site

roads at locations where dust suppression activities are underway and frequency of traffic is comparatively high or moderate. The dustfall study will address NIRB recommendations (letter dated December 7, 2012), assist in evaluating and comparing the air quality impact assessment (Cumberland, 2005) and be used to develop future mitigative and management actions. Details of this study design are presented in the attached memo Appendix G.

Should you have any questions, please contact me via email at stephane.robert@agnico-eagle.com

Regards,
Agnico-Eagle Mines Limited – Meadowbank Division

Stéphane Robert
Manager Regulatory Affairs Nunavut

MEADOWBANK DIVISION

Production Lease KVPL08D280

2013 Second Quarter Report

July 2013

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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 2013.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 92,200 oz. of gold;
- Mined 8,879,842 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1, 028,581	2, 047,342
Gold Grade (g/t)	2.99	2.85
Gold Produced (oz.)	92,200	174,104

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	510	20,586
Waste Rock Production (t)	8,021,253	15,075,989
Ore Production (t)	858,079	1,486,978
Total Blasting (t)	8,829,934	17,339,709
Total Drilling (m)	226,045	430,802

1.4 DIKE CONSTRUCTION ACTIVITIES

Central Dike construction has progressed. Bay Goose Dike capping and the TSF internal structure were completed during the quarter. The increase of storm water dike to the final elevation, 150m, is ongoing.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2013 Mine Plan*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 2013.

There was no planned variation from the "*2013 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current Quarter, one (1) inspection has been held by regulators. The water inspector from Aboriginal Affairs and Northern Development Canada (AANDC) visited the site from June 4th to June 6th. A draft inspection report has been received and action will be taken to address concerns made by the inspector. No major issues were notified. On July 14th, AEM sent to AANDC a letter in response to the inspection. The Inspection Report and AEM's response can be found in Appendix A.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There was one exceedence of the Water License during Q2. Freshwater consumption exceeded the permitted amount of 700,000 m^3. An amendment application was submitted to the NWB on April 23 requesting an increase for freshwater use.

25 spills occurred at the site; three (3) spills were reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the second quarter, 25 spills occurred at the site. Three (3) spills were reported to the Government of Nunavut:

- 2000L of tailings slurry was spilled outside the mill garage door due to a tailings pipe flange break inside the Mill building;
- 575L of propane was released behind the old warehouse because a regulator valve on propane tank stuck open;
- 210L of diesel was spilled at Camp Genset tank #1. A tank overflow occurred due to fuel expansion by warm weather.

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 635,242 m^3. The total freshwater year to date is 1,180,867 m^3. The total amount of reclaim water used in the mill was 373,370 m^3.

In February 2013, the reclaim water barge became unusable as a result of accidental shifting and intake of excess solids (mill slurry). This was also due to an overall lack of water in the reclaim pond. On February 21, 2013, ore processing began using freshwater only. Attempts were made to repair the barge, but were not successful, and due to frozen conditions, repositioning of the barge at this time was not possible. However, the reclaim road has been extended and a diesel pump installed temporarily to obtain reclaim water. As a result of these conditions, freshwater use will be higher than anticipated in 2013.

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. Increased 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. Agnico Eagle Mines (AEM)

Meadowbank Division submitted, on April 23, 2013, a request to the Nunavut Water Board for an amendment to increase freshwater use rate at the Meadowbank Gold Project, Water License # 2AM-MEA0815. AEM is currently waiting for NWB's comments and/or amendment.

Agnico Eagle Mines (AEM) also applied, in April 2013, for a modification to the Type A Water License Part F, Item 4 to include East dike seepage water as non-contact water effluent. Non-contact water (receiving environment water from Second Portage Lake), is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage Attenuation pond. AEM is proposing to discharge seepage water from Second Portage Lake pump through a separate sump collection system and diffuser, back to Second Portage Lake prior to contact with mining activity (thus minimizing site contact water). The overriding premise of this application for a modification is to pump clean lake water back to Second Portage Lake before it is affected by mine contact water. AEM is proposing to install a diffuser to control erosion and disturbance of the bottom sediment. Based on discharge modelling presented in the application, the discharge water quality is not expected to cause adverse effects to aquatic environment. Nevertheless, monitoring programs will follow Type A Water License requirements including non-contact water monitoring and Core Receiving Environment Monitoring Program. On July 3rd, 2013, NWB approved the proposed modification subject to conditions stated in the Notice. You will find in Appendix B the East Dike Seepage application document and the NWB approval letter. On July 9th, 2013, AEM requested Environment Canada to advise if MMER requirements would apply to the East Dike discharge. It is anticipated that EC will provide a decision in early August. To date AEM has not discharged any water from the East dike seepage back to Second Portage Lake.

During the 2nd quarter no effluent was discharged from the Attenuation Pond to Third Portage Lake (ST-9).

Vault Lake Dewatering began on June 27th, 2013. A total of 44,615 m^3 of water was released through a diffusor into the receiving water (Wally Lake) during the 2nd quarter. There were no exceedences of either MMER or Type A Water License 2AM-MEA0815 criteria. You will find in Appendix C a figure showing the Vault layout.

Meadowbank and Baker Lake Tank Farm were dewatered in June. Sample results prior to discharge indicated water met the discharge criteria.

TSS monitoring, management and erosion control began during the quarter with the freshet underway. No exceedances of NWB limits were observed in receiving waters.

The first EEM sampling at Third Portage Lake was completed in April.

The CREMP sampling was completed in April at Wally Lake, Second Portage Lake and Third Portage Lake (North).

Monitoring of turbidity and TSS on Third Portage Lake (TPL) at the airstrip extension has was undertaken during the week of March 18th, 2012 and continued through mid-April. No non-conformities or exceedences were observed.

4.3 WILDLIFE MANAGEMENT

During the quarter, some wolverines, wolves and 1 Muskox were seen on site. Caribou were observed on the AWPR, airstrip and gatehouse. No issues were reported.

The annual goose migration began during the quarter. Two (2) scare cannons were installed to deter geese from landing in the TSF.

Falcons returned to quarries along the AWPR during the quarter. Monitoring of quarries and pit walls for Falcons began during the week of May 20th. In June, falcon eggs were observed in nests at quarries along AWPR. During the week of May 27th, Falcons appeared to have established a nest in North Portage pit but have not been observed since June 10th. AEM has determined that the nest was never established at this location.

Hawk nests were established on Tanks 4 and 6 at the Tank Farm in Baker Lake. The GN-DOE Wildlife Officer was consulted and decided to remove the nests on Tank 4 and 6. Snow fencing was installed over the platforms and has successfully deterred the hawks from nesting on the tanks.

Fisheries assessment work, in accordance with DFO permits, was started on AWPR during the week of June 10th and was completed at the end of June.

~~4.4~~ PERMITTING

The Vault Fishout Work was approved by DFO on April 29th (Appendix D). The Vault Pit Authorization Permit was received from DFO to permit HADD in Vault Lake (Appendix E).

Meadowbank Production Lease amendment (Vault expansion) with KIA signed and submitted on May 2nd (Appendix F)

Environment Canada responded to AEM advising that the Vault Lake dewatering discharge is subject to MMER monitoring upon the commencement of dewatering. The monitoring commenced on June 27th (Appendix G).

Environment Canada provided a response to ‘’EEM Cycle 1 Interpretive Report, Meadowbank Division” submitted on July 1st, 2012; the Technical Advisor Panel determined that the report meets the requirements of the MMER-EEM. AEM response to Environment Canada on June 21st (Appendix H).

Wildlife permit sent to DOE by Nunavut Environmental for 2013 wildlife monitoring.

AEM received modification of Airstrip Approval notice from NWB on April 4th.

Received Oil Pollution Emergency Draft plan review on June 14th from Transport Canada; more work is required to comply with requirement.

The following reports were completed and submitted to regulators:

- 2012 NWB/NIRB/AANDC/KIA/DFO Annual report on April 9th;
- 2012 Annual NPRI and GHG reports submitted on May 27th to Environment Canada via SWIMM;
- Airstrip Extension Construction, Bay Goose Dike Construction and South Camp Dike Construction As-Built reports sent to NWB;
- Vault Fishout plan sent to DFO in April;
- Permit application for fisheries work sent to DFO on May;
- Final Habitat Compensation Monitoring Plan sent to DFO on June 3rd;
- No Net Loss Plan sent to DFO on June 3rd;
- Report sent to DFO on June 21st regarding helmet at KM 1 for culvert overflow;
- KIA Q1 2013 Production Report submitted;
- KIA Q1 2013 report detailing water usage and fees plus payment submitted;
- Environment Canada Q1 MMER via electronic database;
- Update closure cost for No Net Loss Plan to DFO;
- Vault Fish out program to DFO.

Appendix A

Aboriginal Affairs and Northern Development Canada | Affaires autochtones et Développement du Nord Canada

WATER USE INSPECTION REPORT FORM

Date: June 5 and 6, 2013	**Licensee Rep.** Jeffery Pratt, Environmental Coordinator, Kevin Buck Environmental Superintendent
Licensee: Agnico-Eagle Mines Ltd. (AEM)	**Licence No: 2AM-MEA0816**

Comments: A compliance inspection was conducted on the 05th and 06th of June, 2013. Jeffery Pratt, Environmental Coordinator accompanied C. Wilson and A. Shouldice on the inspection of the Meadowbank Gold Project.

WATER SUPPLY

Source(s): Third Portage Lake	**Quantity used:** NI
Owner:/Operator: Agnico-Eagle Mines Ltd.	

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A	**Storage Structure:** A	**Treatment Systems:** A	**Chemical Storage:** A
Flow Meas. Device: NI	**Conveyance Lines:** A	**Pumping Stations:** A	**Screen** : A

Comments:

- Water is pumped from Third Portage Lake to a central holding tank that supplies both the camp facilities and mill. For safety reason the Inspector was unable to enter the mill facilities to photograph the flow meter for the fresh water intake during the inspection; the Proponent shall provide the Inspector will the total fresh water consumed to date for June 06, 2013.
- The Proponent foresaw overages in the annual water consumption despite the water reclaim project. They applied in April 2013 to the Nunavut Water Board for an amendment to the total annual water volume.
- Water volumes have exceeded the licensed amount since May.

WASTE DISPOSAL

Comment:

Waste water

- Seepage from the east dyke is directed into two sumps which are located in the "D" and "C" Pit.
- It is unclear to the inspector the specific routes of the water management system. The Inspector requests a site map and a brief elaboration of current water pumping routes.
- What appeared to be a water line was noted from Second Portage Lake over East dyke to a pump shack near pit "C".
- The Proponent will clarify the measure being taken to protect the fish habitat of Vault Lake. The Vault rock storage facility is being utilized though water management systems appear to not be in place. While the construction continues around Vault Lake in preparation for dewatering, the Lake is protected as it is fish bearing waters. Waste water must be managed to ensure no access into this natural water body.

Tailings and Rock Storage Facilities

- Waste rock is sorted in the pit into marginal, PAG and NPAG. The PAG rock is secured in a pile which is capped with 4m of NPAG.
- Due to freshet the site is experiencing an increase in surface runoff water. Water was noted entering into the tailing facility from the diversion ditch though a culvert. The Inspector was informed that the tailing facility was experiencing low levels of water due to: over estimated levels of annual precipitation, runoff water and freezing issues during the winter. This has all contributed to the reclaim water barge to be temporary offline.
- During the winter tailings discharge pipes segments froze which must be left to thaw. Tailings discharge was noted on the surface of Stormwater dyke and adjacent to the waste rock storage facility's RF-1. This discharged material must be secured in the tailings facility before the term of the next inspection. The Proponent is encouraged to manage incidents like this as all tailing must be directed to the facility.
- The construction of the vault dyke is complete. Waste rock is being sorted and deposited at the vault waste rock storage facility. The monitoring requirements shall be fulfilled as soon as practically possible to ensure all waste water is secured.
- The Proponent shall submit a Construction Summary Report to the Board and Inspector 90 days following the completions of any structure designed to contain, withhold, divert, or retain water or waste as per item 26 Part D, Schedule D item 1. Specifically the diversion ditches constructed this winter

Contaminated Soils

- Contaminated soils from spills around site have historically been stored in Quarry 22 located on the All Weather Road near the Meadowbank Exploration Project.
- Soil will continue to be moved to the Landfarm facility within the mine site before November 2013.
- The Proponent will submit a Plan with the 2013 Annual report which will consider the measure that will be taken to clean up and monitor Quarry 22 and 5.
- Contaminated soils from Quarry 22 will be shaken and have large rocks and garbage

removed before entering into the Landfarm.
- The Proponent will submit to the Inspector a Rock Reject Plan (or an alternative) which will consider the removal and treatment of rocks from the Landfarm before November 30th, 2013.
- The Proponent will submit to the Inspector the monitoring results from the Landfarm sump (ST-14) before the term of the next inspection (July 2013)

Progressive Reclamation
- The Proponent is encouraged to continue to progressively reclamate old buildings and unused equipment and material. This will reduce overall reclamation at the end of mine.
- A loose sediment curtain used during dewatering still remains in the third portage lake. As soon as practically possible this curtain will be removed reasonably this has been noted in the last three inspection therefore action is require as it is considered litter.

Sewage: Sewage Treatment System: BIODISK

Natural Water Body: Yes	**Continuous Discharge** (land or water): **Water**	
Seasonal Discharge: NA	**Wetlands Treatment: NA**	**Trench:** None

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: NI	**Decant Structure:** A	**Erosion:** A
Discharge Meas. Device: NI	**Dyke Inspection:** NA	**Seepages:** NI
Dams, Dykes: NA	**Freeboard:** NA	**Spills:** NI
Construction: A	**O&M Plan:** NI	**A&R Plan:** NI
Periods of Discharge: Cont	**Effluent Discharge Rate:** NI	

Comments:
- Treated sewage is discharged to Teardrop Lake from the sites Water Treatment Facility.
- Currently 3 biodisk are in operation to accommodate the sites 500-520 staff.

FUEL STORAGE:

Owner/Operator:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: NI	**Water within Berms:** NI	**Evidence of Leaks:** NA
Drainage Pipes: NI	**Pump Station & Catchments Berm:** NI	
Pipeline Condition: A	**Condition of Tanks:** NI	

Comments:
- A few small spills noted around site. The environment division deploy necessary measures immediately upon discovery.
- The site is experiencing low level of fuel. Some programs have been scaled back in a fuel conservation project while awaiting the arrival of the first barge in July.

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected	**Owner /Operator:** Agnico-Eagle Mines Ltd.	
0	**AANDC:**	
Signs Posted	**SNP:** A	**Warning: None**
Records & Reporting: Annual Report submitted		
Geotechnical Inspection: NI		

Comments:
- Monitoring stations and waste disposal facilities have been furnished with signage

General Comments:
- During the inspection it was noted that dust control measures needed to be deployed. The Proponent will discuss further the Plan with regards to dust suppression with the Inspector before the term of the next inspection.
- The Proponent shall secure; wind blow debris like expanded foam, wire, and plastic associated with the project the site before the term of the next inspection. Debris was noted in numerous places around site.
- Grouting will not be undertaken this year at the east or bay goose dyke.
- A capping program took place on the bay goose dyke earlier this year and is complete.
- Some areas of subsidence were noted along the driving surface of both dykes and a large area on the boat launch.

Non-Compliance of Act or Licence:

All issues identified during this inspection have or will be address as discussed in this report.

Failure to undertake the actions required as described in this inspection report, and to the satisfaction of the Inspector, may result in enforcement action(s) being undertaken pursuant to

the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*.

Christine Wilson
Inspector's Name

Inspector's Signature

Jeffrey Pratt
Representative Name, Title

Representative Signature

Cc: Erik Allain- Manager Field Operations
Cc: Phyllis Beaulieu – Manager Licensing- Nunavut Water Board

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AGNICO EAGLE

July 14, 2013

Christine Wilson
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RE: RESPONSE TO WATER USE INSPECTION REPORT – DATED JUNE 5 & 6 2013 – LIC#: 2AM-MEA0816

Ms. Wilson,

Thank you for your inspection report dated June 5 & 6, 2012.

Please note the following actions in response to your inspection and the concerns raised in your report,

1) **Water Supply – The inspector was unable to enter the mill facilities to photograph the flow meter for the fresh water intake during the inspection: the Proponent shall provide the inspector will the total fresh water consumed to date for June 06, 2013;**

You will find, attached, a table indicating the quantities of fresh water used at the Meadowbank Site between January 1 and the date of your report, June 6, as you requested.

2) **Waste Water – a) It is unclear to the inspector the specific routes of the water management system. The Inspector requests a site map and a brief elaboration of current water pumping routes;**

I have provided a map of the current water pumping locations on the Meadowbank site. As discussed during your inspection, the internal sumps within the mine will move as the mine progresses. However the location, in which the water is pumped, does not change. I have also attached a chart that depicts where each sump location is pumped to.

b) What appeared to be a water line was noted from Second Portage Lake over East dyke to a pump shack near pit "C";

The pipe that was identified during this inspection was put in place to be used as a discharge for East Dike seepage (if needed). In April, 2013 a request for a modification was submitted to the NWB to allow for the pumping of the seepage to Second Portage Arm. The modification was approved by the Board on July 3, 2013. For now, AEM has not decided if they will discharge the seepage to Second Portage Arm. If AEM decides to use it, the inspector will be notified 10 days before proceeding.

c) **The Proponent will clarify the measure being taken to protect the fish habitat of Vault Lake. The Vault Rock storage facility is being utilized though water management systems appear to not be in place. While the construction continues around Vault Lake in preparation of dewatering, the Lake in protected as it is a fish bearing waters. Waste water must be managed to ensure no access into this natural body;**

The Vault starter pit/ Quarry that was constructed will self-contain any runoff water in the vicinity of stripping waste rock and pit/quarry area.t. Regular visual inspections of the Vault Lake area have taken place to ensure that no run off water containing TSS is impacting Vault Lake. In addition our Engineering Department staff have conducted regular structural inspections and daily checks of waste rock – no wastewater to date has entered Vault Lake – if turbid runoff is noted then silt curtains will be deployed.

3) **Tailings and Rock Storage Facilities – a) The proponent shall submit a Construction Summary Report to the Board and Inspector 90 days following the completions of any structure designed to contain, withhold, divert, or retain water or waste as per item 26 Part D, Schedule D item 1. Specifically the diversion ditches constructed this winter;**

A construction report of the TSF, Diversion Ditch and Vault Dike s will be provided to AANDC Inspector on or before the next inspection..

b) During the winter tailings discharge pipes segments froze which must be left to thaw. Tailings discharge was noted on the surface of Stormwater dyke and adjacent to the waste rock storage facility's RF-1. This discharged material must be secured in tailings facility before the term of the next inspection. The

Proponent is encouraged to manage incidents like this as all tailing must be directed to the facility;

This area has been cleaned. As well, AEM will make sure that any future thawing of tailings lines be directed to the TSF.

c) The construction of Vault dyke is complete. Waste rock is being sorted and deposited at Vault waste rock storage facility. The monitoring requirements shall be fulfilled as soon as practically possible to ensure all waste water is secured;

As *stated in 2 c) of this letter: Engineering Department conducted regular structural inspections as well as daily checks of waste rock – no wastewater to date has entered Vault Lake – if turbid runoff is noted then silt curtains will be deployed. No seepage has been observed to date but any observed will be sampled in accordance with our Water License Part D and Item 24.*

4) **Contaminated Soils – a) The Proponent will submit a Plan with the 2013 Annual report which will consider the measure that will be taken to clean up and monitor Quarry 22 and 5;**

A plan will be submited with the 2013 Annual report which will consider measures that will be taken to remediate and monitor Quarry 22 and 5;

b) The Proponent will submit to the Inspector a Rock Reject Plan (or an alternative) which will consider the removal and treatment of rocks from the Landfarm before November 30, 2013;

This item is addressed in the Landfarm Design and Management Plan (February 2013) in section 4.2.2 & 4.3.2 on page 8. A copy of this management plan is included with this letter.

c) The Proponent will submit to the Inspector the monitoring results from the Landfarm sump (ST-14) before the term of the next inspection;

A copy of the results of the water from the Landfarm is attached. The results met the criteria stated in our Water License. The water was pumped back onto the piles for moisture addition.

d) Contaminated soils from Quarry 22 will be shaken and have large rocks and garbage removed before entering into the landfarm;

This item is addressed in the Landfarm Design and Management Plan (February 2013) in section 4.2.2 & 4.3.2 on page 8. The project to clean up Q22 commenced on July 8. Contaminated

materials will be separated from large rocky material and garbage. Contaminated soils will be brought to the onsite Landfarm.

4) **Progressive Reclamation – a) The Proponent is encouraged to continue to progressively reclamate old buildings and unused equipment and material. This will reduce overall reclamation at the end of mine;**

AEM has actively implemented a progressive reclamation plan. To date 4M of NPAG waste rock has been placed around the perimeter of the Portage Rock Storage Facility. This information is contained in our revised Waste Rock and Tailings Management Plan (submitted to NWB with Annual Report, April, 2013 and is part of our overall Closure Plan). Currently we are updating our Closure Plan. In regards to infrastructure, unused buildings, equipment, and material, these items will be removed once we are sure they will no longer be needed.

b) A loose sediment curtain used during dewatering still remains in Third Portage Lake. As soon as practically possible this curtain will be removed reasonably this has been noted in the last three inspections therefore action is require as it is considered litter;

Removal of this curtain will take place in August 2013.

5) **Fuel Storage - A few small spills noted around site. The environment division deploy necessary measures immediately upon discovery;**

The environment department continues to work with the site services department at cleaning the small spills that have appeared since the snow melt. These spills will be cleaned prior to the next scheduled inspection

6) **General Comments – a) During the inspection, it was noted that dust control measures needed to be deployed. The proponent will discuss further the Plan with regards to dust suppression with the Inspector before the term of the next inspection;**

AEM has a Dust Suppression program. The program includes the application of liquid calcium chloride on site and selected mine site roads. The airstrip is watered approximately 30 minutes prior to the plane landing and again prior to takeoff. In addition the water truck is utilized on a

continuous basis when required. A written program will be provided prior to the next scheduled inspection.

b) The Proponent shall secure; wind blow debris like expanded foam, wire, and plastic associated with the project the site before the term of the next inspection. Debris was noted in numerous places around site;

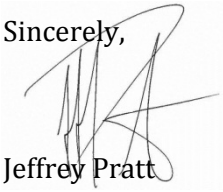
AEM has utilized the services of the summer students hired at the mine to clean up the areas around the site. Expanded foam, blasting wires, etc. noted especially around the diversion ditches and TSF were removed and disposed of in the onsite landfill.

c) Some areas of subsidence were noted along the driving surface of both dykes and a large area on the boat launch;

Engineering is monitoring all subsidence along the dikes. Some will be repaired and others will be left like that to monitor evolution. In addition an annual Geotechnical inspection is undertaken yearly by a third party and all results are discussed with the Meadowbank Dike Review Board annually.

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,



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Appendix B

AGNICO EAGLE

MEADOWBANK MINE

East Dike Seepage- NWB Application for a Type A Water License Modification

APRIL 2013

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Document Control

Version	Date	Section	Page	Revision
1	April 4 2013			Version 1

Plan prepared by:

Agnico Eagle Mines Limited- Meadowbank Division

Executive Summary

Non-contact water (receiving environment water from Second Portage Lake), is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage attenuation pond. Agnico Eagle Mines (AEM) is applying for a modification to the Type A water license part F, item 4 to include East dike seepage water as non-contact water effluent. As a contingency, AEM is proposing to discharge seepage water from Second Portage Lake pump through a separate sump collection system and diffuser, back to Second Portage Lake prior to contact with mining activity (thus minimizing site contact water). The overriding premise of this application for a modification is to pump clean lake water back to Second Portage Lake before it is affected by mine contact water. AEM is proposing to install a diffuser to control erosion and disturbance of the bottom sediment. Based on discharge modelling presented in the application, the discharge water quality is not expected to cause adverse effects to aquatic environment. Nevertheless, monitoring programs will follow Type A water license requirements including non-contact water monitoring, MMER sampling (if applicable) and Core Receiving Environment Monitoring Program.

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Introduction

Diking, collection of water through diversion ditches, seepage collection and dewatering of non-contact water from Second and Third Portage Lakes were approved under the current terms of the NWB License 2AM-MEA0815. Receiving environment water from Second Portage Lake is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage attenuation pond. Once this seepage water has been pumped to the Portage Attenuation Pond it is considered "contact water", as it is mixed with site run off and collection water from the Portage and Goose Pit. As per the site Water License, any water collected in the Attenuation Pond is treated (with all the attenuation water) through the site WTP prior to discharge to Third Portage Lake. In an effort to reduce freshwater consumption, Agnico Eagle Mines (AEM) is assessing whether the East Dike seepage water can be used for milling, progressive re-flooding or dust suppression during operations. Unfortunately, this may not be feasible throughout the year as the volume of seepage from the East Dike is not large enough to successfully be pumped over long distances (i.e. to the mill).

As a contingency, AEM is applying for a modification to the Type A water license part F, item 4 to include East dike seepage water as non-contact water effluent. AEM is proposing to pump this water through a separate sump collection system and discharge pipe, back to Second Portage Lake prior to contact with mining activity (thus avoiding site contact water). Due to the water quality of the seepage and the proposed activity (akin to dewatering non-contact water), AEM is of the opinion that this is consistent with the current conditions of the NWB License 2AM-MEA0815 but to ensure compliance within the terms of the license AEM is applying for a Modification as per Part G, Item 3. The overriding premise of this application for a modification is to pump clean lake water back to Second Portage Lake before it is affected by mine contact water. A secondary but equally important concern is to prevent inefficiencies in operations related to blasting and moving pipes prior to blasting (which may result in unsafe conditions as a result of excess water).

This document provides a description of the proposed collection and discharge of east dike seepage (non-contact) water into Second Portage Lake at the Meadowbank Mine site. The application provides an overview of the seepage discharge proposal, specific locations, timing of discharge, identifies potential impacts to the environment and monitoring that will be conducted to evaluate potential effects on the receiving environment.

1.1 Modification Conformity

The following section and Table 1 summarizes the NWB License 2AM-MEA0815 Part G, *Conditions Applying to Modifications*. Part G of the License which states :

1) The Licensee may, without written consent from the Board, carry out Modifications provided that such modifications are consistent with the terms of this License and the following requirements are met:

a. The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications to include requirements of Part G, Item 3;
b. Such Modifications do not place the Licensee in contravention of the License or the Act;
c. Such Modifications are consistent with the NIRB Project Certificate;
d. The Board has not, within sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days, and
e. The Board has not rejected the proposed Modifications.

2) Modifications for which any conditions referred to in Part G, Item 1 have not been met can be carried out only with written approval from the Board.

3) Applications for Modifications shall contain the following (see Table 1 which summarizes the conformity):

Table 1 – Part G Item 3 Conformity with NWB requirements for a modification

	Conformity
Part G: Item 3. Application for modification shall contain:	
a. A description of the facilities and/or works to be constructed	Section 1.3 East Dike Seepage pg. 7 Section 1.4 Location and Description of Seepage and Outfall pg. 7
b. The proposed location of the structure(s)	Section 1.2 Meadowbank Mine Overview pg. 7
c. Identification of any potential impacts to the receiving environment	Section 3 Monitoring the Receiving Environment pg.19
d. A description of any monitoring required, including sampling locations, parameters to be measured and frequencies of sampling	Section 3 Monitoring the Receiving Environment pg.19
e. Schedule of Construction	Section 1.5 Timing of Outfall pg. 11

4) The Licensee shall provide as-built plans and drawings of the Modifications refered to in this license within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

1.2 Meadowbank Mine Overview

Since 2009, AEM has operated the Meadowbank Gold Mine, which is located 75 km north of the Hamlet of Baker Lake, Nunavut. The Meadowbank mine consists of several gold-bearing deposits that will be mined until 2018. Mining at Meadowbank is planned to occur in three open pits (Goose Pit, Portage Pit and Vault Pit), two of which are currently operational (Portage Pit and Goose Pit). Much of the pit development is located in close proximity to the mill, office and lodging infrastructure, with the exception of the Vault Pit which is approximately 10 km northeast of the main mine site. The East Dike is located to the east of the Portage Pit and was constructed to allow mining to occur in the pit that was previously part of Second Portage Lake northwest basin (Figure 1-1). As mining progresses in 2013 and 2014, Portage Pit C and D will be backfilled and the access to the east dike seepage sumps will be filled (Figure 1-2).

1.3 East Dike Seepage

The East Dike was constructed in accordance with the dike construction and engineering specifications approved by the NWB and reviewed by the Meadowbank Dike Review Board (MDRB – an independent third party) to prevent water from Second Portage Lake from flowing into pit operations. The dike has been constructed with rockfill portions of Non Potentially Acid Generating (NPAG) material and a cut-off wall that has been grouted to bedrock. Nevertheless, seepage of lake water through the dike was expected and has been occurring since 2009. As a result, AEM proposes to return this seepage, if necessary, prior to it coming into contact with mining activities, back into the Second Portage Lake from a discharge location along the East Dike.

1.4 Location and Description of Seepage and Outfall

The location of the east dike seepage and proposed discharge point is located east of the Portage pit approximately halfway along the north-south oriented East Dike (see Figure 1-1 and Figure EDS-01). This location directs discharge east towards an unnamed island approximately 110m east-north-east from the discharge location. There are two seepage collection points on the west side of the East dike. Water will be

pumped from the South seepage pump installation to the North seepage pump installation through connecting, heat-traced pipes and will be discharged through a diffuser into Second Portage Lake, on the east side of the east dike, adjacent to the north seepage pump installation. A diffuser will be installed at the end of the discharge pipe to control erosion and disturbance of the bottom sediment. Water will be discharged vertically through a 90 degree elbow through the diffuser in 5m deep water at a location that will be adapted to field conditions. The diffuser will be anchored by a boulder and the 45m pipe will be anchored to the shore.

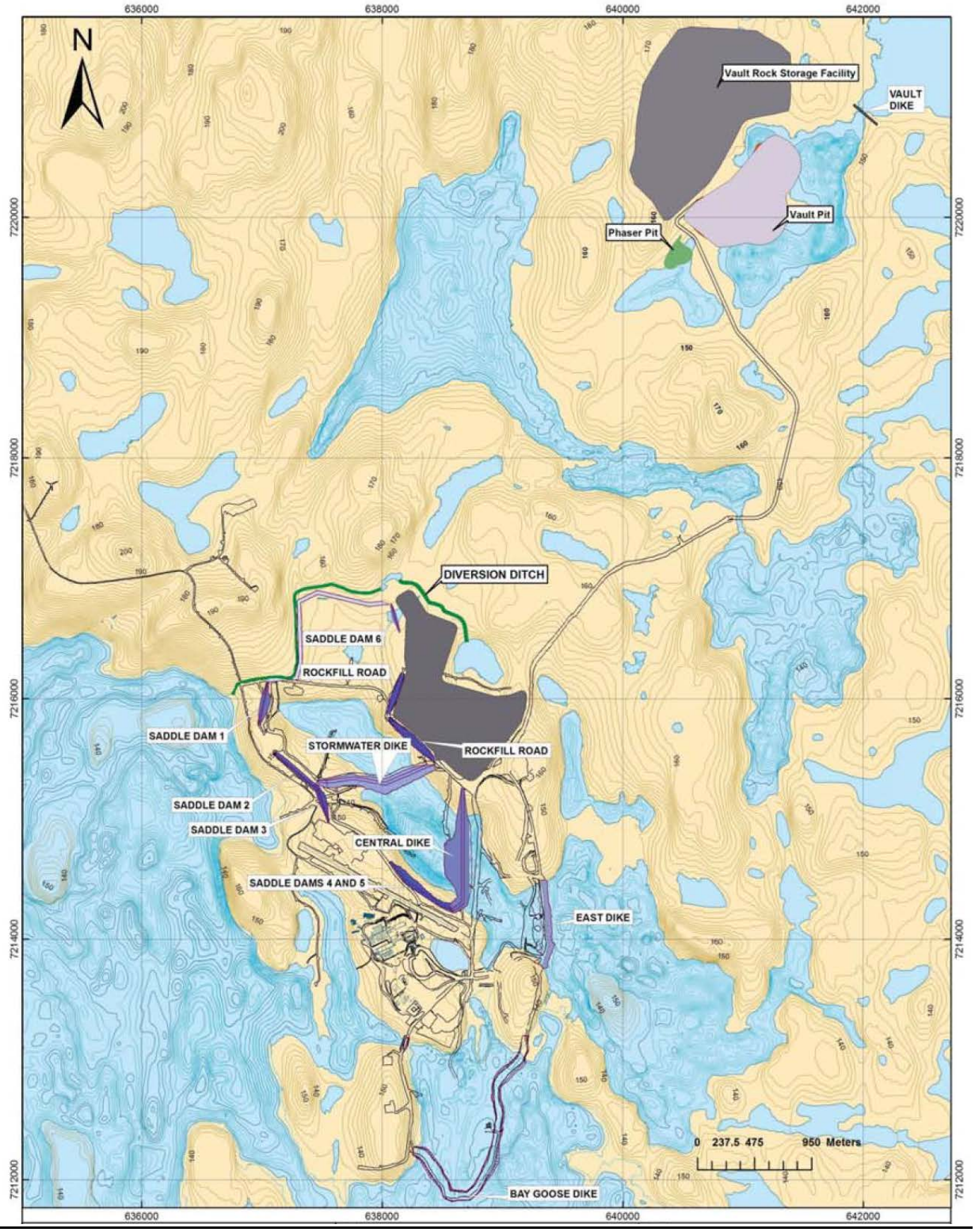

Figure 1-1: Meadowbank General Site Layout

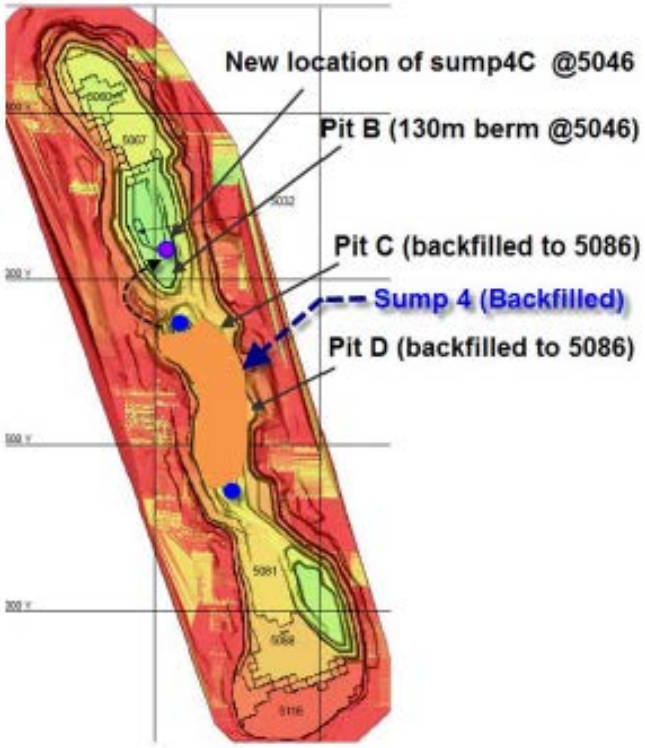

Figure 1-2: Backfilling of Portage Pit C and D in 2013 will fill Sump 4 which presently collects East dike seepage. The plan is to use Sump 4C and pump the water to the Attenuation pond. If this is not feasible, the contingency will be to collect and discharge east dike seepage into SPL.

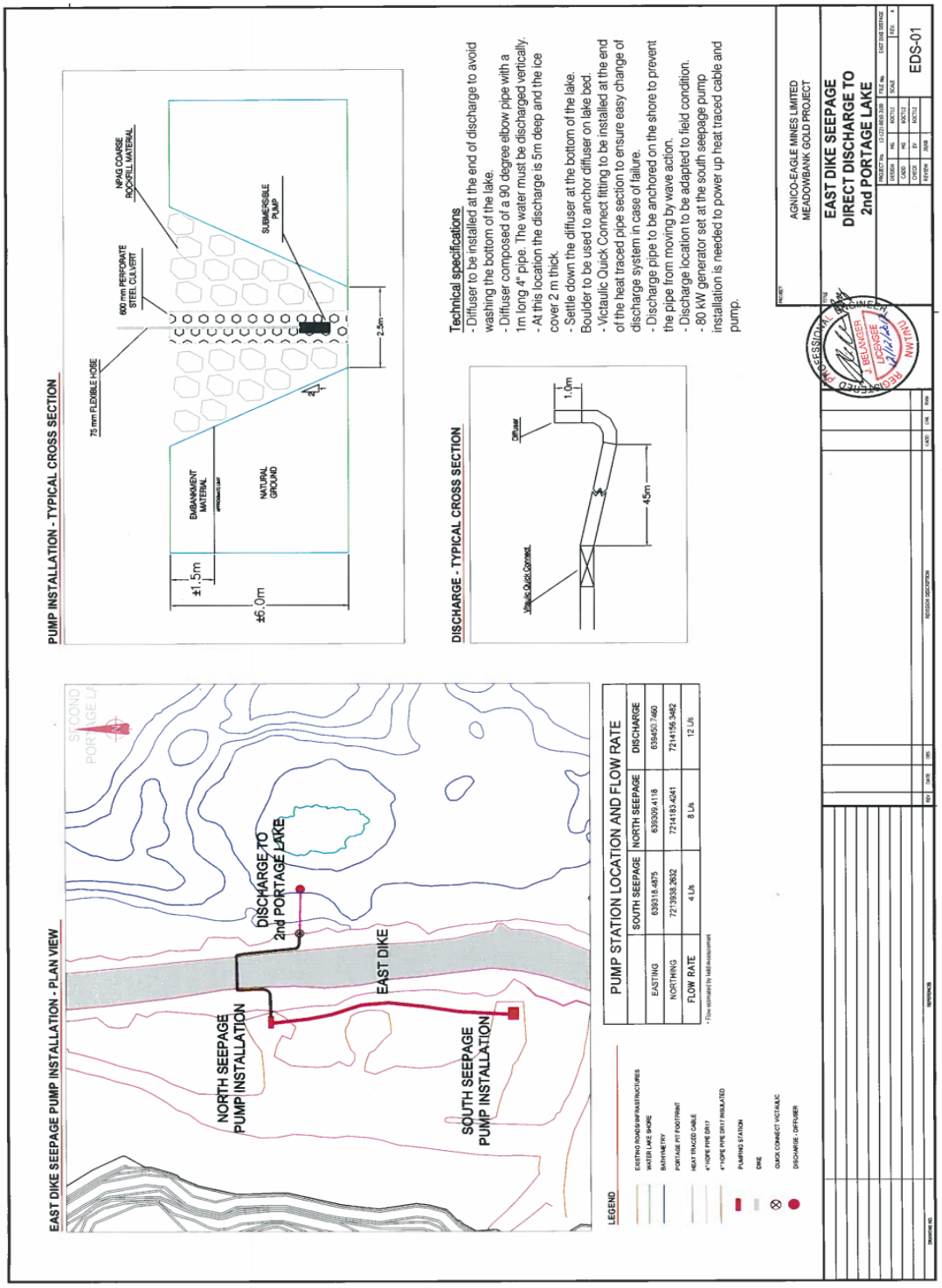

Figure EDS-01: East dike sump collection and discharge location into Second Portage Lake

1.5 Timing of Outfall

Currently, all seepage collected along the east dike is pumped into the pit (sump) and ultimately into Portage Attenuation Pond (future South Cell Tailings Area – 2015) (See figure 1-1). Construction of piping and on-ice diffuser installation will begin immediately upon acceptance by the NWB. Following the implementation of the water management plan, discharge could begin once the diffuser has been properly installed. As a contingency, discharge through the diffuser will occur year-round (during open water season and during ice cover conditions) to ensure seepage water collection volumes are managed and permit safe operations in Portage Pit. It is AEM's intent to try to manage this water on site, either to pump to the Attenuation Pond for re –use to reduce overall freshwater consumption (engineering assessment currently underway) and/or in re-flooding of the Goose pit starting in 2015 and Portage pit in 2017. However with changing mine operations in the Portage Pit the main sump for pumping to the Attenuation Pond will be moved to North Portage making it difficult to pump the East Dike seepage to the sump location. Furthermore, waste rock will be deposited starting in 2013 in mined out areas of the Portage Pit (location of sump used to pump to attenuation pond at the present time).

Water Quality Characteristics of Second Portage Lake

1.6 Description of Second Portage Lake

The physical characteristics of Second Portage Lake are described in Table 2.1, taken from Golder (2011). As presented in Golder (2011) some of these parameters were used for CORMIX to evaluate diffusion and establish *maximum allowable concentrations* summarized in this document.

Table 2.1- Second Portage Lake physical description.

	Description	
Surface Area	3.9 km	
Lake Volume	39.7 x 10^6 m3	
Average Depth	5m	during open water
	3m	with ice cover
Flow direction	East towards Tehek lake Confluence of Third Portage Lake and Drill Trail Lake	
Water Temperature	9 ° C	during open water
	2 ° C	with ice cover
Current direction relative to discharge	Co-flowing and cross-flowing at seepage discharge	

1.7 Seepage Water Characteristics

Second Portage Lake, receiving environment water quality results from the 2011 CREMP (Azimuth, 2012) are presented in Table 2.2 and were compared to CCME Protection of Aquatic Life Guidelines (CCME 2007). Based on the 2011 results taken from twelve (12) sample events, Total Phosphorus, Cadmium and Copper exceeded CCME water quality guidelines. Minimum, mean, median, number of samples and number of below detection samples are presented; half the detection limit was used for statistical purposes. Periodic exceedances of CCME values have been reported during CREMP sampling since 2008 (AEM, 2013) in the receiving environment and in reference areas as reported in baseline sampling (BAER, 2006).

Water quality of East Dike seepage water collected at the sumps was monitored throughout 2012. These data are presented in Table 2.3 and were compared to the CCME Guidelines. Nitrate, Aluminum, Arsenic, Copper, Fluoride, Iron, Molybdenum, Lead and Zinc periodically exceeded CCME water quality guidelines based on the 2012 results. The East Dike was constructed from NPAG rock generated at the Airstrip Quarry and not from active mining areas on site and these trace levels are indicative of native rock formations. The water quality analysis indicates that seepage through NPAG rockfill material and storage in the sump are consistent with Second Portage Lake baseline data, as periodic exceedances of CCME values have been reported. Overall, the concentrations are very low, several magnitudes less than the current discharge criteria as stated in the Water License, and are not expected to impact aquatic biota in the receiving environment.

Table 2.2- Second Portage Lake Receiving Environment Water Quality Characteristics from CREMP monitoring data 2006-2010.

Parameter	Name	Unites	Drinking Water Guidelines (RRNWT 1990)	Aquatic Life Guidelines (CCME 2007)	MMER Guidelines (MMER 2002)	Water Quality at Second Portage Lake (East Dike)				
						Minimum	Median	Maximum	Number of Water Samples	Number of Non-Detectable Concentration
TDS	**Total Dissolved Solids**	*mg/L*	500	-	-	<10	16	24	59	8
Ag	**Silver**	*mg/L*	0.05	0.0001	-	<0.00002	<0.00002	0.27	61	58
Al	**Aluminum**	*mg/L*	-	0.1 (b)	-	<0.005	0.03	1.2	62	4
As	**Arsenic**	*mg/L*	0.05	0.005	0.5	<0.0001	<0.0005	0.0005	62	60
Ba	**Barium**	*mg/L*	1	-	-	<0.01	<0.02	<0.02	62	61
Cd	**Cadmium**	*mg/L*	0.01	0.000017 (c)	-	<0.000017	<0.000017	0.006	62	58
Cl	**Chloride**	*mg/L*	250	-	-	<0.5	0.57	0.83	62	20
Cr	**Chromium**	*mg/L*	0.05	0.001	-	<0.0005	<0.001	0.004	62	60
Cu	**Copper**	*mg/L*	1	0.002 (d)	0.3	<0.001	<0.001	0.003	62	57
F	**Fluoride**	*mg/L*	1007	-	-	0.05	0.07	0.10	57	0
Fe	**Iron**	*mg/L*	0.3	0.3	-	<0.01	0.04	1.3	62	21
Hg	**Mercury**	*mg/L*	-	0.000026	-	<0.00001	<0.00002	<0.0005	62	62
Mn	**Manganese**	*mg/L*	0.05	-	-	<0.005	0.002	0.02	62	2
Mo	**Molybdenum**	*mg/L*	-	0.073	-	<0.00005	<0.001	<0.001	62	62
NH4-N	**Ammonia**	*mg/L*	-	0.68 (e)	-	<0.005	<0.02	0.09	62	50
Ni	**Nickel**	*mg/L*	-	0.25 (d)	0.5	<0.001	<0.001	0.003	62	59
NO3-N	**Nitrate**	*mg/L*	45	2.9 (c), (f)	-	<0.001	0.007	0.08	62	24
Pb	**Lead**	*mg/L*	0.05	0.001 (d)	0.2	<0.00005	<0.0005	0.003	62	58
Se	**Selenium**	*mg/L*	0.01	0.01	-	<0.0005	<0.001	<0.001	62	62
S04	**Sulfate**	*mg/L*	250	-	-	<1	2.2	4.0	62	2
Tl	**Thallium**	*mg/L*	-	0.0008	-	<0.00005	<0.0002	<0.1	62	62
Zn	**Zinc**	*mg/L*	5	0.03	0.5	<0.001	<0.005	0.005	62	61

(b) Guidline based on ambiant water pH

(c) Interim Guideline

(d) Guideline based on ambient water hardness

(e) Guideline based on ambient water pH and Temperature

(f) Guideline applied to the nitrogen fraction of nitrate (i.e. measured from water samples).

Table 2.3 – Seepage Water Quality Characteristics from 2012 sampling

Parameter	Name	Unites	Drinking Water Guidelines (RRNWT 1990)	Aquatic Life Guidelines (CCME 2007)	MMER Guidelines (MMER 2002)	2012 East Dyke Seapage Quality				
						Minimum	Median	Maximum	Number of Water Samples	Number of Non-Detectable Concentration
TDS	**Total Dissolved Solids**	*mg/L*	500	-	-	36	37	38	3	1
Ag	**Silver**	*mg/L*	0.05	0.0001	-	<0.0002	0.0001	0.0343	25	22
Al	**Aluminum**	*mg/L*	-	0.1 (b)	-	<0.006	0.0785	0.773	25	4
As	**Arsenic**	*mg/L*	0.05	0.005	0.5	<0.0005	0.00025	0.0094	25	15
Ba	**Barium**	*mg/L*	1	-	-	<0.02	0.00715	0.0312	25	2
Cd	**Cadmium**	*mg/L*	0.01	0.000017 (c)	-	<0.00002	0.00001	0.0003	25	21
Cl	**Chloride**	*mg/L*	250	-	-	<0.0006	1.2	5	25	4
Cr	**Chromium**	*mg/L*	0.05	0.001	-	<0.0006	0.00135	0.0144	25	12
Cu	**Copper**	*mg/L*	1	0.002 (d)	0.3	<0.0005	0.00105	0.013	25	9
F	**Fluoride**	*mg/L*	1007	-	-	<0.02	0.08	0.33	25	2
Fe	**Iron**	*mg/L*	0.3	0.3	-	<0.01	0.07	0.57	25	5
Hg	**Mercury**	*mg/L*	-	0.000026	-	<0.00001	0.000005	0.00001	25	24
Mn	**Manganese**	*mg/L*	0.05	-	-	<0.0005	0.00525	0.0358	25	4
Mo	**Molybdenum**	*mg/L*	-	0.073	-	<0.0005	0.00025	0.0839	25	19
NH4-N	**Ammonia**	*mg/L*	-	0.68 (e)	-	<0.01	0.04	1	16	2
Ni	**Nickel**	*mg/L*	-	0.25 (d)	0.5	<0.0005	0.0012	0.0053	25	7
NO3-N	**Nitrate**	*mg/L*	45	2.9 (c), (f)	-	0.05	0.145	5.4	25	1
Pb	**Lead**	*mg/L*	0.05	0.001 (d)	0.2	<0.0003	0.00015	0.0491	25	17
Se	**Selenium**	*mg/L*	0.01	0.01	-	<0.001	0.0005	0.005	25	25
S04	**Sulfate**	*mg/L*	250	-	-	<1	5	102	25	2
Tl	**Thallium**	*mg/L*	-	0.0008	-	<0.001	0.0025	0.02	25	24
Zn	**Zinc**	*mg/L*	5	0.03	0.5	<0.001	0.002	0.032	25	12

(b) Guidline based on ambiant water pH

(c) Interim Guideline

(d) Guideline based on ambient water hardness

(e) Guideline based on ambient water pH and Temperature

(f) Guideline applied to the nitrogen fraction of nitrate (i.e. measured from water samples).

1.8 Second Portage Lake Outfall Characteristics

As previously described, the outfall is a single pipe discharging horizontally below the lake surface at approximately 5m depth. For modelling purposes the water release to Second Portage Lake was estimated (current seepage pumping) at 1000 m^3/day (Golder, 2011) with a proposed pumping rate at the discharge pipe of 12 L/s (Figure EDS-01).

1.8.1 Mixing Potential

As reported in Golder (2011), since lake conditions are not known with certainty and lake characteristics change seasonally, several model cases were simulated to account for changes and differences that may occur in Second Portage Lake. A total of 96 different model cases were run for seepage discharges for East Dike. Golder (2011) provided predicted mixing factors at 30 m from all scenarios and the mixing model provided the following observations for Second Portage Lake seepage outfall:

- High discharge velocity promotes mixing of seepage water in Second Portage Lake water column, resulting in higher mixing factors as discharge velocity is higher.
- Stratification in the lake is relatively weak (i.e. approximately 1 °C). This stratification was predicted to have little impact on mixing. Mixing factors, for modelled stratified and non-stratified scenarios, were similar in almost all scenarios.
- Co-flowing scenarios were predicted to have smaller mixing factors than those of the cross-flowing scenarios.
- Mixing factors for cross-flowing scenarios are smaller with increasing ambient velocity. A higher ambient velocity would impose a greater deflection of the discharge plume that limit mixing.
- The lowest mixing factors occur at both lakes for scenarios of a stratified water column and ambient velocity generated by a 10- year peak hourly wind (0.6 m/s). These scenarios are however considered unlikely to occur, since a high ambient velocity from a high wind is likely to create mixing conditions in lakes that would negate or prevent stratification. The mixing factors for these scenarios were therefore not considered further.
- For the estimation of seepage water maximum allowable concentrations, the most stringent (i.e. lowest) mixing factors of the valid scenarios were considered for discharge velocity in Second Portage Lake.

1.8.2 Water Quality Predictions at Diffuser

The results reported in Golder (2011) of the East dike seepage modelled water quality at the edge of the 30m mixing zone. The results determined:

- Maximum allowable concentration should not be higher than the thresholds set in the Metal Mine Effluent Regulations (MMER 2002). Specifically, nickel and zinc maximum allowable concentration must not be higher than 0.5 mg/L.
- Based on the model, concentrations of TDS and chloride may be elevated but the levels correspond to the maximum average concentration of effluent discharge from the Portage Attenuation Pond into Third Portage Lake, as set in the mine Type A water license for that parameter.
- Maximum allowable concentrations are the highest for discharge velocity of 9 m/s, these high values remain only incremental compared to concentrations for a discharge velocity of 6 m/s. It is therefore recommended that discharge velocity not exceed 6m/s to further minimize the potential for lake- bottom erosion.

Table 2.4 Seepage Water Maximum Concentrations

Parameter	Name	Unites	Drinking Water Guidelines (RRNWT 1990)	Aquatic Life Guidelines (CCME 2007)	MMER Guidelines (MMER 2002)	Seepage Water		
						3 m/s	6 m/s	9 m/s
TDS	**Total Dissolved Solids**	*mg/L*	500	-	-	7700	11000	13000
Ag	**Silver**	*mg/L*	0.05	0.0001	-	0.001	0.002	0.002
Al	**Aluminum**	*mg/L*	-	0.1 (b)	-	1.1	1.6	1.8
As	**Arsenic**	*mg/L*	0.05	0.005	0.5	0.08	0.11	0.13
Ba	**Barium**	*mg/L*	1	-	-	16	24	27
Cd	**Cadmium**	*mg/L*	0.01	0.000017 (c)	-	0.0001	0.0002	0.0002
Cl	**Chloride**	*mg/L*	250	-	-	3900	6000	6700
Cr	**Chromium**	*mg/L*	0.05	0.001	-	0.008	0.013	0.014
Cu	**Copper**	*mg/L*	1	0.002 (d)	0.3	0.02	0.04	0.04
F	**Fluoride**	*mg/L*	1007	-	-	26	39	44
Fe	**Iron**	*mg/L*	0.3	0.3	-	4.1	6.3	7.1
Hg	**Mercury**	*mg/L*	-	0.000026	-	0.0004	0.0006	0.0007
Mn	**Manganese**	*mg/L*	0.05	-	-	0.77	1.2	1.3
Mo	**Molybdenum**	*mg/L*	-	0.073	-	1.2	1.8	2
NH4-N	**Ammonia**	*mg/L*	-	0.68 (e)	-	11	16	18
Ni	**Nickel**	*mg/L*	-	0.25 (d)	0.5	0.39	0.59	0.66
NO3-N	**Nitrate**	*mg/L*	45	2.9 (c), (f)	-	46	69	78
Pb	**Lead**	*mg/L*	0.05	0.001 (d)	0.2	0.01	0.02	0.02
Se	**Selenium**	*mg/L*	0.01	0.01	-	0.02	0.02	0.03
S04	**Sulfate**	*mg/L*	250	-	-	3900	6000	6700
Tl	**Thallium**	*mg/L*	-	0.0008	-	0.01	0.02	0.02
Zn	**Zinc**	*mg/L*	5	0.03	0.5	0.44	0.66	0.75

(b) Guidline based on ambiant water pH

(c) Interim Guideline

(d) Guideline based on ambient water hardness

(e) Guideline based on ambient water pH and Temperature

(f) Guideline applied to the nitrogen fraction of nitrate (i.e. measured from water samples).

(g) At the Discharge outfalls

1.8.3 Conclusions and Recommendations from the Seepage Water Quality Outfall Modelling

Under the possible ranges of Second Portage Lake ambient and seepage characteristics, the modelling of the outfall of the east dike seepage water into Second Portage Lake determined that drinking water guidelines and guidelines for the protection of aquatic life were met at the edge of the 30m mixing zone around the diffuser outfall. AEM has designed the diffuser, pumping rate, erosion protection and monitoring based on the following conclusions and recommendations in Golder (2011) that state:

- Modelling predictions are valid for the rate of 1000 m3/day into Second Portage Lake or lower when discharge velocities are between 3 and 9 m/s are maintained. The proposed discharge rates of 12L/s (figure EDS-01) meet these parameters and AEM recognizes that higher discharge rates would require a re-assessment.
- Consistent with reference conditions and baseline water quality, maximum water quality of non-contact water periodically exceed CCME (2007) guidelines. Estimated concentrations for TDS and chloride in Golder (2011) at the discharge indicated an upper limit of 1500 and 250 mg/L, respectively; however, to date all data has not exceeded MMER (2002) thresholds.
- The direction of the diffuser in Second Portage Lake will not be directed toward an island or bay and will be directed to the south-east to allow conveyance of outfall water toward the main body of the lake.
- The diffuser should be directed to minimize erosion of the lake bottom of the dike walls and the protrusion of the pipe and final location of the diffuser into the lake will be adjusted depending on field conditions.

Monitoring the Receiving Environment

Local fish and fish habitat in the receiving environment will be monitored to evaluate the potential impact of seepage discharge as proposed in this design. Although most of the impacts will be mitigated by use of a diffuser and discharge will be directed to minimize effects to the aquatic environment in Second Portage Lake, physical habitat (water quality and sediment quality), food supply (benthic invertebrates), and fish health could be altered. To prevent impacts to the receiving environment, sediment and erosion control measures will be implemented. Furthermore, monitoring programs will be conducted to evaluate both the physical and biological impacts - Type A Water License for non-contact discharge, if applicable MMER monitoring, and Core Receiving Environmental Monitoring Program (CREMP) monitoring. The mitigation and monitoring programs are discussed in the following text.

1.9 Sediment and Erosion Control Measures

The pipe and diffuser will be installed on-ice, anchored with large boulders and allowed to sink once the ice has melted in the spring[1]. This will prevent any in-water construction activity and significantly reduce any sediment disturbance during the installation of the diffuser in accordance with Department of Fisheries and Oceans guidance.

The diffuser will be installed and directed to minimize erosion of the lake bottom or dike face (i.e. horizontal with the water surface and away from the dikes). The protrusion of the pipe into the lakes will be adjusted depending on field conditions. The direction of the discharge will ensure conveyance of the discharge water toward the main body of Second Portage Lake and away from the adjacent island or nearby bay to avoid erosion. Flow rates and pump volumes will be monitored to ensure the protection of the receiving environment and minimize erosion.

1.10 NWB Type A Water License Monitoring

The NWB Type A License 2AM-MEA0815 Part F – conditions applying to waste disposal and management, Item 4 states – *prior to discharge, state that all water collected within the non-contact water diversions during operations at stations ST-5 (within second portage lake) shall not exceed the following Effluent quality limits*:

Table 3.2: Effluent water quality limits for non-contact water diversions during operations at ST-5 (adapted from the Type A License).

Parameter	**Maximum Average Concentration (mg/L)**	**Maximum Allowable Grab Sample Concentration (mg/L)**
TSS	15	30

As per the Type A water license, AEM will collect monthly water samples of the non-contact water at the discharge as per the Type A License ST-5 conditions and analyse for TSS, Group 5 and aluminum monthly during discharge.

[1] This method of installation was successfully completed for the Third Portage Lake diffuser during the spring of 2012.

1.11 MMER Monitoring

The Metal Mine Effluent Regulation (MMER) were promulgated under the Fisheries Act in 2002 and have undergone several amendments, most notably in 2006 with the Regulations Amending the Metal Mining Effluent Regulations (MMER). Before starting to discharge to the lake, AEM will verify with Environment Canada if MMER will be applied to this discharge. If the MMER is applicable to this discharge, AEM will conduct:

1. Routine effluent monitoring at a location that meets MMER requirements in Second Portage Lake. Monitoring will include:
    - Chemical analyses of effluent
    - Acute lethal toxicity testing of effluent
    - Effluent volume and flow rate measurements
    - Calculation of mass loadings of deleterious substances to receiving waters.

2. Emergency response plans have been developed, which includes:
    - Site risk analysis
    - Organization scheme for emergency responses
    - Altering and notification procedures
    - Inventory of spill-response equipment, including the location of that equipment
    - Training plan for mine personnel.

3. Environmental effects monitoring (EEM) will be conducted at stations to meet EEM guidelines. The EEM Program is a cyclical receiving-environment monitoring program (cycles range from 2 to 6 years) to evaluate the effects of metal mining effluents on fish health and fish habitat. AEM will complete EEM at stations in Second Portage Lake and appropriate reference stations (i.e. Innug or Pipedream Lake). The EEM will include:

    - Part 1 – Effluent and water quality monitoring studies
    - Part 2 – Biological monitoring studies, including a site characterization, a fish survey, and a benthic invertebrate community survey.

It should be noted that AEM will add this location to our current MMER and EEM study program and incorporate Environment Canada recommendations.

1.12 Core Receiving Environmental Monitoring

The Core Receiving Environmental Monitoring Program (CREMP) is the core, broad scale program that is aimed at detecting potential impacts due to mining at the scale of lakes or basins. It is commonly referred to as an Aquatic Effects Management Program (AEMP) at other mines in the NWT and NT. It is intended to monitor large-scale basin-wide changes in physical and biological variables to evaluate potential impacts from all mine related stressors to the receiving environment. It therefore serves as the most important monitoring program for evaluating short-term and long-term potential impacts, for which other programs provide additional support and verification.

The CREMP requirements are derived from conditions specified in the Nunavut Water Board Type A Licence # 2AM-MEA0815 and Nunavut Impact Review Board Project Certificate – NIRB- 004 for the Meadowbank Gold Mine, which is based on the following:

- Nuvavut Water Board (NWB; i.e., board decision after public hearings).
- Baselines AEMP approach (AEMP, 2005) (i.e., the approach for monitoring presented during the Nunavut Impact Review Board [NIRB] environmental impact assessment process).
- Core Receiving Environment Monitoring Program (CREMP- AEM, 2012), 2010 Plan Updated to reflect changes in AEMP structure and CREMP
- Aquatic Effects Monitoring Program Meadowbank Mine (Azimuth, 2012)
- Core Receiving Environmental Monitoring Program (CREMP): Design Document 2012 – Meadowbank Mine (Azimuth, 2012)

As discussed in Azimuth (2012), the CREMP study design was tailored based on our understanding of mine construction, operation and infrastructure (e.g., dikes, effluents, stream crossings, roads, etc.) and was developed to detect mine-related impacts at temporal and spatial scales that are ecologically relevant. The program targets general limnology, water and sediment quality, primary productivity (phytoplankton), and benthic community structure. The core program initially focused solely on the project lakes (i.e., those in close proximity to the mine site), but was expanded to Baker Lake in 2008 to ensure that monitoring was also in place to track project-related activities in that area related primarily to barge traffic and shipping. To date, monitoring has been conducted throughout the year where ice conditions permitted.

In addition to MMER sampling (if applicable), CREMP monitoring and data collection will evaluate the basin wide water quality effects that may be caused by seepage discharge. The CREMP consists of the following general elements:

- Sampling Components – limnology, water and sediment chemistry, phytoplankton, and benthic invertebrate community.
- Sampling Areas – Near-field stations include: Third Portage North, Third Portage East, Second Portage Lake, Wally Lake and Baker Lake stations (BBD and BPJ); far-field stations include: Tehek Lake, Tehek FarField; reference stations include: Third Portage South, Innug lake, Pipedream Lake and Baker Lake station (BAP).
- Timing – water sampling (including limnology and phytoplankton) will be conducted up to 6 months of the year. The exception to this will be during periods when ice conditions are not deemed safe (i.e., likely June and October, but may vary).
- Sampling through-ice will take place in May and December at all stations and at least once in the winter at locations closest to the mine site. Open-water sampling will take place in July, August and September. Sediment chemistry and benthic invertebrate sampling will be conducted in August only.
- Spatial coverage – water sampling within each lake basin is randomly distributed and possibly replicated to quantify the horizontal and vertical components of spatial variability (high intensity events only). The intensity (number of samples) of the events alternate between high (all areas, full reps) and low (all areas, no reps) both during open-water and through-ice sampling.

More specifically, the CREMP will monitor receiving environment at randomly selected stations throughout Second Portage Lake (See Figure 3.1, taken from 2011 CREMP report, Azimuth, 2012) and include the following components:

- Water chemistry data will be collected up to 6 months per year (April, May, July, August, September and November/December -depending on logistical constraints - e.g., snow and ice conditions). Two randomly located subsamples will be collected at each station in each month. All samples are surface samples (3 m from the surface). In addition to the core water chemistry program, basic water quality data will be collected at key near-field areas (including Second Portage Lake) at least once mid-winter to reduce uncertainty regarding the potential occurrence of changes over winter.
- Sediment chemistry core sampling for the CREMP is intended to detect long term trends, therefore a sampling frequency of approximately every three years is recommended or will be aligned with the sampling times for benthic invertebrates required for the EEM program.
- Sediment chemistry grab sampling that matches benthic invertebrate sampling (i.e., once per year) are collected to ensure basic physical variables (e.g., particle

size) not covered by sediment core sampling (due to volume limitations) but which may nevertheless affect benthic invertebrates.

- Phytoplankton is collected at the same time as the water chemistry data are collected, but only the open water samples (July to September). Two randomly located subsamples will be collected at each station for each sampling event. All samples should be surface samples (3m from the surface).
- Benthic invertebrates are collected once per year in August at all stations, with 5 subsamples per station.

The CREMP monitoring program is an iterative process and the study design is revisited periodically based on accumulated data to ensure the ability of the CREMP to detect impacts to the receiving environment. Between erosion control measures, routine MMER monitoring and CREMP monitoring, the potential impacts to the receiving environment due to seepage discharge will be evaluated.

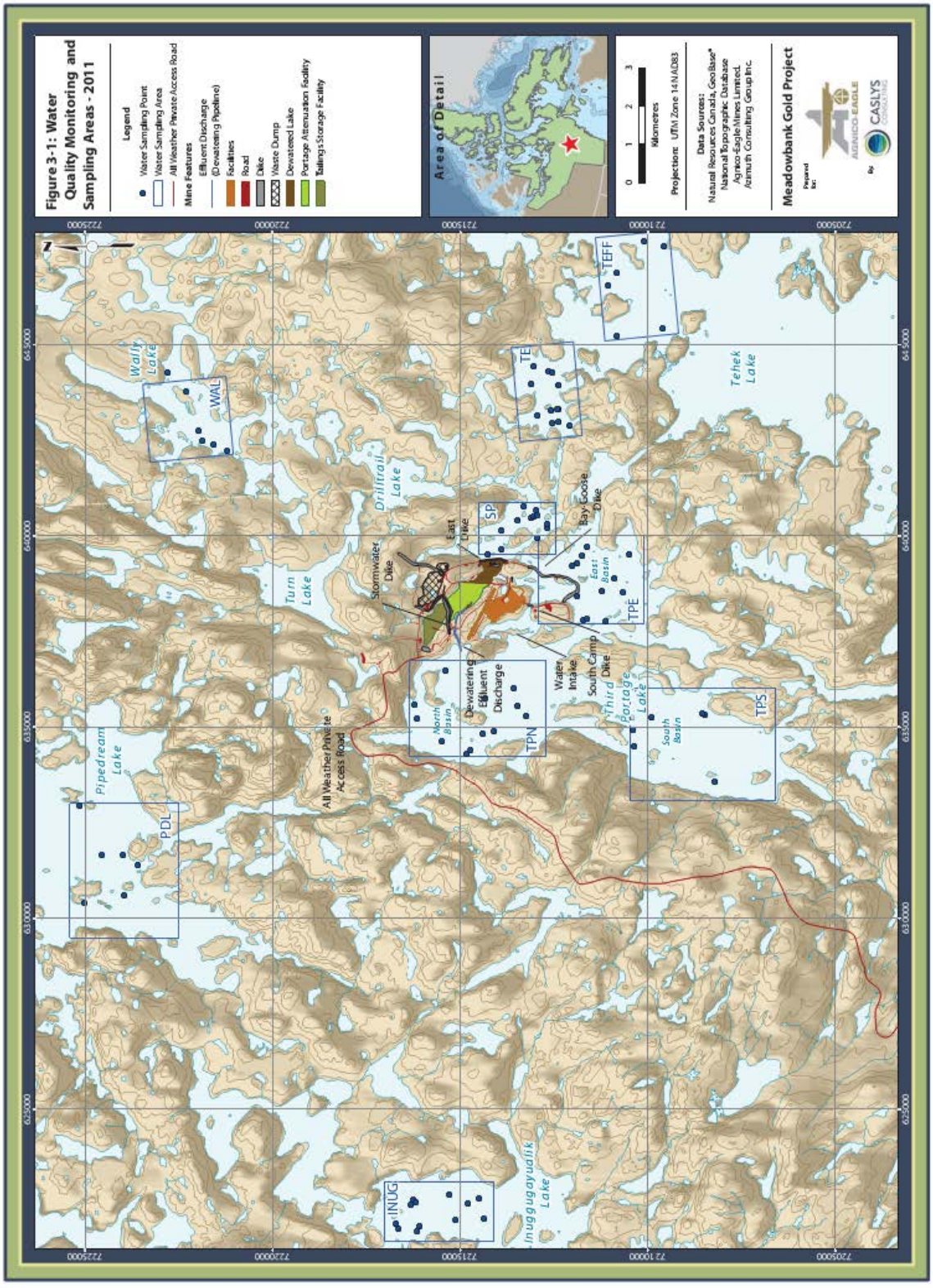

Figure 3.1: CREMP water quality sampling locations

References

AEM (2013). Core Receiving Environment Monitoring Program (CREMP). 2012 Annual report Appendix G2. Prepared by Azimuth Consulting Group for Agnico-Eagle Mines Ltd- Meadowbank Division. April 2013.

Azimuth (2012). Aquatic Effects Monitoring Program Meadowbank Mine. Prepared for Agnico-Eagle Mines Ltd. – Meadowbank Division. December 2012

Azimuth (2012). Core Receiving Environmental Monitoring Program (CREMP): Design Document 2012 Meadowbank Mine. Prepared for Agnico-Eagle Mines Ltd. – Meadowbank Division. December 2012

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Azimuth Consulting Group, 2005. Meadowbank Gold Project – Baseline Aquatic Ecosystem Report. Prepared for Cumberland Resources Ltd. October 2005.

CCME (Canadian Council of Ministers of the Environment) 2007. Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life, 1999, updated December 2007.

Golder 2011. Technical Memorandum – Discharge of dike seepage into Third Portage Lake and Second Portage Lake- Meadowbank Gold Project, Nunauvt. Dated November 24, 2011

File No. 2AM-MEA0815 TR/G3

July 3, 2013

Stéphane Robert
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Agnico-Eagle Mines Limited – Meadowbank Division
10200, Route de Preissac,
Rouyn-Noranda, Quebec J0Y 1C0
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Subject: Licence No. 2AM-MEA0815 – Notice of Modification: East Dike Non-contact Seepage Water Discharge to Second Portage Lake

Dear Mr. Robert,

On April 23, 2013 the Nunavut Water Board (NWB or Board) received a submission from Agnico-Eagle Mines Ltd. (AEM) entitled "Meadowbank Water License 2AM-MEA0815 – East Dike Seepage Modification" with respect to the East Dike non-contact seepage water discharge. The following documents were included with the request:

- Cover letter dated April 22, 2013;
- East Dike Seepage – NWB; Application for a Type A Water Licence Modification dated April 4, 2013;
- Appendix A. Technical Memorandum: Discharge of Dike Seepage Water into Third Portage Lake and Second Portage Lake – Meadowbank Gold Project dated November 24, 2011 (Golder Associates 2011).

AEM is applying for a modification to the Type A Water License to include East Dike Seepage Water as Non-contact water effluent and to pump this water through a separate sump collection system and discharge pipe, back to Second Portage Lake prior to contact with mining activity.

AEM reports that receiving environment water from Second Portage Lake is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage attenuation pond. Once this seepage water has been pumped to the Portage Attenuation Pond it is considered "contact water", as it is mixed with site run off and collection water from the Portage and Goose Pit. As per the site Water License, any water collected in the Attenuation Pond is treated (with all the attenuation water) through the site Water Treatment Plant prior to discharge to Third Portage Lake. In an effort to reduce freshwater consumption, Agnico-Eagle Mines (AEM) assessed whether the East Dike seepage water can be used for milling, progressive re-

flooding or dust suppression during operations. However, AEM states that this may not be feasible throughout the year as the volume of seepage from the East Dike is not large enough to successfully be pumped over long distances (i.e. to the mill). AEM is proposing to pump this water through a separate sump collection system and discharge pipe, back to Second Portage Lake prior to contact with mining activity (thus avoiding site contact water).

On May 21, 2013 the NWB distributed AEM's submission to interested parties for a thirty (30) day review. The NWB received comments from Aboriginal Affairs and Northern Development Canada[1] (AANDC) stating that the Department is not opposed to the submitted modification request and providing recommendations for the Board's consideration.

Upon review of the request, supporting documentation, terms and conditions in Licence 2AM-MEA0813 and submission from AANDC, the NWB hereby accepts the notice of Modification and approves (Motion No. 2013-A1-003) the proposed modification as presented in the April 23, 2013 notice and advises AEM that:

- The Seepage water should be directed to the Portage Attenuation Pond if the Licence criteria are not met;
- Once verified with Environment Canada (EC) AEM should provide the Board with written notification on whether or not the Metal Mining Effluent Regulations (MMER) will apply to this discharge;
- The discharge velocity should not exceed 6 m/s to promote mixing of seepage water and minimize the potential for lake-bottom erosion; and
- All associated Core Receiving Environmental Monitoring Program's (CREMP) water quality sampling results should be included within the annual monitoring reports.

The NWB would also like to highlight Licence conditions and requirements that apply to the proposed modification which include:

- Part F, Item 4 - Prior to discharge, all water collected within the Non-Contact Water diversions during Operations at monitoring stations ST-5, ST-6, and ST-7, shall not exceed the following:

Parameter	Maximum Average Concentration (mg/L)	Maximum Allowable Grab Sample Concentration (mg/L)
TSS	15.0	30.0

- Part F, Item 8 - The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned Discharges from any facilities. The notice shall include an estimated volume proposed for Discharge and the receiving location.

[1] Letter and Technical Memorandum from D. Abernethy AANDC, to P. Beaulieu NWB. Re: Water Licence No. 2AM-MEA0815 – Meadowbank Gold Project – Agnico-Eagle Mines Ltd. – East Dike Seepage Modification Request, dated June 21, 2013.

- Part G, Item 4 - The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

Should you have any questions or require any clarification with respect to the above, please feel free to contact the undersigned at (867) 360-6338 ext. 35 or by email at k.kharatyan@nunavutwaterboard.org or David Hohnstein, Director Technical Services at (780) 443-4406 or by email at dts@nunavutwaterboard.org.

Sincerely,

Original Signed By:

Karen Kharatyan
Technical Advisor

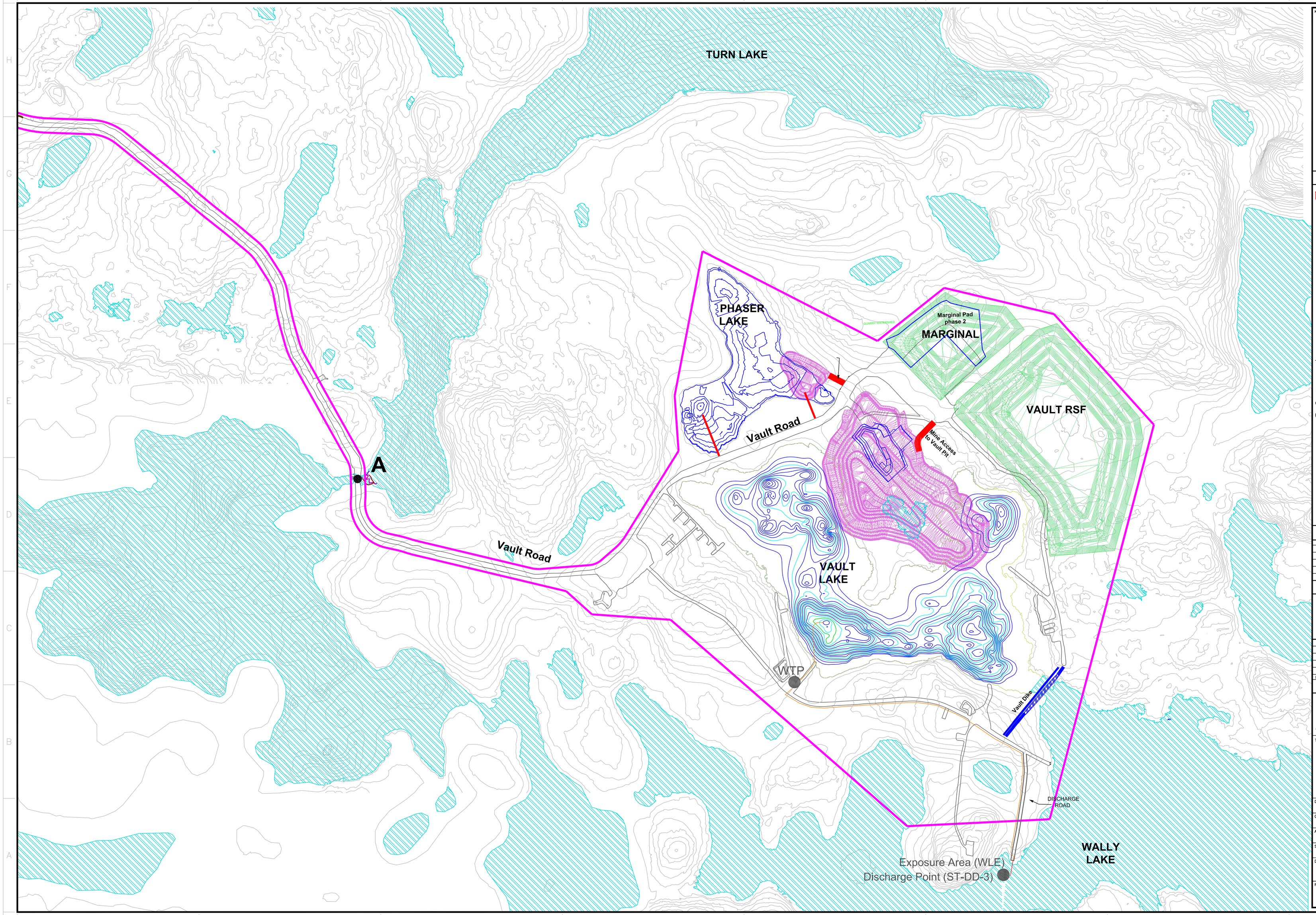
Attachment: Comments AANDC

Cc: Distribution list - Kivalliq

Appendix C

DRAWING NO.

FORMAT ARCHD–LANDSCAPE



KEY PLAN

GENERAL NOTES

NOT FOR CONSTRUCTION.

This map is for information purpose.

The coordinate system in this map is in UTM, which does not have to be confused with the coordinate system used in Gemcom for the Vault Project.

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TITLE	# DWG

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	BY	APP.	CLIENT

REVISIONS

AGNICO-EAGLE
MEADOWBANK DIVISION

TITLE

AGNICO–EAGLE – MEADOWBANK DIVISION
Vault Project

Vault Lake Dewatering
Phase 2

DRAWN BY	DATE
M. GROLEAU	25/04/2013
CHECKED BY	
APPROVED BY	
SCALE	DATE
DRAWING NO.	
PROJECT NO.	REVISION / SHEET
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Appendix D

AGNICO EAGLE

MEADOWBANK GOLD MINE

FINAL - Vault Lake Fishout Work Plan

APRIL 2013

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DOCUMENT CONTROL

Version	Date	Section	Page	Revision
V1	May 2008	All	All	Azimuth. 2008. Fishout Program for the northwest arm of Second Portage Lake
V2	June 2010	All	All	AEM. 2010. Meadowbank Gold Project Fishout Program.
V3	January 2013	All	All	AEM. 2013.DRAFT Vault Lake Fishout Work Plan

Plan prepared by:

Ryan VanEngen MSc,

Agnico-Eagle Mines Limited – Meadowbank Division

Reviewed by:

North/South Consultants Inc. &

Department of Fisheries and Oceans

ACRONYMS

AEM	Agnico-Eagle Mines Limited
CCME	Canadian Council of Ministers of the Environment
CEPA	*Canadian Environmental Protection Act*
CPUE	Catch per Unit Effort
CREMP	Core Receiving Environmental Monitoring Program
DFO	Department of Fisheries and Oceans
EC	Environment Canada
HADD	Habitat Alteration Disruption and Destruction
HEP	Habitat Evaluation Procedure
NNL	No Net Loss
NT/NWT	Northwest Territories
NWB	Nunavut Water Board

SECTION 1 • INTRODUCTION

1.1 Background

Since 2009, Agnico-Eagle Mines (AEM) has operated the Meadowbank Gold Mine, which is located 75 km north of the Hamlet of Baker Lake, Nunavut. The mine site is connected to the hamlet by a 110 km all-weather road, and an airstrip onsite allows direct access for personnel and freight. The Meadowbank mine consists of several gold-bearing deposits that are currently planned to be extracted using three open pits (Goose Pit, Portage Pit, Vault Pit), two of which are currently operational (Portage Pit and Goose Pit). Much of the pit development is located in close proximity to the mill, office and lodging infrastructure, with the exception of the Vault Pit which is approximately 10 km northeast of the main minesite (Figure 1-1).

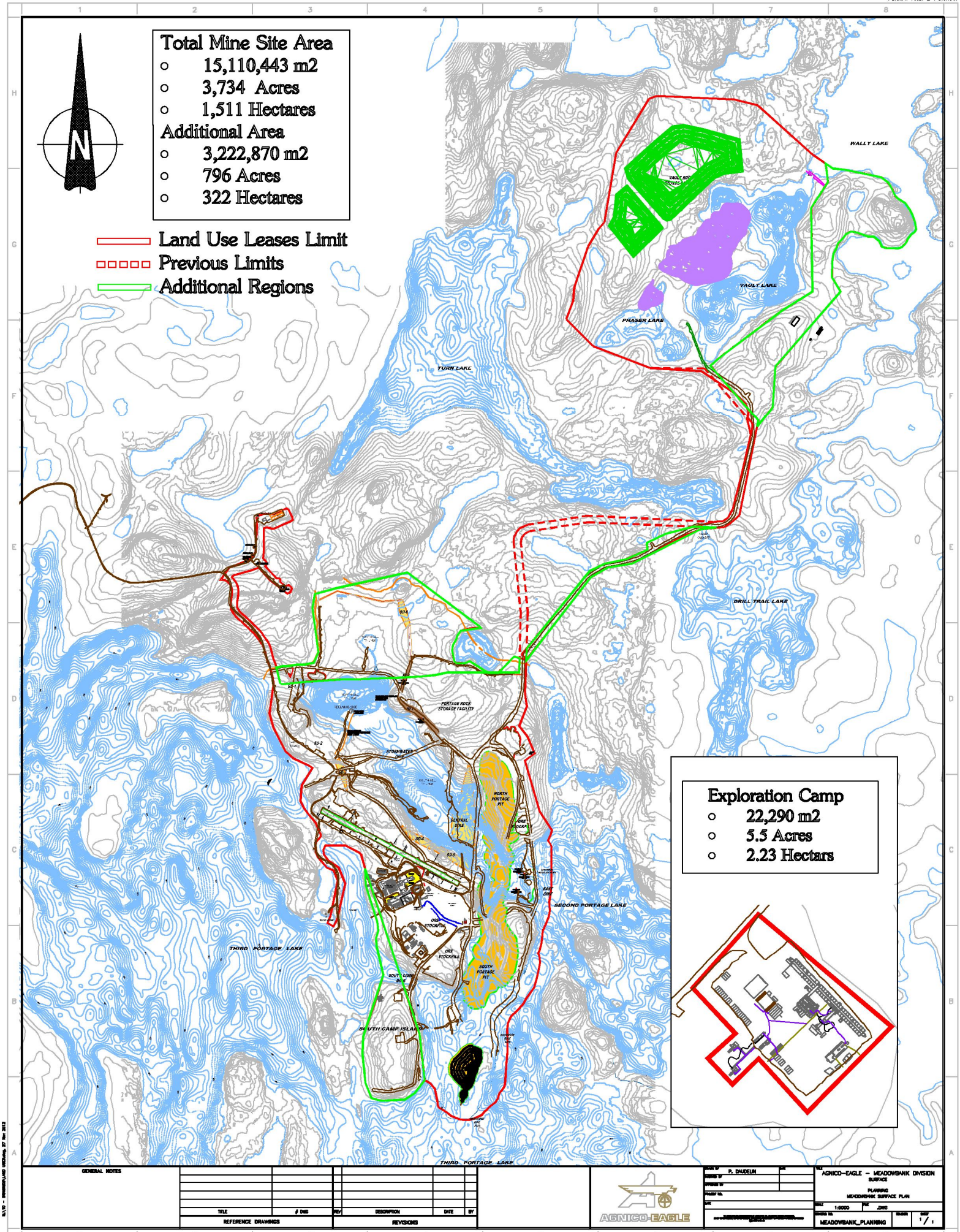
Under the current design plans and DFO authorizations, a portion of each of the pits occurs in lacustrine environment. As a result, construction has commenced on a series of dikes to separate the pit areas from the remainder of the adjacent lakes. Under DFO authorizations, four lakes (Second Portage Lake, Third Portage Lake, Vault Lake and Phaser Lake) are to undergo partial or complete dewatering following dike construction, to provide access to the pit areas. To date, dewatering has been completed in the northwest arm of Second Portage Lake, and the Bay-Goose Basin of Third Portage Lake. Following the submission of a revised Meadowbank No Net Loss Plan on October 15, 2012, AEM recently received the *DFO authorization NU-03-019.4*, dated April 2, 2013, for Vault Lake which permitted harmful alteration, disruption or destruction of fish habitat under Section 32 (2)(c) and 35(2)(b) and the isolation, dewatering and operations in Vault Lake which will begin in 2013. Phaser Lake is planned to be isolated and be dewatered without dike construction in the future.

As discussed during the EIS, approved in the NIRB project certificate and in follow-up consultations with stakeholders, three fishout programs were planned for the Meadowbank mine. The first fish-out program took place during the summer of 2008 in the northwest arm of Second Portage Lake (Azimuth, 2009); the second took place during the summer of 2010 in the Bay-Goose basin in the eastern portion of the Third Portage Lake (North-South, 2011); and the third is planned for the summer of 2013 in Vault Lake to allow for mining activities to occur in the western portion of the lake.

The fish-out programs conducted for the Meadowbank mine have been guided by the Tyson et al. (2011) *General fish-out protocol for lakes and impoundments in the Northwest Territories and Nunavut.* The fish-out programs have also incorporated inputs from the local community including: public presentations in Baker Lake on April 16, 2008, consultation during the preparation of the 2012 NNL Plan, and reviews of the 2008 and 2010 fishout programs. The fishout programs have incorporated experience from the preceding fishout programs that included fish collection methods and data analysis provided by DFO representatives. Furthermore, a meeting with the Baker Lake

Hunters and Trappers Organization (HTO) will be held prior to the fishout commencing to discuss the final fishout workplan.

The following document outlines the objectives, timeline, methods and procedures that are proposed for the 2013 Vault Lake fishout at the Meadowbank mine.



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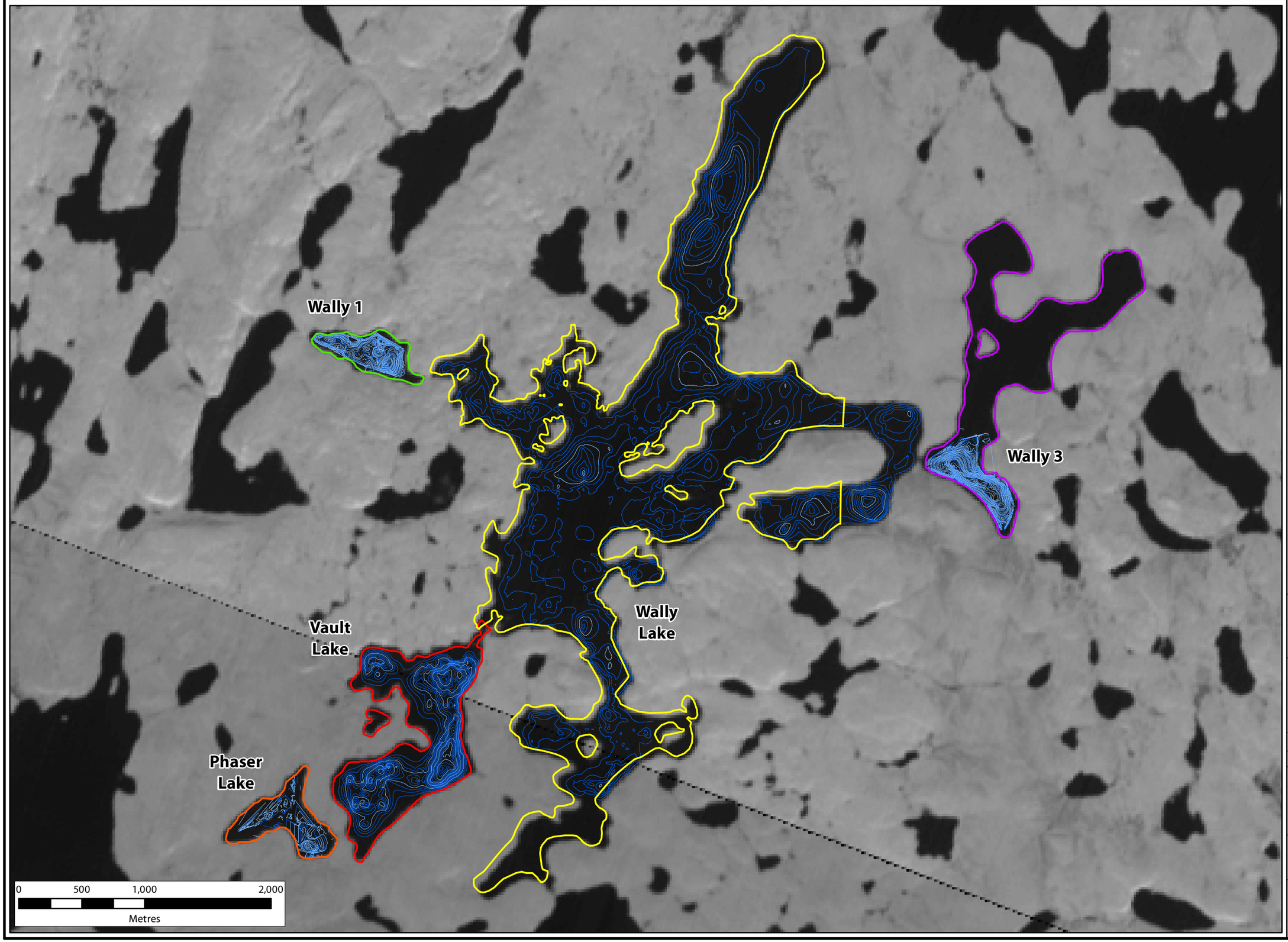

Legend

- Wally Lake
- Wally 1
- Wally 3
- Phaser Lake
- Vault Lake

Contour

- Major
- Minor

Lake Depth

Wally Lake
Maximum: 118masl
Minimum: 138masl

Wally 1
Maximum: 122masl
Minimum: 135.5masl

Wally 3
Maximum: 121masl
Minimum: 139masl

Phaser Lake
Maximum: 136masl
Minimum: 143masl

Vault Lake
Maximum: 9.5m depth
Minimum: 0m

Meadowbank, Nunavut
Bathymetry

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PROJECT: DA11-062-01

CLIENT: Agnico-Eagle Meadowbank Division

N W E S
UTM Zone 14 NAD83

DATE: JANUARY 2012

SCALE: 1:28,000

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FIGURE:

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The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations, features, or roads, nor as a guide to navigation. MNR data provided by Queen's Printer of Ontario. Use of the data in any derivative product does not constitute an endorsement by the MNR or the Ontario Government of such products.

1.2 Objectives and Scope

According to Tyson et al. (2011), the guiding principle of the Vault Lake fish-out program is to ensure that both ecological data and fish specimens are collected in a manner that does not cause "fish wasting". In consideration of these principles and in consultation with the DFO, the objective of the fishout will be to rescue as many fish in Vault Lake, recover and distributing fish to local communities and properly collect and record data that will meet the general requirements of Tyson et al. (2011). The fish-out program will have 3 core components: fish recovery and rescue from Vault lake (which will involve a fish transfer, primarily to Wally Lake), CPUE phase, final removal phase, collection of biological data, and distribution of fish to local communities.

1.3 Timeline

The schedule for implementing key elements of the fishout program in Vault Lake will follow a similar timeline as was completed and approved by DFO for the fishout of Bay-Goose Basin in 2010 (North South, 2011). The proposed schedule of the fishout program in Vault Lake is shown in Table 1-1. Vault dike construction has been completed. As a result, Vault Lake is isolated and water levels will need to be managed accordingly. As outlined in Table 1-1, dewatering will begin prior to freshet and is proposed to be completed in conjunction with the final phase of the fishout program to manage water levels near operations (See Figure 1-3). Commencement of the fishout program will be dependent on ice thaw which is anticipated for mid- July 2013. The Vault Lake CPUE and fish rescue phase will continue in July and August; the final removal phase will aim to begin at the end of August alongside partial - dewatering with a targeted completion date of the fishout by mid-September.

Table 1-1 Proposed Timeline for 2013 Vault Lake Fishout

Proposed Time	Activity	Description
February to April 2013	Vault Dike Construction	Dike construction occurring in shallow, less than 2m water depth. The entire area is frozen to depth. This will isolate Vault Lake from Wally Lake.
May - June 2013	Partial dewatering	Water volume control of freshet inflow and rain event volume control into Vault Lake.
Mid-July 2013	Fishout	Fishout begins with the CPUE and rescue phase- fish community data collection, transfer of fish to Wally Lake and distribution of fish to Baker Lake.
End of August 2013	Fishout	Complete CPUE and rescue phase and transition to final removal phase
End of August 2013	Partial dewatering	Dewatering resumes to create 4 small basins (A, BC and D - See Figure 1-2)
September 2013	Fishout	Final removal phase and fish rescue.
Mid- September 2013	Fishout	Complete fishout
October 2013	Partial Dewatering	Dewatering continues; not completely dewatered until DFO Section 32 is authorized

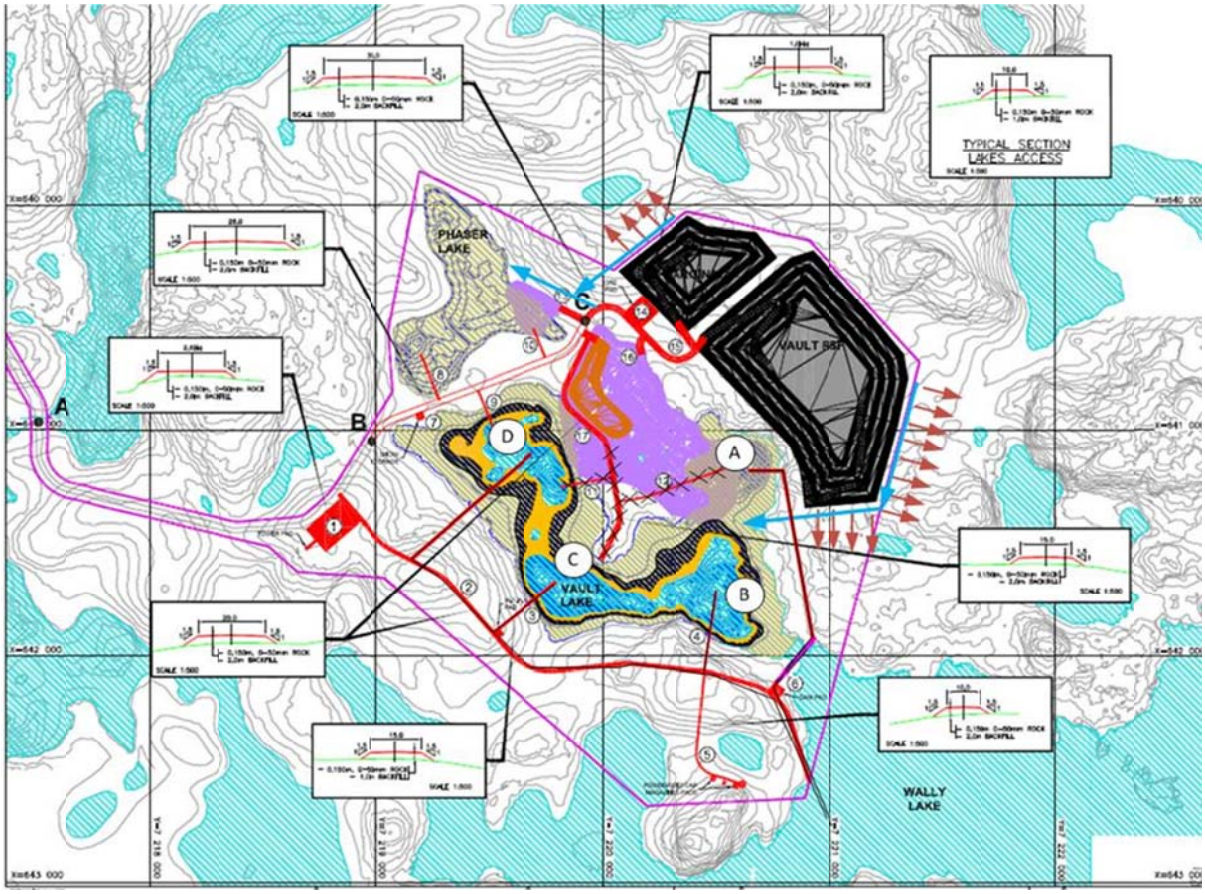


Figure 1-3 Dewatering sequencing and Vault Pit operations in Vault Lake Area

SECTION 2 • COMMUNITY CONSULTATION AND FISH DISTRIBUTION

Prior to the fishout of the northwest arm of Second Portage Lake, on April 16, 2008, a presentation was given to the community of Baker Lake by AEM and Azimuth Consulting Group Inc. (Azimuth) representatives. This presentation welcomed all community members and familiarized the community with the three proposed fishout programs, with a focus on the largest fishout of Second Portage Lake. It described in detail the meristics data that would be collected and a proposed method of fish distribution to the community. General questions regarding the program were raised by the community. In addition, one person expressed concerns regarding consuming fin-clipped fish. Informal discussions with other attendees suggested that this was not a general concern, so the program was not modified. No other concerns were raised.

Distribution of fish from the northwest arm of Second Portage Lake to the community of Baker Lake took place from mid-August to mid-October 2008. Meristics data from all fish were collected and categorized to size and species, and grouped into two categories: “people food” or “dog food”.

People Food: All lake trout and Arctic char greater than about 300 mm were processed on site (i.e., gutted and gilled) and shipped either fresh or frozen to Baker Lake. A small number of round whitefish, in excess of 250 mm, were shipped to town because some elders indicated they liked to eat whitefish. All fish destined for human consumption were placed within individual bags, heat sealed and identified whether fish were sacrificed (by pithing) or died in the nets. Some people preferred to eat fish that were sacrificed and not those that died in nets. Labelling individual bags allowed locals to choose what they preferred.

Dog Food: All small fish of all species and all burbot were frozen in small groups, bagged and frozen for use as dog food. Fish smaller than 100 mm were not processed; they were frozen whole for use as dog food.

The fish were transported in boxes to Baker Lake and placed inside of the community freezer and were made accessible to community members. Initially, during the first 2 – 3 weeks of fishing, fish were delivered fresh or frozen daily or every second day. As numbers of fish declined during the course of the fishing effort, shipments to town were reduced to every few days. Residents came down to the freezer and selected fish as desired. On occasion, boxes of ‘people food’ fish were taken to the local hospice and community center for special events which were coordinated by AEM’s community liaison officer. Overall, the fish distribution in 2008 from Second Portage Lake was successful. AEM received good feedback from the community on the program and all of the fish at the end of the season had been consumed by residents.

In consultation with the DFO and the HTO, in 2010, AEM transferred many of the fish from the Bay-Goose basin directly into Third Portage Lake. The fish that were used for data collection were distributed to the community of Baker Lake in a similar manner as previously described for the 2008

fishout. The results of the 2010 fishout (North-South, 2011) were shared with the HTO during a Meadowbank mine site visit on June 13, 2011, following the completion of the 2010 annual report.

Similarly, in the 2013 Vault Lake Fishout, AEM proposes to transfer as many fish as possible to the nearby waterbody and collect detailed meristics data on any incidental fish mortalities. On July 13, 2011 and on February 23, 2012 the HTO were consulted on Meadowbank no net loss planning and the fishout program of Vault Lake during a Meadowbank mine site visit. During discussion with the HTO, representatives did not have a problem with the previous fishouts and expressed an interest that the fish be packaged and distributed to the community as per 2008 and 2010 fishout programs; they understood that community members would be hired by AEM or their consultant to assist in the fishout and that fewer fish will likely be delivered to the community because the fishout will focus on a fish transfer. Prior to the 2013 Vault Fishout commencing, AEM will host a meeting with the HTO to review the work plan and approach and answer any questions or concerns at that time.

SECTION 3 • REGULATORY SETTING AND PERMITTING

AEM recently completed and submitted to DFO a revised No Net Loss Plan (October 15, 2012) that calculated the loss of fish habitat and compensation for the Vault Lake Area (AEM, 2012). AEM received a DFO authorization (NU-03-0191.4) on April 2, 2013 prior to the fishout commencing and dewatering that authorized the loss of fish habitat (HADDs) as a result of the Vault Pit undertakings and temporary loss of habitat due to dewatering.

Furthermore, in preparation for the Vault Lake fishout, AEM will work with the DFO to ensure the fishout work plan and proposed fishout methods meet the objectives and goals of the DFO guidance *General fish-out protocol for lakes and impoundments in the Northwest Territories and Nunavut* (Tyson et al, 2011) while meeting mine operations timelines for dewatering. On February 19th, AEM met with DFO representatives in Ottawa to review and discuss the approach described herein, prior to finalizing the Vault Lake fishout workplan. AEM will ensure the contracted fisheries consultant (North-South consultants) apply for a license from DFO to Fish for Scientific Purposes and apply for a letter of approval of the Animal Use Protocol. All staff handling fish will be trained in proper fish handling as directed by the animal care department.

SECTION 4 • PROJECT MANAGEMENT AND FISHOUT PERSONNEL

For the fish-out program, a project team will be created to develop and implement the work plan. The project team will include a DFO habitat biologist, a project manager, a project field biologist, field technicians and field assistants. Field assistants will be staffed primarily from local communities (i.e., Baker Lake). The DFO habitat biologist (Elizabeth Patreau) will be the principal contact for AEM during development of the work plan and providing advice to AEM as required throughout the fishout. The project manager (Ryan VanEngen) will represent AEM and will be responsible for managing the fishout program including developing the work plan, communicating with DFO and providing deliverables to the regulatory agencies. AEM has recently hired North-South Consultants that will be using experienced personnel, many of which have worked in the Arctic and/or participated in the fish-out of Second Portage Lake in 2008 and Bay-Goose Basin in 2010, on behalf of AEM. The project biologist from North- South Consultants will work together with the project manager and will be a qualified biologist that will be responsible for the technical requirements and implementation of the fish-out program including aiding in the development of the work plan, training field staff, supervising field activities and data collection, QA/QC, data analysis and preparing deliverables. The field technicians will conduct the fish-out and data collection under the supervision and guidance of the project biologist.

SECTION 5 • ISOLATION OF VAULT LAKE, TSS MONITORING AND TSS MITIGATION

5.1 Vault Dike

In 2008, turbidity curtains and a fish-cut-off-net were deployed in the northwest arm of Second Portage Lake, immediately northwest of the impoundment side of the East dike. Installation of the fish cut off net allowed the fishout to start approximately 3 weeks sooner than had the program waited until the construction of the dike walls was complete. In 2010, during the ice-cover period, a causeway was built to provide wind and water current protection during the construction of the Bay-Goose dike (phase 2). The causeway was constructed during the winter and once completed, prevented any fish movement between the Third Portage Lake and the Bay-Goose basin. In 2013, the Vault dike is scheduled to begin construction in the winter and was completed under frozen conditions by April. This has resulted in the complete isolation of Vault Lake from Wally Lake during the open water season. As a result, no fish cut-off- net will be installed and the requirement of an isolated lake prior to the fishout beginning will be met (Tyson et al. 2011).

5.2 TSS Monitoring and Mitigation

Vault dike construction will be occurring under frozen conditions during the months of February and March. The small channel where the dike was constructed between Vault Lake and Wally Lake, is a shallow channel that freezes to the bottom (<2m deep). As a result, no construction monitoring for Total Suspended Solids (TSS) is proposed for the Vault Dike. Monthly monitoring will take place during the Core Receiving Environmental Monitoring Program (CREMP) in April prior to freshet (Azimuth, 2012). Freshet monitoring will take place in June and post freshet monitoring will be undertaken in the open water months in the summer. In accordance with the NWB Type A License 2AM- MEA-0815, the dewatering will follow the *Water Quality Monitoring and Management Plan for Dike Construction and Dewatering* (AEM, 2010).

SECTION 6 • FISH COMMUNITY ASSESSMENT AND FISH RESCUE

In accordance with Tyson et al. (2011) (at that time it was a *Draft* DFO fishout protocol), a mark recapture study was completed in 2008 during the fishout of the northwest arm of Second Portage Lake. The purpose of the study was to estimate the total fish population for the impoundment area. This phase of the fish out program began on August 3, 2008, once the cut-off net was in place and all necessary permits were acquired. Initially, two types of fish capture methods for this phase were used:

- Trap nets - two trap nets were set perpendicular to shore targeting fairly shallow areas where smaller fish would be expected.
- Gill nets – only 38-mm index gill nets were used for this phase. Each boat crew were able to fish with 4 to 8 net panels, set only for a short time (1 to 4 hours).

All nets and traps were moved regularly (every day or two) to cover all available habitats, with an emphasis towards shallow water habitats. Partial fin clips and/or floy tags were used to mark lake trout (the most abundant species) and Arctic char. Biological assessments in this phase were limited to fish mortalities. Species; weight; fork length (total length for burbot) were recorded for every fish. Fish were also palpitated where possible to identify sexually active males or females. Details of each set were recorded using the field forms.

The mark-recapture phase continued to the maximum duration of 14 days. A 10% recapture rate was achieved by the end of this period using a total of 275 sets of 6 x 45.4 m length gill nets. Following the Chapman adjustment to Schnabel's method, the index of abundance was calculated; 1497 lake trout were estimated and 58 Arctic char. These estimates underestimated the true population size; at the end of the fish out a total of 2018 lake trout and 485 arctic char had been captured. The Catch-Per-Unit-Effort (CPUE) study (described in Section 6) proved to be a more accurate predictor of population size; the CPUE estimated a total of 2690-2710 fish (using the DeLury and Leslie regression models) while the true total number of fish captured at the end of the fish out was 3079.

At the end of the 2008 fishout of the northwest arm of Second Portage Lake, AEM made the following observations/conclusions:

- The mark recapture phase of the fish out program took a total of 17 days to complete (14 days of fishing and 3 days of waiting to begin the CPUE phase). Given the short ice-off period at the site, this took valuable time away from the goal of fishing out the impoundment area.
- The results from the mark recapture study were limited in usefulness. The CPUE phase gave a far more accurate estimation of initial abundance.

- The fish out program concluded on October 16, 2008. Due to high winds and icy conditions from mid- September until early October (when ice-over conditions started), weather conditions posed a serious safety risk for the fishout field personnel.

Consequently, in collaboration with DFO, AEM omitted this phase of the fishout program for the Bay Goose basin in 2010 and permitted the fishout crews to concentrate their efforts on the CPUE phase and final removal phase. As the CPUE phase of the program has the same purpose as the mark recapture phase, AEM concluded that the intent of the draft DFO fish out protocol was met.

Similar to the 2010 fishout and in accordance with Tyson et al. (2011), AEM proposes to omit the mark and recapture phase of the 2013 Vault Lake fishout.

6.1 CPUE phase

The objective for the Catch Per Unit Effort (CPUE) phase is to collect fish community CPUE data for the entire fish population in Vault lake. This involves collecting fish using a standard unit of effort for the duration of the phase. The equipment type, fishing methods, unit effort and fishing periods will remain the same as in the 2010 fishout for the duration of the CPUE phase.

The CPUE phase of the fishout program will begin as soon as possible after ice-out (with an anticipated start date of July 15, 2013, see Table 1-1). Fish will be captured using the same gear that was employed in 2008 and 2010. Six panel gill nets of stretched mesh sizes 126, 102, 76, 51, 38, and 25 mm will be used, with an increasing total number of nets/panels deployed as CPUE declines over time. Panels will be 1.8 m deep by 22.7 m. Nets will be moved every day or two to ensure full coverage of Vault Lake; duration of sets may vary as this phase of the program proceeds (i.e., similar to the 2008 and 2010 program, in the later season when catches are low and water is cold, set durations may be longer). Angling may also be used to minimize fish capture times and volunteers from the mine site may participate in the fishout.

As in 2008 and 2010, CPUE data will be analyzed daily using both the Leslie and DeLury methods. As updated and available, data and graphs will be sent to DFO every 2 days by email. Unit of effort for the Vault Fishout will remain comparable to previous fishouts, despite a greater effort to rescue and transfer fish (Tyson et al, 2011). All data from net sets will be recorded on field forms. Similar forms will be used as in the 2010 fishout program (see Appendix A). All captured fish will be identified to species, weighed and measured for fork length (total length in the case of burbot). Fish will also be gently palpitated to identify reproducing males or females prior to their release. A detailed biological assessment will be conducted on all fish that do not survive the transfer (ie. on incidental mortalities). More specifically, a detailed biological assessment will be conducted for a representative number of fish (we will aim to collect 30 from the dominant species lake trout and round whitefish (as they are often the least likely to successfully survive transfer), that may not survive the fish rescue and transfer). Similar to what was conducted in 2010, this assessment on incidental mortalities will include:

- Detailed internal and external examinations will be conducted on each of the fish to determine sex, reproductive status, parasite presence, and overall apparent health (e.g., DELT - deformities, erosions, lesions or tumours). A subset of these fish will be subject to more invasive measurements/sampling.
- Aging structures (otoliths and/or fins) will be taken (if possible) from all species across a range of expected size classes.
- Stomach contents will be collected from the same fish and either be analyzed in the field (e.g., whole fish can easily be counted) or preserved if more detailed analysis is needed. In the latter case, samples will be uniquely labelled (and associated with a uniquely identified fish), and placed in a 10% buffered formalin solution in whirl-pac bags. Stomach contents will be processed on site by the Project Biologist or sent to North/South in Winnipeg.
- Gonad weights and fecundity (female only) will also be measured for the same fish. Ovaries will be preserved in buffered formalin (or modified Gilson's solution) and analyzed for fecundity (on site or at North/South in Winnipeg), where a subsample of at least 100 eggs will be weighed to allow the estimation of the total number of eggs.
- Liver weights and metals samples will also be taken. Livers will be weighed in their entirety and frozen for shipment to the laboratory for analysis.
- Fish guts not retained for analytical sampling will be incinerated on site, as requested by DFO during the 2008 fishout.

AEM will begin discussing the completion of the CPUE phase with DFO when:

- there has been a consistent, statistically significant (e.g., $p<0.10$) decline over a 10-day or greater period (for at least one of the two CPUE population estimate methods); and/or
- overnight sets are catching very few fish regardless of the location of deployment.

When one or both of these criteria are met, in consultation with the DFO, the nets will be removed for 24 hours. Following the no-fishing period, nets will be re-deployed to confirm that the CPUE phase has met DFO expectations. The decision of determining when the CPUE phase is complete and the final removal will begin will be made in consultation with DFO.

6.2 Fish Transfer (Rescue) and CPUE phase

With DFO approval, during the CPUE phase fish that appear healthy and capable of recovery will be transferred primarily to Wally Lake. The decision to transfer individual fish will be a made in the field by fish technicians under the direction of the project biologist. Although considerable effort will be made to salvage and transfer as many fish as possible, the effectiveness of the salvage efforts will be evaluated in consultation with DFO. Based on 2010 fishout results, it is expected that the greatest number of fish will be salvaged during the first month during the CPUE phase, while catch rates remain high. However, fish are expected to be rescued through all phases as successful rescue and transfer of fish will be the main priority. All healthy fish that appear unaffected by capture and handling (i.e., especially VECs such as lake trout) will be transferred primarily into Wally Lake.

As in 2010, fish will be transferred in aerated cold water tubs in 2013. The water temperature and number of healthy fish transferred will be recorded. Ideally, both length and weight measurements, and a physical inspection will be taken for all fish. However, to reduce handling time, only length may be taken for the transferred fish. All fish >250mm in length will be floy tagged (to identify each individual) and transferred into Wally Lake. Fish <250mm, found to be healthy will be fin clipped or left unmarked and released. Detailed records will document mortalities due to capture, handling or transfer. Fish recovery rates were 50% for lake trout and arctic char at other northern projects (Ekati and Diavik) with very poor recovery rates for whitefish. However, based on the success in 2010 fish transfer, where approximately 80% of the fish were successfully transferred within the first 3 weeks of the fishout, AEM is anticipating a similar success rate for the Vault fish rescue.

Overall, the goal of the fishout rescue is to preserve the net productivity of the system. Given the relatively short duration of mining (less than 5 years) which will destroy a small portion of Vault lake, the large size of Wally Lake as compared to Vault Lake, and the near identical fish community assemblage (see Figure 6-1), a fish transfer is a viable option that is expected to assist in a more rapid recovery in Vault Lake after reflooding (reclamation is proposed to begin in 2018). Although there is some uncertainty, it is expected that Wally will provide a temporary holding area for transferred fish that will ultimately be relocated back into Vault Lake. Furthermore, the transfer into Wally Lake may increase recruitment and ultimately increase the energy of the system without disturbing the fish population dynamics.

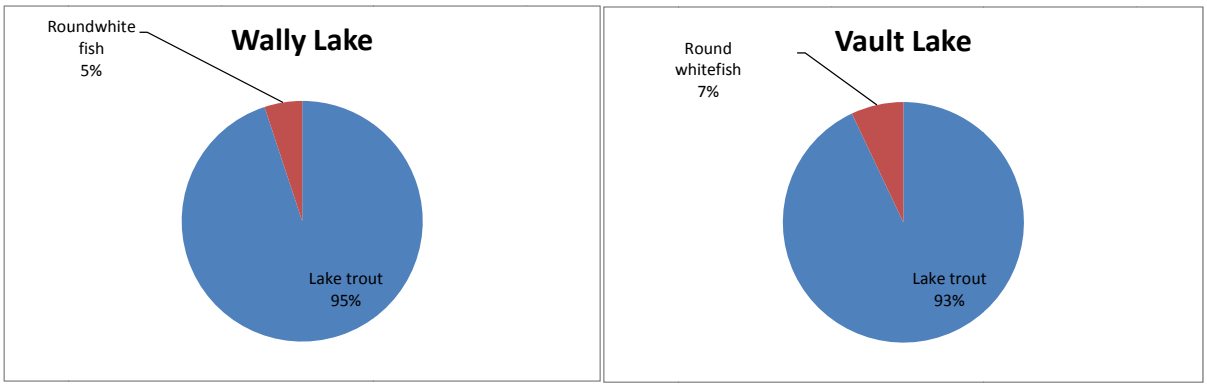


Figure 6-1: Fish biomass estimate in Vault and Wally Lake from surveys conducted in August 2012. Adapted from AEM (2012)

SECTION 7 • FINAL REMOVAL PHASE

In consultation with DFO, the final removal will take place immediately after the CPUE phase is completed. The objective of the final removal phase is to remove all of the remaining fish. This phase will begin at the same time as the partial dewatering of Vault Lake. Over the course of the final removal phase, the fish will be concentrated into smaller basins of water (see Table 1-1 and Figure 1-2). The final fish removal phase may include: using all available fish capture techniques and methods not used in the CPUE phase (including smaller nets, angling, bating nets to capture fish, etc.). Every effort will be made to remove all of the fish from the waterbody. The removal phase will be completed when final benchmarks are met that may include:

- no fish are caught for 48 hours, and then after a 24 hour break, no fish are caught for an additional 48 hours; and/or
- catch has declined to near zero and the total abundance and/or biomass has reached at least 95% of the estimated initial abundance from the CPUE data.

Similar to the 2008 and 2010 fishouts, gill nets will be used as the principal gear to capture the fish. However, the number of gangs will be increased, and AEM may consider using larger mesh sizes; in addition, some fine mesh "Swedish" gill nets (8mm, 10mm and/or 12.5mm nets) will be incorporated into the program. As in 2008 and 2010, effort will continue to be recorded approximately so that depletion estimators can be evaluated. All captured fish during the final removal will continue to be processed for biological information, but details regarding which net or mesh size caught each fish may not be recorded.

Partial dewatering is proposed in the Vault Lake during the final phase, as a result the decision to continue the final removal in the 2013 open water season will be based on the fishout data, drawdown timing, weather, and personnel safety.

SECTION 8 • AQUATIC BIOLOGY AND LIMNOLOGY DATA COLLECTION

Prior to disturbance caused by mine activity, data was collected for limnology, water chemistry, sediment chemistry, periphyton biomass, zooplankton and benthic invertebrate data in Vault Lake during baseline data collection in 2002 and 2003 (Cumberland, 2005). Fish community surveys were completed in 2003 and more recently in 2012 in Vault Lake and determined the presence of lake trout and round whitefish, with no burbot or Arctic char caught. These data provide a complete account of background limnology, aquatic biology and fish community assemblages in the Vault Lake prior to mining activities.

According to Tyson et al. (2011), more detailed and/or updated sampling may be desirable. Unfortunately due to limited access to Vault Lake prior to October 2012 (when the road was complete), updated aquatic data was not collected during the open water season. Furthermore, due to dewatering activity, which is proposed to begin prior to freshet to control the water level, no additional aquatic biology and limnology data will be collected as the limnology and lower trophic biology may have already been altered.

SECTION 9 • HABITAT MAPPING

Thorough physical habitat inventories were conducted prior to mine activity to evaluate habitat in Vault Lake as part of the original No Net Loss Plan (Cumberland, 2006). Due to some uncertainties in fish collection, follow-up fish community assessments were conducted in 2012 and an additional physical habitat inventory assessment was conducted to verify baseline conditions. The results of the habitat evaluation procedure were submitted as part of the updated NNL Plan which provide a thorough evaluation of fish habitat loss due to Vault Pit operations (AEM, 2012).

Habitat mapping of the northwest arm of Second Portage Lake was completed from July to August 2009, after dewatering removed a sufficient volume of water to expose the habitat. Low level photogrammetric aerial photographs were taken of the whole impoundment area; these photos will be used to confirm earlier estimates of habitat quality and will allow derivation of a relationship between habitat area and fish biomass. Similarly, in 2012, a physical habitat mapping comparison using aerial photography, high resolution ground surveying and GIS of a portion of the Bay-Goose basin was completed and was submitted as part of the 2012 annual reporting. These data allowed for an analysis of the habitat evaluation procedure (HEP) used for Bay-Goose basin predevelopment and compare the methods and results to after dewatering. Given the level of detail, GIS capabilities and statistical approaches available for these analyses, AEM will consult with the DFO to determine the necessity in collecting additional follow-up habitat mapping in Vault Lake. This decision will be made in consideration that the mining operations and dewatering platforms will be constructed upon receipt of a Section 32 Authorization, immediately following the fishout, which will increase the uncertainty in conducting habitat mapping post dewatering.

SECTION 10 • REPORTING

According to Tyson et al. (2011), DFO has developed data input forms to match the data collected during all fish-out activities. AEM will use these forms to enter the field data into an Excel database or to suit DFO requirements. Data entry will not be finalized until all results are available (example field sheets are presented in Appendix A); at that time it will be provided to the DFO.

Data analysis and reporting will include an interpretative report as well as raw data tables and summary statistics of data. Specifics will include, but not limited to, the following:

- Introduction and objectives,
- Review of methodology, including maps showing where gear was placed,
- Analysis of CPUE data according to the Leslie and DeLury methods, including best estimates of population sizes and consideration of uncertainty. Depending on findings, the analysis may also extend to biomass rather than only abundance (i.e., similar to the 2008 and 2010 analysis)
- Copies of field data sheets and photographs; and
- Discussion of results in comparison to the 2008 and 2010 fishouts.

SECTION 11 • REFERENCES

AEM. 2012. Agnico-Eagle Mines: Meadowbank Division No Net Loss Plan. Submitted to DFO on October 15, 2012.

AEM. 2010. Water Quality Monitoring and Management Plan for Dike Construction and Dewatering. In accordance with water license 2AM-MEA 0815. Prepared by AEM, Version 4, April 2010.

Azimuth Consulting Group, 2005. Meadowbank Gold Project – Baseline Aquatic Ecosystem Report. Prepared for Cumberland Resources Ltd. October 2005.

Azimuth Consulting Group. 2009. 2008 Fish-Out of the Northwest Arm of Second Portage Lake: Prepared for Agnico-Eagle Mines: Meadowbank Division. Submitted as part of the 2008 Annual Report.

Azimuth Consulting Group. 2012. Core Receiving Environmental Monitoring Program (CREMP): Design Document 2012. Meadowbank Mine. December 2012.

Cumberland. 2006. Meadowbank Gold Project. No-Net-Loss Plan (NNLP) November 2006. Prepared for Cumberland Resources Ltd.

North-South Consultants. 2011. Meadowbank Division: 2010 Fishout of the Bay-Goose Basin in Third Portage Lake. A report prepared for Agnico-Eagle Mines Limited- Meadowbank Division. Submitted as part of the 2010 AEM Annual Report.

Tyson, J.D., W.M. Tonn, S. Boss, and B.W. Hanna. 2011. General fish-out protocol for lakes and impoundments in the Northwest Territories and Nunavut. Can. Tech. Rep. Fish. Aquat. Sci. 2935: v + 34 p.

APPENDIX A • FIELD DATA COLLECTION FORMS

The attached forms were approved by DFO and used in the 2010 fishout. We propose to use the same field sheet for the 2013 Vault Fishout; the only change is the addition of a floy tag # column.

In addition, each boat crew will carry a map of the Vault Lake and indicate the location & direction of each net set.

Meadowbank Project. Fish-Out CPUE Phase Field Data Sheet

AEM 2010

Page___of___

A. Gear set data

Location / ID:			Number of panels by mesh size (for GNs):	Net Length (m):
	Start location	End of Net (in NAD 83)	25:___ 38:___ 51:___ 76:___ 102:___ 126:___	Net Height (m): All are 2m
Easting:			Set date:	Net depth at each end (m): /
Northing:			Set time:	Surface temp:
Recorder:			Lift date:	Wind direction / speed:
Field Staff:			Lift time:	General comments:

B. Fish sample data

These fields for every fish					Field fish data [3]			Fish Transfer				Lab Analysis: Biological Assessment							Comments (including results of internal / external examinations including DELT)		
Species Code	Sample ID or Number	Mesh Size[1]	Length [2]	Weight (g)	Sex	Repro Status	Maturity	Mortality	Cause of Death: (Net/ handling/ transfer)	Successfully transferred to TPL?		Aging Structure [4]	Stomach weight (or % full) & contents - indicate if preserved for taxonomy	Ovary weight (g)	Weight of 100 eggs	Liver Weight (g)	Liver metals sample?[5]	Tissue metals sample?[6]			
		(mm)	(mm)	(g)	M/F	Code	Code	Y/N		Y/N	Tag #	Code(s)					Y/N	Y/N			

Notes: 1. See mesh size options in section A. 2. Fork length for trout, char and whitefish; total for all others. 3. Fill out fields for sex, repro status and maturity based on "milking" for most fish. 4. otoliths and fins for LT and AC, otoliths only for burbot and whitefish, none for sculpins or sticklebacks. 5. Some stomachs to be processed in field; some to be sent to lab - see plan. 6/7. Liver sample should be coded as "fish sample ID" + "L". Tissue samples should be coded as "fish sample ID" + "T"

Assess Code	Assessment Type
FO-MR	Fish-out: Mark-Recapture phase
FO-CPUE	Fish-out: CPUE/Removal phase
FO-FREM	Fish-out: Final Removal phase
B-line	Base line sampling
AEMP	Aquatic Effects Monitoring Program

Gear Code	Gear Type
AN	Angling
GN	Gill net
MN	Minnow trap
TN	Trap net
OT	Other

Length Code	Length
F	Fork
T	Total

Sex Code	Sex
F	Female
M	Male
U	Unknown

Maturity Code	Maturity
IM	Immature
MA	Mature
SD	Seasonal development
UN	Unknown

Reprod Code	Reprod Status
GR	Green
RI	Ripe
RU	Running
SP	Spent
UD	Undeveloped
UN	Unknown

AgeStruct Code	Aging Structure
FR	Finray
OT	Otolith
SC	Scale
NO	None
CL	Cleithrum
OP	Operculum bone

Fate Code	Fate
NR	New, released marked
NM	New, mortality
RR	Recapture, released
RM	Recapture, mortality
E	Escaped unmarked

Tissue Code	Tissue Sample
ST	Stomach
MU	Muscle
LV	Liver
EG	Eggs
GO	Gonad
NO	None

Fin Code	Fin Clip
ADIP	Adipose
LPEC	Left Pectoral
RPEC	Right Pectoral
LPEL	Left Pelvic
RPEL	Right Pelvic
ANAL	Anal
UPCA	Upper Caudal
LOCA	Lower Caudal

Species codes:	
LKTR	lake trout
ARCH	arctic char
RNWH	round whitefish
BURB	burbot
NSST	ninespine stickleback
SLSC	slimy sculpin

M6	F1	immature male; immature female
M7	F2	preparing to spawn in current year
M8	F3	Ripe and running Male and Females
M9	F4	Spent males and females
M10	F5	M and F that have spawned in past; not in current ye
M11	F11	male or female previously spawned but unsure of condition in current year.

Note: These codes correspond to the Reprod Codes above

Appendix E

DFO File No.: 03-HCAA-CA7-00191
Authorization No.NU-03-0191.4

FISHERIES ACT AUTHORIZATION

Authorization issued to:

Agnico Eagle Mines Ltd. *(hereafter referred to as the "Proponent")*
Meadowbank Division
Regional Office 20, Route 395
Cadillac, QB
J0Y 1C0

Location of Proposed Development

Nearest community (city, town, village): Baker Lake
Municipality, district, township, county: Kivalliq Region
Province: Nunavut
Name of watercourse, waterbody: Vault Lake
Longitude and latitude, UTM Coordinates: Longitude 95°59'20", Latitude 65°04'18", Easting 359466, Northing 7219764

Valid Authorization Period for Impacts to Fish and Fish Habitat

The valid period of this authorization for the harmful alteration or disruption, or destruction of fish habitat pursuant to paragraph 35(2)(b) and the destruction of fish pursuant to paragraph 32(2)(c) includes:

From	To
Date of Issuance	December 31, 2017

The valid authorization periods for other conditions of this Authorization are set out below as **Conditions of Authorization**.

Description of Proposed Development

The proposed development impacting on fish and fish habitat involves:

The construction of Vault Pit in Vault Lake which will be isolated from adjacent Wally Lake by Vault Dike.

Vault Lake will undergo dewatering and fish transfer to Wally Lake to facilitate excavation and quarrying activities.

Description of Authorized Impacts to Fish and Fish Habitat

Authorized impacts to fish and fish habitat resulting from the works, undertakings, operations or activities associated with proposed development described above include:

Location	Work of Undertaking	Habitat Units Lost (HU's)
Vault Lake	Dewatering, excavation, dike construction and placement of course material in Vault Lake basin.	27.73

Conditions of Authorization

1. Conditions that relate to the **Proponent's Plan**:

1.1 The conditions of this Authorization notwithstanding, should the above authorized impacts to fish and fish habitat in the opinion of the Fisheries and Oceans Canada (DFO) be greater than previously assessed, then DFO may suspend any works, undertakings, activities and/or operations associated with the proposed development, to avoid or mitigate adverse impacts to fish and fish habitat. DFO may also direct the Proponent and its agents, and contractors, to carry out at the Proponent's expense any modifications, works or activities deemed necessary by DFO to avoid or mitigate further adverse impacts to fish and fish habitat. In circumstances where DFO is of the view that greater impacts may occur than were contemplated by the parties DFO may also modify or rescind this authorization. If the authorization is to be changed the Proponent will be given an opportunity to discuss any proposed modifications or rescission.

1.2 The Proponent confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent and acknowledges that they are solely responsible for all design, safety and workmanship aspects of all the works associated with this Authorization.

1.3 The works, undertakings, activities and operations must comply with the means and

conditions as identified within this Authorization. Impacts to fish and fish habitat other than that specifically identified within this Authorization are not permitted.

1.4 Works and undertakings shall be conducted in accordance with the practices outlined in the following reports:

- Application for Authorization for Works or Undertakings Affecting Fish Habitat, signed by Rachel Gould (Agnico-Eagle Mines Ltd.) dated January 9, 2013
- Core Receiving Environment Monitoring Program (CREMP): Design Document 2012 – Meadowbank Division. Prepared by Agnico-Eagle Mines Ltd. – Meadowbank Division, dated December 2012
- Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012
- Tyson, J.D., et al. Fisheries and Oceans Canada. 2011. General Fish-Out Protocol for Lakes and Impoundments in the Northwest Territories and Nunavut. Canadian Technical Report of Fisheries and Aquatic Sciences 2935.
- Fisheries and Oceans Canada. DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut. Dated June 21, 2010.
- No Net Loss Plan Implementation Cost Estimate and Construction Schedule – Meadowbank Gold Mine Project, Revision 1, prepared by Agnico-Eagle Mines Ltd. – Meadowbank Division, dated July 8, 2008
- Proposed Water Quality Monitoring and Management Plan for Dike Construction and Dewatering at the Meadowbank Mine, Ver.6, prepared by Agnico-Eagle Mines Ltd., dated April 2008
- Report Addendum Detailed Design of Dewatering Dikes Meadowbank Gold Project, 3 Volumes, Document No.492, Ver.0, prepared by Golder Associates, dated July 12, 2007
- Final Report Detailed Design of Dewatering Dikes Meadowbank Gold Project, 3 Volumes, Document No.342, Ver.0, prepared by Golder Associates, dated March 13, 2007
- Fisheries and Oceans Canada. 1995. Freshwater Intake End-of-Pipe Fish Screen Guideline. http://www.dfo-mpo.gc.ca/library/223669.pdf

2. Conditions that relate to the **mitigation** of potential impacts to fish and fish habitat:

2.1 A qualified biologist or environmental inspector shall be on site during all in-water construction, compensation and restoration works to ensure implementation of the designs as intended in the Proponent's Plan and conditions of this Authorization.

2.2 A Fish-Out Program for removing fish from within the diked off portions of Vault Lake at the Meadowbank Property, will be developed in consultation with DFO by June 1, 2013 and subject to DFO approval.

2.2.1 Fish rescue methods shall be implemented as per the Fish-Out Program approved by DFO.

2.3 All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, debris, etc) from entering the water.

2.3.1 Any stockpiled materials shall be stored and stabilized above the ordinary high water mark of any water body.

2.3.2 Vehicle and equipment re-fuelling and maintenance shall be conducted above the ordinary high water mark of any water body.

2.3.3 Any part of equipment entering the water shall be free of fluid leaks and externally cleaned/degreased to prevent any deleterious substance from entering the water.

2.4 Only clean material free of fine particulate matter shall be placed in the water.

2.5 Sediment and erosion control measures shall be implemented prior to work, and maintained during the work phases, including decommissioning and restoration phases, to mitigate impacts to fish habitat.

2.5.1 All disturbed areas shall be stabilized upon completion of work and restored to a pre-disturbed state or better.

2.5.2 Sediment and erosion control measures shall be left in place and maintained until all disturbed areas have been stabilized.

3. Conditions that relate to monitoring and reporting of Authorization conditions:

3.1 The Proponent shall undertake monitoring and report to DFO annually, by December 31st, whether works, undertakings, activities or operations for the mitigation of potential impacts to fish and fish habitat were conducted according to the conditions of this Authorization, by:

3.1.1 Providing dated photographs and inspection reports to demonstrate effective implementation and functioning of mitigation works undertakings, activities or operations described above as mitigation conditions.

3.1.2 Providing details of any contingency measures that were followed to prevent impacts greater than allowed by this Authorization in the event that mitigation measures did not function as described in the Proponent Plan.

4. Conditions that relate to the **compensation** for the authorized impacts to fish and fish habitat:

4.1 65.32 Habitat Units (HU's) of compensatory fish habitat shall be created by re-flooding Vault Pit and Phaser Lake basin; creating access for Arctic Char to Wally Lake; and, creating a connecting channel to Dogleg Pond.

5. All fish habitat compensatory works shall be completed and functioning according to the *Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012*;

5.1 If at any time the Proponent becomes aware that the compensatory habitat is not completed and/or functioning according to the above criteria, the Proponent shall carry out any works which are necessary to ensure the compensatory habitat is completed and/or functioning as required by this Authorization.

5.2 The Proponent confirms that they shall leave the compensatory habitat undisturbed. After the compensatory habitat has been created the Proponent shall not carry on any work, undertaking, activity or operation that will adversely disturb or impact the compensatory habitat.

6. Conditions that relate to monitoring and reporting of **compensation** (described above):

6.1 The Proponent shall conduct monitoring of the compensatory habitat according to the *Habitat Compensation Monitoring Plan, version 4, dated May 2008 and the No Net Loss Plan Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 08, 2008*

6.2 The Proponent shall report to DFO that the compensation works were conducted according to the conditions of this Authorization by providing the following:

6.2.1 A photographic record of before, during and after construction, during decommissioning and post-restoration, shall indicate that all works and undertakings have been completed according to the approved proponent plan and conditions of this Authorization.

6.2.1.1 The photographic record shall include, but not be limited to, a record of the sediment and erosion control measures and the fish habitat compensation measures.

6.2.1.2 The photographs for each pre-construction, during construction, post-construction, decommissioning and post-restoration time periods shall be taken from the same vantage point(s) and general direction.

6.2.1.3 All photographs shall be clearly labelled as to date and vantage point(s). The photographic vantage point(s) and viewing directions shall be indicated, and clearly indexed to the photographs, on a plan view drawing of the construction site(s).

6.2.2 A written report and photographic record summarizing the results of the Monitoring Program shall be submitted to the Iqaluit, Nunavut office of Fisheries and Oceans Canada by March 31 of each year following the monitoring year detailed in the *No Net Loss Plan Implementation Cost Estimate & Construction Schedule – Meadowbank Gold Mine Project, Revision 1, dated July 8, 2008.*

6.3 As-built reports including engineering drawings shall be submitted to the Iqaluit, Nunavut office of Fisheries and Oceans Canada within 6 months of the respective completion of each fish habitat compensation effort identified in the *Meadowbank Gold Project No Net Loss Plan (NNLP), prepared by Agnico-Eagle Mines Ltd. dated October 15, 2012*

Authorization Limitations and Application Conditions

The holder of this authorization is hereby authorized under the authority of paragraph 32(2)(c) and/or paragraph 35(2)(b) of the Fisheries Act. R.S.C., 1985, c.F. 14 to carry out the works, undertakings, activities and/or operations as described herein. This authorization is valid only with respect to fish and fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This Authorization does ***not*** permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish except under conditions that can only be authorized by regulations made by Governor in Council.

At the date of issuance of this Authorization, no aquatic SARA listed species were identified. In the event that a SARA listed species is identified or an aquatic species becomes listed under SARA, this authorization does not permit harm, harassment or killing of any species at risk (SARA section 32), the damage or destruction of residence (SARA section 33) or the destruction of critical habitat (SARA section 58).

Failure to comply with any condition of this authorization may result in charges being laid under the *Fisheries Act*.

This authorization should be held on site and work crews should be made familiar with the conditions attached.

The Proponent shall advise DFO in advance if the ownership or responsibility for the conditions of this authorization changes.

DFO File No. : 03-HCAA-CA7-00191
Authorization No. : NU-03-0191.4

Date of Issuance: April 2- 2013

Approved by:

David Burden
A/Regional Director General
Central & Arctic Region
Fisheries and Oceans Canada

Appendix F

This **AMENDING AGREEMENT** dated the 2nd day of May , 2013

BETWEEN:

KIVALLIQ INUIT ASSOCIATION
("KIA")

- and –

AGNICO-EAGLE MINES LIMITED
("AEM")

WHEREAS:

A. KIA entered into Production Lease KVPL08D280 for Inuit Owned Lands with AEM dated July 24, 2008, as amended by Amending Agreement dated February 9, 2009 (the "Production Lease");

B. AEM wishes to further amend the Production Lease to provide for a change in the area of the Leased Land.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is acknowledged by the parties, the parties agree as follows:

1. This Agreement shall take effect on the date of execution.

2. Schedule "A" to the Production Lease shall be deleted and replaced with Schedule "A" to this Amending Agreement.

3. Article 4.01 shall be deleted and replaced with the following:

   (1) AEM shall pay to KIA within fourteen (14) business days of the effective date of this Amending Agreement (pro rated for the first year), and thereafter on each Anniversary Date:

      (a) Rent in the amount of one hundred and thirteen thousand four hundred and seventy-five dollars ($113,475.00) based on $75.00 per hectare for 1,513 hectares; and

      (b) Surface disturbance fees in the amount of based on $30.00 per hectare

   (2) Should it be determined that the area of the Leased Land is more or less than 1,513 hectares, the Rent herein provided shall be adjusted. Should it be determined that the surface area disturbed is more or less than 600 hectares, the surface disturbance fees shall be adjusted.

4. In all other respects, the Production Lease shall remain unamended and in effect.

5. This Agreement may be executed in counterparts, each of which shall be deemed to be an original and all of which taken together shall constitute one agreement. Documents sent via facsimile shall be valid and binding.

ALL OF WHICH is agreed to, as evidenced by the signatures of the parties:

KIVALLIQ INUIT ASSOCIATION

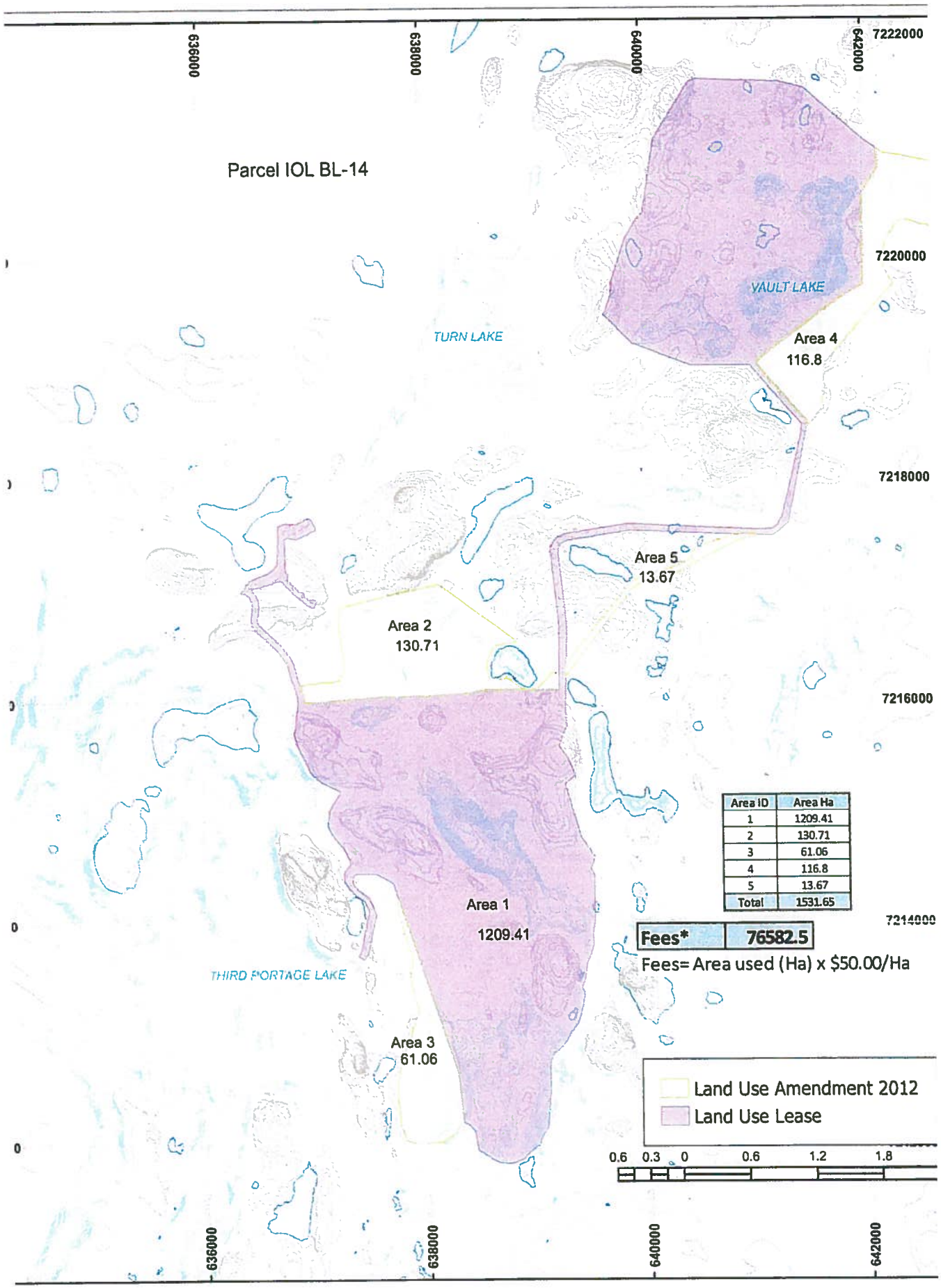
Per: _____

AGNICO-EAGLE MINES LIMITED

Per: _____

SCHEDULE "A"

(attach new sketch)



Land Use Lease Amendment Request 2012

Appendix G

Environment Canada Environnement Canada

Environmental Protection Operations Directorate
123 Main Street, Suite 150
Winnipeg, Manitoba
R3C 4W2

May 16, 2013

Marie-Pier Marcil
Sr. Technician Compliance
Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0
marie-pier.marcil@agnicoeagle.com

Dear Ms Marcil,

Re: Vault Lake Dewatering

This letter is in response to your email to Ian Rumbolt of Environment Canada, dated May 13. In this email you sought clarification regarding whether water from the dewatering of Vault Lake would be considered effluent under the metal Mining Effluent Regulations (MMER), and you presented your understanding that it would not be considered effluent.

A similar question arose in 2009 with respect to the dewatering of the northwest arm of Second Portage Lake during the construction of the Meadowbank Mine.

At that time, our interpretation of the MMER was that the mine was a mine under development and as such was subject to MMER. Following the construction of a dyke, a portion of Second Portage Lake was dewatered to access the ore which is located under a lake bed. This dewatering, undertaken as part of the mine development, was essential to the subsequent extraction of ore from the open pit. As such, the dewatering was considered, essentially, part of the development of the open pit and the water from the lake dewatering was determined to be mine water effluent. Thus, the water from the dewatering of the northwest arm of Second Portage Lake was considered effluent under the MMER and subject to the requirements of the Regulations.

The current plan to dewater Vault Lake to develop a new open pit is very similar. Thus, based on the previous decision regarding the dewatering of the northwest arm of Second Portage Lake, EC has determined that water from the dewatering of Vault Lake will be considered to the effluent. As such, Agnico Eagle will be required to comply with all relevant requirements of the MMER.

I note that you stated in your email of May 13 that "As the dewatering project proceeds we anticipate the need for our WTP during the latter stages when TSS from bottom sediments could be present. This is based on the previous dewatering of Second Portage Lake. Treatment for TSS removal will likely be required for the remaining 30 – 40 % of the volume (Sept/Oct). The project will be completed in October."

I also note that the EIS for the Meadowbank Project identified a potential for degradation of water quality associated with lake dewatering. For example, regarding potential effects of dewatering, the EIS states (p.87) that "Shoreline wetlands and some inflowing streams will be affected by lowered water tables, which will cause nearby active layer thicknesses to increase. As wetlands are associated with excess ground ice, some combination of thaw subsidence, local thaw instability and sediment production is expected. The effects are expected to be short lived, spanning construction, but quickly stabilizing during construction or early operations." Furthermore, Table 4.24 of the EIS "introduction of sediments and porewater metals due to dewatering" as a potential impact on fish habitat.

Thus, notwithstanding there is clear legal basis for considering water from the dewatering of Vault Lake to be effluent, the above information provides a solid technical basis for the need for appropriate monitoring of the dewatering activities.

If you have any questions or want to discuss this further, please do not hesitate to contact me. Please feel free to contact Environment Canada Enforcement Officer Ian Rumbolt (the inspector for your facility) at (867) 975-4637or by email at ian.rumbolt@ec.gc.ca or me by telephone at (204) 984-3522, or e-mail at reg.ejeckam@ec.gc.ca .

Sincerely,

Reg Ejeckam, P. Geo.
Sr. Mining Project Officer
Prairie and Northern Region

cc: Ian Rumbolt, (EC); Charles Dumaresq (EC); Anne Wilson (EC)

Appendix H

AGNICO EAGLE

June 21st, 2013

Ms. Cheryl Baraniecki
Environmental Protection Operations Directorate
Environment Canada
Prairie and Northern Region
Room 200
4999-98th Avenue NW
Edmonton, AB T6B 2X3
Cheryl.Baraniecki@ec.gc.ca

Re: Metal Mining Effluent Regulations – Evaluation of 2012 Environmental Effects Monitoring (EEM) Interpretative Report, Meadowbank Division, Nunavut (File 7834-3-37/A350-2)

Dear Ms. Baraniecki,

On February 27, 2013, AEM received comments on report entitled 'Environmental Effects Monitoring (EEM): Cycle 1 Interpretative Report, Meadowbank Division, Nunavut', submitted by July 1, 2012. You will find, attached with this letter, responses to these comments addressed in the form of a simple addendum to the 2012 Interpretative Report.

Should you have any questions or require further information, please contact me at stephane.robert@agnicoeagle.com or directly at, 819-763-0229.

Regards,
Agnico Eagle Mines Limited – Meadowbank Division

Stéphane Robert
Manager Regulatory Affairs

Technical Memorandum

Date: June 20, 2013

To: Ryan Vanengen, Agnico Eagle Mines Ltd, Meadowbank Division

Cc:

From: Gary Mann and Laura Bekar

RE: Environmental Effects Monitoring (EEM):
Cycle One Interpretive Report Meadowbank Division, Nunavut
TAP Comments / Azimuth Response

TAP comments are numbered below in black text, with responses found below each comment in blue italics text. Most TAP comments were focused on the Cycle 1 Interpretive Report which Azimuth prepared on behalf of AEM. For these TAP comments Azimuth provided the response. However, some TAP comments concerned other reports (AEM's annual effluent report), in which case AEM was consulted for response.

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1. Overall this is a well written and thorough report. The figures and maps aided the review and the BACI and weight of evidence assessment provided valuable context.

No action needed.

2. P. 9: Duplicate samples of effluent collected at DD-FD-1 on August 24, 2011 had relative percent difference of 93 and 100% for aluminum and iron respectively. Did the laboratory provide any explanation for these values?

As discussed in the AEM 2011 annual report (pp. 32-33), RPD values may be either positive or negative, and ideally should provide a mix of the two, clustered around zero. Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are very low and approaching the detection limit. Consequently, a RPD of 50% for concentrations that exceed 10x the method detection limit (MDL) are considered unacceptable and are flagged. In this case, the exceedances were flagged and the results of the Core Receiving Environment Monitoring Program (CREMP) monitoring on August 23rd at station TPN were reviewed. The annual report noted that "there did not appear to be any trends with the parameters that exceeded the QAQC data quality objectives, nor were there any indications of sampling errors or variability". Furthermore, no elevated levels of aluminum and iron were noted within the TPN basin of the CREMP report and therefore the laboratory was not contacted.

3. P. 10: Mercury in effluent did exceed the regulatory limit of 0.1 ug/L in August 2011 (2.93 ug/L). The TAP acknowledges that mercury measured in the trip blank was 2.5 mg/L. Assuming contamination was consistent, that could result in an effluent concentration of approximately 0.4 ug/L. The TAP would like to continue discussions on this issue in the next study design submission.

We look forward to this discussion.

4. P. 16: Are other parameters monitored in effluent in addition to those required under the MMER? There may be patterns in the effluent that correlate with the different results of the August 2011 sub-lethal tests.

AEM indicated that no other parameters were included in the August 2011 effluent quality analyses.

5. P. 17: The TAP acknowledges the unique nature of the effluent being discharged during this study and the challenges that this poses. Is it possible to determine how many benthic stations may have been located in the plume during this study?

The Study Design Document (Azimuth 2010)[1] presented a conservative estimate for the 1% dilution boundary (i.e., the "plume" area) which defined the TPN exposure area. All benthic invertebrate sampling stations were located within the model-defined exposure area. Actual plume delineation work conducted during the field program documented a small, wind-constrained plume that did not extend to the benthic sampling zone.

6. P. 33: Sediment concentrations of arsenic and chromium are high in all lakes but particularly in the reference lakes. While the concentration of iron also seems higher in reference lakes and may influence the bioavailability of the arsenic and/or chromium, the TAP would appreciate some more discussion on the suitability of INUG and PDL as reference areas. If this discussion has already been presented in a different document, please provide the reference.

The merits of utilizing PDL and INUG as reference lakes for the EEM study at Meadowbank were discussed in the Study Design Document (Azimuth 2010). In short, neither lakes, which are both situated in the adjacent Back River watershed, are exposed to any anthropogenic influences (mining or otherwise) and are fairly similar in ecoregion, geology, morphometry, and physical habitat when compared to TPN. While habitat value for fish use has not been specifically evaluated in detail for INUG or PDL, the physical habitat (slope and depth) and limnology (temperature, and dissolved oxygen) are similar to TPN. Benthic communities in all three lakes are fairly similar. While all these lakes are dominated by lake trout, there are some differences in species composition for the remainder of the fish community.

It should be noted that the Meadowbank region is mineralized and that there are exceedences of one or more of the CCME sediment quality guidelines in most sampling areas. Detailed sequential extraction analysis and toxicity testing of Second Portage Lake sediments

[1] Azimuth 2010. Environmental Effects Monitoring (EEM): Cycle 1 Study Design, Meadowbank Division, Nunavut. Report prepared by Azimuth Consulting Group Inc., Vancouver , BC for Environment Canada, Edmonton, AB on behalf of Agnico-Eagle Mines Ltd., Baker Lake, NU.

conducted in 2010 showed low metals bioavailability (Azimuth, 2011)[2]. Baseline benthic invertebrate sampling results definitely highlight some among-area differences (e.g., Wally Lake is consistently high, Tehek is consistently lower) that appear to be related to lake-specific differences in productivity; INUG and PDL, however, are pretty typical overall and don't stand out as depauperate areas. Notwithstanding, the BACI analyses using the CREMP data conducted in the EEM Interpretative Report provides for the evaluation of relative change between reference and exposure areas over time. A major advantage of the BACI design (over a CI design) is that it does not need to rely on the assumption that areas are inherently identical (as a CI design does), only that areas respond similarly to regional factors such as climate (e.g., rainfall, mean temperature, etc.). Thus, the BACI accounts for inherent differences between areas and tests for disproportionate changes over time at the exposure area.

7. P. 42: While not required, the TAP would appreciate some comparison of overall catch per unit effort for lake trout between lakes.

Catch per unit effort for lake trout between TPN, INUG and PDL were (LKTR/gang-hour):
TPN: 0.41 INUG: 0.51 PDL: 0.36
Note that fewer panels were used for the reference lake gangs. However, since only the most effective panel sizes were used, the gang-hour values shown above should be the best simple estimate of CPUE. Ideally, CPUE estimates should be calculated by mesh size for each lake they were ineffective at catching fish. However, we don't think that additional effort is warranted in this case.

8. P.48: the comparison between the pectoral and otolith age estimates is very informative and appreciated.

No action needed.

9. P. 65: It appears that table 4.3-3 reflects the data available from mature adults. Please confirm.

Table 4.3-3 is a tally of all fish for which liver weight was measured. While fish were sexed based on close examination of reproductive organs, some were immature.

10. P. 60: Table 4.3-8 shows 43 LKTR from TPN with internal condition assessed. Were liver weights only collected on mature adults? Acknowledging that fish may be juvenile and/or resting, TAP would appreciate a summary of all the liver data collected in this study.

Table 4.3-3 is a summary of all fish for which liver weight was measured. While in hindsight we recognize that an opportunity to collect liver weights on more fish was missed, the EEM Cycle 1 Study Design (Azimuth 2010) specified the measurements to be collected on incidental LKTR mortalities:

> Mortality of fish will be minimized as much as possible by checking nets regularly to remove captured fish; however, inadvertent mortalities will be autopsied to determine internal condition and parasite load, sex and

[2] Azimuth 2011. Aquatic Effects Monitoring Program – Targeted Study Effects Assessment Study 2010, Meadowbank Mine. Report prepared by Azimuth Consulting Group Inc., Vancouver , BC for Agnico-Eagle Mines Ltd., Baker Lake, NU. March 2011.

gender ratio, diet from examination of stomach contents, and verification of ageing by sampling the otoliths.

As Table 4.3-8 indicates, all measurements indicated above were routinely collected on LKTR mortalities at TPN (and reference areas). Efforts were stepped up to collect liver weights once it became apparent that sample size was much too low for the planned lethal study of round whitefish (hence the liver weight data for both reference areas).

11. P. 98: The TAP appreciates the additional analyses and context provided for the benthic invertebrate section.

No action needed.

12. P.113: The TAP appreciates the supplemental analysis and discussion provided in this report.

No action needed.

13. P. 116: Please confirm that samples collected in TPN and other lakes used in the BACI were proximate to where samples were collected for the EEM program and at similar depths, substrates etc.

The samples were collected at the exact same locations. The CREMP samples consisted of two subsamples, which were composited in the field prior to taxonomic analysis. An addition EEM subsample was collected at the same location and analyzed independently. The three-subsample EEM data was constructed by "pooling" the taxonomy results for the CREMP subsamples and EEM subsample.

14. P. 148: The result of the fish survey should also include indicators of reproduction. As it appears the reproductive endpoints associated with a typical non-lethal survey may be challenging, are there other possibilities that could be explored in order to meet this requirement?

The non-lethal survey reproductive indicators recommended in EEM guidance are based on monitoring young-of-year (YOY) fish. Relative abundance, growth and survival can all be estimated using sequential studies targeting YOY (e.g., Gray et al. 2002)[3]*. However, YOY have never been reliably captured in the Meadowbank Project Lakes (even during two fish removal studies), so this avenue was not pursued. We welcome further discussion on this issue.*

15. P. 148: Assuming internal examinations will continue to be done on all incidental mortalities, the TAP would appreciate that the liver data associated with these fish be analyzed and presented.

As discussed in comment #10 above, the SOP for non-lethal LKTR sampling will be revised to ensure that gonad and/or liver weights are opportunistically collected and presented for all incidental mortalities. These data will be analyzed (to the extent practical) and presented in the Cycle 2 Interpretive Report.

[3] Gray, M. A., A. R. Curry, and K.R. Munkittrick. 2002. Non-lethal sampling methods for assessing environmental impacts using a small-bodied sentinel fish species. *Water Quality Research Journal of Canada* **37**:195-211.

16. P. 149: Mines in northern Canada typically include 3 to 5 benthic sub samples per station due to the low density and diversity in the benthic community. Density was marginally significant in the EEM analyses and a pattern of lower density is seen when larger CREMP dataset is used (Fig 5.4-8). In addition, samples at TPN tend to be collected at lower depths and at sites with relatively lower fines and TOC (both of which were identified as significantly different among sample areas). The TAP is not willing to consider reducing the number of subsamples until further discussion on some of the other variables and sampling considerations takes place.

Metal Mining EEM Guidance (Section 4.4.2 of Environment Canada 2012) provides methods to determine the degree of subsampling needed to accurately reflect conditions at a station using the Elliott Equation. Cycle 1 Study Design (Azimuth 2010) reported Elliott Equation results that showed that more than two subsamples were generally not needed. The only exception was for abundance (density) at Station 2 (see Table 5-1 below from the Study Design).

Table 5-1. Results of the Elliot equation for determining a suitable number of sub-samples.

Replicate Station #	mean	SD	N[3]	Elliot Equation Result (# of grabs)
Abundance[1]				
1	1.42	0.24	5	0.75
2	1.49	0.46	5	2.38
3	1.38	0.10	4	0.12
4	1.27	0.28	4	1.24
Richness[2]				
1	4.20	0.45	5	0.28
2	3.60	0.55	5	0.58
3	2.75	0.50	4	0.83
4	2.50	0.58	4	1.33

[1] Data is log transformed.
[2] Richness evaluated at the family level.
[3] Five grabs were collected at each station, however some samples were deemed to have been improperly preserved and therefore were excluded

However, as explained in the Cycle 1 Study Design Addendum (Azimuth 2011)[4], the original equation results for Station 2 included a clear outlier (see Family-level counts table below) that would have inflated the result. Removing the outlier would result in an Elliot Equation value of less than 1 Petit Ponar grab for that station (i.e., Elliott equation results for Station 2 excluding that outlying point is 0.18 for abundance and 0.44 for richness). Thus, Elliot Equation results indicate that compositing two subsamples is sufficient to characterize abundance and richness for the Meadowbank EEM.

[4] Azimuth 2011. Environmental Effects Monitoring (EEM): Cycle 1 Study Design Addendum, Meadowbank Division, Nunavut. Report prepared by Azimuth Consulting Group Inc., Vancouver , BC for Environment Canada, Edmonton, AB on behalf of Agnico-Eagle Mines Ltd., Baker Lake, NU.

Family-level counts for samples used to derive the Elliot equation values.

Sample	Station	Enchytraeidae	Tubificidae	Lumbriculidae	Chironomidae	Sphaeriidae	R	N	
TPE1-A	TPE1	0	4	2	17	2	4	25	
TPE1-B	TPE1	0	8	1	31	3	4	43	
TPE1-C	TPE1	0	1	2	7	3	4	13	
TPE1-D	TPE1	0	3	1	13	1	4	18	
TPE1-E	TPE1	5	1	3	27	13	5	49	
TPE2-A	TPE2	0	8	1	33	15	4	57	
TPE2-B	TPE2	0	3	1	30	17	4	51	
TPE2-C	TPE2	0	1	0	1	3	3	5	
TPE2-D	TPE2	0	5	0	16	9	3	30	
TPE2-E	TPE2	3	3	0	30	28	4	64	
INUG1-A	INUG1	0	0	1	11	7	3	19	
INUG1-B	INUG1	0	0	1	12	18	3	31	
INUG1-C	INUG1	0	0	2	4	15	3	21	
INUG1-D	INUG1	0	0	0	6	20	2	26	
INUG1-E	INUG1	0	0	0	1	2	2	3	*
INUG2-A	INUG2	0	0	1	23	13	3	37	
INUG2-B	INUG2	0	0	1	0	5	2	6	*
INUG2-C	INUG2	0	0	1	6	6	3	13	
INUG2-D	INUG2	0	0	0	18	9	2	27	
INUG2-E	INUG2	0	0	0	2	7	2	9	

* indicates samples were flagged by the laboratory as inadequately preserved.

Notwithstanding, the TAP final comments on the Cycle 1 Study Design requested three subsamples for the EEM program. The Cycle 1 Interpretive Report (Azimuth 2012) addressed this issue again in ***Section 5.4.1 Comparability of the 2011 EEM and 2011 CREMP Data Sets*** *(key info shown below). The results again support the contention that two-grab subsampling is sufficient to characterize the benthic community at Meadowbank. Given the costs of doubling the number of samples and doubling the statistical analysis and associated interpretation, we stand by our recommendations to directly use the CREMP data to support the Cycle 2 EEM study.*

While the benefits of having more data (more reference areas and more years) are somewhat obvious, this section explores whether the two-grab CREMP data set poses any constraints to detecting statistical differences between reference and exposure areas. The main concern would be whether the two-grab samples inflate estimates of within-area variability (i.e., due to insufficient characterization) relative to the EEM data, thus reducing statistical power.

Side-by-side EEM (all data = TPN, PDL, INUG in 2011) vs. CREMP (subset of data to include only TPN, PDL, INUG in 2011) raw data (by area; **Figure 5.4-2**) and means and standard errors for each benthic invertebrate community endpoint (except for Simpson's Evenness, which is not calculated in the CREMP) are shown by pooled reference area and exposure area in **Figure 5.4-3**. Given the concerns highlighted above regarding statistical power, power analysis (see text box in **Section 5.3.4**) was used to compare the two data sets (**Table 5.4-1**). In two of three cases, the minimum detectable effect size was actually smaller (i.e., better) for the CREMP data set. Power to detect the +/- 2 SD CES was somewhat lower for the CREMP data set for the Similarity Index, but that result was mainly due to a smaller reference area standard deviation (and hence a smaller SD-based CES). The CREMP and EEM results are very similar and there is no reason to believe that using the CREMP data would limit our ability to make defensible inferences regarding potential differences between reference and exposure areas. Over and above the obvious cost savings in terms of laboratory and statistical analyses, the more extensive (spatially and temporally) CREMP data set will ultimately help make better inferences regarding potential effluent-related effects to the benthic invertebrate community.

Figure 5.4- 2. Benthic invertebrate community endpoint results by area and program (CREMP, EEM).

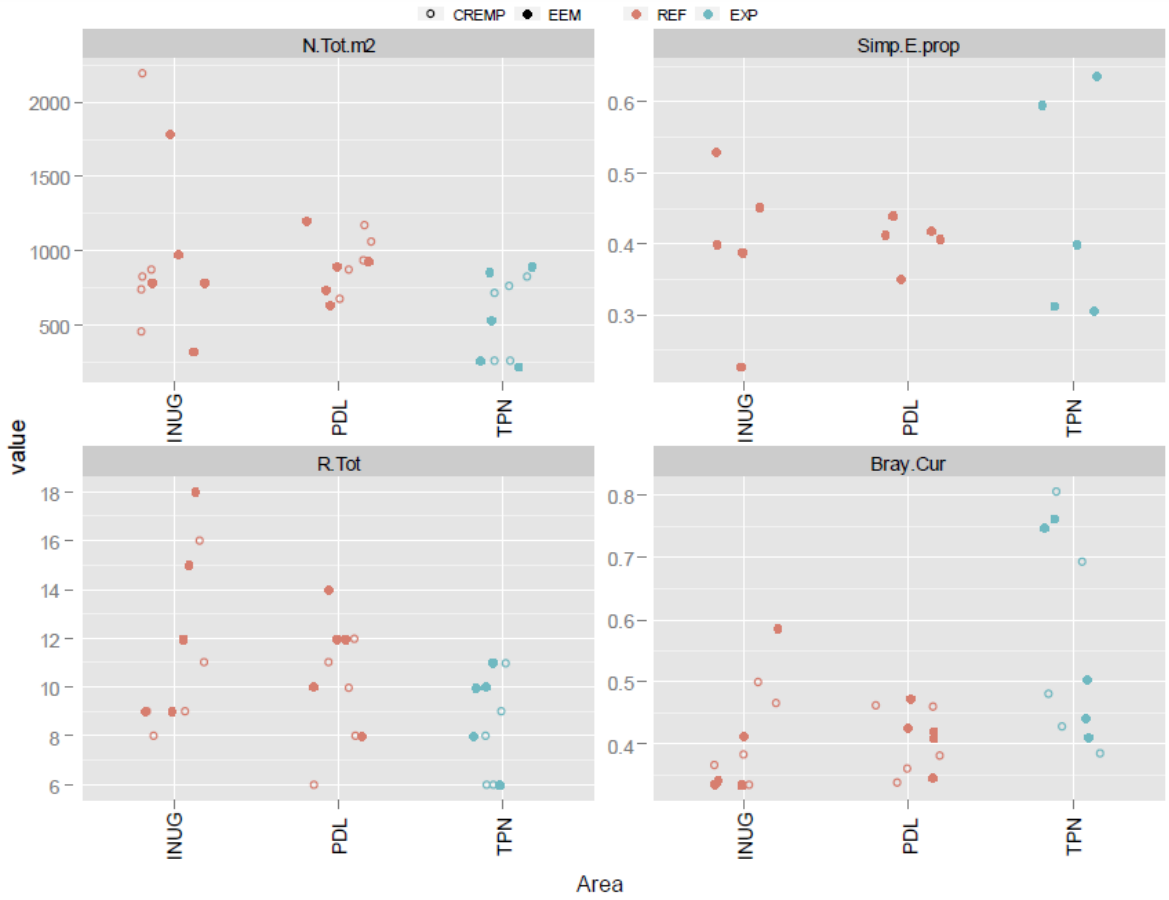

Table 5.4- 1. Comparability of EEM and CREMP benthic community data sets using power analysis.

Endpoint	Program	Obs. ES	Ref SD	CES	n (EXP/REF)	α	β	Power for CES	Minimum ES	Minumum EXP n for CES and Power
Benthic Community Endpoints										
Total Density log10(N.Tot.m2)	EEM	-351	385	-770	5/10	0.1	0.1	0.98	620	4
	CREMP	-415	471	-942	5/10	0.1	0.1	0.99	715	4
Total Richness (R.Tot)	EEM	-2.9	3.11	-6.2	5/10	0.1	0.1	0.98	4.77	4
	CREMP	-2	2.75	-5.5	5/10	0.1	0.1	0.98	4.36	4
Similarity (Bray.Cur)	EEM	0.17	0.0791	0.158	5/10	0.1	0.1	0.78	0.193	7
	CREMP	0.16	0.0579	0.116	5/10	0.1	0.1	0.57	0.187	13

Notes: "Obs. ES" = observed effect size, reported in log10 units for N.Tot.m2; "CES" = critical effect size (from EEM TGD) = 2 * Ref SD (reported here in the same direction as the Obs.ES); "n" = sample size; "Ref SD" = standard deviation of pooled reference area; "Minimum ES" reported in Obs. ES units, not as multiple of Ref SD; Minimum sample size (REF n = 2 * EXP n).

AGNICO EAGLE

MEADOWBANK DIVISION

Production Lease KVPL08D280

2013 Third Quarter Report

October 2013

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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 2013.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 133,459 oz. of gold;
- Mined 9,492,629 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1, 046,947	3,094,289
Gold Grade (g/t)	4.15	3.29
Gold Produced (oz.)	133,459	307,563

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	224,650	257,719
Waste Rock Production (t)	8,327,184	23,806,013
Ore Production (t)	940,795	2,590,666
Total Blasting (t)	9,694,609	27,838,973
Total Drilling (m)	440,818	1,291,652

1.4 DIKE CONSTRUCTION ACTIVITIES

The Stormwater Dike rockfill was raised from the El. 148 m to El. 150 m and the filter materials on the upstream slope have been completed. The installation of the Coletanche geomembrane was started on the Stormwater Dike from El. 148m to El. 150m. The remaining liner will arrive on site with the third barge of the season and the installation of the geomembrane will be finalized in October.

The reclaim access within the North Tailing Cell has to be raised from El. 147.5m to El. 150m, and rockfill protective structures have to be constructed to El. 148m to protect the

reclaim barge from tailings migration. The work started at the end of September and will be finalized at the end of the last quarter.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2013 Mine Plan*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 2013.

There was no planned variation from the "*2013 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current quarter, five (5) inspections were conducted by regulators:

- AANDC and KIA to do Annual Surface Water Sampling (non-regulatory) in July;
- AANDC Water Resource Officer conducted a general site inspection on July 29th – 30th;
- DFO conducted a general site inspection from August 7th to 9th;
- 2 AANDC and 2 Environment Canada Inspector on August 27th to take samples at ST-16 seep and NP-2 Lake. This visit was a follow up to sampling that AANDC conducted during the site visit on July 29th – 30th; and
- NIRB Monitoring Officer on site for an inspection on September 13th.

AEM received one inspection report from AANDC Water Resource Officer on September 26th, 2013 (Appendix A). AEM is presently preparing a response to this inspection report.

On September 15th, AEM provided explanations to NIRB about the barrels observed at the Meadowbank Landfill during the September 13th Inspection (Appendix B).

Removal of turbidity curtain in Third Portage Lake began on September 21st. Removal of 30 meters of the curtain was completed. The work was more difficult than anticipated and the weather prevented the dive contractor from completing the removal. It was noted that a layer of sediment has covered the remaining curtain and any disturbance causes a release. At this time AEM is determining what measures will be taken in 2014 to either remove the remaining curtain or leave it in place to prevent an environmental impact due to sediment release.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There were 2 exceedences of the Water License during Q3:

- Freshwater consumption exceeded the permitted amount of 700,000 m^3
- On August 22nd, final effluent from Portage Attenuation Pond was toxic for Daphnia (but not trout)

Twelve (12) spills occurred at the site; one (1) spill was reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the third quarter, 12 spills occurred at the site. One (1) spill was reported to the Government of Nunavut:

- 200L of diesel was spilled in the pit because a tanker's fuel tank was punctured by a rock.

In July, AEM forwarded follow up correspondence to the AANDC Inspector regarding the reportable diesel spill of 210L that occur at Camp Genset Tank #1 on June 15th (Appendix C).

Clean-up of contaminated soil at Quarry 22 was completed during the quarter. A total of 336 loads of contaminated soil and garbage were removed and placed in Meadowbank landfarm (above industrial criteria) and waste rock storage facility (below industrial criteria). The next step is to take samples of the surface soil in Quarry 22 and Quarry 5 to verify if the soil is still contaminated (spring 2014).

During the quarter, a total of 98 seacans filled with hazardous waste materials (449.5 tonnes) were collected from the Meadowbank project area. The sea cans were shipped from the spud barge at AEM's Baker Lake marshalling facilities to Becancour, 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 9331166-0, 9331167-8, and 9331164-5. A description of the types of waste, packaging and volume is provided in Table 4.1.

Table 4.1: 2013 Hazardous Materials Shipped Off Site

Type of Waste	Type of Packaging and Amount of Items								
	Drum	Tote	Quatrex	Boxe	Pallet	60 L steel drum	20 L plastic pail	20 L steel pail	Container (Bulk)
Acid lead batteries			29		1				
Air Filter				5					
Contaminated soils	1		2						
Compressed gases N.O.S.			1						
Domestic water dispenser					1				
Empty content contaminated	1086					242			
Empty plastic pails (SO)							3318		
Flammable liquid			2						
Glue last residues			12						
Glycol	7	17							
Glycol and oil mix	2	19							
Hydrogen peroxide aqueous solution								1	
Nitric Acid last residues	345								
Oil emulsion	3								
Oil filters	184		5						
Oily solids waste	43		193						
Plastic pail lids (SO)			16						
Rubber dust	4								
Scraped tire									5
Sulfuric acid								1	
Tetrechloroethylene last residues	1								
Used filter	35		1	3					
Vegetal oil (cooking)	15								
Vegetal grease (cooking)	10		1						
Waste diesel	25	1							
Waste eye wash					1				
Waste Jet fuel	5								
Waste gasoline	10								
Waste grease	77					19			
Waste hardener / Trythylene Tetramine					2				

Waste Methanol	1	4	3						
Waste oil	102	257							
Waste oil and grease	2								
Waste paint			16						
Waste pitch	16								
Waste spray cans (aerosols)									
Waste thiner	1								
TOTAL	**1975**	**298**	**281**	**8**	**5**	**261**	**3318**	**2**	**5**

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 239,030 m^3. The total freshwater used to date is 1,419,897 m^3. The total amount of reclaim water used in the mill was 721,266 m^3.

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. Increased 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. On April 23rd, 2013 Agnico Eagle Mines Meadowbank Division submitted a request to the Nunavut Water Board for an amendment to increase the freshwater use rate at the Meadowbank Gold Project. NIRB requested, on August 6th, public input to determine if AEM's NWB water amendment application is a significant project scope change; the review period was until September 3rd. AEM received no comments indicating significant change to the scope of the EIS and is still waiting for the decision of NIRB. On August 29th, AEM received, from NWB, a letter indicating that a technical meeting and pre-hearing conference would be held in Baker Lake on October 15th and 16th, 2013. On October 1st, the pre-hearing conference was changed to October 16th and 17th, 2013.

AEM also applied, in April 2013, for a modification to the Type A Water License Part F, Item 4 to include East dike seepage water as non-contact water effluent. On July 3rd, AEM received a Water License Modification approval from NWB to allow East Dike seepage non-contact water to be discharged to Second Portage Lake. You will find in Appendix D the NWB approval letter. On July 9th, AEM requested direction from Environment Canada as to whether the discharge of the non-contact East Dike seepage would be subject to MMER requirements. On August 7th, AEM received, from Environment Canada, correspondence advising that the effluent from the discharge of the East Dike seepage is subject to the requirements of the MMER (Appendix E). AEM is preparing a 60 day notification pursuant to MMER to Environment Canada to commence the discharge of East Dike Seepage at the beginning of December.

During AANDC Water License inspection on July 29th and 30th 2013 it was observed that "red" colored seepage from the south-east side of the Waste Rock Storage Facility was migrating through the road perimeter into Lake NP-2. Following this observation, AEM increased pumping of the seep water to the Tailings Storage Facility to prevent migration through the road. Construction of a till plug was completed on September 1st to prevent any further migration through the perimeter road. Please refer to the attached Appendix F "*Preliminary AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16*" for a detailed description. This report was forwarded to NWB, DFO, KIA, AANDC and EC Inspectors. The seepage has ceased migrating through the road to Lake NP-2.

On August 7th, AEM sent to AANDC the required 10 days' notice to start the WTP discharge from Attenuation Pond into Third Portage Lake. Discharge from Portage Attenuation Pond (ST-9) started on August 22nd. A total of 402,058 m^3 was discharged during the quarter. On August 22nd, final effluent from Portage Attenuation Pond was toxic for Daphnia but not for Rainbow Trout. This toxicity is only a non-compliance under the NWB Water License. You will find in Appendix G the analysis certificate. No toxicity was observed in September and the discharge water quality is in compliance with the MMER and NWB License criteria.

Vault Lake Dewatering continued during the 3rd quarter. From July to September 1,975,079 m^3 of water was discharged into the receiving water (Wally Lake) for a total discharged to date of 2,019,694 m^3. A second pump for the Vault dewatering was started on August 6th and a third pump was started on September 29th. Daily and weekly monitoring samples were taken at the intake of the 3 pumps. There were no exceedences of either MMER or Type A Water License 2AM-MEA0815 criteria.

West and East diversion ditches were monitored for TSS during the quarter. Barriers and silt curtain were in place and adjusted accordingly to ensure no impacts in Third Portage Lake. Sample results indicate compliance with the Water License.

On September 27th, AEM provided 10 days' notice to the AANDC Water Inspector for the discharging of accumulated water from the Meadowbank mine site and the Baker Lake Tank Farms. AEM is still waiting for the results from the sampling before proceeding.

Three (3) CREMP monitoring events occurred during the quarter:

- From July 15th to July 21st;
- From August 19th to August 29th by Azimuth; and
- From September 18th to 30th.

Groundwater monitoring is almost completed. Two wells were sampled from August 19th to September 24th. The Environmental Department will continue the program by obtaining sample(s) from Portage Pit B drill holes when groundwater is encountered.

4.3 WILDLIFE MANAGEMENT

During the quarter, some wolverines, wolves, foxes, caribous and 1 Muskox were seen on site. No mortalities or high risk incidents were reported.

A lot of geese were observed in July around periphery of the mine due to the fall migration.

Falcons and offspring were observed in different quarries along the AWPR in July.

The Q2 Hunter Harvest Study was completed in Baker Lake on July 13th and 14th.

Vault Lake fishout began on July 19th and ended on September 24th, 2013. A total of 3,153 fish were collected for the entire project. As of September 24th, 56% of the catch was successfully placed into Wally Lake. Mortalities were sent to the community of Baker Lake. On September 20th, DFO verbally agreed that September 24th was the last day of the fishout. DFO agreed with this decision based on: the high effort that AEM made to remove and transfer fish, the success and the number of fish/ biomass predicted in the CPUE phase, and due to deteriorating weather and safety concerns for the crew. AEM was subsequently permitted to destroy fish by means other than fishing.

~~4.4~~ PERMITTING

AEM received approval from DFO to start full (2nd pump) dewatering of Vault Lake.

AEM sent correspondence to DFO requesting adjustments to the Letter of Credits on August 12th (Appendix H). This adjustment is based on the approved 2012 Meadowbank No Net Loss Plan Version 2 and a revised cost estimate in accordance with DFO authorizations NU 03.0191.3 and NU 03.0191.4. On September 26th, 2013, AEM received a letter from NIRB to advise that interested parties must provide their comments to the Board on AEM's proposed amendment of Authorization NU 03.0190 and NU 03.0191.4 before October 10th, 2013.

On September 3rd, AEM sent an email to DFO (Appendix I) to confirm that *DFO Protocol for Winter Water Withdrawal from Ice-Covered Waterbodies in the Northwest Territories and Nunavut* is being adhered to for EMR Lake and will be adhered to for the amended water withdrawal request for the Third Portage Lake intake.

The following reports were completed and submitted to regulators~~:~~

- Final Habitat Compensation Monitoring Program submitted to DFO on July 23rd;

- Payment for 2013 Annual Water compensation Fees sent to KIA;
- NWB monthly report;
- Tailings Storage Facility, Vault Dike, North Cell Diversion Ditches, Third Portage Lake and Wally Lake diffusor As-built report sent to NWB;
- Letter of credit sent to NTI regarding Vault Production Lease;
- Vault Lake Fishout update to DFO;
- Baker Lake Jet-A tanks registration (12 additional) on August 19th on the Environment Canada Website;
- Preliminary AEM report on Seepage Water from RSF;
- KIA Q2 2013 Production Report submitted;
- KIA Q2 2013 report detailing water usage and fees plus payment submitted;
- Environment Canada Q2 MMER via electronic database.

Appendix A

WATER USE INSPECTION REPORT FORM

Date: July 29th-30th, 2013	**Licensee Rep.** Jeffery Pratt -Environmental Coordinator, Kevin Buck- Environmental Superintendent
Licensee: Agnico-Eagle Mines Ltd. (AEM)	**Licence No: 2AM-MEA0815**

Comments: A compliance inspection was conducted on the 29th-30th of July, 2013. Jeffery Pratt, Environmental Coordinator accompanied Inspector C. Wilson and A. Shouldice on the inspection of the Meadowbank Gold Project.

Pre inspection compliance review
On July 14th, 2013 Jeffery Pratt provided a response to the inspection report from June 5th-6th. The following is a summary of actions taken by AEM in response to deficiencies identified in the June Inspection report.

- Construction report for Tailing Storage Facility (TSF), Vault Dike, and Diversion Ditches has been submitted to the Nunavut Water Board and the Inspector.
- Areas where tailings were spilled have been cleaned up, with all signs of tailings removed.
- Removal of contaminated soils from quarries 22 and 5 is complete. All contaminated soil has been secured inside the landfarm facility.
- Progress has been made on sorting and separating reject materials entering landfarm.
- Windblown garbage and debris around site has been reduced through a site cleanup initiative.

Outstanding items
- Contaminated soil piled against the rear wall of the landfarm containment berm. AEM has committed to pushing the piles back once the rear pile is aerated. This is an ongoing concern from inspections conducted in 2012, specifically with regards to the containment of contaminated water.
- A Remediation Plan for quarries 22 and 5 is to be submitted with the 2013 Annual Report.
- Removal of a silt curtain in Third Portage Lake. The Licensee informed the Inspector that a dive team has been contracted to complete this task before year end.

Below is a summary of a pre inspection meeting on July 29th, 2013. The attendees include Kevin Buck, Environmental Superintendent; Jeffery Pratt, Environmental Coordinator with Agnico-Eagle Mines Limited; and Erik Allain, Manager Field Operations; Peterloosie Papatsie, Student; Atuat Shouldice, Casual; and Christine Wilson, Water Resource Officer, with Aboriginal Affairs and Northern Development Canada (AANDC).

- Fish out program of Vault Lake started on July 19th, 2013. The end date is projected for mid-September with a total of 58% of all the fish transferred from Vault to Wally Lake.
- A total of 400 fish netted to date in Vault Lake.
- North South Consulting contracted to coordinate fish out program.
- AEM employees are taking part in the release of live fish; this is an environmental initiative to introduce mine employees to the marine life in the area.
- The first barge has arrived and departed from Baker Lake. In total four (4) barges are scheduled to service Meadowbank's shipping needs for this 2013 season.
- The last barge is scheduled to haul the hazardous waste from the site.
- The dust suppression fluid which was being applied to the airstrip is no longer authorized by the charter airline. AEM has return to the application of water before each landing.
- Dust sampling program is being completed this year and will be submitted with the annual report.
- Silt curtain removal has been approved for this year and will commence in 2013.
- Phase two of the Central Dike has been delayed due to unavailable resources.
- A total of ten (10) deposition points for tailings slurry are being utilized around the TSF.
- Non- contact water diversion ditches are completed around the tailings storage facility.

WATER SUPPLY

Source(s): Third Portage Lake	**Quantity used:** 985396m³
Owner:/Operator: Agnico-Eagle Mines Ltd.	

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: NI	**Storage Structure:** NI	**Treatment Systems:** NI	**Chemical Storage:** NI
Flow Meas. Device: NI	**Conveyance Lines:** NI	**Pumping Stations:** NI	**Screen :** NI

Comments:
- As of June 6th, 2013 total water volume consumed was 985396 m³. This is over the allowable limit by more than 250000 m³
- The Proponent foresaw overages in the annual water consumption due to a reduced amount of reclaim water available in the TSF. Tailings deposition was limited to one

side of the facility during the winter months causing a reduction in beaching which contributes to the available reclaim water. AEM applied in April 2013 to the Nunavut Water Board for an additional 1000000 m^3 to the total annual water volume. This amendment has not yet been approved by the Board, though the Proponent continues to exceed the licensed amount.
- Water volumes in 2013 have exceeded the licensed amount since May.

WASTE DISPOSAL
Comment:

Waste water
- A map detailing the sumps and pumping station routes was provided to the Inspector.
- A pipe noted during the last inspection was confirmed as a discharge line for seepage water from East Dyke sumps. AEM was approved to discharge the East Dyke seepage water back into Second Portage Lake in 2013. The Inspector was informed by AEM that this discharge location will not be utilized in 2013 as resources are unavailable for sampling.

Tailings and Rock Storage Facilities

Vault
- The construction of the Vault Dyke is complete.
- Waste rock is being sorted and deposited at the vault waste rock storage facility. The Inspector requested a map detailing the proposed monitoring locations within the Vault deposit area.

Portage
- Water reclaim barge continues to be offline in the North Cell of the TSF.
- At the rear of the PRSF an area is filled with potentially contact/tailings water; this water is red in colour, and very cloudy. A road constructed around the PRSF separates this water from a lake referred to as NP-2. This water in NP-2 which borders the PRSF shows signs of seepage from the PRSF contact water sump. Note: the water in NP-2 immediately adjacent to the PRSF contact water sump has white foam floating on top and a red colour of sedimentation on the shore. The vegetation around NP-2 Lake is brown and appears to be dead.
- Samples have been collected at the PRSF contact water sump and NP-2 Lake.
- Results from these samples confirmed that contact water has seeped into NP-2 Lake.
- The Licensee will report to the Nunavut Water Board detailing the entirety of the situation surrounding the seepage water before October 5th, 2013.
- All contact water is to be managed as prescribed in the Water Management Plan (WMP) in accordance with Part H item 19.

Contaminated Soils
- All soils from quarries 22 and 5 have been moved into the Landfarm facility.
- The remediation pilot project is underway; sewage sludge was added to the center of the piles after aeration.
- The Proponent has committed to submitting a Plan with the 2013 Annual report which will consider the measure that must be taken to clean up and monitor quarry 22 and 5.
- All waste water from the landfarm facilities are to be contained within the landfarm. Any discharge from this facility must meet ST-35 discharge limits for fecal coliforms.

Progressive Reclamation
- The Proponent is encouraged to continue to progressively reclaim old buildings, unused equipment and material. This will reduce overall reclamation at the end of mine.
- An additional area has been created in the PRSF to house non-potentially acid generating rock (NPAG) material which will cap the TSF during reclamation.
- The proponent continues to cap the PRSF with 4m of NPAG material which will reduce the amount of reclamation work required during closure activities.

Landfill
- Unacceptable material was found in the landfill; aerosol containers, domestic waste, and oily rags.
- The Proponent will police this facility and operate it as detailed in the Landfill Design and Management Plan.
- Failure to properly police the Land fill facility will result in additional monitoring which will require the logging and reporting of all materials entering the facility to ensure compliance with the criteria set out in the current authorization.

Sewage: Sewage Treatment System: BIODISK

Natural Water Body: Yes	**Continuous Discharge** (land or water)**:** Water	
Seasonal Discharge: NA	**Wetlands Treatment:** NA	**Trench:** None

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: NI	**Decant Structure:** NI	**Erosion:** NI
Discharge Meas. Device: NI	**Dyke Inspection:** NI	**Seepages:** NI
Dams, Dykes: NI	**Freeboard:** NI	**Spills:** NI
Construction: NI	**O&M Plan:** NI	**A&R Plan:** NI
Periods of Discharge: Cont	**Effluent Discharge Rate:** NI	

Comments:
During this inspection the Sewage Treatment System (STP) was not inspected.

FUEL STORAGE:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: NI	**Water within Berms:** NI	**Evidence of Leaks:** NA
Drainage Pipes: NI	**Pump Station & Catchments Berm:** NI	
Pipeline Condition: NI	**Condition of Tanks:** NI	

Comments:

Marshaling Facilities

- Expansion of the marshaling facilities tank farm is underway.
- The Inspector was informed by the Proponent that a small excavation that was noted in the 2012 inspection was due to the repair of a tear which occurred during general maintenance.

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected	**Owner /Operator:** Agnico-Eagle Mines Ltd.	
2	**AANDC:** 2	
Signs Posted: U	**SNP:** U	**Warning:** A
Records & Reporting: Annual Report submitted		
Geotechnical Inspection: To be completed in September of 2013		

Comments:

- Waste disposal facilities have been furnished with signage
- Sampling locations are lacking signage. This is ongoing from previous years. All sampling location will be fitted with signage before the November 1st, 2013. These locations will be photographed and logged for sampling consistency purposes and submitted to the Inspector before June 15, 2014.
- A review of the QA/QC and sampling collection protocols is recommended. Sampling and analysis of such samples will be a focus of the next Inspection.

General Comments:

- Quarry 23 is being used as a storage area for old or unused materials and equipment.
- This area is found to be in an unacceptable state; pieces of broken/burnt equipment are located throughout the quarry.
- All maintenance is to be completed in a designated area; many pieces of equipment have hydrocarbon staining beneath them and/or the batteries were found to still be attached. The Proponent will conduct these activities in accordance with Part H item 8.
- During the inspection it was noted that dust control measures needed to be deployed. The Proponent has provided to the Inspector with an account of the measures taken to suppress dust onsite. The results of the on-going dust monitoring program will be submitted to the Inspector before the date of the next inspection.
- Material used during the construction of the airstrip extension is noted along the shore of Third Portage Lake. This material if not to be utilized during construction must be removed before winter as this is considered waste.

Non-Compliance of Act or Licence:

Part H item (8): Failure to implement spill control measures
Part H item (19): Failure to carry out plans to their full extent

AEM is reminded of their duty to report to the Nunavut Water Board before October 5th, 2013 with regards to the situation surround the seepage water at ST-16.

Failure to undertake the actions required as described in this inspection report, and to the satisfaction of the Inspector, may result in enforcement action(s) being undertaken pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act.*

Christine Wilson
Inspector's Name

Inspector's Signature

Representative Name, Title

Representative Signature

Cc: Andrew Keim- A/Manager Field Operations
Cc: Erik Allain- Manager Field Operations
Cc: Phyllis Beaulieu – Manager Licensing- Nunavut Water Board

Contact Information:
Christine Wilson
Resource Management Officer
Aboriginal Affairs and Northern Development Canada
Building 918 – Box 100
Iqaluit, Nunavut XOA OHO
867-975-4296 Ph
867-979-6445 Fx
Christine.Wilson@aandc.gc.ca

Appendix B

From:	Kevin Buck
To:	Sophia Granchinho (sgranchinho@nirb.ca)
Cc:	Jeffrey Pratt; Marie-Pier Marcil
Subject:	Barrels at Landfill
Date:	September-15-13 5:47:54 PM
Attachments:	image005.png

Hi Sophia – I wanted to update you on the barrels observed at the MB landfill. Please note,

- The material in the barrels is wax generated by the explosive manufacturer on site. The material is a solid non-hazardous waste and is not regulated by WHMIS or TDGA
- The Nitrate prill previously used on site had a wax coating. When the prill is put into the process – basically added to water at 70 C temps, the wax melts and disassociates from the prill and floats to the top of the process tank. It is then skimmed off and put into the empty barrels and hardens (as wax does) as the temp cools. The contractor had contacted our department previously about this and we advised to try to re melt and get it out of the drums but it proved to difficult. It was deemed safe to put in the landfill. The barrels we observed represents two years of material.
- The contractor has since changed product source and the different product does not have this protective wax coating so there will be no more generated.
- So, the material is in solid form and not hazmat. And no more will be generated.
- There will be no environmental impact from this other than we are trying to recycle as much steel as possible.

I trust this satisfies your concern – if you have any additional questions feel free to contact me anytime

Regards,

Kevin Buck
Environmental Superintendent

kevin.buck@agnicoeagle.com

T: 819.759.3555 x6838
C: 819.856.1956

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

agnicoeagle.com

AGNICO EAGLE

Appendix C

June 15th Spill

Follow-up:

Tank overflowed due to fuel expansion caused by warmer weather.

Camp generators using this tank were not being used in the past months and tank was left full.

Final calculation of spilled quantity was at 210 liters after levels were measured and calculations done for expansion.

There were no off site impact or discharge to any receiving watercourse.

Clean-up:

Operations to empty tank were started immediately. A tanker was used to collect fuel and place in the Meadowbank main fuel tank. After waiting for crane operator availability, tank was lifted and moved to a temporary location.

Contaminated soil underneath tank was removed and brought to the landfarm. A total of 60 m^3 was collected and removed. Clean material was placed and compacted for stability. A membrane was also installed at a 12 inches depth to contain any future incident.

Preventive measure:

1) Procedure was revised to make sure all tanks are not filled over 90% of their capacity.
2) A visual warning will be installed at the tanks to remind refuelling staff of safe fill level and tank capacity.
3) Mill-Powerplant will check for possibility of installing a level meter on tank and link signal to main operating console. Alarm levels would then be available for monitoring.

Photos:

Appendix D

File No. 2AM-MEA0815 TR/G3

July 3, 2013

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 – Notice of Modification: East Dike Non-contact Seepage Water Discharge to Second Portage Lake

Dear Mr. Robert,

On April 23, 2013 the Nunavut Water Board (NWB or Board) received a submission from Agnico-Eagle Mines Ltd. (AEM) entitled "Meadowbank Water License 2AM-MEA0815 – East Dike Seepage Modification" with respect to the East Dike non-contact seepage water discharge. The following documents were included with the request:

- Cover letter dated April 22, 2013;
- East Dike Seepage – NWB; Application for a Type A Water Licence Modification dated April 4, 2013;
- Appendix A. Technical Memorandum: Discharge of Dike Seepage Water into Third Portage Lake and Second Portage Lake – Meadowbank Gold Project dated November 24, 2011 (Golder Associates 2011).

AEM is applying for a modification to the Type A Water License to include East Dike Seepage Water as Non-contact water effluent and to pump this water through a separate sump collection system and discharge pipe, back to Second Portage Lake prior to contact with mining activity.

AEM reports that receiving environment water from Second Portage Lake is presently seeping through the East Dike and is collected by two sumps prior to pumping to the Portage attenuation pond. Once this seepage water has been pumped to the Portage Attenuation Pond it is considered "contact water", as it is mixed with site run off and collection water from the Portage and Goose Pit. As per the site Water License, any water collected in the Attenuation Pond is treated (with all the attenuation water) through the site Water Treatment Plant prior to discharge to Third Portage Lake. In an effort to reduce freshwater consumption, Agnico-Eagle Mines (AEM) assessed whether the East Dike seepage water can be used for milling, progressive re-

flooding or dust suppression during operations. However, AEM states that this may not be feasible throughout the year as the volume of seepage from the East Dike is not large enough to successfully be pumped over long distances (i.e. to the mill). AEM is proposing to pump this water through a separate sump collection system and discharge pipe, back to Second Portage Lake prior to contact with mining activity (thus avoiding site contact water).

On May 21, 2013 the NWB distributed AEM's submission to interested parties for a thirty (30) day review. The NWB received comments from Aboriginal Affairs and Northern Development Canada[1] (AANDC) stating that the Department is not opposed to the submitted modification request and providing recommendations for the Board's consideration.

Upon review of the request, supporting documentation, terms and conditions in Licence 2AM-MEA0813 and submission from AANDC, the NWB hereby accepts the notice of Modification and approves (Motion No. 2013-A1-003) the proposed modification as presented in the April 23, 2013 notice and advises AEM that:

- The Seepage water should be directed to the Portage Attenuation Pond if the Licence criteria are not met;
- Once verified with Environment Canada (EC) AEM should provide the Board with written notification on whether or not the Metal Mining Effluent Regulations (MMER) will apply to this discharge;
- The discharge velocity should not exceed 6 m/s to promote mixing of seepage water and minimize the potential for lake-bottom erosion; and
- All associated Core Receiving Environmental Monitoring Program's (CREMP) water quality sampling results should be included within the annual monitoring reports.

The NWB would also like to highlight Licence conditions and requirements that apply to the proposed modification which include:

- Part F, Item 4 - Prior to discharge, all water collected within the Non-Contact Water diversions during Operations at monitoring stations ST-5, ST-6, and ST-7, shall not exceed the following:

Parameter	Maximum Average Concentration (mg/L)	Maximum Allowable Grab Sample Concentration (mg/L)
TSS	15.0	30.0

- Part F, Item 8 - The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned Discharges from any facilities. The notice shall include an estimated volume proposed for Discharge and the receiving location.

[1] Letter and Technical Memorandum from D. Abernethy AANDC, to P. Beaulieu NWB. Re: Water Licence No. 2AM-MEA0815 – Meadowbank Gold Project – Agnico-Eagle Mines Ltd. – East Dike Seepage Modification Request, dated June 21, 2013.

- Part G, Item 4 - The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

Should you have any questions or require any clarification with respect to the above, please feel free to contact the undersigned at (867) 360-6338 ext. 35 or by email at k.kharatyan@nunavutwaterboard.org or David Hohnstein, Director Technical Services at (780) 443-4406 or by email at dts@nunavutwaterboard.org.

Sincerely,

Original Signed By:

Karen Kharatyan
Technical Advisor

Attachment: Comments AANDC

Cc: Distribution list - Kivalliq

Appendix E

Environment Canada Environnement Canada

Environmental Protection Operations Directorate
123 Main Street, Suite 150
Winnipeg, Manitoba
R3C 4W2

August 7, 2013

Mr. Stephane Robert
Manager Regulatory Affairs
Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0

Dear Mr. Robert,

Re: Meadowbank Mine – East Dike Seepage Water

This letter is in response to your letter to Ian Rumbolt, Enforcement Officer with Environment Canada, dated July 9, 2013 seeking clarification from Environment Canada regarding the application of the *Metal Mining Effluent Regulations* (MMER) to discharge waters from non-contact East Dike seepage.

In your letter, you state that Agnico Eagle Mines (AEM) submitted a modification request pursuant to the Type A Water License Part F Item 4 to the Nunavut Water Board (NWB) on April 23rd, 2013. In the modification application, AEM proposed to collect East Dike Seepage Water and pump it through a separate sump collection system and discharge pipe back to Second Portage Lake.

Environment Canada has determined that the effluent resulting from the discharge of the East Dike seepage is subject to the requirements of the MMER.

Please note that, as specified in section 10 of the MMER:

> (1) The owner or operator of a mine shall submit in writing to the authorization officer the information required by section 9, for
>
> (a) any final discharge point that is identified by an inspector, and that was not identified as required by section 9, within 30 days after the discharge point is identified; and
>
> (b) each new final discharge point, at least 60 days before depositing effluent from that new final discharge point.
>
> (2) The owner or operator shall submit in writing to the authorization officer the information on any proposed change to a final discharge point at least 60 days before the change is to be made.

Also note that sampling required for the Environmental Effects Monitoring (EEM) program under the MMER will need to be reviewed to ensure compliance. Please contact Ms. Shelly Boss by email at shelly.boss@ec.gc.ca or by phone (780) 951-8754 if you have any questions on the EEM requirements.

For any questions please do not hesitate to contact Mr. Reg Ejeckam (Mining Project Officer) by telephone at (204) 984-3522, or e-mail at reg.ejeckam@ec.gc.ca .

Sincerely,

Cheryl Baraneicki
Regional Director
MMER Authorization Officer

cc: Ian Rumbolt, Enforcement Officer, EC
Chris Doiron, Manager, Mining Section, Mining, EC
Reg Ejeckam, Mining Projects Officer, EC
Shelly Boss, A/Senior EEM Coordinator, EC
Kevin Buck, Environmental Superintendent, AEM
Marie-Pier Marcil, Sr. Technical Compliance, AEM

Appendix F

AGNICO EAGLE

MEADOWBANK MINE

Preliminary AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16

SEPTEMBER 2013

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1. **Issue**

During an AANDC Water License inspection on July 29th and 30th 2013 it was observed that “red” colored seepage from the south - east side of the Waste Rock Storage Facility was seeping through the road perimeter into Lake NP-2. Samples were taken by both the Inspector and AEM staff (split sample). Analysis results from this sampling were received by AEM on August 16th, 2013. See Photos 1 and 2 below and Table 1.

Photo 1 – Shore of NP-2

Photo 2 – ST-16 Waste Rock seepage.

Table 1 – Historical ST-16 Results

Parameters	Date / Units	ST-16 Average 2011	ST-16 Average 2012	ST-16 11/06/2013	ST-16 04/07/2013	ST-16 Split 30/07/2013	ST-16 Split AANDC Result 30/07/2013
*pH		6.49	7.30	6.45	7.21		7.20
*Turbidity	NTU	17	34		17		123
*Conductivity	us/cm		154	420	1485		4510
Alkalinity	mg CaCo3/L	34	67	46	89	272	162
Aluminum	mg/L	0.159	0.513		0.464	0.042	0.045
Dissolved Aluminium	mg/L				0.027	< 0.006	
Ammonia	mgN/L	0.07	0.03	< 0.05	0.20	1.20	
Ammonia-nitrogen	mgN/L		0.22	0.45	7.80	34.00	
Total Dissolved Solids	mg/L	55	175	37	969	3792	
Total Suspended Solids	mg/L						50
Arsenic	mg/L	0.0020	0.0045	0.0029	0.0091	0.0139	0.0083
Dissolved As	mg/L				0.0031	0.0058	
Barium	mg/L	0.0095	0.0196		0.0741	0.1414	0.1480
Dissolved Barium	mg/L				0.0558	0.1433	
Cadmium	mg/L	0.00060	0.00004		0.00014	0.00065	0.00020
Dissolved Cadmium	mg/L				0.0001	0.0007	
Chloride	mg/L	2	3		15	450	192
Chromium	mg/L		0.0048		0.0034	0.0011	0.0010
Copper	mg/L	0.0017	0.0046	0.0028	2.3110	2.0380	3.3500
Dissolved Copper	mg/L				1.909	1.712	
Fluoride	mg/L	0.106	0.098		0.110	0.290	
Hardness	mg CaCO3/L	62	59		361	1417	1020
Iron	mg/L	1.21	1.94		1.60	4.40	21.90
Dissolved Iron	mg/L				0.17	0.06	
Lead	mg/L	0.0010	0.0056	< 0.0003	0.0015	0.0013	< 0.0001
Dissolved Lead	mg/L				< 0.0003	< 0.0003	
Manganese	mg/L	0.588	0.961		2.447	6.370	5.850
Dissolved Manganese	mg/L				2.110	6.055	
Mercury	mg/L	0.00062	0.00007		< 0.00010	0.00005	0.00015
Dissolved Mercury	mg/L				< 0.0001	< 0.0001	
Molybdenum	mg/L	0.001	0.001		0.026	0.170	0.083
Dissolved Molybdenum	mg/L				0.0204	0.1773	
Nickel	mg/L	0.0339	0.0395	0.0069	0.5149	2.0150	1.3300
Dissolved Nickel	mg/L				0.415	1.810	
Nitrate	mg/L	0.17	0.34		8.10	37.80	23.70
Selenium	mg/L	0.002	0.001		0.007	0.020	0.013
Dissolved Selenium	mg/L				0.005	0.023	

Silver	mg/L	0.0006	0.0049								0.0056
Dissolved Silver	mg/L					<	0.0002		0.0019		
Sulphate	mg/L	24	9				406		2400		1450
Thallium	mg/L	0.0025	0.0025			<	0.0050	<	0.0050	<	0.0001
Dissolved Thallium	mg/L					<	0.005	<			
Zinc	mg/L	0.005	0.008	<	0.001		0.010		0.009	<	0.005
Dissolved Zinc	mg/L						0.003		0.008		
Calcium (Ca)	mg/L										312
Magnesium (Mg)	mg/L										60
Potassium (K)	mg/L										88
Sodium (Na)	mg/L										590
Cesium	mg/L										0.0009
Rubidium	mg/L										0.0687
Ortho-Phosphate as Phosphorus	mg/L										
Antimony (Sb)	mg/L						0.0004		0.0012		0.0007
Boron (B)	mg/L						0.04		0.15		
Beryllium (Be)	mg/L					<	0.0005	<	0.0005	<	0.0001
Cobalt (Co)	mg/L						0.0729		0.3114		0.2290
Lithium (Li)	mg/L					<	0.005		0.006		0.004
Tin (Sn)	mg/L					<	0.001	<	0.001		
Strontium (Sr)	mg/L						0.44		2.14		1.40
Tianium (Ti)	mg/L						0.1300		0.5500		0.0007
Uranium (U)	mg/L						0.034		0.170		0.115
Vanadium (V)	mg/L					<	0.0005	<	0.0005		0.0011
Nitrite	mg/L						0.07		0.41		

2. Background Information

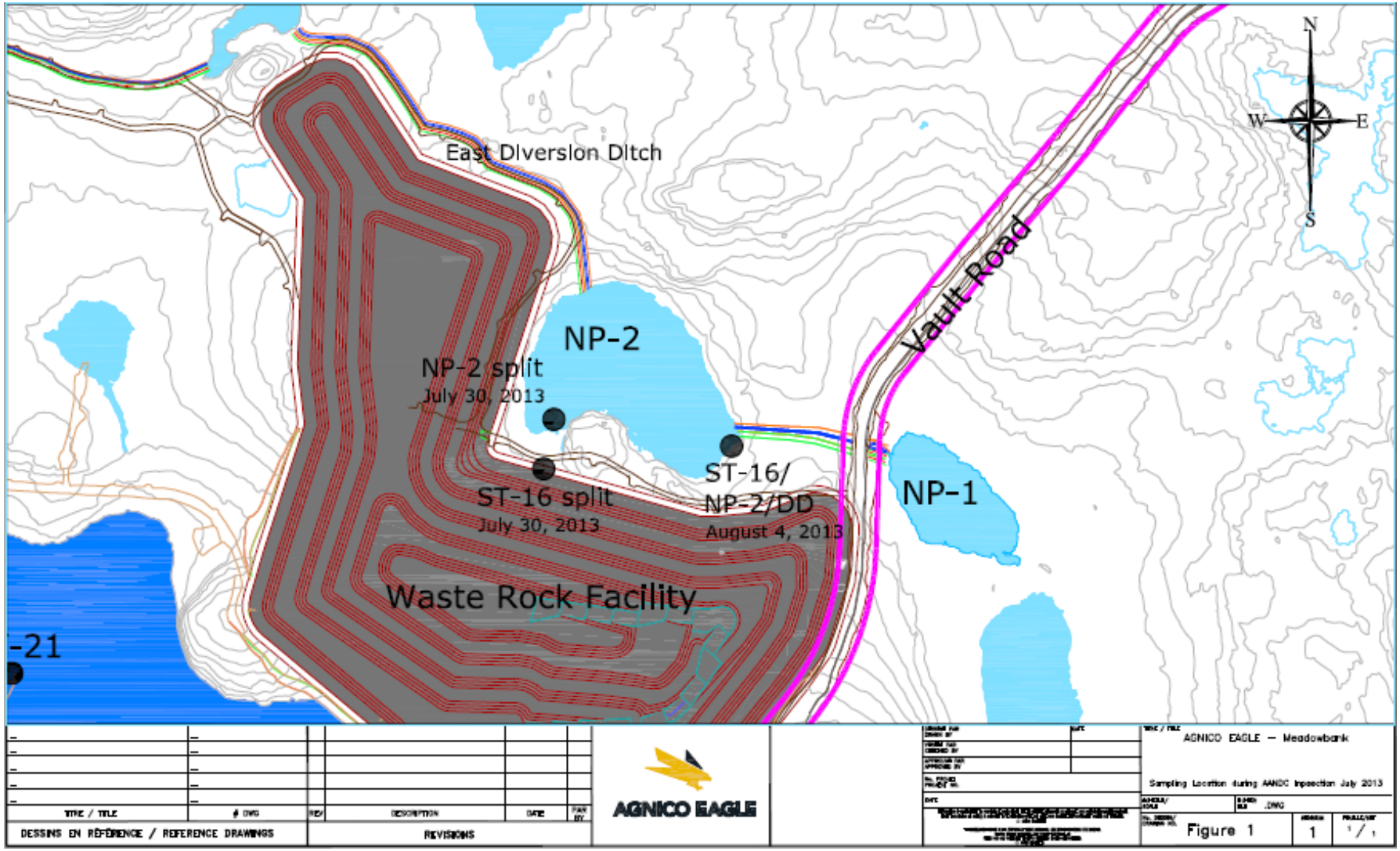
Historically, this “red” coloured water had not been observed previously at this location. The water was typically brown colored, indicative of freshet water which is usually impounded by the road and the waste rock. In the spring of 2012, a crushed NPAG rock road was constructed to isolate the sump from NP-2. Results from 2012 and initially in 2013 indicated that the water quality was good with no elevated copper or nickel and typical of freshet surface water quality (see Table 1 above). Based on the June water quality results and historical results in ST-16, AEM continued to monitor the sump as per the Type A water license.

In 2012 the construction of the East and West Diversion ditches was completed. These ditches are designed to keep freshet surface drainage from contacting the Waste Rock Storage Facility and the Tailings Storage Facility (TSF). The East ditch flows through Lakes NP- 2 and connects to Lake NP-1. After freshet there is little turnover in these lakes and the only inflows and outflows would be rainwater (See Figure 1). The ditches ensure that the water levels in these lakes do not rise and overflow into active mine areas such as the Waste Rock Facility and TSF.

In June 2013 we observed the normal brown color in the seep area initially up until approximately July 26th and 27th when the colour had changed to “red”. This is indicative of iron precipitate. The normal procedure is to have site water trucks pump out the seepage and deposit either in the TSF or use as dust suppressant in the mine pit only. Sample results from July 4th indicated that copper and nickel were elevated. This was an anomaly and our plan was to verify with the next sampling results (August 4th). There was no confirmed indication of actual seepage migrating through the perimeter road to Lake NP-2 until the red coloured seepage appeared around July 26th and 27th. At that point the red could be observed along the shoreline in NP-2. This was confined to the near shore and not in the main part of the lake. It was not observed at the exit of Lake NP-2. Removal of the seep water had previously commenced and was continuing at this point in time. **There was and has been no fish mortalities observed to date.**

As mentioned the AANDC inspector was on site July 29th and 30th, 2013 and split samples were taken. The seepage was evident in the Lake, along the near shore only (see photo 2), and we increased the removal of the seep water from the ST-16 sample location. Please see Figure 1 below for sample locations.

Figure 1 – Sampling Location during AANDC Inspection July 2013



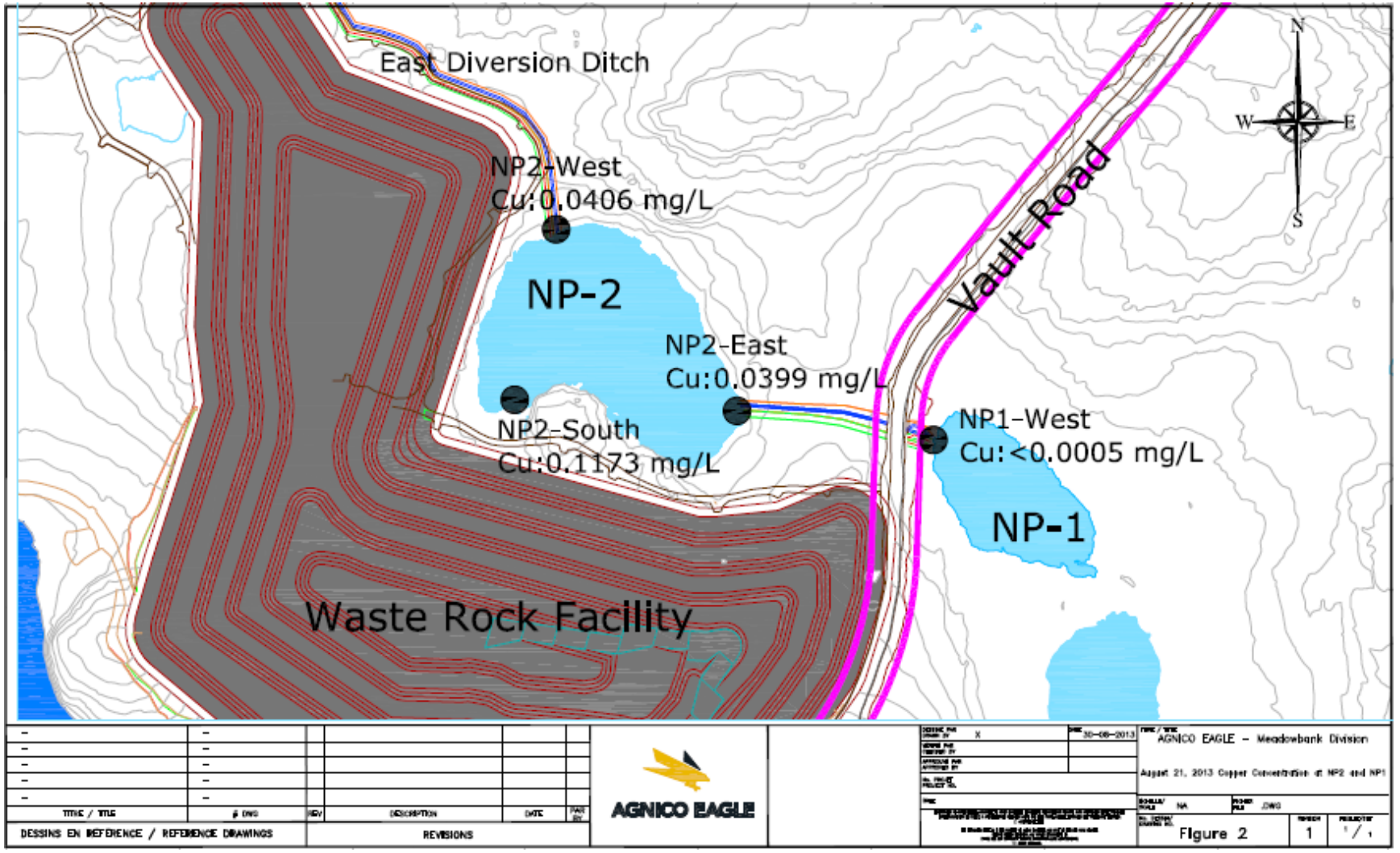
By August 4th AEM had lowered the level in the seepage area to the point where it was felt that the seepage through the road had stopped. Pumping of the sump continued and is still ongoing. Also on August 4th a sample was taken in NP-2 at the East end of the Lake in an area that exhibited clear water – see Figure 1 location.

On August 16th results were received from the sampling conducted with AANDC (see Table 1 above for results) and the certificates are attached as Appendix 1. The copper, nickel, iron, manganese and sulphate were elevated. A preliminary investigation was launched by the Environment and Engineering Departments. Pumping of the seep water continued and all of this water was directed to the TSF. On August 19th the results from AEM's August 4th sample in NP-2 Lake at the East end were received and this too indicated elevated copper at a level of 0.1713 mg/l which exceeded the CCME criteria for Protection of Aquatic Life. All of this information was forwarded to the AANDC Inspector including all analysis results.

The investigation at this time was centered on seepage from the waste rock, specifically from the PAG material. Some waste rock at the site contains copper, iron and sulphides which could explain the elevated values observed in the sample results. This was not observed historically at this site. The main immediate action was to keep the waste rock seepage pumped down to prevent migration through the road into NP-2 Lake.

Further monitoring for copper only was undertaken in NP-2 Lake on August 21st, 2013. Results were received on August 24th and are indicated on Figure 2 below. The level had dropped significantly at NP-South, East and West and was not detected in NP-1 Lake. This was an indication that the seepage to the Lake had stopped due to pumping.

Figure 2 – August 21, 2013 Copper Concentration at NP-2 and NP-1



The investigation continued and a Plug/Dike design request to prevent any seepage from migrating through the road to NP-2 Lake was submitted to AEM's Engineering Department. A design was produced (see Figure 3 below). This was an additional measure taken to augment the pumping of the seep water. Construction of the Waste Rock Plug commenced on August 26th, 2013. Also, it was observed, after the pumping out of the water to a low level, that water was still seeping from the waste rock and this included two distinct areas in close proximity (approximately 15 m apart) to each other. One was "red" colored and the other "brown" - see photos 3 and 4 below.

Figure 3 – Plug Design

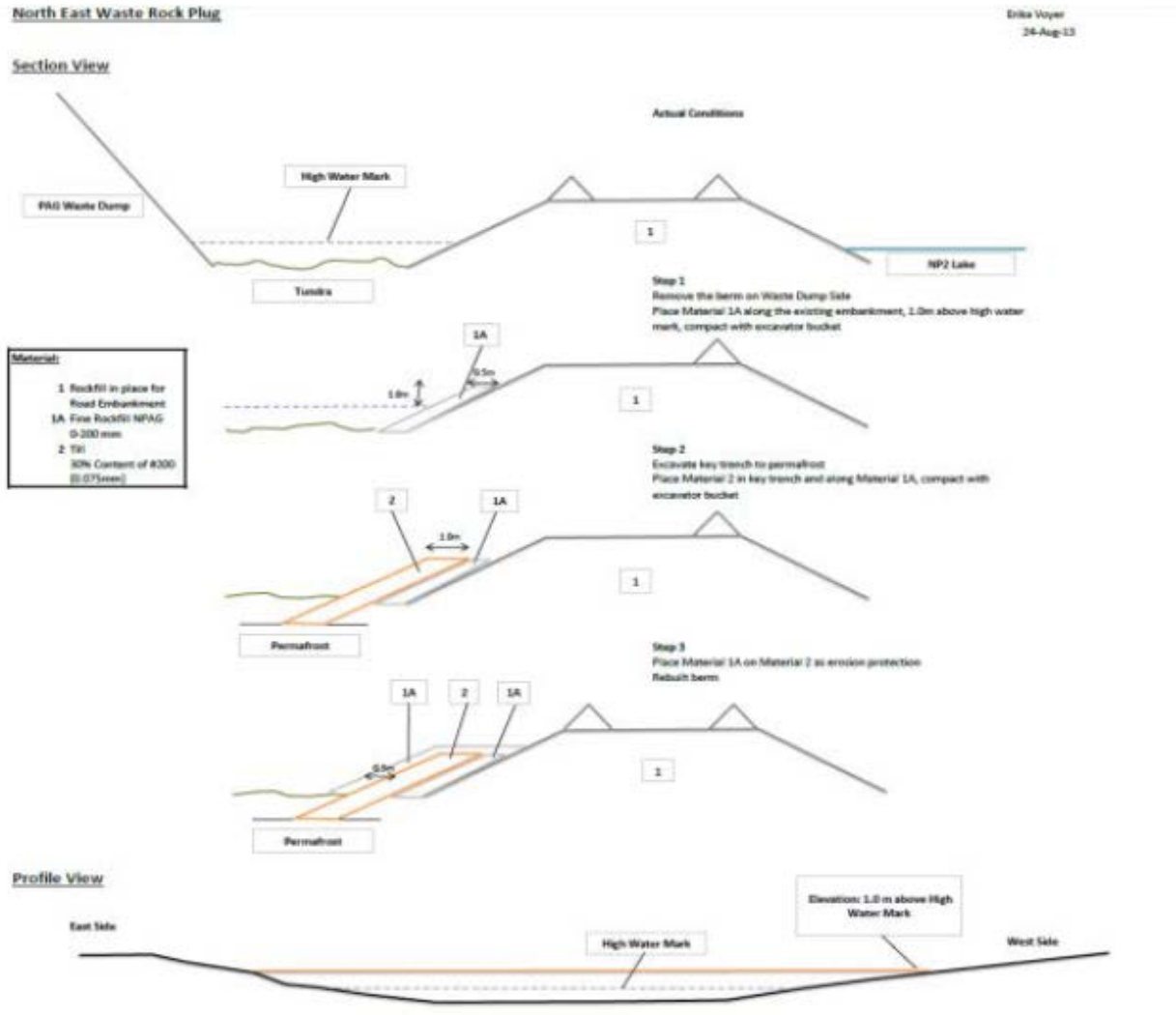


Photo 3 – Brown seepage

Photo 4 – Red seepage

A staff gauge has been placed at the seepage to determine the water level increases more definitively – see photo 5 below.

Photo 5 – Seepage Staff Gauge

On August 27th two Inspectors from AANDC and two Inspectors from Environment Canada attended the Meadowbank site and conducted sampling at the seep – ST-16 and at four locations around NP-2 Lake. AEM took duplicate samples during this visit. The construction project of the Waste Rock Plug had started and was being conducted during the visit. As previously stated AEM was of the opinion that the seepage through the road had stopped by August 21st.

Concurrent to the inspection, the preliminary investigation had determined that there was a hydraulic gradient that existed between the TSF reclaim water level and NP-2 Lake. The TSF water level was at elevation 145.7 m and NP-2 Lake was at elevation 141.2 m. Upon examining a topographical photo prior to mine development there was an indication that the former watercourse connecting the seep area to the North West Arm Second Portage Lake (now the TSF) could act as a conduit under the waste rock to the seep area – see photo 6 below. After conducting a comparison analysis of sample results in the TSF (sample station ST-21) several similarities became evident. Notably this included copper, nickel, chloride, sulphate, hardness – see comparison Table 2 below. AEM determined that is was possible that the TSF reclaim water could be migrating through the former water course to the seep area at a location along RF 1 rockfill road (TSF perimeter structure). This is the suspected migration route.

Table 2 – Comparison between ST-21 and ST-16

Parameters	Date / Units	ST-21 Average 2013	ST-21 04/07/2013	ST-16 Split 30/07/2013	30/07/2013 Split AANDC Result
*pH		8.95	8.28		7.20
*Turbidity	NTU	20	9		123
*Conductivity	us/cm				4510
Alkalinity	mg CaCo3/L	116	127	272	162
Aluminum	mg/L	0.409	0.409	0.042	0.045
Dissolved Aluminium	mg/L	0.124	0.152	< 0.006	
Ammonia	mgN/L	25.70		1.20	
Ammonia-nitrogen	mgN/L	31.9	17.6	34.0	
Total Dissolved Solids	mg/L	3504	1988	3792	
Total Suspended Solids	mg/L				50
Arsenic	mg/L	0.0208	0.0208	0.0139	0.0083
Dissolved As	mg/L	0.0129	0.0137	0.0058	
Barium	mg/L	0.0598	0.0598	0.1414	0.1480
Dissolved Barium	mg/L	0.0936	0.0465	0.1433	
Cadmium	mg/L	0.00043	0.00043	0.00065	0.00020
Dissolved Cadmium	mg/L	0.00203	0.00035	0.0007	
Chloride	mg/L	1129	292	450	192
Chromium	mg/L	0.0007	0.0007	0.0011	0.0010
Copper	mg/L	0.6531	0.6531	2.0380	3.3500
Dissolved Copper	mg/L	10.8004	0.3915	1.712	
Fluoride	mg/L	3.36	0.26	0.290	
Hardness	mg CaCO3/L	1454	662	1417	1020
Iron	mg/L	0.56	0.56	4.4	21.9
Dissolved Iron	mg/L	0.71	< 0.01	0.06	
Lead	mg/L	0.0045	0.0045	0.0013	< 0.0001
Dissolved Lead	mg/L	0.0019	< 0.0003	< 0.0003	
Manganese	mg/L	0.5164	0.5164	6.370	5.850
Dissolved Manganese	mg/L	0.0839	0.4254	6.055	
Mercury	mg/L	0.000005	< 0.00001	0.00005	0.00015
Dissolved Mercury	mg/L	0.00015	< 0.0001	< 0.0001	
Molybdenum	mg/L	0.2041	0.2041	0.170	0.083
Dissolved Molybdenum	mg/L	0.372	0.171	0.1773	
Nickel	mg/L	0.1204	0.1204	2.0150	1.3300
Dissolved Nickel	mg/L	0.1638	0.0962	1.810	
Nitrate	mg/L	15.6	12.2	37.8	23.7
Selenium	mg/L	0.012	0.012	0.020	0.013
Dissolved Selenium	mg/L	0.021	0.010	0.023	
Silver	mg/L				0.0056
Dissolved Silver	mg/L	0.0067	< 0.0002	0.0019	
Sulphate	mg/L	2268	1085	2400	1450

Thallium	mg/L	0.0025	<	0.0050	<	0.0050	< 0.0001
Dissolved Thallium	mg/L	0.01	<	0.01			
Zinc	mg/L	0.006		0.006		0.009	< 0.005
Dissolved Zinc	mg/L	0.0865		0.004		0.008	
Calcium	mg/L						312
Magnesium	mg/L						60
Potassium	mg/L						88
Sodium	mg/L						590
Cesium	mg/L						0.0009
Rubidium	mg/L						0.0687
Antimony	mg/L	0.0014		0.0014		0.0012	0.0007
Boron	mg/L					0.15	
Beryllium	mg/L	0.00025	<	0.0005	<	0.0005	< 0.0001
Cobalt	mg/L					0.3114	0.2290
Lithium	mg/L	0.0025	<	0.005		0.006	0.004
Tin	mg/L	0.0005	<	0.001	<	0.001	
Strontium	mg/L	0.798		0.798		2.14	1.40
Titanium	mg/L	0.2900		0.2900		0.5500	0.0007
Uranium	mg/L	0.009		0.009		0.170	0.115
Vanadium	mg/L	0.00025	<	0.0005	<	0.0005	0.0011
Nitrite	mg/L	0.25		0.31		0.41	

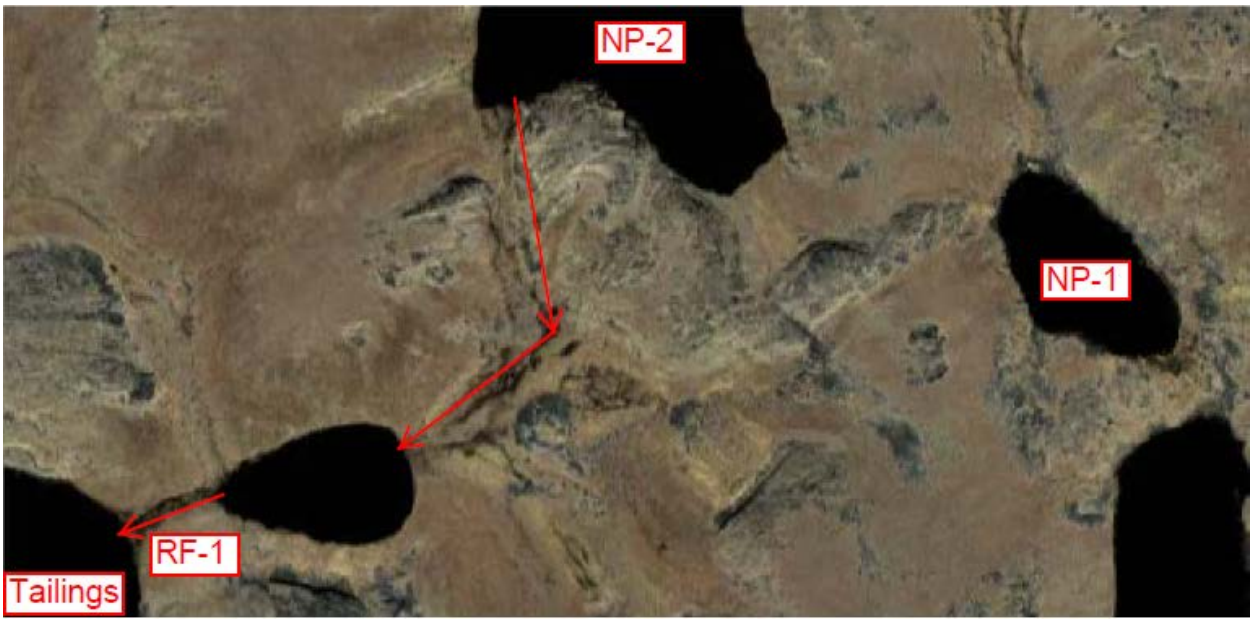


Photo 6 – Topography prior to mine development

Construction of the Waste Rock Plug was completed on September 1st. The seep areas are segregated and have been kept at low levels – see photo 7 below.

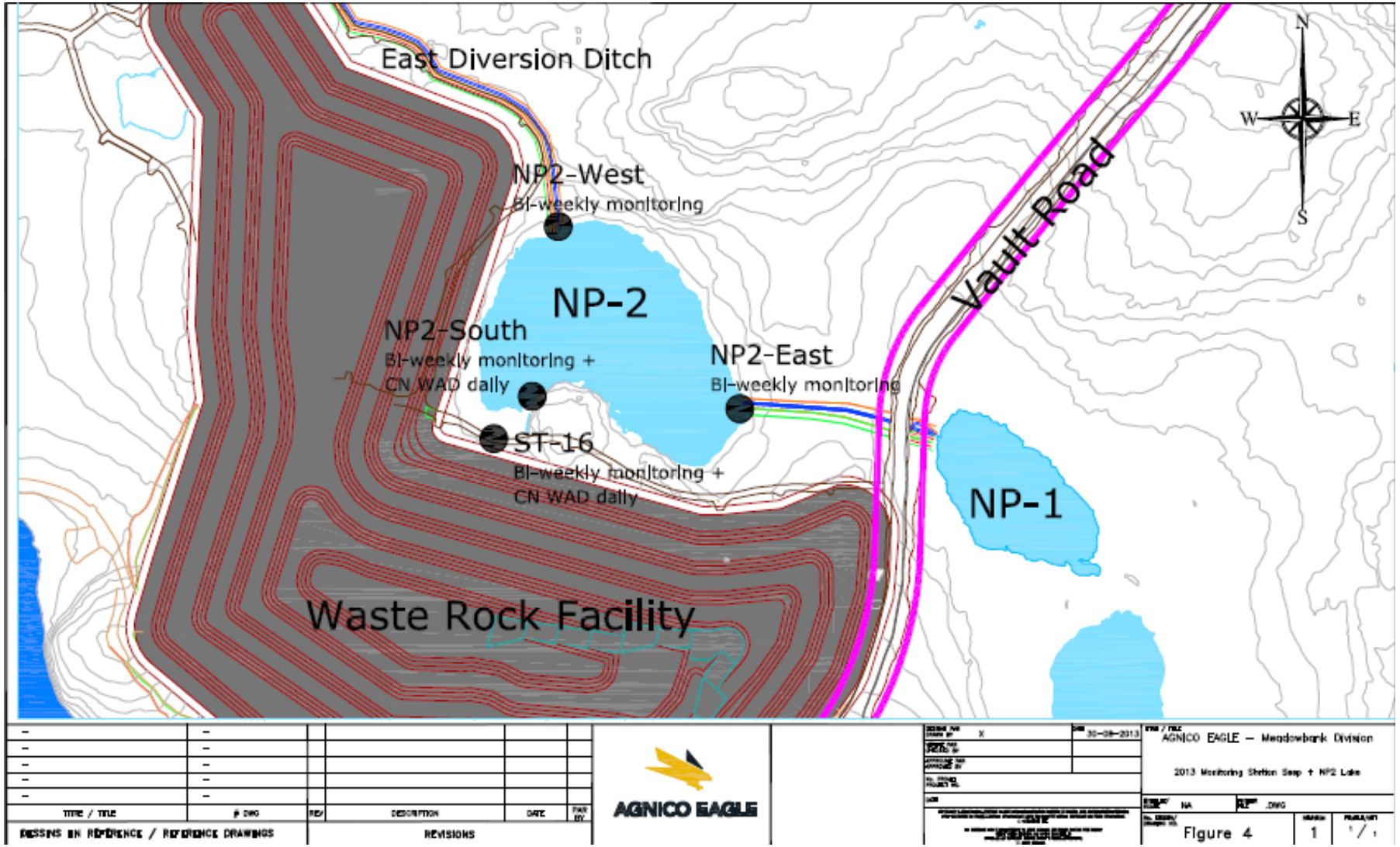
Photo 7 – Construction of Waste Rock Plug

3. Measures Taken/Action Plan

- Upon first noting the "red" seep water in NP-2 Lake (approximately July 26th) and after the initial AANDC inspection of July 30th AEM increased pumping of the seep water to prevent migration through the road. The seeps will be monitored daily and pumped out accordingly – daily if necessary;
- After receiving the sample analysis results from July 30th sampling conducted with the AANDC Inspector indicating elevated copper, nickel, etc. an investigation was started to determine the source of these metals. There was no previous history of this. Initially AEM concentrated on the waste rock properties and possible seepage of PAG rock;
- By August 28th, after noting a hydraulic gradient between the TSF and NP-2 Lake, the fact that a former watercourse connected the two areas (RF-1 and ST-16) under the Waste Rock Facility and the results of a comparative analysis of sample results from the TSF (ST-21) and the ST-16 seep area it was determined that it was possible for TSF reclaim to migrate to the seep area;
- A short term monitoring program was implemented (See Figure 4). The short term monitoring program includes daily monitoring of CN WAD using our on site assay laboratory at the seep areas ST-16 and in NP-2 Lake South location. In addition we will sample ST-16, NP-2 South, East and West bi weekly for total and dissolved metals, general chemistry as well as total and free cyanide (Group 2 and 3 of our NWB Water License parameters). Phaser Lake will be sampled also as an external reference; background samples for most metals were taken in 2003;
- A Waste Rock Plug/Dike was designed and constructed (commencing August 26th), under the supervision of the AEM Engineering Department, along the perimeter road to prevent any further seepage to Lake NP-2. This was completed on September 1st. A complete construction report and as-built drawing will be prepared;
- A staff gauge was placed in the seeps to better determine the seepage inflow;
- An internal SOP was completed (see Appendix 2) to ensure that seeps are pumped in a timely manner at the commencement of freshet and kept at a low level;
- Tailing deposition will be concentrated along the rockfill road in the area where the former watercourse was located to a level higher than the current water level in the TSF. This will direct the water away from the suspected migration route toward the reclaim barge and act as a plug. This commenced on September 2nd; and

- AEM has submitted (on September 2nd) a request for proposal from a third party engineering firm to assess why this seepage has occurred, verify the pathway under the waste rock storage area, if there any additional short term measures that can be implemented, further suggestions for management of freshet, whether an engineered collection and sump system is required for the seepage area, an evaluation of the seepage risk in the TSF and provision of recommendations for a permanent solution.

Figure 4 – Short term monitoring stations



4. Conclusion

AEM has completed a preliminary investigation into the discharge of seepage from the Waste Rock Storage Area in the location of sampling station ST-16 and determined that this material has likely seeped through the perimeter road into NP-2 Lake (fish bearing). Further to this, it appears likely that the seepage source is possibly reclaim water from the TSF migrating under the waste rock pile to ST-16 and subsequently through the perimeter road to NP-2 Lake. The seepage water at the ST-16 location has been kept to a low level and is checked daily.

Measures were implemented to stop the seepage to NP- 2 Lake and prevent it from re-occurring (Waste Rock Plug installation). Tailings deposition was changed on September 2nd to an area where the seepage is thought to be migrating. This action will also assist in pushing the water away from the rockfill perimeter structure and act as an additional “plug”.

A third party engineering firm was requested, on September 2nd, to submit a proposal to provide further assessment and recommendations, including whether additional permanent structures are required to correct this problem.

AEM is of the opinion that appropriate corrective and preventive measures have been undertaken in the short term to isolate the seepage and protect the receiving environment. For the longer term AEM plans to assess the findings of the third party engineering firm and submit any additional actions that are necessary.

APPENDIX 1
Results from the sampling conducted with AANDC

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-28320

Sampling location: SW-6(S-RSF) split (ST-6)
Sampling date: July 30, 2013

Sample name: SW-6(S-RSF) split (ST-6)
Sampling hour: N/D

Sampled by: Jeff Pratt
Date received: July 31, 2013

Matrix: Water

Drinking water distribution:

Reported on: August 16, 2013

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.

Sauf indication contraire, tous les échantillons ont été reçus en bon état.
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Analytical Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Alkalinity	272 mg CaCO3/L	M-TIT-1.0	August 01, 2013
Aluminium (Al)	0.042 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Aluminium (Al)	<0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Antimony (Sb)	0.0012 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Silver (Ag)	0.0019 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Arsenic (As)	0.0139 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Arsenic (As)	0.0058 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia nitrogen (NH3-NH4)	34 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Barium (Ba)	0.1414 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Barium (Ba)	0.1433 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Beryllium (Be)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Boron (B)	0.15 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cadmium (Cd)	0.00065 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Cadmium (Cd)	0.00065 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Chloride	450 mg/L	Sous-traitance\Multilab Direct	August 01, 2013
Chrome (Cr)	0.0011 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cobalt (Co)	0.3114 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Copper (Cu)	2.038 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Copper (Cu)	1.712 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Hardness	1417 mg CaCO3/L	Sous-traitance\Multilab Direct	August 05, 2013
Tin (Sn)	<0.001 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Iron (Fe)	4.4 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Iron (Fe)	0.06 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Fluoride (F)	0.29 mg/L	Sous-traitance\Multilab Direct	August 08, 2013
Lithium (Li)	0.006 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Manganese (Mn)	6.370 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Manganese (Mn)	6.055 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Mercury (Hg)	0.00005 mg/L	Sous-traitance\Multilab Direct	August 02, 2013
Dissolved Mercury (Hg)	<0.0001 mg/L	Sous-traitance\Multilab Direct	August 15, 2013
Molybdenum (Mo)	0.1704 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Molybdenum (Mo)	0.1773 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia (NH3)	1.2 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Nickel (Ni)	2.015 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Nickel (Ni)	1.810 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Nitrate (NO3)	37.8 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Nitrite (NO2)	0.41 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Lead (Pb)	0.0013 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Selenium (Se)	0.02 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Selenium (Se)	0.023 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

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Analytical Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Dissolved Solids	3792 mg/L	M-TIT-1.0	August 01, 2013
Strontium (Sr)	2.14 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Sulfate (SO4)	2400 mg SO4/L	Sous-traitance\Multilab Direct	August 05, 2013
Thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Dissolved thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Titanium (Ti)	0.55 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Uranium (U)	0.17 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Vanadium (V)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Zinc (Zn)	0.009 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Zinc	0.008 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Multilab DIRECT

Detection limit

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Alkalinity	2	mg CaCO3/L	M-TIT-1.0	
Aluminium (Al)	0.006	mg/L	Sous-traitance	
Dissolved Aluminium (Al)	0.006	mg/L	Sous-traitance	
Antimony (Sb)	0.0001	mg/L	Sous-traitance	Yes
Dissolved Silver (Ag)	0.0002	mg/L	Sous-traitance	
Arsenic (As)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Arsenic (As)	0.0005	mg/L	Sous-traitance	
Ammonia nitrogen (NH3-NH4)	0.01	mg N/L	Sous-traitance	Yes
Barium (Ba)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Barium (Ba)	0.0005	mg/L	Sous-traitance	
Beryllium (Be)	0.0005	mg/L	Sous-traitance	
Boron (B)	0.01	mg/L	Sous-traitance	Yes
Cadmium (Cd)	0.00002	mg/L	Sous-traitance	Yes
Dissolved Cadmium (Cd)	0.00002	mg/L	Sous-traitance	
Chloride	0.5	mg/L	Sous-traitance	Yes
Chrome (Cr)	0.0006	mg/L	Sous-traitance	Yes
Cobalt (Co)	0.0005	mg/L	Sous-traitance	
Copper (Cu)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Copper (Cu)	0.0005	mg/L	Sous-traitance	
Hardness	1	mg CaCO3/L	Sous-traitance	
Tin (Sn)	0.001	mg/L	Sous-traitance	Yes
Iron (Fe)	0.01	mg/L	Sous-traitance	Yes
Dissolved Iron (Fe)	0.01	mg/L	Sous-traitance	
Fluoride (F)	0.02	mg/L	Sous-traitance	Yes
Lithium (Li)	0.005	mg/L	Sous-traitance	
Manganese (Mn)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Manganese (Mn)	0.0005	mg/L	Sous-traitance	
Mercury (Hg)	0.00001	mg/L	Sous-traitance	Yes
Dissolved Mercury (Hg)	0.0001	mg/L	Sous-traitance	
Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	
Ammonia (NH3)	0.05	mg N/L	Sous-traitance	
Nickel (Ni)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Nickel (Ni)	0.0005	mg/L	Sous-traitance	
Nitrate (NO3)	0.01	mg N/L	Sous-traitance	Yes
Nitrite (NO2)	0.01	mg N/L	Sous-traitance	Yes
Lead (Pb)	0.0003	mg/L	Sous-traitance	Yes
Dissolved Lead (Pb)	0.0003	mg/L	Sous-traitance	
Selenium (Se)	0.001	mg/L	Sous-traitance	Yes
Dissolved Selenium (Se)	0.001	mg/L	Sous-traitance	

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Detection limit

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Dissolved Solids	1	mg/L	M-TIT-1.0	
Strontium (Sr)	0.005	mg/L	Sous-traitance	
Sulfate (SO4)	1	mg SO4/L	Sous-traitance	Yes
Thallium (Tl)	0.005	mg/L	Sous-traitance	
Dissolved thallium (Tl)	0.005	mg/L	Sous-traitance	
Titanium (Ti)	0.01	mg/L	Sous-traitance	
Uranium (U)	0.001	mg/L	Sous-traitance	
Vanadium (V)	0.0005	mg/L	Sous-traitance	Yes
Zinc (Zn)	0.001	mg/L	Sous-traitance	Yes
Dissolved Zinc	0.001	mg/L	Sous-traitance	

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Alkalinity mg CaCO3/L	Standard name	STD alcalinité
	Result	158
	Accuracy	91%
	Limit	123 - 167
Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23m
	Result	5.77
	Accuracy	93.2%
	Limit	5.26 - 7.12
Dissolved Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23
	Result	6.22
	Accuracy	99.5%
	Limit	5.26 - 7.12
Antimony (Sb) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-23m
	Result	0.1885
	Accuracy	85.3%
	Limit	0.188 - 0.254
Dissolved Silver (Ag) mg/L	Blank	<0.0002
Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.3401
	Accuracy	79.8%
	Limit	0.198 - 0.368
Dissolved Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.3176
	Accuracy	95.5%
	Limit	0.236 - 0.372
Ammonia nitrogen (NH3-NH4) m	Blank	<0.01
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	2.146
	Accuracy	89.4%
	Limit	2.0 - 2.8

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Dissolved Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	2.254
	Accuracy	93.9%
	Limit	2.04 - 2.76
Beryllium (Be) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.591
	Accuracy	93.6%
	Limit	1.4 - 2.0
Boron (B) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	2.5
	Accuracy	86.8%
	Limit	2.45 - 3.31
Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23m
	Result	0.91111
	Accuracy	98.8%
	Limit	0.8 - 1.0
Dissolved Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23
	Result	0.87322
	Accuracy	97%
	Limit	0.8 - 1.0
Chloride mg/L	Blank	<0.5
	Standard name	DMR-0446-2013-CL
	Result	100
	Accuracy	99%
	Limit	87 - 111
Chrome (Cr) mg/L	Blank	<0.0006
	Standard name	DMR-0311-2013-23m
	Result	4.064
	Accuracy	99.7%
	Limit	3.44 - 4.66
Cobalt (Co) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.643
	Accuracy	94.7%
	Limit	1.33 - 1.79

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.404
	Accuracy	86.8%
	Limit	1.05 - 1.43
Dissolved Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.301
	Accuracy	95.1%
	Limit	1.05 - 1.43
Tin (Sn) mg/L	Blank	<0.001
Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	11.6
	Accuracy	89.5%
	Limit	8.9 - 12.1
Dissolved Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23
	Result	10.4
	Accuracy	99%
	Limit	8.9 - 12.1
Fluoride (F) mg/L	Blank	<0.02
	Standard name	DMR-0446-2013-12-F
	Result	2.9
	Accuracy	94.8%
	Limit	2.83 - 3.29
Lithium (Li) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	0.863
	Accuracy	97.3%
	Limit	0.714 - 0.966
Manganese (Mn) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	3.956
	Accuracy	97.5%
	Limit	3.28 - 4.44
Dissolved Manganese (Mn) mg/l	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	3.675
	Accuracy	95.2%

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Limit	3.28 - 4.44
Mercury (Hg) mg/L	Blank	<0.00001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.00418
	Accuracy	95.5%
	Limit	0.003 - 0.005
Dissolved Mercury (Hg) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.0032
	Accuracy	80%
	Limit	0.003 - 0.005
Molybdenum (Mo) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.6781
	Accuracy	96.2%
	Limit	0.599 - 0.811
Dissolved Molybdenum (Mo) mg	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.6419
	Accuracy	91%
	Limit	0.599 - 0.811
Ammonia (NH3) mg N/L	Blank	<0.05
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.232
	Accuracy	91%
	Limit	0.96 - 1.30
Dissolved Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.147
	Accuracy	92.5%
	Limit	1.05 - 1.43
Nitrate (NO3) mg N/L	Blank	<0.01
	Sample duplicate	37.8-35.3
Nitrite (NO2) mg N/L	Blank	<0.01
	Standard name	DMR-0446-2013-NO2

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Result	2.5
	Accuracy	99.2%
	Limit	2.14 - 2.90
	Sample duplicate	0.41-0.40
Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23m
	Result	0.9249
	Accuracy	97.2%
	Limit	0.8 - 1.0
Dissolved Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23
	Result	0.9053
	Accuracy	99.4%
	Limit	0.8 - 1.0
Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	1.46
	Accuracy	91.9%
	Limit	1.15 - 1.55
Dissolved Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	1.39
	Accuracy	97%
	Limit	1.15 - 1.55
Strontium (Sr) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	1.25
	Accuracy	99.2%
	Limit	1.05 - 1.43
Sulfate (SO4) mg SO4/L	Blank	<0.6
	Standard name	DMR-0446-2013-SO4
	Result	117
	Accuracy	93.6%
	Limit	99 - 121
Thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Dissolved thallium (Tl) mg/L	Blank	<0.005

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Titanium (Ti) mg/L	Blank	<0.01
Uranium (U) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	2.01
	Accuracy	85.1%
	Limit	1.49 - 2.01
Vanadium (V) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.950
	Accuracy	98%
	Limit	1.69 - 2.29
Zinc (Zn) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	5.07
	Accuracy	87.6%
	Limit	3.83 - 5.19
Dissolved Zinc mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	4.78
	Accuracy	94%
	Limit	3.83 - 5.19

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Additional information

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6)
Sampling location: SW-6(S-RSF) split (ST-6)
Sampling date: July 30, 2013
Sampling hour: N/D

Lab method	Method reference
M-TIT-1.0	MA.303-Titr Auto 2.0
M-MET-3.0	MA.200-Mét. 1.2
M-NH3-2.0	MA.300-N 2.0
M-CL-2.0	MA.300-Ions 1.3
M-CI-1.0	MA.300-Anions 1.0
M-NITR-2.0	MA.300-NO3 2.0
M-Lix-1.0	MA.100-Lix.com. 1.1
M-SULF-2.0	MA.300-Ions 1.3

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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-28321

Sampling location:	NP2 split	Sampling date:	July 30, 2013
Sample name:	NP2 split	Sampling hour:	15:00
Sampled by:	Jeff Pratt	Date received:	July 31, 2013
Matrix:	Waste Water		

Drinking water distribution:

Reported on: August 16, 2013

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.

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Analytical Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Result	Method name	Analysis date
Alkalinity	177 mg CaCO3/L	M-TIT-1.0	August 01, 2013
Aluminium (Al)	0.024 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Aluminium (Al)	<0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Antimony (Sb)	0.0004 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Silver (Ag)	0.0024 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Arsenic (As)	0.0068 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Arsenic (As)	0.0022 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia nitrogen (NH3-NH4)	27.4 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Barium (Ba)	0.1419 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Barium (Ba)	0.1329 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Beryllium (Be)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Boron (B)	0.09 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cadmium (Cd)	0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Cadmium (Cd)	0.00022 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Chloride	587 mg/L	Sous-traitance\Multilab Direct	August 01, 2013
Chrome (Cr)	<0.0006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cobalt (Co)	0.2515 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Copper (Cu)	3.261 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Copper (Cu)	2.949 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Hardness	1031 mg CaCO3/L	Sous-traitance\Multilab Direct	August 05, 2013
Tin (Sn)	<0.001 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Iron (Fe)	23.6 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Iron (Fe)	0.15 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Fluoride (F)	0.02 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Lithium (Li)	0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Manganese (Mn)	6.464 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Manganese (Mn)	5.427 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Mercury (Hg)	0.00002 mg/L	Sous-traitance\Multilab Direct	August 02, 2013
Dissolved Mercury (Hg)	<0.0001 mg/L	Sous-traitance\Multilab Direct	August 15, 2013
Molybdenum (Mo)	0.0871 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Molybdenum (Mo)	0.0716 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia (NH3)	0.14 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Nickel (Ni)	1.465 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Nickel (Ni)	1.246 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Nitrate (NO3)	23.5 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Nitrite (NO2)	0.4 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Selenium (Se)	0.014 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Selenium (Se)	0.014 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Analytical Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Result	Method name	Analysis date
Dissolved Solids	2854 mg/L	M-TIT-1.0	August 01, 2013
Strontium (Sr)	1.62 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Sulfate (SO4)	1546 mg SO4/L	Sous-traitance\Multilab Direct	August 05, 2013
Thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Dissolved thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Titanium (Ti)	0.39 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Uranium (U)	0.144 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Vanadium (V)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Zinc (Zn)	0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Zinc	0.007 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Multilab DIRECT

Detection limit

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Value	Unit	Method	Accreditation
Alkalinity	2	mg CaCO3/L	M-TIT-1.0	
Aluminium (Al)	0.006	mg/L	Sous-traitance	
Dissolved Aluminium (Al)	0.006	mg/L	Sous-traitance	
Antimony (Sb)	0.0001	mg/L	Sous-traitance	Yes
Dissolved Silver (Ag)	0.0002	mg/L	Sous-traitance	
Arsenic (As)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Arsenic (As)	0.0005	mg/L	Sous-traitance	
Ammonia nitrogen (NH3-NH4)	0.01	mg N/L	Sous-traitance	Yes
Barium (Ba)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Barium (Ba)	0.0005	mg/L	Sous-traitance	
Beryllium (Be)	0.0005	mg/L	Sous-traitance	
Boron (B)	0.01	mg/L	Sous-traitance	Yes
Cadmium (Cd)	0.00002	mg/L	Sous-traitance	Yes
Dissolved Cadmium (Cd)	0.00002	mg/L	Sous-traitance	
Chloride	0.5	mg/L	Sous-traitance	Yes
Chrome (Cr)	0.0006	mg/L	Sous-traitance	Yes
Cobalt (Co)	0.0005	mg/L	Sous-traitance	
Copper (Cu)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Copper (Cu)	0.0005	mg/L	Sous-traitance	
Hardness	1	mg CaCO3/L	Sous-traitance	
Tin (Sn)	0.001	mg/L	Sous-traitance	Yes
Iron (Fe)	0.01	mg/L	Sous-traitance	Yes
Dissolved Iron (Fe)	0.01	mg/L	Sous-traitance	
Fluoride (F)	0.02	mg/L	Sous-traitance	Yes
Lithium (Li)	0.005	mg/L	Sous-traitance	
Manganese (Mn)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Manganese (Mn)	0.0005	mg/L	Sous-traitance	
Mercury (Hg)	0.00001	mg/L	Sous-traitance	Yes
Dissolved Mercury (Hg)	0.0001	mg/L	Sous-traitance	
Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	
Ammonia (NH3)	0.05	mg N/L	Sous-traitance	
Nickel (Ni)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Nickel (Ni)	0.0005	mg/L	Sous-traitance	
Nitrate (NO3)	0.01	mg N/L	Sous-traitance	Yes
Nitrite (NO2)	0.01	mg N/L	Sous-traitance	Yes
Lead (Pb)	0.0003	mg/L	Sous-traitance	Yes
Dissolved Lead (Pb)	0.0003	mg/L	Sous-traitance	
Selenium (Se)	0.001	mg/L	Sous-traitance	Yes
Dissolved Selenium (Se)	0.001	mg/L	Sous-traitance	

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Detection limit

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Value	Unit	Method	Accreditation
Dissolved Solids	1	mg/L	M-TIT-1.0	
Strontium (Sr)	0.005	mg/L	Sous-traitance	
Sulfate (SO4)	1	mg SO4/L	Sous-traitance	Yes
Thallium (Tl)	0.005	mg/L	Sous-traitance	
Dissolved thallium (Tl)	0.005	mg/L	Sous-traitance	
Titanium (Ti)	0.01	mg/L	Sous-traitance	
Uranium (U)	0.001	mg/L	Sous-traitance	
Vanadium (V)	0.0005	mg/L	Sous-traitance	Yes
Zinc (Zn)	0.001	mg/L	Sous-traitance	Yes
Dissolved Zinc	0.001	mg/L	Sous-traitance	

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Courriel:
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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Alkalinity mg CaCO3/L	Standard name	STD alcalinité
	Result	158
	Accuracy	91%
	Limit	123 - 167
Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23m
	Result	5.77
	Accuracy	93.2%
	Limit	5.26 - 7.12
Dissolved Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23
	Result	6.22
	Accuracy	99.5%
	Limit	5.26 - 7.12
Antimony (Sb) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-23m
	Result	0.1885
	Accuracy	85.3%
	Limit	0.188 - 0.254
Dissolved Silver (Ag) mg/L	Blank	<0.0002
Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.3401
	Accuracy	79.8%
	Limit	0.198 - 0.368
Dissolved Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.3176
	Accuracy	95.5%
	Limit	0.236 - 0.372
Ammonia nitrogen (NH3-NH4) m	Blank	<0.01
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	2.146
	Accuracy	89.4%
	Limit	2.0 - 2.8

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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Dissolved Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	2.254
	Accuracy	93.9%
	Limit	2.04 - 2.76
Beryllium (Be) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.591
	Accuracy	93.6%
	Limit	1.4 - 2.0
Boron (B) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	2.5
	Accuracy	86.8%
	Limit	2.45 - 3.31
Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23m
	Result	0.91111
	Accuracy	98.8%
	Limit	0.8 - 1.0
Dissolved Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23
	Result	0.87322
	Accuracy	97%
	Limit	0.8 - 1.0
Chloride mg/L	Blank	<0.5
	Standard name	DMR-0446-2013-CL
	Result	100
	Accuracy	99%
	Limit	87 - 111
Chrome (Cr) mg/L	Blank	<0.0006
	Standard name	DMR-0311-2013-23m
	Result	4.064
	Accuracy	99.7%
	Limit	3.44 - 4.66
Cobalt (Co) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.643
	Accuracy	94.7%
	Limit	1.33 - 1.79

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Quality control Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.404
	Accuracy	86.8%
	Limit	1.05 - 1.43
Dissolved Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.301
	Accuracy	95.1%
	Limit	1.05 - 1.43
Tin (Sn) mg/L	Blank	<0.001
Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	11.6
	Accuracy	89.5%
	Limit	8.9 - 12.1
Dissolved Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23
	Result	10.4
	Accuracy	99%
	Limit	8.9 - 12.1
Lithium (Li) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	0.863
	Accuracy	97.3%
	Limit	0.714 - 0.966
Manganese (Mn) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	3.956
	Accuracy	97.5%
	Limit	3.28 - 4.44
Dissolved Manganese (Mn) mg/l	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	3.675
	Accuracy	95.2%
	Limit	3.28 - 4.44
Mercury (Hg) mg/L	Blank	<0.00001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.00418
	Accuracy	95.5%

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Multilab DIRECT

Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
	Limit	0.003 - 0.005
Dissolved Mercury (Hg) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.0032
	Accuracy	80%
	Limit	0.003 - 0.005
Molybdenum (Mo) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.6781
	Accuracy	96.2%
	Limit	0.599 - 0.811
Dissolved Molybdenum (Mo) mg	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.6419
	Accuracy	91%
	Limit	0.599 - 0.811
Ammonia (NH3) mg N/L	Blank	<0.05
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.232
	Accuracy	91%
	Limit	0.96 - 1.30
Dissolved Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.147
	Accuracy	92.5%
	Limit	1.05 - 1.43
Nitrate (NO3) mg N/L	Blank	<0.01
Nitrite (NO2) mg N/L	Blank	<0.01
	Standard name	DMR-0446-2013-NO2
	Result	2.5
	Accuracy	99.2%
	Limit	2.14 - 2.90
Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23m
	Result	0.9249

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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
	Accuracy	97.2%
	Limit	0.8 - 1.0
Dissolved Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23
	Result	0.9053
	Accuracy	99.4%
	Limit	0.8 - 1.0
Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	1.46
	Accuracy	91.9%
	Limit	1.15 - 1.55
Dissolved Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	1.39
	Accuracy	97%
	Limit	1.15 - 1.55
Strontium (Sr) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	1.25
	Accuracy	99.2%
	Limit	1.05 - 1.43
Sulfate (SO4) mg SO4/L	Blank	<0.6
	Standard name	DMR-0446-2013-SO4
	Result	117
	Accuracy	93.6%
	Limit	99 - 121
Thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Dissolved thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Titanium (Ti) mg/L	Blank	<0.01
Uranium (U) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m

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Quality control Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Vanadium (V) mg/L	Result	2.01
	Accuracy	85.1%
	Limit	1.49 - 2.01
	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
Zinc (Zn) mg/L	Result	1.950
	Accuracy	98%
	Limit	1.69 - 2.29
	Blank	<0.001
	Standard name	DMR-0311-2013-23m
Dissolved Zinc mg/L	Result	5.07
	Accuracy	87.6%
	Limit	3.83 - 5.19
	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	4.78
	Accuracy	94%
	Limit	3.83 - 5.19

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Additional information

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Lab method	Method reference
M-TIT-1.0	MA.303-Titr Auto 2.0
M-MET-3.0	MA.200-Mét. 1.2
M-NH3-2.0	MA.300-N 2.0
M-CL-2.0	MA.300-Ions 1.3
M-CI-1.0	MA.300-Anions 1.0
M-NITR-2.0	MA.300-NO3 2.0
M-Lix-1.0	MA.100-Lix.com. 1.1
M-SULF-2.0	MA.300-Ions 1.3

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APPENDIX 2

SOP: Management of Water in Diversion Ditches, Seeps, and Collection Locations during Freshet

Water Management in Diversion Ditches, Seeps, and Collection Locations during Freshet

PROCEDURE NUMBER:			MBK-ENV-0006
People concerned	Mine, Dikes, Engineering and Environment	**Prepared by**	**Jeffrey Pratt** **Environmental Coordinator**
		Authorized by	**Kevin Buck** **Environmental Superintendent**
Effective :	**September 4, 2013**	***"Safety First, Safety Last … Safety Always!"*** ***"No Repeats" – Our Stepping Stone to ZERO HARM***	
This procedure corresponds to the required minimum standard. Each and everyone also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.			

Objective:

This procedure is put in place to give specific dates in which actions must be taken to avoid excess non-contact water impacting on site mining activity, and also to prevent excessive pooling of contact water that could lead to a release of contact water off the mine site. This procedure will keep the project in conformance with NWB license, Part D, Item 33; Part E, Item 9.

Concerned departments:

Environment

Mine

Engineering

Dyke and Dewatering

Risks/ Impacts Legend

Health & Safety

Process/quality

Costs

Environment

Management of Water in Diversion Ditches, Seeps, and Collection Locations during Freshet

Procedure	*Risks / Impacts*
Diversion Ditches	
1. No later than May 1, all diversion ditches must be cleaned free of ice and snow to allow freshet melt water to flow freely and prevent any obstructions within the diversion ditches.	Avoid Environmental Impact Avoid Excess water on Mine Site
2. Culverts under Vault road are to be steamed, if necessary, to free ice obstructions.	Avoid Environmental Impact Avoid Excess water on Mine Site and road wash out
3. Starting May 1 commence monitoring water moving through the diversion ditch system. Sampling for TSS must be completed by Environment Department, and shall initiate as soon as water flowing.	Avoid Environmental Impact
4. If TSS levels are elevated Sediment control measures must be put in place. This may include installation of silt fence, or turbidity barrier. To be conducted by Environment staff	Avoid Environmental Impact

Seep and Collection Locations	
1. May 1st begin weekly inspections of seep areas and melt water collection locations. As per NWB license, Part E, Item 9.	 Avoid Environmental Impact Avoid Excess water on Mine Site
2. At first sign of melt water collection, contact Environment Department. It will need to be determined if the water requires analysis prior to movement.	 Avoid Environmental Impact Avoid Excess water on Mine Site
3. At first sign of melt water arrange with Mine or Dyke and Dewatering to begin removing water from seep and collection locations. Be sure to get an approved disposal location from the Environment Department.	 Avoid Environmental Impact
4. Any movement of water must be recorded. Quantity of water moved and location water is drawn and dispensed must be recorded.	Required for Reporting to Government Agencies
5. All actions listed in this SOP are required corrective measures to mitigate any impacts related to surface drainage resulting from the Project's activities on off site receiving waters. As per NWB license, Part D, Item 33.	 Avoid Environmental Impact

Appendix G

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Certificate of Analysis

Request number: **13-557226**

Date Received: 2013-08-26

Date Certificate Issued: 2013-09-11

Certificate Version: 1

☑ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

MULTI-LAB DIRECT - Rouyn

125 BOUL. INDUSTRIEL
ROUYN-NORANDA, Québec, Canada
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Telephone : (819) 797-0550
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P.O. Number	Your project ID.	Project Manager
NA	29057	M. Roger Turmel

Comments

This version replaces and cancels all earlier version.

NA : Information Not Available

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Results pertain only to the samples submitted for analysis.

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Certificate of Analysis

Client: **MULTI-LAB DIRECT - Rouyn**

Request Number: 13-557226

P.O. Number	Your Project ID.	Project Manager
NA	29057	M. Roger Turmel

Sample(s)

Lab. No.		**2423442**
Your Reference		29057-ST-9/MMER
Matrix		Water
Sampled by		M. Martin theriault et M. samu
Site sampled		Meadowbank
Date sampled		2013-08-22
Date received		2013-08-26

Parameter(s)

Method Reference		
Résultats toxicité truite	Preparation	-
QE006-01 (Accredited)	Analysis	-
	Sequential No.	NA
LC50-96h	% v/v	>100
% mortality at 100% v/v	% mort 96h	NA
CI 95% lower		NA
CI 95% upper		NA
Code Statistical method		AUCUN
Toxic units	U.T.	<1.0
Conclusion		Not lethal
Analysis details		APPENDIX
Résultats toxicité daphnie	Preparation	-
QE007-01 / QE008-01 (Accredited)	Analysis	-
	Sequential No.	NA
LC50-48h	% v/v	77.1
% mortality at 100% v/v	% mort 48h	NA
CI 95% lower		67.2
CI 95% upper		88.4
Code Statistical method		TRISK
Toxic units	U.T.	1.3
Conclusion		Lethal
Analysis details		APPENDIX

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Certificate of Analysis

Client: **MULTI-LAB DIRECT - Rouyn**

Request Number: 13-557226

P.O. Number	Your Project ID.	Project Manager
NA	29057	M. Roger Turmel

Sample(s)

Lab. No.	**2423442**
Your Reference	29057-ST-9/MMER
Matrix	Water
Sampled by	M. Martin theriault et M. samu
Site sampled	Meadowbank
Date sampled	2013-08-22
Date received	2013-08-26

Parameter(s)

Method
Reference

Comments:

2423442 29057-ST-9/MMER Daphnia - Type d'essai : CL50, Truites - Type d'essai : CL50

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Saint-Augustin-de-Desmaures laboratory.

Linda Bouchard, biologist

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Results pertain only to the samples submitted for analysis.

Appendix

Client: MULTI-LAB DIRECT **Request number:** 13-557226

BIOASSAY Rainbow trout

Lab. No:	2423442	**Sampling method:**	Grab
Your reference:	29057-ST-9/MMER	**Date sampled (date and hour):**	2013-08-22
Matrix:	Water	**Date received (date and hour):**	2013-08-26 08:00:00
Sampled by:	M. Martin theriault et M. samuel Tapp	**State of sampled received:**	Conform
Site sampled:	Meadowbank		

Date and hour start analysis (0hrs): 2013-08-27 13:00 **Date and hour end analysis (96hrs):** 2013-08-31 13:00

Analysed by: JB

Organisms:	***Oncorhynchus mykiss*** ; Acclimation: ≥ 2 weeks % mortality 7 days before test:<1		
Lot #:	PAV130726		
Average weight of control fish (g):	0.37	**Minimum:** 0.28	**Maximum:** 0.51
± std. dev.:	0.08		
Average fork length of control fish (mm):	35.8	**Minimum:** 32	**Maximum:** 40
± std. dev.:	2.7		
Number of fish/container:	10		
Loading density (g/L):	0.37		
Volume of test solutions (L):	10		
Height of test solutions (cm):	22		
Photoperiod:	16hrs light / 8hrs darkness		
Dilution water:	Dechlorinated municipal water		
Pre-aeration of sample:	30 minutes		
Pre-aeration and aeration rate (mL/min/L ±1):	6.5		
Pre-treatment of sample:	NA		
Protocol / Reference method:	SPE1/RM/13, 2000, mod. 05/2007 No modification to protocol		

sample concentration (% v/v)	number of fish 0 hrs	volume (L)	atypical or stressed 96hrs (number)	atypical or stressed 96hrs (%)	mortality 96hrs (number)	mortality 96hrs (%)	temperature (°C)		pH		dissolved oxygen (mg/L)		conductivity (µS/cm)
							0hrs	96hrs	0hrs	96hrs	0hrs	96hrs	0hrs
0.00	10	10	0	0	0	0	15.6	15.4	7.7	7.8	9.5	9.2	287
6.25	10	10	0	0	0	0	15.0	15.4	7.8	7.7	9.2	9.9	355
12.50	10	10	0	0	0	0	14.9	15.4	7.9	7.7	9.7	9.5	421
25.00	10	10	0	0	0	0	14.8	15.4	8.0	7.7	9.8	9.4	567
50.00	10	10	0	0	0	0	14.9	15.4	7.9	7.8	9.7	9.1	844
100.0	10	10	0	0	1	10	15.6	15.4	7.7	7.8	9.3	9.3	1335
Sample characteristics before analysis			**Appearance**				15.9		7.2		8.5		1321
			Clear										

Reference assay (Phenol)		**Geometric average:**	9.100
Reference assay date:	2013-08-23	**Lower control limit:**	6.580
LC50-96h (mg/L of Phenol):	10.00	**Upper control limit:**	11.62
Lower C.I. at 95%:	9.080		
Lower C.I. at 95%:	11.00		

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The above-mentionned samples will be retained for a period of 30 days following the issue of this certificate with the exception of microbiology samples or as instructed by the client. Results pertain only to the samples submitted for analysis.

Appendix

Client: MULTI-LAB DIRECT **Request number:** 13-557226

BIOESSAI *Daphnia magna*

Lab. No:	2423442	**Sampling method:**	Grab
Your reference:	29057-ST-9/MMER	**Date sampled (date and hour):**	2013-08-22
Matrix:	Water	**Date received (date and hour):**	2013-08-26 08:00:00
Sampled by:	M. Martin theriault et M. samuel Tapp	**State of sampled received:**	Conform
Site sampled	Meadowbank		

Date and hour start analysis (0hrs): 2013-08-26 16:00 **Date and hour end analysis (48hrs):** 2013-08-28 16:00

EC50-48h (% v/v): 70.7
Lower C.I. at 95%: 50
Upper C.I. at 95%: 100
Calculation method: Binomiale

Analysed by: JG

Organisms: *Daphnia magna* (<24 heures)
<1% of mortality of brood stock 7 days before test
Average number of neonates per brood: 20
Age at first brood (days): 7
Number of Daphnia/container: 10
Loading density (mL/Daphnia): 30
Volume of test solutions (mL): 300
Photoperiod: 16hrs light / 8hrs darkness
Dilution water: Dechlorinated municipal water, hardness adjusted
Culture and dilution water hardness (mg/L CaCO3): 172
Pre-aeration of sample: 0 minute
Pre-aeration rate (mL/min/L ±1): NA
Sample hardness (mg/L CaCO3): 380
Sample hardness adjusted (mg/L CaCO3): NA
Pre-treatment of sample: NA
Protocol / Reference method: SPE1/RM/14, 2000
No modification to protocol

sample concentration (% v/v)	number of Daphnia 0hrs	immobility 48hrs (number)	immobility 48hrs (%)	mortality 48hrs (number)	mortality 48hrs (%)	temperature (°C)		pH		dissolved oxygen (mg/L)		conductivity (µS/cm)
						0hrs	48hrs	0hrs	48hrs	0hrs	48hrs	0hrs
0.00	10	0	0	0	0	20.2	20.3	7.7	7.7	8.7	8.5	523
6.25	10	0	0	0	0	20.2	20.1	7.8	7.7	8.4	8.4	583
12.50	10	0	0	0	0	20.2	20.0	7.8	7.8	8.5	8.3	651
25.00	10	0	0	0	0	20.3	20.0	7.7	7.8	8.3	8.4	770
50.00	10	0	0	0	0	20.3	20.0	7.6	7.8	8.5	8.1	1014
100.0	10	10	100	8	80	20.5	20.1	7.4	7.8	8.3	8.0	1472
Sample characteristics before analysis			Appearance: Clear			20.7		7.0		7.8		1471

Reference assay (Potassium dichromate):
Reference assay date: 2013-08-26
LC-50-48h (mg/L of Cr): 0.227
Lower C.I. at 95%: 0.210
Lower C.I. at 95%: 0.245

Geometric average: 0.308
Lower control limit: 0.210
Upper control limit: 0.406

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The above-mentionned samples will be retained for a period of 30 days following the issue of this certificate with the exception of microbiology samples or as instructed by the client. Results pertain only to the samples submitted for analysis.

Appendix H

AGNICO EAGLE

Date: August 12, 2013

Addressed to: Eastern Arctic Area | Région Arctique de L'est
Central and Arctic Region | Région du Centre et de l'Arctique
Fisheries and Oceans Canada | Pêches et Océans Canada
P.O. BOX 358 | C.P. 358 | Iqaluit, NU, X0A 0H0
Government of Canada | Gouvernement du Canada

Dear Elizabeth Patreau,

Re: Request to adjust DFO letter of credit

Prior to the acquisition of the mining rights for the Meadowbank Gold Mine by Agnico Eagle Mines (AEM) in 2007, Cumberland Resources Ltd. had previously begun baseline studies and permit applications for the site. As part of this process Cumberland obtained a Nunavut Impact Review Board (NIRB) Project Certificate. In 2008 AEM obtained authorization under the Fisheries Act from DFO (Fisheries Authorization NU-03-0191) for the Meadowbank Project following DFO approval of the original No Net Loss Plan (NNLP). Fisheries Authorizations were obtained for the Main Minesite Area (Second Portage and Third Portage Lakes) and the Tailings Storage Facility (TSF, administered by Environment Canada under the Metal Mine Effluent Regulation (Section 36 of the Fisheries Act), which were guided by the original NNLP that encompassed all areas of the Meadowbank site including the proposed Vault Open Pit mining area.

Based on the original no net loss plan, AEM provided DFO with a letter of credit for $15.75 million for the mine site (dated July 21, 2009) and a separate letter of credit of $10.2 million for the tailings impoundment area or tailings storage facility (TSF) (dated January 12, 2010), for a total fish habitat compensation related security for the Meadowbank mine site of $25.95 million.

In 2010 and 2011, AEM revisited the original NNLP and addendums, and found discrepancies between the number of habitat units described in the plan and those in the authorizations granted by DFO. Furthermore, based on the arctic operational experience of AEM gained during the development of the Meadowbank Mine, some of the compensation measures described in the original NNL plan no longer appeared to be feasible. More specifically, based on AEM's experience of building in-water dikes, and considering the magnitude of the 19 ha of in-water habitat compensation that was proposed in the original NNLP, AEM came to the realization that these proposed compensation structures had the potential to cause changes in the receiving environment, for which the compensation was intended to enhance. AEM therefore proposed a number of alterations and compensation measures that replaced many of the technically challenging in-water features and clarified the discrepancies previously noted. These were described in the 2012 Meadowbank Mine No Net Loss Plan and authorized by DFO for the TSF, mine site (NU-03-0191.3) and Vault Area (NU-03-0191.4). Subsequently, costs for the new NNLP were estimated in the "DRAFT No Net Loss Plan Implementation Cost Estimate and Construction Schedule" document provided to DFO on June 3, 2013.

AGNICO EAGLE

As discussed during our telephone conversation on June 21st, 2013 and during the inspection and site visit on August 7-9th, 2013, since the commencement of mine development and operations at Meadowbank in 2008, AEM has constructed various habitat compensation features that were outlined in the 2012 Meadowbank No Net Loss Plan and in the NNLP implementation cost estimate. These include:

- dike face habitat creation;
- the start of open pit backfilling that following re-flooding, will result in end-pit lake fish habitat compensation;
- in-pit boulder gardens to provide additional habitat compensation;
- in-pit roads that will be scarified to create shoals; and
- the creation of improved hydraulic connection of two small lakes as part of the non-contact water management.

Furthermore, among other habitat compensation that were described in the 2012 NNLP, AEM will construct additional in-basin boulder gardens, create 1 ha of in-water finger dikes and will construct measures to improve the connectivity of waterbodies in the Vault area. The total cost[1] of the Meadowbank habitat compensation according to the revised NNLP and amended DFO authorizations was estimated at $1.0 Million for the tailings impoundment area, $4.7 Million for the mine site authorization (NU-03-0191.3) and $2.9 Million for the Vault Area (NU-03-0191.4). Thus the total estimated cost for the remaining compensation measures yet to be completed has been reduced from $25.95 million (in 2008) to $8.6 Million, as in the original NNLP cost estimate, this includes a 20% contingency. AEM believes $8.6 million will cover the cost to construct the compensation options and/or implement contingency options listed in the NNLP and approved by DFO in the revised authorizations.

Consequently AEM is requesting that DFO adjust the fisheries compensation security requirements for the Meadowbank Project to reflect the current remaining compensation obligations. The reduction in securities that AEM is requesting is primarily a result of the following changes since the 2008 cost estimate:

- First, AEM has progressively completed or began preparation of a number of habitat compensation features described above;
- Secondly, the end pit habitat compensation through backfilling, enhancement and the larger boulder gardens will be constructed prior to reflooding. Because the construction of these structures will be completed in dewatered areas, the construction of the

[1] The estimate in 2008 AEM was developed using RECLAIM V3.1, which is software prepared for Water Resources Division of AANDC by Brodie Consulting Ltd. In 2012, AEM used an updated version (RECLAIM V6.1) to estimate the costs.

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compensation is feasible, less costly and replaces the original 19 ha of in-water finger dikes and finger dike extensions[2]; and

- Last, the in-water finger dikes proposed in the 2012 NNLP, will be less challenging to construct as they will now be built during the winter under frozen conditions.

As a result, AEM is requesting the final approval by the DFO of the DRAFT No Net Loss Plan Implementation Cost Estimate and Construction Schedule and an adjustment to the letters of credit to reflect the updated cost estimate.

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

Regards,

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

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

[2] The originally proposed in-water finger dikes and finger dike extensions were extensive and costly to construct. As outlined in 2008, it would have required turbidity curtain installation, monitoring and the material would have been handled numerous times in order to complete their construction (i.e. it would need to be handled by a dozer and grizzly for material separation, loading and hauling, in-water placement by a dozer followed by in-water excavation to meet the required depths, according to the biological parameters of the fish habitat compensation plan).

Appendix I

Marie-Pier Marcil

Subject: FW: NIRB 03MN107: Acknowledgement of Request to amend Agnico-Eagle Mines Ltd.'s Type "A" Water Licence for the Meadowbank Gold Project

From: Ryan Vanengen
Sent: September-03-13 10:07 AM
To: Patreau, Elizabeth
Cc: Kevin Buck; Stephane Robert; Info at NIRB; Sophia Granchinho; Marie-Pier Marcil
Subject: RE: NIRB 03MN107: Acknowledgement of Request to amend Agnico-Eagle Mines Ltd.'s Type "A" Water Licence for the Meadowbank Gold Project

Hello Elizabeth,

The following information confirms the *DFO Protocol for Winter Water Withdrawal from Ice-Covered Waterbodies in the Northwest Territories and Nunavut* is being adhered to for EMR lake (also referred to as Explosives Lake) and will be adhered to for the amended water withdrawal request for the Third Portage Lake intake.

Table 1: Review of DFO Protocol for Winter Water Withdrawal for Ice covered lakes at Meadowbank					
	Third Portage Lake			**EMR Lake**	
Coordinates latitude and longitude and/or UTM coordinates (NAD 83)	7211600		639100	7217500	636500
			Withdrawal is:		Withdrawal is:
Water Withdrawal requirements in 2013 (m3)	1,870,000	*	0.42%	2,400	0.40%
* in 2014 and thereafter - 1.15 mil m3			of the volume of the lake		of the volume of the lake
Surface area in ha	3,950			25	
Total Lake Volume in m3	446,000,000			600,000	
Under Ice Volume in m3 (based on max ice thickness for region)	NA			NA	
Max expected ice thickness value used in m	2			2	
Calculated 10% Withdrawal volume in m3	44,600,000			60,000	
Aerial photographs of waterbody PDF format	See EIS, Available Upon Request			See EIS, Available Upon Request	
Bathymetric Map(s) of waterbody PDF format	>40m			>8m	

Table 2: Review of DFO Protocol Conditions for Winter Water Withdrawal for Ice covered lakes at Meadowbank		
Lake ID number and/or name	**Third Portage Lake**	**EMR Lake**
From the DFO protocol - page 1		
In order to establish a winter water withdrawal limit for a given waterbody, the following criteria must be adhered to:		
1. In one ice-covered season, total water withdrawal from a single waterbody is not to exceed 10% of the available water volume calculated using the appropriate maximum expected ice thickness provided in Table 1.	Meets protocol	Meets protocol
2. In cases where there are multiple users withdrawing water from a single waterbody, is not to exceed 10% of the coordinated water source identification is essential. Therefore, consistent and available water volume calculated using the appropriate maximum expected ice thickness provided in Table 1.	Only one user	Only one user
3. Only waterbodies with maximum depths that are ≥1.5m than their corresponding maximum expected ice thickness should be considered for water withdrawal (Table 1). Waterbodies with less than 1.5m of free water beneath the maximum ice are considered to be particularly vulnerable to the effects of water withdrawal.	Confirmed	Confirmed
4. Any waterbody with a maximum expected ice thickness that is greater than, or equal to, its maximum depth (as determined from a bathymetric survey) is exempt from the 10% maximum withdrawal limit (Table 1)	NA	NA

Ryan VanEngen MSc.
Environment Biologist
ryan.vanengen@agnicoeagle.com
C:519.400.7979

Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
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MEADOWBANK DIVISION

Production Lease KVPL08D280

2013 Fourth Quarter Report

January 2014

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Appendix H: Golder RSF seepage report
Appendix I: Assay road seepage spill report and spill update #1 to #4
Appendix J: 2012-2013 NIRB annual monitoring report and recommendations

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 fourth quarter (Q4) from October to December 2013.

1.1 HIGHLIGHTS FOR THE QUARTER

- Production of 123,370 oz. of gold;
- Mined 8,425,582 tonnes of waste rock, ore and overburden.

1.2 MILL AND POWER PLANT

Performance Indicators	Current Quarter	YTD Realized
Tonnes Processed (t)	1,048,552	4,142,840
Gold Grade (g/t)	3.83	3.43
Gold Produced (oz.)	123,370	430,933

1.3 MINING - ENGINEERING AND PRODUCTION

Performance Indicators	Current Quarter	YTD Realized
Overburden Production (t)	2,705	205,225
Waste Rock Production (t)	7,487,836	31,932,927
Ore Production (t)	935,041	3,439,230
Total Blasting (t)	9,228,248	36,913,555
Total Drilling (m)	222,198	901,612

1.4 DIKE CONSTRUCTION ACTIVITIES

The Stormwater Dike remaining liner was completed during the month of October. This dike is now considered 100% completed meaning that all the dikes for the North Tailing Cell are now completed.

Rockfill protective structures constructed to El. 148m to protect the reclaim barge from tailings migration in the North Tailing Cell have been completed as well during the last quarter of 2013. The works started at the end of September and have been finalized during December.

SECTION 2 • VARIATION FROM THE MINE PLAN

The "*2013 Mine Plan*" for the Meadowbank Gold Project, prepared for the Kivalliq Inuit Association as required by Production Lease KVPL08D280, was submitted to the KIA in January 2013.

There was no planned variation from the "*2013 Mine Plan*".

SECTION 3 • INSPECTION REPORTS

During the current quarter, two (2) inspections were conducted by regulators:

- GN Renewable Resources along with GN Conservation Office on site for an unannounced visit on October 23rd; and
- KIA was on site on November 29th to inspect the Assay Road Seepage;

AEM received the September 13th NIRB Inspection report (Appendix A) on November 14th. AEM sent correspondence to DFO on November 22nd regarding the elevated turbidity observed by NIRB during their inspection (Appendix B).

AEM sent response to the July 29-30 AANDC Inspection report received on September 26th (Appendix C) on November 12th.

SECTION 4 • ENVIRONMENTAL MONITORING

SUMMARY

There were 2 exceedences of the Water License during Q4:

- Freshwater consumption exceeded the permitted amount of 700,000 m^3; and
- Portage Attenuation Pond discharge aluminium concentration on October 2nd (2.16 mg/L) and 7th (1.96 mg/L) exceeded the Water License Part F, Item 2 for effluent quality (1.5 mg/L as a maximum grab sample). AEM did not exceed the monthly average concentration limit for aluminum.

Twenty (20) spills occurred at the site; two (2) spills were reported to the Government of Nunavut.

4.1 WASTE MANAGEMENT

During the fourth quarter, 20 spills occurred at the site. Two (2) spills were reported to the Government of Nunavut:

- 200L of oil spilled at the new transit laydown because when removing drums in sea can, the forklift operator punctured the oil drums; and
- It was determined that there was a reportable seepage taking place in front of the Assay Lab Road. The spill was reported to be > 5,000L.

Sample grid for Quarry 22 and Quarry 5 completed in October. The next step is to take samples of the surface soil in Quarry 22 and Quarry 5 to verify if the soil is still contaminated (spring 2014).

4.2 WATER MANAGEMENT

During the quarter, the total freshwater used was 173,681 m^3. The total freshwater used to date is 1,593,578 m^3. The total amount of reclaim water used in the mill was 727,477 m^3.

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. On April 23rd, 2013 Agnico Eagle Mines 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 October 1st, AEM received correspondence from NIRB advising that freshwater use amendment is exempt from screening (Appendix D). Water License pre-hearing conference

and technical meeting were held in Baker Lake on October 16th and 17th. On November 1st, AEM received the NWB pre-hearing conference decision and the notice for the public hearing (Appendix E). The NWB advised at the pre-hearing conference that AEM must hold a workshop in regard to issues raised at the technical meeting related to annual reporting, closure and final water quality but not related to the water use increase. The workshop was held by AEM via Webex on November 28th with AANDC, KIA, NWB and EC. Minutes of the meeting were sent to all parties on December 9th (Appendix F). Another workshop will be held after January 17th to review AEM water management planning. This would be a technical meeting to review specifics related to water balance and water quality modelling. The final hearing will be a written hearing and will be held in January 17th, 2014.

AEM also applied, in April 2013, for a modification to the Type A Water License Part F, Item 4 to include East dike seepage water as non-contact water effluent. On July 3rd, AEM received a Water License Modification approval from NWB to allow East Dike seepage non-contact water to be discharged to Second Portage Lake. On October 7th, AEM sent the 60 day notification required under MMER to Environment Canada to commence the discharge of East Dike Seepage on December 1st, 2013. After technical problems with AEM discharge equipment, the beginning of the discharge was postponed to January 7th, 2014.

The RSF seepage has been frozen since October 5th, 2013. Weekly inspections were completed at RSF and NP-2 Lake, and a monthly sample was taken in NP-2 Lake. On October 15th, AEM received Golder's preliminary evaluation on seepage causes and recommendations for solutions. On November 8th, AEM received an AANDC Inspector's Direction (Order) regarding the RSF Seepage into NP-2 and on November 20th, AEM sent a response to this Inspector's Direction (Appendix G). On December 3rd, AANDC confirmed acceptance of the AEM response to the Inspector's Direction. The independent engineering firm report was also submitted to AANDC in response to the Inspector's Direction (Appendix H). On November 15th, AEM received an email advising that AANDC Field Operations Division has initiated an investigation in regard to the incident that was discovered during the AANDC July 29 – 30 Inspection. The investigation has been initiated for the purpose of gathering additional information in regard to alleged violations under subsection 12 (1) of the Nunavut Waters and Nunavut Surface Rights Tribunal Act. AEM also received, on November 15th, an email advising that Environment Canada Environmental Enforcement Division has initiated an investigation. The investigation has been initiated for the purposes of gathering additional information in regard to alleged violations under subsection 36(3) of the Fisheries Act.

On November 4th, 2013, it was observed that water was seeping thru the road in front of the Assay Lab Road. After investigation, it was determined that the seepage was coming from the process plant (due to the presence of CN, Cu and Fe in sample analysis results). On November 8th, the discharge of seepage was reported to Government Agencies (Appendix I). On November 12th, AEM sent spill report update #1 and #2 to Government Agencies, on November 19th, AEM sent spill report update #3 and on December 11th AEM sent the spill

report update #4 (Appendix I). Sample monitoring indicates that no contamination has reached Third Portage Lake. No more seepage has been visible since November 24th. On November 28th, AEM held a meeting with the Baker Lake council to provide an update on this situation. In December, AEM contracted a consultant to review and make recommendations. Consultant Phase 1 report is scheduled for completion in January 2014. Please refer to the spill report and update #1 to #4 for more information.

Discharge from Portage Attenuation Pond (ST-9) was stopped on October 18th. A total of 82,960 m^3 was discharged during the quarter for a total year to date of 485,018 m^3. On October 2nd and 7th, the aluminium concentration was 2.16 mg/L and 1.96 mg/L, respectively, exceeding the Water License Part F, Item 2 for effluent quality (1.5 mg/L as a maximum grab). AEM did not exceed the October monthly average concentration limit for aluminium. The source of the elevated level of aluminium appears to be from the coagulant used in the water treatment plant, and the fact that the WTP was started and stopped several time before October 18th. This makes it difficult to optimize coagulant dosage. The discharge water quality is in compliance with the MMER and NWB License criteria except for October's aluminium.

Vault Lake Dewatering continued from October 1st to 22nd during the 4th quarter. A total of 344,907 m^3 of water was discharged into the receiving water (Wally Lake) for a total discharged to date of 2,364,600 m^3. There were no exceedences of either MMER or Type A Water License 2AM-MEA0815 criteria.

Two (2) CREMP monitoring events occurred during the quarter on November and December. CREMP sampling was completed for the year.

Groundwater monitoring was completed in October by taking a sample from seepage in the wall of Goose Pit.

4.3 WILDLIFE MANAGEMENT

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

A Grizzly bear was harvested at KM 74 by Inuit hunters on October 1st and reported to GN Wildlife Officer for information.

During the week of November 18th, the caribou migration started with main traffic between KM 40 – 60. A notice was sent to all AEM and contractors employees to give caribou the right of way. By the beginning of December, the migration appeared to be over as only 30 caribou were observed on the west side of the AWPAR at KM 70 on December 16th.

In December, a large number of wolves were reported around MBK, Vault area and Exploration Camp. On December 4th, an email was sent to GN Wildlife Officer to report that a wolf had attacked flags on AWPAR.

During the quarter, wildlife and migration memorandum was sent to AEM and contractors employees.

AEM met with GN-DOE in December to discuss the Memo of Understanding for 2013-2014 caribou monitoring and 2013 reporting.

~~4.4~~ PERMITTING

AEM sent written response to DFO on October 8th regarding AEM's request to amend fisheries authorization.

AEM sent a response letter to DFO on November 15th "re:NIRB comments regarding amendment to DFO authorizations".

AEM forwarded information about "Country Food" for employees at Meadowbank to NIRB Monitoring Officer on November 8th.

AEM received the NIRB 2012-2013 Annual Monitoring report and recommendations (Appendix J) on November 27th. AEM's response is to be submitted by January 7th, 2014.

The following reports were completed and submitted to regulators~~:~~

- No Net Loss Cost estimate document sent to DFO on November 15th;
- AUP form and harvest report for fisheries work on AWPR to DFO on December 23rd;
- NWB monthly reports, September, October, and November;
- 2013 Annual Rental Lease No. 66A/8-71-2 and No. 66A/8-72-2 sent to AANDC on December 17th;
- KIA Q3 2013 Production Report submitted;
- KIA Q3 2013 report detailing water usage and fees plus payment submitted;
- Environment Canada Q3 MMER via electronic database.

Appendix A

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

November 14, 2013

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

Sent via email: kevin.buck@agnico-eagle.com

Re: The Nunavut Impact Review Board's 2013 Site Visit Report for the Meadowbank Gold Project

---

Dear Kevin Buck:

The Nunavut Impact Review Board (NIRB) would like to thank Agnico Eagle Mines Ltd. (AEM) for the opportunity to visit the Meadowbank Gold mine project on September 13, 2013. As a result of the site visit, a report has been prepared outlining the observations made.

Please find enclosed the *2013 Site Visit Report for the Nunavut Impact Review Board's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Project* for your information and note that it has also been posted to the NIRB's online public registry at the following link: http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/04-SITE%20VISITS/2013/01-REPORT/.

Should you have any questions regarding the NIRB's Monitoring program for the Meadowbank Gold project, please do not hesitate to contact the undersigned at (867) 793-4633 or sgranchinho@nirb.ca.

Sincerely,

Granchinho

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

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

Enclosure: 2013 Site Visit Report for the Nunavut Impact Review Board's Monitoring of Agnico-Eagle Mines Ltd.'s Meadowbank Gold Project (*November 2013*)

2013 Site Visit Report

for the NIRB's Monitoring of Agnico-Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
November 2013

Full Report Title:	2013 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. PO Box 540 Baker Lake, NU X0C 0A0
Proponent Contact:	Kevin Buck, Environment Superintendent
Telephone:	(819) 759-3555, ext. 6838
Visit conducted by:	Sophia Granchinho, M.Sc., EP Senior Technical Advisor/Monitoring Officer
Telephone:	(866) 233-3033
Site visit dates:	September 13, 2013
Last site visit:	September 12-13, 2012
Photos by:	Sophia Granchinho
Cover photos:	1) View of Meadowbank Mine Site 2) View of Baker Lake Docking 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 13, 2013 as part of the NIRB's monitoring program.

1.1 Objectives & Purpose of Site Visit

In December 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 [No. 004] to include an amendment to Condition 32 pursuant to NLCA 12.8.2 and an approval to change the name of the holder of the Project Certificate [No. 004] 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 [004] (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 (Section 12.7.2(a), provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals (Section 12.7.2(c)), and will further be used to assess the accuracy of the predictions contained in the project impact statements (Section 12.7.2(d)).

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. The current Project owner, Agnico Eagle Mines Limited (AEM or Proponent), indicated in its December 2011 Reserves and Resources report that Meadowbank had at the time, proven and probable gold reserves of 2.2 million ounces; lower than the initial value predicted (AEM, 2011). In February 2012, AEM announced that its Meadowbank ore reserves had been reduced as a result of it being unable to economically mine the lower grade ore which subsequently, reduced the expected life of the mine by approximately 3 years (AEM, 2012). AEM provided a revised mine plan to the Kivalliq Inuit Association which predicted that its Meadowbank operations are now scheduled to be completed by 2017 instead of 2020 (AEM, 2012).

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 (access road) 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 access road.

1.3 Preparations for the Site Visit

The Monitoring Officer reviewed the following items to prepare for the site visit: Meadowbank Project Certificate [No. 004], 2012 Site Visit Report, AEM's 2012 Annual Report and associated appendices, and follow-up correspondence from the NIRB's 2012 site visit.

2 SITE VISIT

The 2013 site visit was conducted by Sophia Granchinho, NIRB Monitoring Officer. On September 13, 2013 the Monitoring Officer was driven to the Meadowbank mine site from the AEM office in Baker Lake with other AEM staff. Once at the site, the Monitoring Officer was met by Kevin Buck, AEM's Environment Superintendent. Mr. Buck and the Monitoring Officer discussed issues which were related to the 2012 site visit. In the afternoon, Mr. Buck and Martin Therialut led a tour of the site, which included the waste rock facility, landfarm, landfill/pilot remediation site, tailings storage facility, Vault Pit, active mine areas including Portage pits and Bay-Goose basin, the waste and hazardous materials storage area, the incinerator, fuel storage area, air monitoring station and dust monitoring station. At the conclusion of the tour of the mine site, the Monitoring Officer met with Mr. Buck to discuss the site visit and further issues related to environmental compliance. Afterwards, Mr. Tom Thomson drove the Monitoring Officer along with a Golder consultant, Yves Boulianne, to the hamlet of Baker Lake via the access road. Prior to being dropped off at the AEM office, Mr. Tom Thomson and Mr. Yves Boulianne accompanied the Monitoring Officer to the following Baker Lake facilities: diversion channel at Third Portage Lake, quarry 22, quarry 5, bridge at kilometre 22/23, culvert at kilometre 1 and the Baker Lake bulk fuel storage facility/marshalling area.

The site visit provided the Monitoring Officer with a tour of all major project components and further, provided an opportunity for the Monitoring Officer and AEM staff to discuss relevant issues 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. While travelling along the access road to and from the Meadowbank site and the hamlet of Baker Lake, the Monitoring Officer observed very little wildlife. The only observable wildlife included two caribou, Snow geese (and blue geese) and a Peregrine falcon along the access road. No wildlife was observed at site; however, it was noted by staff that a muskox had been lingering around the Vault Pit area.

b. Mr. Buck mentioned that the pilot remediation program undertaken this year at the Meadowbank site using on-site nutrients (sewage sludge) to initiate biodegradation of

contaminated hydrocarbon soil worked very well and that AEM was planning on using the same technique next year for all hydrocarbon contaminated soils (see Photo 1). This method would be used instead of general landfarming techniques (see Landfarm Plan for further information [AEM, 2013]).

Photo 1: Contaminated soil storage/pilot remediation site

c. AEM indicated that additional grid samples would be taken at both Quarry 5 and Quarry 22 (both sites previously used for storage of contaminated hydrocarbon soil) and confirmed that if samples indicate that no hydrocarbons are present, remediation of both quarries would commence. Photo 2 through Photo 4 show the condition of Quarry 5 from the storage of contaminated soils in 2011 to clean-up in 2013, while Photo 5 and Photo 6 show the condition of Quarry 22 in 2012 and 2013.

Photo 2: Quarry 5 in 2011 containing contaminated soil from fuel spill at kilometre 22 along the access road

Photo 3: Quarry 5 in 2012

Photo 4: Quarry 5 in 2013

Photo 5: Quarry 22 in 2012, serving as a storage area for contaminated soil

Photo 6: Quarry 22 in 2013

d. The Monitoring Officer noted that the environmental emergency sea-cans containing booms, shovels, absorbent pads, and other miscellaneous spill response equipment were located at most bridge crossing (one was not observed at the km 22/23 bridge). Further, two additional environmental emergency sea-cans, one containing spill response equipment and another containing a boat with motor were located at the Baker Lake laydown facility.

e. Active blasting and drilling were ongoing at the North, Central and South Portage pits, with daily geotechnical inspections being undertaken to ensure the safety of all employees and contractors working in the active mine area (see Photo 7).

Photo 7: Portage Pit

f. Development of the Bay-Goose Dike and causeway was completed in 2010 with the instrumentation on the Bay-Goose Dike and the jet grouting program completed in 2011. Mining of the Bay-Goose basin started in May 2012 (Photo 8).

Photo 8: Bay-Goose basin

g. Construction of the Vault Road was completed by the end of 2012 and AEM commenced stripping, quarrying and related construction activities in 2013 (Photo 9). During the site visit, it was noted that dewatering of Vault Lake would commence in late September, once the fish-out program had been completed (see Photo 10). Mining of Vault Pit is planned for 2014.

Photo 9: Vault Lake Quarry site

Photo 10: Site of future Cell B, Vault Lake Pit

h. Inspection of the tailings storage facility did not reveal any apparent rips to the liners that were exposed within Saddle Dam #1 and Saddle Dam #2 (Photo 11).

Photo 11: Tailings storage facility

i. Mr. Buck indicated that the extension of the airstrip was completed in April 2013. This extension was previously screened and approved pursuant to NIRB File No. 10XN039.

j. The Monitoring Officer noted that the water within the diversion ditch constructed around the tailings facility and flowing into Third Portage Lake appeared to be turbid, likely due to the high volume of rainfall over the previous few days (see Photo 12). Further, the silt curtains installed in Third Portage Lake did not appear to be functioning properly as there was evidence of turbid water/sediment along the shoreline of Third Portage Lake and flowing into the lake. The diversion ditch was built to control freshet water from entering the tailings facility (see Photo 13).

Photo 12: Diversion ditch around tailings facility

Photo 13: Turbid water entering Third Portage Lake

k. While travelling along the access road from Meadowbank back to Baker Lake, the Monitoring Officer noted that the culvert crossing at kilometre 1 was damaged and that there was evidence of sediment deposit at the outflow of the culvert into Airport Lake. AEM indicated that it would assist the hamlet of Baker Lake in any work(s) required to upgrade/repair the culvert. AEM indicated that this particular section of the access road is owned by the hamlet and is not leased by AEM (see Photo 14).

Photo 14: Culvert crossing at kilometre 1

2.2 Observations based on NIRB's Project Certificate [004]

Sections 2.2.1 through 2.2.6 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 one groundwater monitoring well appeared to be operational. AEM noted that the last operational groundwater monitoring well of those installed in 2003 became damaged from frost action in 2010. Three of the four defective wells were replaced in 2006 but were again damage by frost action. Two of the wells were again replaced in 2008 with a more robust design. In 2011, two monitoring wells were installed, one on Goose Island to replace one of the 2003 wells and one at the tailings storage facility to replace one of the 2007 wells. Only one of the wells replaced in 2008 was sampled in 2011 as the second well showed blockage and no samples could be taken. Mr. Buck indicated that although groundwater sampling did occur at the operational wells for the 2013 sampling program, well number MW11-02 could not be sampled due to blockage from the previous year. AEM is planning on using

production wells instead of groundwater wells to evaluate the groundwater quality but for the 2013 year, AEM staff indicated that as there was limited water flowing at the selected production wells, no sampling had been conducted for this year.

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."*

As per previous site visits, the Monitoring Officer noted in 2013 that AEM continued to segregate and store all domestic, hazardous, and combustible wastes in marked sea-cans prior to these materials being incinerated or shipped to appropriate and approved off-site disposal facilities (Photo 15). AEM indicated that sea-cans filled with waste are backhauled via truck haul to Baker Lake and are then moved via the annual sea lift to southern Canada (Photo 16). AEM has also initiated other recycling programs to reduce the amount of wastes going to the landfill; *e.g*., puncturing aerosol cans which could then be recycled as metal (Photo 17 and Photo 18).

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

Photo 16: Sea-cans waiting to be backhauled

Photo 17: Landfill at Meadowbank mine site

Photo 18: Waste rock facility

The Meadowbank site dual chamber forced air incinerator remains in service for the combustion of all non-hazardous, combustible materials at the site (Photo 19). AEM staff noted that approximately 1.7 tonnes of domestic garbage is incinerated per day; however, Mr. Buck indicated AEM has plans in place to continually improve waste management by reducing the amount of domestic garbage produced at site. Some examples include completely replacing paper coffee cups with plastic coffee cups, using plastic lunch boxes and trays instead of paper bags, recycling wood products by finding second uses for these at site or by backhauling it to Baker Lake where it may be claimed and used by community members.

Photo 19: Dual chamber forced air incinerator at the Meadowbank site

Mr. Buck indicated that there have not been any issues with wildlife around site and that staff are encouraged to leave wildlife alone. Mr. Buck indicated that caribou and muskox have been around the Vault Lake site and that a few fox dens with pups have also been observed around site. In addition, Mr. Buck indicated that active falcon nests had also been observed within

various quarry sites along the access road with most adult pairs having fledged at least one chick successfully.

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 2012 visit to the Meadowbank site, the Monitoring Officer noted that all areas were kept in an impressively clean state, with no obvious spills. There were a few instances of wind-blown material observed around the Meadowbank site.

Mr. Buck indicated that clean-up of the spill that occurred near kilometre 22 of the access road in October 2010 was complete and the booms previously deployed in the watercourse had been removed in July 2013 (Photo 20). Mr. Buck confirmed that the site would continue to be monitored as part of AEM's aquatic effects monitoring program.

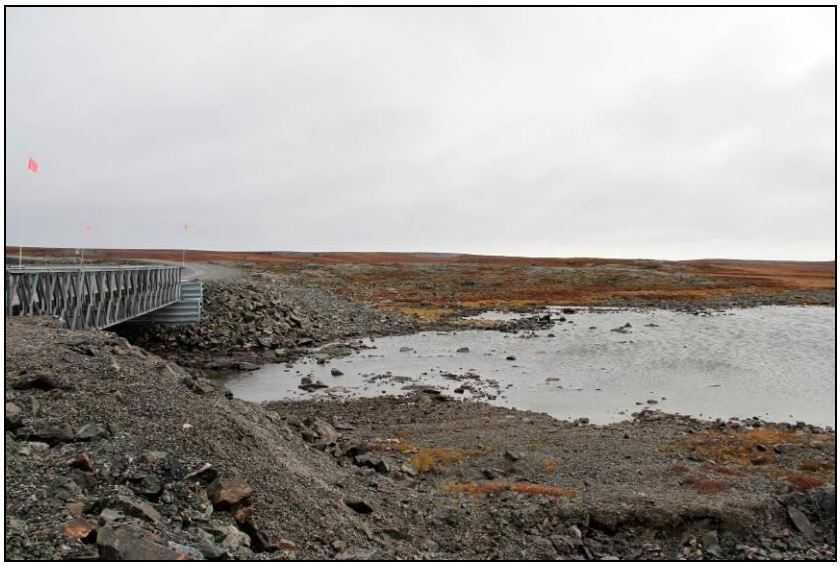


Photo 20: Bridge near kilometre 22

Condition 27

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

During the 2013 site visit, the Monitoring Officer observed that all of AEM's fuel and hazardous materials associated with the Meadowbank project appeared to be stored in a safe and environmentally protective manner (i.e. secondary containment at fuel storage areas and secure containment of hazardous materials; see Photo 21 and Photo 22).

Photo 21: Meadowbank on-site fuel tank farm

Photo 22: Baker Lake bulk fuel storage facility

The fuel transfer stations on site (Photo 23) and at the Baker Lake bulk fuel storage facility (Photo 24) appeared to be well contained and properly set up for the re-fuelling of vehicles. No hydrocarbon odours were noted at either the Meadowbank fuel tank farm or the Baker Lake bulk fuel storage facility. No sheen was observed on the water within the Meadowbank fuel tank farm or the Baker Lake bulk fuel storage facility.

The Monitoring Officer noted that a Jet-A pad had been installed near the Baker Lake bulk fuel storage facility and that it had 20 fuel tanks in place (Photo 25).

Photo 23: Meadowbank on-site fuel transfer station

Photo 24: Baker Lake fuel transfer station (taken in 2012)

Photo 25: Jet-A pad at Baker Lake storage facility

2.2.2 All-Weather Private Access Road (AWPAR)

Amended **Condition 32**

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

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

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

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

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

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

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

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

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

AEM maintains one gatehouse at kilometre 5 of the access road, and another gatehouse close to the entrance to the mine site and camp at Meadowbank. Both gatehouses are manned by guards who monitor the safety and security of all personnel using the road. All traffic is required to check in (via radio or in person) with the employee at the gatehouse prior to proceeding past either gatehouse along the road (see Photo 26). The AEM employee manning the kilometre 5 gatehouse maintains a daily logbook of all persons travelling the access road for non-mine use. Members of the public travelling along the road are required to sign-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.

Photo 26: Gatehouse at kilometre 5, near Baker Lake

As per Condition 32(b), AEM submitted a copy of its updated Transportation Management Plan to the NIRB on May 13, 2010. One of the features of the access road as described within the plan is the placement of refuge stations every 10 kilometres. The Monitoring Officer noted that these refuge stations (emergency sea-cans) were not located on the road and was informed by Mr. Buck in 2012 that the sea-cans were removed because items within the stations were being stolen and that the refuge stations were not serving the original and intended purpose. The signs as required per Condition 32(c) were posted in both English and Inuktitut at the gatehouse (Photo 27), at each major bridge crossing (on the side of the environmental emergency sea-cans) and at every at 10 kilometre intervals along the road.

Photo 27: Signs posted at gatehouse at kilometre 5

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 noted that the updated maps 2012 which outline caribou migration corridors were posted in high traffic areas such as the bulletin board outside the check-in office. AEM indicated that all employees must report to the check-in office upon arrival to site at the commencement of their two-week shift and again upon departure from site and would be able to review the updated caribou migration corridor maps.

As indicated earlier in the report, no wildlife were observed around site during the 2013 site visit except along the access road to the mine site.

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 indicated that five locations were monitored for noise during the 2013 summer period. AEM staff noted that monitoring indicated that the dominant mine noise sources included activities such as helicopter and other air traffic, the use of construction and operation heavy equipment and blasting. Monitoring stations were removed prior to the site visit due to windy conditions.

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."

The air monitoring stations were installed by the end of October 2011 and monitoring started in November 2011 (see Photo 28). The partisol sampling stations required heated shelter and electricity in order to operate properly, and these were installed in 2012. During the 2013 site visit, Mr. Buck noted that an air monitoring station installed in 2012 near the Vault Lake road had been relocated. The road alignment to Vault Lake was modified from the original design plan which in turn required that the air monitoring station be moved to a location further away from the road.

Photo 28: Air monitoring station

Condition 74

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

AEM staff 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. AEM staff also noted that it would be using calcium chloride flakes for 2014 as it is lighter to transport and easier to use. AEM noted that it is currently waiting for the results of studies conducted along the access road in 2013 to determine whether or not the dust from the access road is impacting the vegetation around the area. During the site visit, AEM confirmed that no dust suppressants are currently in use along the access road.

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 at the shore with AEM employees on site. The Monitoring Officer did note that these areas were kept impressively clean with sea-cans well organized during the 2013 site visit (see Photo 29).

Photo 29: Bake Lake dock and laydown facility

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 appear to be well managed and maintained with adequate environmental protection measures and procedures in place.

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 as applicable to the NIRB's 2013 Site Visit. 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 notes that the pilot remediation program undertaken this year at the Meadowbank mine site appeared to have worked well. The Monitoring Officer was informed that the rate of biodegradation of the contaminated soil containing nutrients (sewage sludge) was faster compared to contaminated soils with no nutrients added. AEM indicated that it plans to use this method again next year for the treatment of all of its contaminated soils.

The Monitoring Officer also noted that the silt curtains put in place downstream of the diversion ditch flowing into Third Portage Lake did not appear to be functioning properly as sedimentation was evident around the shoreline and flowing into the lake.

Regarding Condition 8, only one groundwater well appeared to have been operational during the 2013 site visit. AEM indicated that further re-evaluation of the groundwater well monitoring program would be conducted, including an evaluation of the potential use of production wells instead of groundwater wells to assess the existing groundwater conditions.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site. AEM noted that wildlife had been observed at the site including caribou, muskox and foxes, with a few fox dens around the site as well. .

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. The Monitoring Officer was informed during the 2013 site visit that the clean-up of the spill at kilometre 22 was complete, but that the site would continue to be monitored as part of AEM's ongoing aquatics effects monitoring program. Some instances of wind-blown debris scattered around the site were noted during the 2013 site visit.

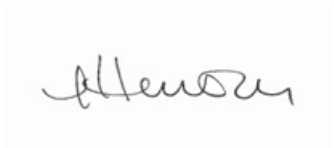
Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer noted that the fuel storage facilities appeared to be well contained and properly set up for the re-fuelling of vehicles.

The Proponent did not appear to have fully met the requirements of Condition 74, as dust suppression techniques had been applied at the Meadowbank site but were not in use along the access road from Baker Lake to site. AEM did indicate that plans were in place to determine the effects of dust on vegetation along the access road and to determine the best options to deal with the dust created.

Prepared by: Sophia Granchinho
Title: Senior Technical Advisor/Monitoring Officer
Date: November 1, 2013

Signature:

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 29, 2013

Signature: 

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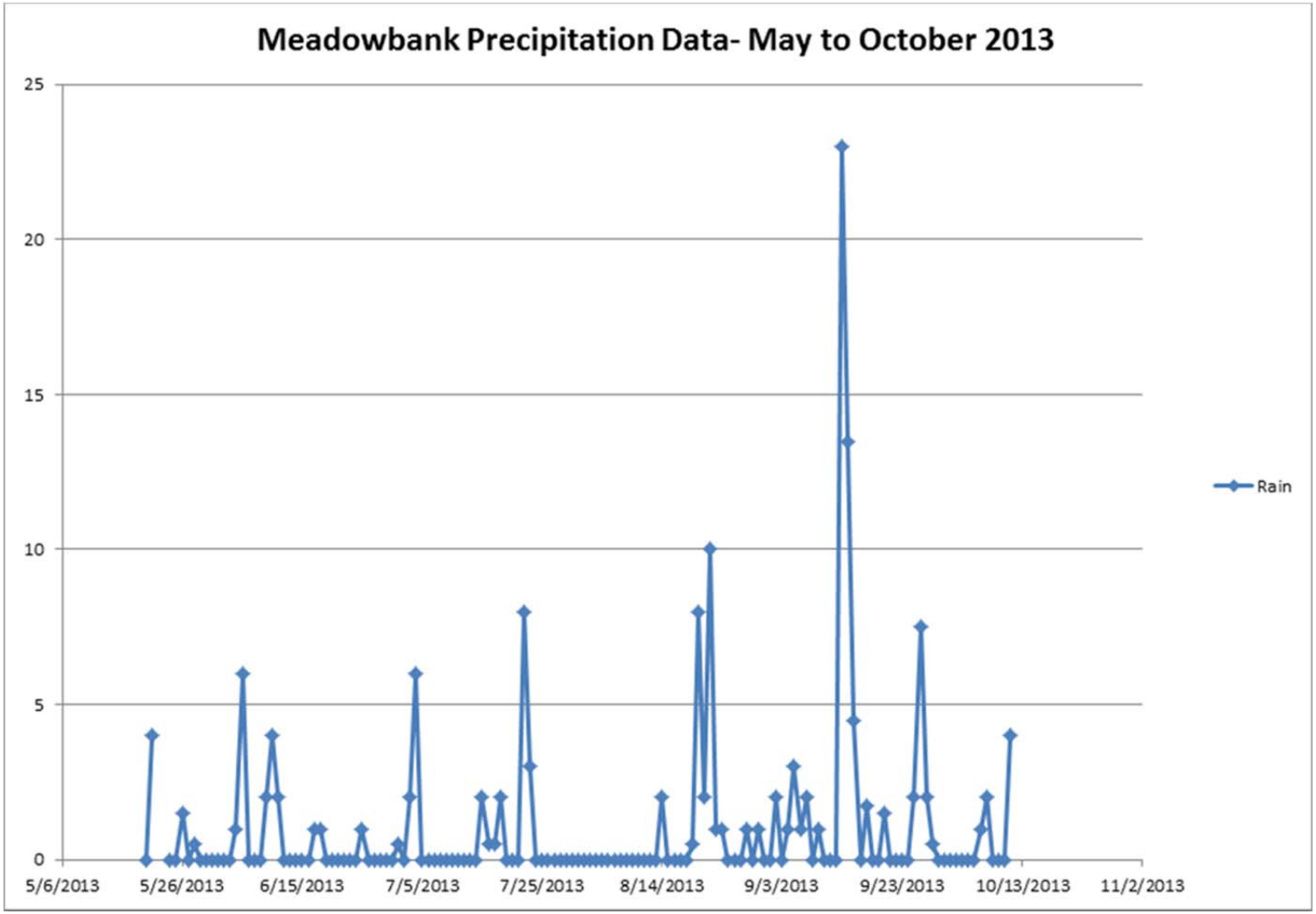
Appendix B

Marie-Pier Marcil

Subject: FW: NIRB 03MN107: The Nunavut Impact Review Board's 2013 Site Visit Report for the Meadowbank Gold Project

Hello Elizabeth,

The elevated turbidity that NIRB referred to on Page 8 of their site visit report on September 13, 2013 was not considered an occurrence by the technicians onsite and therefore not reported by AEM. AEM thoroughly monitored the turbidity during the spring freshet and at that time set up turbidity barriers and silt fences to control sediment deposits. It is clear from the photos that the heavy rain caused some sediments to escape the curtains; as a result the curtains were reconfigured after the site visit. As you can see from the precipitation data and the Type A License monitoring results at ST-6 below, this was a rare event of high rains that was short in duration and the resulting elevated turbid water noted by the inspector was not deemed an occurrence by onsite staff at the time. This was primarily due to the fact that the technicians felt some of the TSS were natural inputs, the volume wasn't large (compared to spring freshet runoff) and when adjusted, the turbidity curtains were more effective at containing the TSS. We will discuss this event with the technicians and site services department on-site to ensure that monitoring protocols (visual inspections, followed by turbidity monitoring and adaptive management) are followed to support decisions of reporting occurrences to DFO in the future.



As per the Type A License, monthly monitoring indicates TSS levels below the limits throughout the summer at Station ST-6.

	Date	6/24/2013		7/29/2013	8/13/2013	9/3/2013	10/6/2013
Parameter	Units	Original ID	Duplicate	Original ID	Original ID	Original ID	Original ID
pH		7.04		8.82	6.8	7.52	7.21
Turbidity	NTU	15.48		54.9	0.91	0.8	0.71
Conductivity	µs/cm				32	48.1	42.4

Temperature	°C		14.14				22.24		11.2		14.7
CN	mg/L		0.009		0.007	<0.005	0.005		0.005		0.011
Tss	mg/l		2		3	2	1		8		2
Ra	Bq/l	<	0.002	<	0.002	<0.002	0.002		0.002	<	0.002
Al	mg/l		0.348		0.247	0.023	0.006	<	0.006		0.038
As	mg/L		0.0005		0.0017	<0.0005	0.0005		0.0017		0.0016
Cu	mg/L		0.0018		0.0022	0.0141	0.0005		0.0047	<	0.0005
Ni	mg/L		0.002		0.0025	0.0011	0.0005		0.001	<	0.0005
Pb	mg/L	<	0.0003	<	0.0003	<0.0003	0.0003		0.0077	<	0.0003
SO4	mg/L		7		6	7	0.6		13.9		6
Zn	mg/L	<	0.001		0.001	0.002	0.001		0.002		0.003

As we have discussed previously, Airplane lake crossing is the responsibility of the hamlet - please contact the hamlet in regards to Airplane Lake crossing issues.

If you have any questions, please contact Kevin Buck or myself,

Ryan VanEngen MSc.
Environment Biologist
ryan.vanengen@agnicoeagle.com
C:519.400.7979

Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
XOC OAO

agnicoeagle.com

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Please consider the environment before printing this email

From: Patreau, Elizabeth [mailto:Elizabeth.Patreau@dfo-mpo.gc.ca]
Sent: Friday, November 15, 2013 10:35 AM
To: Kevin Buck; Stephane Robert; Ryan Vanengen
Cc: Info at NIRB
Subject: RE: NIRB 03MN107: The Nunavut Impact Review Board's 2013 Site Visit Report for the Meadowbank Gold Project

DFO has reviewed the NIRB September 2013 site visit monitoring report and would like to provide the following comments:

Occurrences into fish bearing waters such as that noted by NIRB's monitoring officers on Page.8 of their report regarding turbid water entering Third Portage Lake and Airplane Lake must be sent to DFO at that time (by the Proponent). There is a duty to notify an inspector (Inspector, Fishery Officer or prescribed authority) of DFO when this serious harm to fish is not authorized under the Act, or when there is a serious and imminent danger of such an occurrence (Sec.38 of Fisheries Act).
To my knowledge, DFO did not receive a report of this occurrence in September. AEM, can you please confirm whether or not notice was provided to DFO in September (and if so, to whom?). If not, why not? And, has this issue been resolved?

Should you have any questions concerning the above, please contact me.

Elizabeth Patreau
Senior Fisheries Protection Biologist
Telephone - Téléphone: *867 979-8019*
Email - Courriel: Elizabeth.Patreau@dfo-mpo.gc.ca

Appendix C

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November 12, 2013

Christine Wilson
Water Resource Officer- Kivalliq Region
Field Operations Unit
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
P.O. Box 100
Iqaluit, Nunavut X0A 0H0
Ph:867-975-4296
Fx: 867-979-6445
Christine.Wilson@aandc.gc.ca

RE: RESPONSE TO WATER USE INSPECTION REPORT – DATED JULY29th-30th, 2013 – LIC#: 2AM-MEA0816

Ms. Wilson,

Thank you for your inspection report dated July 29 & 30, 2013 and received September 24th.

Please note the following actions in response to your inspection and the concerns raised in your report.

Outstanding items

- ***Contaminated soil piled against the rear wall of the landfarm containment berm. AEM has committed to pushing the piles back once the rear pile is aerated. This is an ongoing concern from inspections conducted in 2012, specifically with regards to the containment of contaminated water.***

On October 18th the edges of the contaminated soil piles within the Landfarm were moved to allow for accumulation of potential run off water. Please see pictures below. This was preformed around the entire edge not just the pile against the rear wall. As a result any water collected will be diverted to the landfarm floor. As per our Landfarm Management Plan this water is sampled and would be pumped to the Tailings Facility (if necessary at freshet – in 2012 it was not necessary to pump any water out).

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Regional Office:
93, Rue Arseneault
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Val d'Or, Quebec J9P 0E9
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Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

- ***A Remediation Plan for quarries 22 and 5 is to be submitted with the 2013 Annual Report.***

In summer 2013, all the material of quarries 22 and 5 was removed and sent to the landfarm (below industrial guidelines) or waste rock pad (above industrial guidelines). In 2014, we will conduct soil sampling to confirm all the contaminated material has been removed. A complete description of the remediation of quarries 22 and 5 will be included in the 2013 Annual Report.

- ***Removal of a silt curtain in Third Portage Lake. The Licensee informed the Inspector that a dive team has been contracted to complete this task before year end.***

Here is a September 25th excerpt, from a report given by the Dyke General Foreman, who was also one of the divers:

"Just a small report about the silt curtain removal work that was done the past week.

We did our first dives day has inspection and analysis, we founded that the curtain is more than the 800m, depth varies from 15ft up to 50ft. The barrier is divided by section of 20 to 30m long, all attached by tie-rap in the middle and the curtain have either ropes or metal cables that are along each sides attached by metal shackles at the extremity. The curtain who was installed in a V shape had drowned and closed on herself at the bottom so we had a 2 liner thickness to work on. It is actually cover with sediments, has some rock on it at some points and even went through a metal casing that was left from old exploration research. Those are the main points that are making it difficult to lift up the barrier at the surface because it creates a lot of a suction effect.

At our second dives day, we were able to retrieve a 30m piece and bring it on shore, the proper work sequence is to detach the shackles, attach the extremities with a rope on to the boat, lift it up a bit then cut all the tie-raps and finally pull it out with the boat. We fought a lot with the boat to lift up and bring that part at the surface, it finally ripped off and we were able to tow it at the shore.

The bottom of the lake is very muddy and creates a big sediment fog so we had to work blind every time we wanted to attach ropes, cut the curtain and unscrew the shackles.

We could have done more but external factors such as the plane delay for 24hrs and the bad weather we had on Saturday has slowed us down quite a bit. We had some problem with the over board motor of the Alaskan, the propeller wouldn't go reverse and we had to start it by hand every time it stalled.

After debriefing, we came to a conclusion that it would be a job for at least one week with 2 divers. We would repeat the same sequence of work but we could attach longer sections with a long metal cable that we could bring to shore and linked it up to a dozer(for example) that could pull it, the 50 force motor on the boat doesn't have the capacity to lift up a whole section."

Further review and planning for the removal of this curtain will take place throughout the winter. Items to considered are:

a) Is there going to be more of an environmental effect removing the barrier now that there is a buildup of TSS on top of the curtain, therefore better off to leave the curtain in place ?

b) If removal is determined: Logistics of when this will take place, equipment required and contractor (diver) availability.

Water Supply

i) Update: 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 planned for January 17th, 2014. There were no objections from intervenors or the NWB to the increase in water consumption.

Waste Disposal

Tailings and Rock Storage Facilities

Vault

- ***Waste rock is being sorted and deposited at the vault waste rock storage facility. The Inspector requested a map detailing the proposed monitoring locations within the Vault deposit area.***

Please find the following map depicting the monitoring locations within the Vault area.

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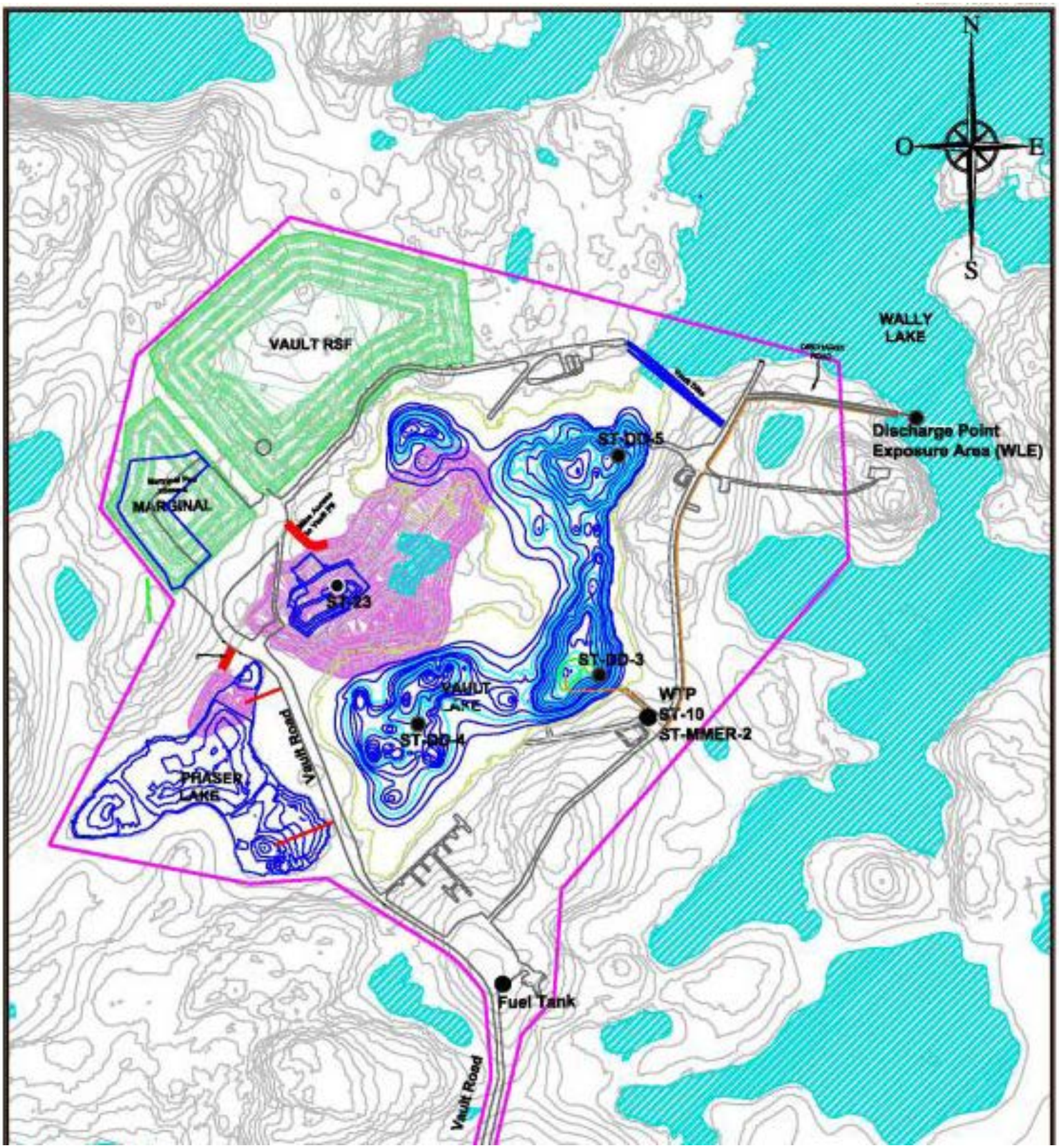

Regional Office:
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Portage

- ***At the rear of the PRSF an area is filled with potentially contact/tailings water; this water is red in colour, and very cloudy. A road constructed around the PRSF separates this water from a lake referred to as NP-2. This water in NP-2 which borders the PRSF shows signs of seepage from the PRSF contact water sump. Note: the water in NP-2 immediately adjacent to the PRSF contact water sump has white foam floating on top and a red colour of sedimentation on the shore. The vegetation around NP-2 Lake is brown and appears to be dead.***
- ***Samples have been collected at the PRSF contact water sump and NP-2 Lake.***
- ***Results from these samples confirmed that contact water has seeped into NP-2 Lake.***
- ***The Licensee will report to the Nunavut Water Board detailing the entirety of the situation surrounding the seepage water before October 5th, 2013.***
- ***All contact water is to be managed as prescribed in the Water Management Plan (WMP) in accordance with Part H item 19.***

AEM provided to the NWB a copy of the "Preliminary AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16" on October 5, 2013. A more detailed report will be provided in the next weeks to the inspectors.

Contaminated Soils

- ***The Proponent has committed to submitting a Plan with the 2013 Annual report which will consider the measure that must be taken to clean up and monitor quarry 22 and 5.***

A complete description of the remediation of quarries 22 and 5 will be included in the 2013 Annual Report

- ***All waste water from the landfarm facilities are to be contained within the landfarm. Any discharge from this facility must meet ST-35 discharge limits for fecal coliforms.***

As described in the Landfarm Design and Management Plan ver 3 (Feb. 2013), under section 4.7.2 AEM will sample for parameters outlined in Part F, Item 16 which refers to discharge to land from a fuel containment area. As described in the plan the water will either be sprayed back on the piles within the Landfarm for moisture or it will be transferred into the Tailings Storage Facility (TSF). No discharge will be send to the environment. The Landfarm water may have fecal coliforms present from the use of the sewage sludge on the piles for bioremediation, especially in the spring in summer months when there will be open water and the piles can be opened and have the sludge added. Fecal Coliforms within the piles or ice will not survive the winter season due to freezing temperatures. If water is to be removed it will be pumped to the adjacent TSF. The adjacent TSF already accepts water from the Stormwater Management Pond (Tear Drop Lake) as per our approved Operation & Maintenance Manual - Sewage Treatment Plant. The Stormwater Management Pond, which is the former ST-35 location and is related to a former Type B License

when this water was discharged to Third Portage Lake (TPL), is no longer discharged to TPL. In fact ST-35 is no longer a sampling station. Further to this any water in the TSF is not discharged to the environment (TPL) AEM does not believe it necessary to sample for fecal coliforms for these reasons.

Progressive Reclamation

- ***The Proponent is encouraged to continue to progressively reclaim old buildings, unused equipment and material. This will reduce overall reclamation at the end of mine.***

As suggested by the AANDC officers, AEM moved forward with minimizing the amount of seacans stored in Q23. A total of 86 seacans were removed from Q23 and sent south during the sealift season. The contents were sorted for later use or sent south as scrap.

AEM also continues to add our final cover of NPAG material to the edges of the RSF and commenced a 2:1 slope in Q22.

Landfill

- ***Unacceptable material was found in the landfill; aerosol containers, domestic waste, and oily rags.***
- ***The Proponent will police this facility and operate it as detailed in the Landfill Design and Management Plan.***
- ***Failure to properly police the Land fill facility will result in additional monitoring which will require the logging and reporting of all materials entering the facility to ensure compliance with the criteria set out in the current authorization.***

Please find the below Landfill inspection form in which the environmental technicians complete when doing formal inspections of the landfill. I have also attached a completed form for your convenience. Daily visual inspections are completed and any findings are entered into our interdepartmental communication tool. Formal inspections are completed on a weekly basis and the findings are recorded on the inspection form. If any improper items are observed every effort is given to find out who would have disposed of the material in the improper manner. Meetings are held with the offending department/personnel to prevent reoccurrences.

The environment department has also continued to attend intradepartmental tool box meetings to discuss various environmental programs around the mine site. One of the programs specifically pertains to the proper waste management.

Agnico-Eagle Mines: Meadowbank Division
Environment Department

Landfill Environmental Inspection report

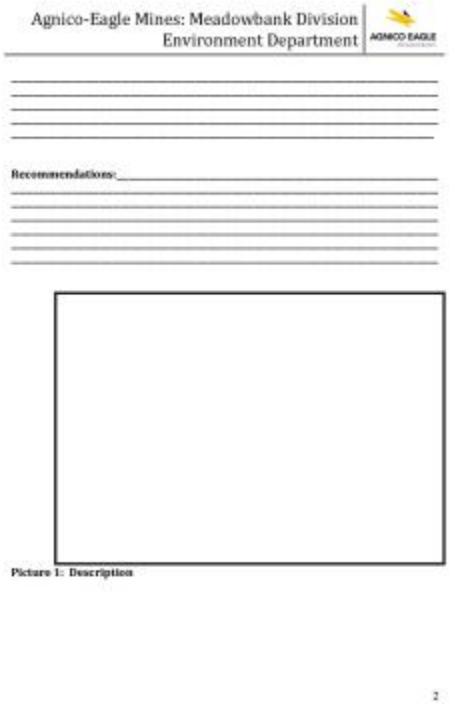
Date: **Inspected By:**
Location: **Responsible department:**

Subject	Conform	Non-conform	N/A	Picture(s) #
Visual sign of leachate				
Visual sign of runoff or seepage. If so, record and report the observation and the flow (PART 1 Item 10 and 15 of the NWB)				
Visual sign of windblown debris				
Presence of a rockfill berm to act as a wind shield				
Ash testing done (once per year) and Ashes colder than 40°				
Geotechnical Inspection conducted (once per year) NWB PART 1 Item 12				
Volume of waste send to the landfill compiled (month end data)				
Presence of salvagable material				
Presence of hazardous material				
Latest sub-landfill covered by a minimum of 0.3 to 1 meter of waste rock				
Sign or presence of wildlife				

Note: Refer to the Landfill Design and Management Plan section 2.2 and 3.3 for Acceptable and Unacceptable waste at the landfill

Comments:_____

1



Agnico-Eagle Mines: Meadowbank Division
Environment Department

Recommendations:_____

Picture 1: Description

2

SURVEILLANCE NETWORK PROGRAM (SNP)

- ***Sampling locations are lacking signage. This is ongoing from previous years. All sampling location will be fitted with signage before the November 1st, 2013. These locations will be photographed and logged for sampling consistency purposes and submitted to the Inspector before June 15, 2014.***

As discussed with the inspector all signs had been erected in the fall of 2012 and the particular location in which the inspector had not seen a sign was due to the increase in water of the area during the freshet.

All monitoring stations do have appropriate signage. Please find the attached pictures.

Example of the signage in place:

MW-08-02

The following are our locations with the signage:

ST-5

ST-6

ST-9

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

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ST-10

ST-14

ST-16

ST-18

ST-19

ST-20

ST-21

ST-23

ST-40

MW-08-03

ST-S-1

ST-S-2

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
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Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

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General Comments:

- ***Quarry 23 is being used as a storage area for old or unused materials and equipment.***
- ***This area is found to be in an unacceptable state; pieces of broken/burnt equipment are located throughout the quarry.***
- ***All maintenance is to be completed in a designated area; many pieces of equipment have hydrocarbon staining beneath them and/or the batteries were found to still be attached. The Proponent will conduct these activities in accordance with Part H item 8.***

Quarry 23 is being used as a temporary storage area for equipment that is not currently being used, but may be used in the future. It also contains some drill cores, which AEM is required to keep, steel and pipe product and electrical products. The broken and/or burnt equipment in this area continue to be stripped for the parts on the equipment. There is no maintenance being performed at this site

AEM is working on a plan to remove the unusable derelict equipment during the upcoming 2014 sealift. .

The minor hydrocarbon staining that was noted has been cleaned up. Inspections are completed regularly in quarry 23 by the environment department.

- ***During the inspection it was noted that dust control measures needed to be deployed. The Proponent has provided to the Inspector with an account of the measures taken to suppress dust onsite. The results of the on-going dust monitoring program will be submitted to the Inspector before the date of the next inspection.***

Please find below the up to date results from the dust monitoring study. No standards for dustfall are available for Nunavut. Results of the dustfall analysis will be compared to the Alberta Environment Department recreational area guideline of 0.53mg/cm2/30d, to provide context. This table depicts the average monthly results at the Meadowbank project.

	Exposure	Total dustfall	Total dustfall 30 days	Total fixed dustfall	Total fixed dustfall (30 days)
Units	days	mg	mg/cm²/ 30 days	mg	mg/cm²/30 days
Alberta Environment Department Recreational Area Guideline		NA	NA	NA	0.53
DF-1 (Emulsion)	28.2	47.9	0.6148	44.2	0.5702
DF-2 (TCG)	28.2	33.8	0.4344	27.9	0.3644
DF-3 (TPE)	28.2	37	0.4636	32.9	0.4212
DF-4 (Vault Road)	28.2	17.1111	0.2087	13.8889	0.1668

AEM has a dust control program and will continue to monitor for dust and follow our program. All the results from 2013 will be submitted in the annual report.

Dust Suppression Plan

1) Mine roads are water continuously using water truck. As needed.

2) Site roads have liquid calcium chloride applied, including from Meadowbank Gatehouse to Exploration Camp

3) Air strip has water applied 30 minutes or less prior to the arrival of aircraft. And again 15 minutes before take-off of the aircraft. We are currently researching a more permanent dust suppressant method for the air strip; this is subject to Airline approval.

4) Calcium Chloride Flakes have been order for Dust suppression 2014. These will be arriving during the 2013 barge season.

- ***Material used during the construction of the airstrip extension is noted along the shore of Third Portage Lake. This material if not to be utilized during construction must be removed before winter as this is considered waste.***

Removal of this material will take place prior to November 30, 2013. AEM decided to wait until the tundra froze to remove this material to avoid rutting and creating an even worse environmental impact. Photos of the removal from this location will be sent to the inspector as soon as this project is completed.

Non-Compliance of Act or Licence:

Part H item (8): Failure to implement spill control measures

The area in Q23 in which the minor spill was noted has been cleaned up. Departments involved were also made aware that spill control measures must be put in place to prevent spillage and to immediately clean up any spillage if it occurs.

Part H item (19): Failure to carry out plans to their full extent

There is no Part H Item (19) in Licence No: 2AM-MEA0815. AEM ask the inspector for clarification on this prior to commenting.

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: Kevin Buck –AEM
Stephane Robert – AEM
Erik Allain – AANDC
Phyllis Beaulieu – Nunavut Water Board

Landfill Environmental Inspection report

Date: *2013-10-14* **Inspected By: Martin Theriault**
Location: Landfill **Responsible department: Site services/Mine**

Subject	Conform	Non-conform	N/A	Picture(s) #
Visual sign of leachate			X	
Visual sign of runoff or seepage. If so, record and report the observation and the flow (PART I Item 10 and 15 of the NWB)			X	
Visual sign of windblown debris	X see comments			
Presence of a rockfill berm to act as a wind shield	X			
Ash testing done (once per year) and Ashes colder than 60°	X July 2013			
Geotechnical Inspection conducted (once per year) NWB PART I Item 12	X			
Volume of waste send to the landfill compiled (month end data)		X Missing September data		
Presence of salvageable material	X			
Presence of hazardous material	X			
Latest sub-landfill covered by a minimum of 0.3 to 1 meter of waste rock	X			
Sign or presence of wildlife	X		X	

Note: Refer to the Landfill Design and Management Plan section 3.2 and 3.3 for Acceptable and Unacceptable waste at the landfill

Comments: Very windy the day of the inspection, some debris were flying but not going out of the landfill as the rockfill berm were about 10 meters high.
We need the amount of waste transfert to the landfill for the month of September

Recommendations: Make sure to keep track of every load going in the landfill and to send the month end report to the environment department

Picture 1: Landfill

Appendix D

NIRB File No.: 03MN107
NWB File No.: 2AM-MEA0815
KivIA Production Lease No.: KVPL308D280
AANDC File No.: 5510-5-3
DFO File No.: NU-03-0191
EC File No.: 4703 001 015 120
NRCan File No.: F74222

October 1, 2013

Thomas Kabloona
Chairperson of the Nunavut Water Board
c/o Phyllis Beaulieu
Manager of Licensing
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Sent via email: licensing@nunavutwaterboard.org

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 Type A Water Licence for the Meadowbank Gold Project, Kivalliq Region

---

Dear Phyllis Beaulieu:

On April 23, 2013 the Nunavut Impact Review Board (NIRB or Board) received correspondence from Agnico-Eagle Mines Ltd. (AEM) advising of its intention to apply with the Nunavut Water Board (NWB) for an amendment to its Type A Water Licence (2AM-MEA0815) for the Meadowbank Gold Project (NIRB File No. 03MN107). On July 15, 2013 the NIRB received correspondence from the NWB which acknowledged AEM's amendment application and requested that the NIRB confirm whether any screening, reconsideration or review of the proposed amendment would be required.

PROCESS OVERVIEW

The NIRB Project Certificate [004] issued for the Meadowbank Gold Project on December 31, 2006 was the product of the Board's extensive public review of the potential impacts associated with the project proposal filed by the original proponent of the project, Cumberland Resources Ltd. in March 2003. The NIRB's Review provided opportunities for public input through written

submissions, community meetings and participation in a Public Hearing. The scope of the NIRB's Review was based on the project as proposed in 2003 and as reviewed by the Board between 2003 and 2006. To determine the impact assessment requirements applicable to AEM's current amendment request, the NIRB had to consider two possible avenues under the Nunavut Land Claims Agreement (NLCA).

If the NIRB determined that the proposed amendment is within the scope of the Meadowbank Gold Project as previously reviewed by the Board and as addressed by the existing terms and conditions of the NIRB Project Certificate [004], the amendment would be exempt from the requirement for screening by the NIRB as set out in Article 12, Section 12.4.3 of the NLCA:

> *12.4.3 Any application for a component or activity of a project proposal that has been permitted to proceed in accordance with these provisions shall be exempt from the requirement for screening by NIRB unless:*
>
> *(a) such component or activity was not part of the original proposal; or*
>
> *(b) its inclusion would significantly modify the project.*

Alternatively, if the NIRB determined that the amendment request represents a significant change to the project as previously reviewed, the Board would then evaluate whether the significant changes to the project warrant a formal reconsideration of the terms and conditions of the existing NIRB Project Certificate [004] pursuant to Section 12.8.2 of the NLCA:

> *12.8.2 NIRB may on its own account or upon application by a DIO, the proponent, or other interests, reconsider the terms and conditions contained in the NIRB certificate if it is established that:*
>
> *(a) the terms and conditions are not achieving their purpose;*
>
> *(b) the circumstances relating to the project or the effect of the terms and conditions are significantly different from those anticipated at the time the certificate was issued; or*
>
> *(c) there are technological developments or new information which provide a more efficient method of accomplishing the purpose of the terms and conditions.*

Given the integrated regulatory process established by the NLCA Article 12, Sections 12.10.1 and Article 13, Section 13.5.4, the NWB cannot approve the issuance of an amended licence until the NIRB has confirmed that the assessment provisions of Article 12 of the NLCA have been satisfied.

PROCEDURAL HISTORY

AEM has applied for an amendment to the Type "A" Water Licence as issued by the NWB for the Meadowbank Gold Project to allow for increased fresh water use as projected requirements have exceeded and continue to exceed the previously permitted rate. The amendment application indicates that increased freshwater use is required owing to higher than anticipated rates of ore processing, and an adjustment of the initial water balance model, resulting in a deficit of reclaimed water. AEM has applied for a water licence amendment to increase the freshwater

drawdown and use from the Third Portage Lake from the originally permitted 700,000 cubic metres per year (m^3/yr) to 1,870,000 m^3/yr in 2013, and 1,150,000 m^3/yr for the years 2014 through 2018.

The complete amendment application is available online from the NIRB's public registry at the following location:

http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/06-AUTHORIZATIONS/Nunavut%20Water%20Board/01-LICENCE/03-AMENDMENTS/2013%20Amendment/.

On August 6, 2013 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 Water Licence (No. 2AM-MEA0815) amendment application on or before August 20, 2013. The Board requested that parties provide their views on the following points in particular:

- Whether or not the proposed amendment is within the scope of the project as originally reviewed by the NIRB in 2006 and as addressed by the existing terms and conditions of the NIRB Project Certificate [004];
- Whether or not the proposed amendment triggers a requirement for reconsideration of the terms and conditions of the NIRB Project Certificate [004] as set out in NLCA Sections 12.8.2 (a), (b), or (c) and, if so, which of the circumstances supporting reconsideration under the NLCA provides the basis for the reconsideration;
- Whether, if a reconsideration of Project Certificate [No. 004] is triggered under Section 12.8.2 of the NLCA, there are specific terms and conditions that should be reconsidered;
- Whether a reconsideration under 12.8.2 is likely to arouse significant public concern and, if so, describing the basis for the concern;
- Whether parties require additional information to support the consideration of the proposed amendment application and the Board's request for comments; and
- Any matter of importance to the Party related to the amendment application as presented by AEM that should be considered by the NIRB in making its determination.

Due to an administrative error, a number of parties on the NIRB distribution list did not receive the request for comments as initially distributed. Follow-up correspondence was sent to all parties extending the comment deadline and requesting that parties provide comment submissions by September 3, 2013. On or before September 3, 2013, the NIRB received comment submissions from the following interested parties:

- *Aboriginal Affairs and Northern Development Canada*
- *Environment Canada*
- *Fisheries and Oceans Canada (request for clarification and comments)*

All comments provided to NIRB regarding this amendment can be viewed on the NIRB's online public registry and are available at the following link:

http://ftp.nirb.ca/03-MONITORING/03MN107-MEADOWBANK%20GOLD%20MINE/06-AUTHORIZATIONS/Nunavut%20Water%20Board/01-LICENCE/03-AMENDMENTS/2013%20Amendment/02-COMMENTS/.

NIRB Assessment and Decision

After a thorough assessment of all materials provided to the Board and comments received, the NIRB is of the understanding that the proposed amendment application by AEM does 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. Therefore, this amendment application is exempt from the requirements for screening pursuant to Section 12.4.3 of the NLCA and the amendment activities therein remain subject to the terms and conditions of the NIRB Project Certificate [004].

The NIRB's Monitoring Officer for the Meadowbank Project Certificate will give further consideration to whether any additional monitoring/reporting requirements may be necessary in light of the proposed amendment as per the Sections 12.7.1 and 12.7.2 of the NLCA, following receipt of further clarification from the Proponent on a number of items.

Should you have any questions or require clarification related to the NIRB's monitoring program for the Meadowbank Gold Project, please contact Sophia Granchinho, Senior Technical Advisor and Monitoring Officer at (867) 793-4633 or sgranchinho@nirb.ca.

Sincerely,

Ryan Barry
Executive Director
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico-Eagle Mines Ltd.
Kevin Buck, Agnico-Eagle Mines Ltd.
Karén Kharatyan, Nunavut Water Board
Meadowbank Distribution List

Appendix E

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 2AM-MEA0815

Date: November 1, 2013

To: Meadowbank Distribution List

Subject: **Type "A" Water Licence 2AM-MEA0815, Agnico-Eagle Mines Limited: Pre-Hearing Conference Decision Regarding an Application for Amendment**

On October 31, by Panel Motion #2013-18-P9-04, the members of the Meadowbank Panel (P9), duly appointed by the Nunavut Water Board (NWB or Board) to consider the Amendment Application of the existing Type "A" Water Licence 2AM-MEA0815, held by Agnico-Eagle Mines Limited, approved the release of this Pre-Hearing Conference Decision Report along with the procedural direction for the written Public Hearing for the above noted file and asked that the following information be conveyed in that regard.

In order to facilitate the process for considering the Type "A" Water Licence 2AM-MEA0815 Amendment Application, submitted to the Board on April 26, 2013 by Agnico-Eagle Mines Limited (AEM, Applicant or Licensee) for the Meadowbank Gold Project (the Amendment Application), the Panel directed that in accordance with Rule 14 of the NWB Rules of Practice and Procedure (the Rules), the staff of the NWB hold a Pre-Hearing Conference (PHC) for the Amendment Application.

The Technical Meeting was held in the closest community to the Meadowbank Gold Project, Baker Lake, Nunavut, on Wednesday, October 16, commencing at 8:30 am and concluding at 3:30 pm local time. A Community Session was also held in Baker Lake on the evening of Wednesday, October 16 from 7:00 pm to 9:00 pm local time. The following morning, Thursday October 17, the NWB held the Pre-Hearing Conference (PHC) in respect of the Amendment Application from 8:30 am to 11:30 am local time. The Agenda for the TM/PHC is attached as Appendix A and the parties in attendance at the TM/PHC are listed in Appendix B.

As set out in Rule 14.1 of the Rules, the PHC dealt with the following matters relevant to the Amendment Application:

- Timetable for the Pre-Hearing exchange of information
- Identification of interested parties;

- Submissions of interested parties;
- List of issues to be dealt with at the Hearing;
- Desirability of amending the Application for the purpose of clarification;
- Procedures for the Public Hearing; and
- Identification of any other matters that may assist in the simplification and disposition of the Hearing.

Introduction and Registration

No community or public members registered with the Board to participate in the TM or PHC. The Applicant and the following Interveners participated in the TM/PHC:

- Agnico-Eagle Mines Limited (AEM);
- the Kivalliq Inuit Association (KivIA); and
- Aboriginal Affairs and Northern Development Canada (AANDC).

Environment Canada also provided written comments in respect to the Amendment Application in advance of the TM/PHC indicating that they had no issues with the Amendment Application but may provide further comment on review of the water management plan. On this basis, Environment Canada did not appear or otherwise participate in the TM/PHC. A specific list of the individuals participating in the TM/PHC is provided in Appendix B to this Report.

1.0 The Application Before the Board

The Amendment Application before the Board is an application to amend Part E, Item 3 of Type "A" Water Licence 2AM-MEA0815 to increase the authorized use of water 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.

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 permitted within the existing Type "A" Licence. The Applicant reported annual water use of 1,148,505 m^3, 1,088,254 m^3 and 1,044,674 m^3 of freshwater in 2010, 2011 and 2012, 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 water use requirements are still projected to continue to exceed the permitted rate. The Applicant indicated that in 2013 additional water use was also required due to operational problems with the reclaim water barge which resulted in limited use of recycled water from approximately February 2013 through to June 2013, and as such, this amendment to the Licence continues to be required.

Application and Supporting Materials Submitted by the Applicant

The following documents were included within the Amendment Application:

A. Cover Letter;
B. Completed Application form for Water Licence Amendment;
C. Compliance assessment/status report;
D. 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.
E. Freshwater Consumption Executive Summary – English and Inuktitut; and
F. $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 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/

Scope of the Type "A" Water Licence Amendment Application

The scope of the Type "A" Water Licence Amendment Application is proposed to remain the same as the existing Licence. This Amendment seeks only to increase the total authorized amount of water used to **1,870,000 m^3** in 2013 and **1,150,000 m^3** per year after 2013.

2.0 Procedural History

Licence history

The existing Type "A" Water Licence 2AM-MEA0815 was issued by the NWB on June 9, 2008.[1] The 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 water 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 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.

On September 21, 2012 after reporting annual water use that exceeded the licensed limit of 700,000 m3 in 2010, 2011 and 2012, the Applicant provided the NWB and other interested parties with an update of their freshwater usage at the Meadowbank Gold Project site. AEM

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

indicated in that letter that an action plan had been put into place to minimize the use of freshwater at the mill and that AEM was investigating several different options to increase the usage of reclaim water that would subsequently result in a decrease of the mill's freshwater requirements.

On January 3, 2013 AEM provided the NWB with an update of the Project's freshwater consumption. At that time the Applicant indicated that they were able to increase the recirculation of reclaim water by 80%, and that these measures had, in turn, reduced the freshwater consumption at the site by almost 40 m^3/hour which represented a total annual volume of 300,000 m^3. AEM also indicated that with the completion of the action plan, the Licensee was hoping to reduce freshwater use to meet the current limit of 700,000 m^3 per year in 2013.

However, 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 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 July 15, 2013, 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 Mine Project. The NPC has not provided any indication that an additional conformity determination is required for the Amendment Application.

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). 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. Therefore, on August 29, 2013, the Board gave notice of the Amendment Application in accordance with s. 55(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA), inviting interested person to continue their technical review of the application and make representations within thirty days of the Notice of Application (September 29, 2013). 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. On October 1, 2013, the Board confirmed October 16-17, 2013 as the dates of the Technical Meeting and Pre-Hearing Conference in Baker Lake**,** and provided parties with a proposed Agenda for the TM/PHC (attached as Appendix A). Interested parties were asked to provide comments on the proposed Agenda and to confirm their attendance at the Technical Meeting and Pre-Hearing Conference by October 10, 2013.

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]. 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 (KivIA), citing internet problems that prevented the electronic delivery of their submissions on September 29, 2013, provided the Board with their written technical review comments. The KivIA also confirmed their participation at the Technical Meeting and Pre-hearing Conference in Baker Lake. On October 10, 2013 AANDC confirmed their attendance at the Technical Meeting and Pre-Hearing Conference in Baker Lake. EC indicated that as they had not identified any issues with respect to the Amendment Application, EC would not be in attendance at the Technical Meeting and Pre-Hearing Conference.

On October 22, 2013, as follow up to the attendance and participation of Sophia Granchinho, the NIRB's Monitoring Officer for the Meadowbank 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."

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 Meadowbank Panel (P9) also approved the release of this Pre-Hearing Conference Decision Report along with the procedural direction for the written Public Hearing to be conducted for the Amendment Application.

3.0 Technical Review Comments Received by the Board

Technical review comments specific to the Licence Amendment Application were submitted on or before October 9 by the Kivalliq Inuit Association, Aboriginal Affairs and Northern Development Canada and Environment Canada.

Kivalliq (KivIA)

Overall, the KivIA indicated that they did not have issues with the Amendment Application specifically. The KivIA 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).

Although KivIA did not identify specific technical issues associated with the increased water use proposed under the Amendment Application, KivIA did identify concerns in relation to understanding 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). In particular, the KivIA 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 KivIA indicated that they wanted to ensure that the level of monitoring is 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 KivIA indicated that additional information should be supplied regarding whether the reclamation plan, security deposit and monitoring plans provided by the Applicant should also be updated to reflect the increased ore processing rate.

AANDC

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 implement 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.

Environment Canada

Environment Canada indicated that they had no concerns with the increase in water use and with the Amendment Application however, they trust there will be opportunity for future discussions on the water management issues.

4.0 Technical Meeting

The Technical Meeting (TM) for the Amendment Application was held in the closest community to the Project, Baker Lake, on October 16 and 17, 2013. From a procedural standpoint, it should be noted that, as is the Board's practice, the TM was somewhat informal and the meeting was administered by the Board's staff and chaired by David Hohnstein, the Board's Director of Technical Services. It should also be noted that the Panel Members of the Board who will be the decision-makers for the Amendment Application, were not in attendance at either the TM or the PHC.

The objectives of the TM were outlined to the participants as follows:

- examine technical data and other materials submitted to date as part of the Amendment Application, including interveners' submissions;
- informally discuss and resolve, to the extent possible, any technical matters/issues raised between interveners and the applicant, particularly those matters that could affect the Board's determination on any PHC issues, in advance of the PHC;
- provide the opportunity for the applicant and interveners to identify for the Board the issues and concerns that have been resolved and to discuss any unresolved or ongoing issues related to the Amendment Application;
- identify opportunities for streamlining the issues and process so as to eliminate existing or potential duplication; and
- document any commitments made by the various parties involved in the TM, with the aim of carrying forward those commitments to the PHC.

At the TM, the following key issues were discussed by the parties:

- the updated water management plan for the site;
- activities undertaken by the Applicant to increase reclaim water use and to reduce freshwater requirements;
- the timing and anticipated contents of AEM's separate amendment/renewal application to be submitted one year before the expiry of the existing licence (July 2014);
- confirmation that the scope of this Amendment Application includes only the increase to water use volume and will not include changes to reclamation plans, security, waste rock disposal areas and tailings management;
- the updating of water user compensation to be undertaken by the KivIA and AEM in November; and
- monitoring, reporting and plan reconciliation necessary for the terms and conditions of an amended Licence to adequately reflect AEM's updated approach to monitoring, reporting and planning .

At the completion of the TM it was confirmed by all participants that there were no outstanding issues that would prevent the Board from moving forward to the Pre-Hearing Conference and Public Hearing in respect of the Amendment Application.

5.0 Community Session

To promote public awareness and public participation in the NWB licensing process, the NWB coordinated a community meeting in Baker Lake on the evening of October 16, 2013 that commenced at 7:00 pm. Representatives of the Board, the Applicant, the KivIA and AANDC attended the session and were available to address public comments and questions about the Amendment Application specifically and the water licensing process in general.

Attendance at the community session was very low (two participants). Consequently, the community session was conducted without formal presentations, instead consisting of an informal roundtable discussion between the participants and the parties. The Applicant and the NWB presented a very brief overview and summary of the existing Type "A" Water Licence for the Project, the Amendment Application before the NWB and the water licensing process. This was followed by an informal question and answer period where the following questions were discussed:

- Were the pits completely fished out before being mined?
- Is it possible for freshwater to become contaminated because of waste rock disposal and tailings disposal?
- Could contamination result from melting snow passing through the waste rock disposal and tailings disposal areas?
- How will the company and/or governmental organizations make sure that no water contamination happens after mining is complete?
- Are the fish in water bodies close to the mine safe to eat?
- What will happen after the active mining is done? And in particular:
    - how will the mining areas be cleaned up;
    - will buildings be moved, demolished or remain on site;
    - will it be safe to go on-site and walk around the site when the site is reclaimed;
    - will the fish be gone from the area by then;
    - how long will the water quality be checked to make sure that it remains clean and safe to drink; and
    - will the site be secured for future generations?
- How long will the active mining continue?
- What does the final product of the mine (gold bar) look like (i.e. how big is it, how much does it weigh)?
- How many Inuit employees does AEM have?

6.0 Pre-Hearing Conference (PHC)

As the parties confirmed in the TM that there were no outstanding issues that would prevent the Amendment Application from being considered by the Board in a Public Hearing, the PHC portion of the Agenda proceeded in the morning of October 17, 2013. The PHC was chaired by the Board's Executive Director, Damien Côté, with the same participants as the TM. The purpose of the PHC was to discuss the various matters as set out in Rule 14 of the NWB Rules of Practice and Procedure for Public Hearings (the Rules), in preparation for the Public Hearing.

Timetable for the Pre-Hearing Exchange of Information

At the outset of the PHC there was considerable discussion amongst the parties regarding the extent to which additional information needed to be supplied by the Applicant in advance of the Public Hearing. In the course of these discussions, it became clear that some of the additional information requested by the parties was in relation to information that AEM was anticipating supplying for the upcoming Licence Renewal application (anticipated to be filed in July 2014) and that would not be available in time for this Amendment Application. The Applicant also indicated that this additional information was not, in AEM's view, relevant to the water use issues arising from this Amendment Application but rather related to the overall operation and reclamation of the mine itself.

In addition, there was discussion regarding how best to ensure that the parties can access and review existing information contained in the Annual Monitoring Report, management plans, etc. being filed by AEM with the NWB. In this regard, it was suggested by the parties and the Board that it may be helpful, as a precursor to the parties filing further written submissions, to hold, by teleconference, an Annual Report Workshop involving the parties at the PHC (with the possible addition of Environment Canada). The purpose of the Workshop would be to have AEM provide a "guided tour" of the existing Annual Report and then have an open discussion with the parties regarding potential improvements to the reporting structure that reflect not only the Water Licence requirements but also greater ease of access and use for the parties to the information contained in the Annual Report.

The parties agreed that, taking into account the timing of the Public Hearing, the NWB's 60 day Notice Period requirements in advance of a Public Hearing and the Board's usual requirements under Rule 12.4 of the NWB Rules of Practice and Procedure for Public Hearings, which establishes that a minimum of fifteen (15) days be provided for review of all pre-Hearing written submissions, this Workshop must take place during the week of November 25-29 or earlier.

Following the Workshop, the parties may decide that they do not need to provide additional written submissions other than the technical review comments already received by the Board, but if any additional materials are filed, these materials are expected to be quite limited in scope. It should be noted that if unanticipated and substantive submissions are provided to the Board in advance of the Public Hearing, the Board may be required to reconsider the timelines set out below to meet the requirements of procedural fairness.

Reflecting these factors, the Board requires that the participants observe the following timetable:

- Workshop related to the reporting requirements of Licence 2AM-MEA0815 to be held by Teleconference some time during the **week of November 25-29, 2013 or earlier**;
- all further and final written submissions to be provided by interveners, including the translated summaries of the interveners' comments, and comments on the Amendment Application by members of the public must be filed with the Board on or before **1:00 pm Mountain Time on Friday, December 20, 2013**;
- all further and final responses provided by the Applicant to the information filed with the NWB to date and interveners' written submissions filed on December 20, 2013 must be filed with the Board on or before **1:00 pm Mountain Time on Friday, January 3, 2014**;

As the parties are aware, all submissions will be posted on the NWB's ftp-site (ftp://nunavutwaterboard.org/) and in the public registry upon receipt. A copy of the public registry as it relates to the Amendment Application is available on-line at the link identified previously for review prior to the Public Hearing.

Identification of Interested Parties

A complete list of interested parties that attended the TM/PHC is set out in Appendix B. During the PHC, these same parties confirmed their interest and participation in the Public Hearing associated with the Amendment Application:

- Agnico-Eagle Mines Limited (AEM);
- the Kivalliq Inuit Association (KivIA); and
- Aboriginal Affairs and Northern Development Canada (AANDC).

In addition, the parties attending the TM/PHC identified that Environment Canada may be an additional interested party that should be invited to participate in the remaining processing of the Amendment Application and associated Public Hearing.

In addition, in the formal notice of the Public Hearing that will be issued by the Board in this matter to a broad distribution list including the parties identified above and the general public, the Board will invite any other parties who wish to provide written submissions in respect of the Amendment Application in advance of the Public Hearing to do so. These parties will be advised to notify the Board and will be expected to observe the timelines for submission of written materials to the Board established for the other interveners.

List of Issues

The intervening parties in attendance at the TM-PHC confirmed that none of the unresolved or outstanding issues associated with the Amendment Application and the related information requirements should prevent the Board from proceeding with the Public Hearing in respect of the Amendment Application.

Based on the prior written submissions of the parties and the information exchanged at the TM/PHC, the Board has identified that the following issues remain to be considered by the Board at the Public Hearing:

- water use;
- water balance/water quality and associated monitoring and reporting requirements (including pit in-filling monitoring and reporting);
- impacts that increased ore production may have not only on water usage but also waste disposal and tailings storage;
- changes to waste rock storage and tailings facility associated with increased water use;
- overall requirements for existing plan revisions including abandonment and reclamation plans, monitoring plans and security amounts attributable to increased water use;
- clarification of the triggers for changes to monitoring requirements if monitoring identifies impacts from increased water use;
- whether issues of water user compensation have been resolved or remain outstanding; and
- any other issues that may be identified by the parties or the public as warranting consideration at the Public Hearing.

Desirability of amending the Amendment Application prior to the Hearing

Although it was discussed at the PHC, whether, given the requirement for AEM to submit a renewal application in July 2014 it was preferable for AEM to combine the Amendment Application with the upcoming renewal, AEM confirmed that due to timing and the availability of information such as the updated overall security assessment for the site, AEM requires the Amendment Application to be considered separately from the upcoming renewal application which will not be submitted until July 2014. On this basis, the Amendment Application to be considered by the Board relates only to an increase to the water use volume and there will be no change in scope to the Amendment Application as submitted to the Board in April 2013.

Public Hearing Procedures for the Amendment Application

The Board has determined, based on the factors listed below and as authorized under the Board's Rules of Practice and Procedure, that it is appropriate for this Public Hearing to be conducted in the form of a **written Public Hearing** rather than an in person Public Hearing. The factors that in the Board's view support having a written Public Hearing are as follows:

- the Board's review of the Amendment Application;
- the very limited scope of the amendment to the existing Licence requested by the Applicant;
- the lack of public concern associated with the Amendment Application (as demonstrated by the receipt of no written submissions by community members or other members of the public and by low attendance at the TM/PHC and the community session hosted by the Board on October 16);
- the request of the Applicant and the KivIA regarding the suitability of conducting a written Public Hearing to consider the Amendment Application; and
- the recognition that significant opportunities for future public consultation and engagement will arise during the regulatory process associated with the upcoming renewal application to be submitted by AEM in July 2014.

In making this determination, the Board is mindful of the submissions of AANDC at the PHC that in person Public Hearings are the preferred approach and there is always a benefit associated with the hearing process being carried out in person and in the community most affected by a project. However, in light of the circumstances identified above, in the Board's view, the benefits of an in person Public Hearing in respect of an amendment that is so limited in scope are

outweighed by the significant cost, time and human resource requirements associated with an in person Public Hearing in respect of this Amendment Application.

Assuming that the dates for pre-Hearing exchange of materials set out above are met, the written Public Hearing may proceed on **Friday, January 17, 2013**. Therefore, if all pre-hearing information exchange timelines are met, at the close of the day on January 17, 2013 the Hearing Record associated with the Amendment Application will close and the matter will be remitted to the duly appointed 3-Member Panel of the Board (Meadowbank Panel P9) for a decision. The Panel will consider all the evidence contained within the Hearing Record to arrive at a decision with respect to the Amendment Application.

Provision of Final Written Submissions from Interested Parties

As this Public Hearing will be conducted as a written Public Hearing, all technical review submissions and other forms of comment on the Amendment Application will be considered as evidence in the written Public Hearing, and the parties do not need to re-file these materials in the form of final written submissions. However, any additional information that the parties wish the Board to consider during their review of the Amendment Application must be filed with the Board in accordance with the timelines outlined under the heading "Pre-hearing Exchange of Documentation" above. Further, **the Board requests that all interveners who have filed comments with the Board to date, if they have not already done so, provide translated summaries of their comments in Inuktitut, Inuinnaqtun and French on or before December 20, 2013**.

Measures to Simplify the Disposition of the Amendment Application

At the PHC, the parties identified that with the exception of the Annual Report Workshop teleconference (as discussed above) there are no additional measures that can be taken to further simplify the disposition of the Amendment Application.

Steps following the Public Hearing

Following the close of the Public Hearing Record, the Panel will deliberate, and when the Panel has reached a decision, (typically within thirty (30) days of the close of the Hearing Record), the Board will issue its Record of Proceedings and Decision to the Minister of Aboriginal Affairs and Northern Development Canada. If the Panel recommends that the Amendment be granted, a draft of the Amended Licence will be attached to the Board's Decision.

If you require additional information, please do not hesitate to contact the Board's Director of Technical Services, David Hohnstein, dts@nunavutwaterboard.org or the Board's Director of Licensing, Phyllis Beaulieu, at licensing@nunavutwaterboard.org for any other matter related to the Public Hearing.

Regards,

Damien Côté
Executive Director

Attachments:
Appendix A: Technical Meeting and Pre-Hearing Conference Agenda
Appendix B: List of Participants at the Technical Meeting and Pre-Hearing Conference

APPENDIX A—TM/PHC Agenda October 16-17

AGENDA

MEADOWBANK GOLD PROJECT
TYPE "A" WATER LICENCE
AMENDMENT APPLICATION
TECHNICAL MEETING AND PRE-HEARING CONFERENCE
OCTOBER 16-17, 2013

Technical Meeting
Date: October 16, 2013
Time: 8:30 AM
Location: Baker Lake Community Hall

1. Introduction and Registration
2. Application to the board
3. Purpose of the Pre-Hearing / Technical Meeting
    a. Agnico-Eagle Mines Ltd. presentation on the current status of the Project
    b. Identification of Interested Parties
    c. Presentations from Interested parties
    d. Formulation of Issues
    e. Identification and Service of Documents to Parties (deadline, public registry, form)
    f. Translation and the Record (language, transcripts)

Community Session
Date: October 16, 2013
Time: 19:00-21:00 PM
Location: Baker Lake Community Hall

Pre-Hearing Conference
Date: October 17, 2013
Time: 08:30 AM
Location: Baker Lake Community Hall

1. Hearing
    a. Date, Time and Location
    b. Order of Events
    c. Equipment

2. Other Issues
3. Closing of the Meeting

APPENDIX B – Attendees at TM/PHC

Participant	Representing
Stéphane Robert, Manager, Regulatory Affairs Nunavut	AEM
Kevin Buck, Environmental Superintendent	AEM
Erika Voyer, Principal Geotechnical Engineer	AEM
Luis Manzo, Director of Lands	KivIA
Karen Costello, Director of Resource Management	AANDC
David Abernethy, Regional Coordinator, Water Resources Division, Resource Management Directorate	AANDC
(Via Teleconference at TM) Murray Ball, Manager of Water Resources	AANDC
Damien Côté, Executive Director	Nunavut Water Board
David Hohnstein, Director Technical Services	Nunavut Water Board
Phyllis Beaulieu, Manager of Licensing	Nunavut Water Board
Karén Kharatyan, Technical Advisor	Nunavut Water Board
Sonia Aredes, Technical Advisor (Public Hearings)	Nunavut Water Board
Robin Ikkutisluk, Licensing Administrator	Nunavut Water Board
Ben Kogvik, Secretary to the Board, Interpreter/Translator	Nunavut Water Board
Angie Akammak, Interpreter/translator	Nunavut Water Board
Corey Francis, Sound Technician, PIDO Productions	Nunavut Water Board
Teresa Meadows, Legal Counsel, Miller Thomson	Nunavut Water Board

NUNAVUT WATER BOARD
NOTICE OF PUBLIC HEARING

Notice is given that on January 17, 2014 the Nunavut Water Board (NWB) will conduct a *written* Public Hearing in respect of an application to amend the quantity of water used under a Type "A" Water Licence authorizing the use of waters and deposit of waste, details of which are as follows:

File #:	**2AM-MEA0815**
Project:	Meadowbank Gold Project
Location:	Latitude: 65° 01' 33" N; Longitude: 96° 04' 01 W
Purpose:	Amendment of Type 'A' Water Licence to increase water use from amount of water used from the current permitted amount 700,000 m^3 to 1,870,000 m^3 in 2013 and 1,150,000 m^3 per year after 2013.
Location of Hearing:	The Public Hearing will be conducted *in writing*
Date and Time:	The written Public Hearing will occur on January 17, 2014

The *written* Public Hearing will proceed in accordance with the *NWB Rules of Practice and Procedure* and the directions of the Panel provided in the NWB's 2AM-MEA0815 Pre-Hearing Conference Decision issued on November 1, 2013 and available from the link below.

Interested persons are invited to make representations on or before December 20, 2013 to:

Manager of Licensing
Nunavut Water Board
P.O. Box 119, Gjoa Haven, Nunavut X0B 1J0
Phone: (867) 360-6338; Fax: (867) 360-6369
E-mail: licensing@nunavutwaterboard.org

NOTE: Anyone who may be adversely affected by the Applicant's proposed Amendment but fails to make representations to the NWB at least 10 days before the Public Hearing may lose the right to seek compensation under the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

Copies of the application and supporting documents may be obtained, free of charge, through the internet on the NWB ftp site at the following link (Username: public and password: registry):

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

or by contacting:

Stéphane Robert, Agnico-Eagle Mines Ltd.
Phone: (819) 759-3700; Fax: (819) 759-3663
E-mail: stephane.robert@agnico-eagle.com

Appendix F

AGNICO EAGLE

AANDC, EC, KIA, NWB & AEM – Meadowbank Annual Report Review

Date: November 28, 2013 – 14:00 – 15:30
Subject: Meadowbank Annual report workshop
Location: Hosted by AEM via WebEx
Participants: AEM - Ryan VanEngen (WebEx host), Stephane Robert, Kevin Buck, Marie-Pier Marcil; NWB – Karen Kharatyan, Phyllis Beaulieu; KIA- Luis Manzo; AANDC- David Abernathy, Murray Ball, Ian Parsons; EC- Anne Wilson, Michael Mohammed

Attachments – see PDF presentation sent to participants on November 27th.

Introduction – Ryan VanEngen

"Round table"; introduction of all parties.

The group reviewed the purpose of the meeting:

- Review Type A water license annual report requirements and the AEM annual report format;
- Respond to issues raised by AANDC in PHC;
- Open discussion about how to proceed with annual reporting.

Review NWB License Requirements for the Annual Report and 2012 Annual Report format– Ryan VanEngen

AEM reviewed the License 2AM-MEA0815: Schedule B – General Condition. This schedule describes what the annual report shall include sections related to Construction, Water, Waste, Spills, Modifications, Monitoring and Closure. Since 2008, AEM has structured the annual report to meet these conditions.

AEM reviewed the Table of Contents of the 2012 annual report and illustrated that all of the requirements stated in Schedule B are presented in the annual report. AEM also stressed the overlap between many of the conditions in the Type A water license, NIRB project certificate, DFO authorizations, KIA annual reporting and federal regulations, that in AEM's opinion are met in the annual report. AEM has provided Table 1.1 that list annual report requirements for all of our licenses and authorizations; this provides a guide to the reader on where to find text that responds to the specific conditions in all of the licenses.

AANDC appreciated the effort that goes into the annual report and feel that AEM is meeting the conditions of the Type A License related to the annual report.

Overall, all participants (EC, AANDC, KIA, NWB) agreed with the format of the 2012 annual report and think it was easy to read.

AANDC suggested that, in consideration of the renewal, terms of reference should be established for the content of the Water Management and Waste Management Plan (separate) (i.e. balance, model predictions, quality info). The main concern from AANDC was that the water management information (balance and water quality predictions) was not presented in the annual report but was found in the SNC (2012) revised water management plan. AANDC noted that their annual reporting concerns and site water management are not related to AEMs freshwater use amendment application and that AANDC does not think the increased freshwater consumption rate will cause significant impacts to local aquatic ecosystem.

Review and discussion of AANDC water license amendment main points/ issues – Ryan VanEngen/ Kevin Buck – refer to AANDC email dated November 18th, 2013.

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

Mine Waste and Water Management Plans

Issue #2: Separation of the Mine Waste and Water Management Plan into two Plans:

AANDC Recommendation stated that the amended water licence should remove any reference made to a Mine Waste and Water Management Plan. Rather, reference should be made to the Mine Waste Management and Water Management Plans that have been implemented by Agnico Eagle. In 2009, Agnico Eagle replaced the 2007 Mine Waste and Water Management Plan with a Mine Waste Management Plan and Water Management Plan. These plans address Part F, Item 16 of the licence. This change in management planning should be incorporated into an amended water licence.

AEM agrees and this will be part of the Type A water license renewal and not part of the actual amendment request.

Water Balance and Water Quality Modeling Reports – Discussion and AEM responses to AANDC's issues.

Issue #1: No stand- alone Water Balance and Water Quality Monitoring Reports

AGNICO EAGLE

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

Applicable licence conditions were reviewed:

Part E, Item 6: The Licensee shall submit a Water Balance and Water Quality Monitoring Reports to the Board for review, biannually (twice a year) for two years following the commencement of operations and annually thereafter. The Report shall include a comparison of predicted and measured parameters.

AEM presented all of the water balance data (section 4 of the 2012 annual report) and water quality monitoring data (section 8 of the 2012 annual report to meet Part I Schedule I). More specifically collection systems, dewatering, and mine site water quality data are presented in 8.1.2, 8.1.3, and 8.1.5 per type A water license.

Part E, Item 7: The Water Balance and Water Quality Model shall be re-calibrated as necessary in accordance with the action plan outlined in section 3.2.5.2 of the Water Quality and Flow Monitoring Plan (August 2007), and at a minimum of once every two years following the commencement of Operations. The results and implications of the re-calibrated model shall be reported to the Board.

The water balance and water quality model were re-calibrated in 2012 and submitted in the Annual Report.

AANDC appreciated this review but had difficulty to find this information in the2012 annual report and had concerns that the modelling was not meeting the water license.

AEM will improve the reporting on water balance and water quality in our next annual report.

AEM noted that until 2012, the water management was primarily focused on dewatering and managing freshwater use and reclaim water optimization. As Meadowbank has progressed, our water management has transitioned to optimizing our operations and water management. We now have a dedicated team of water management engineers that routinely update the site wide water balance.

Discussion of Water Quality Modeling

AEM explained the reason for a quality model update in the Water license. Water quality modelling assists AEM (and regulators) to ensure the water will meet discharge criteria. This will assist us in - determining pit water quality, planning water treatment, evaluate discharge timing, etc.

AGNICO EAGLE

As we approach pit reflooding we will be reviewing our water quality model annually to ensure that CCME criteria to protect aquatic biota prior to breaching the dikes are met. The SNC forecasted water quality predictions for the pit and the downward trend of 2013 water quality data at ST-21, that will be used to predict future water quality in our 2013 model was reviewed as part of this workshop.

AANDC-requested that during the water license renewal the annual reporting conditions is clarified.

AEM agreed to discuss these issues during the water license renewal. AEM requested clarification on what predictions AANDC want AEM to compare to. AANDC asked to compare with the original model and give explanation in the difference between the two models.

KIA needs a comparison and summary table that states why there are differences. This will assist KIA in making a comparison.

AEM will include this information in our 2013 Annual Report – a comparison of results vs. predicted and offer explanations for significant changes.

KIA had some outstanding issues related to freshwater license amendment 1) waste rock use 2) and the effects of increased waste rock tonnage has on water compensation and water use. AEM and KIA will send a joint letter of agreement on compensation to NWB to allow the license amendment to proceed.

Closing – Stephane Robert

AEM is of the opinion that the annual report requirements of Schedule B of the Type A water license were met. All parties (AANDC, EC, KIA, and NWB) agree with the format and did not have specific suggestions on how to improve the annual report.

Separate from this License amendment, EC and AEM suggest that we host a workshop in mid-January (after Jan 17th) to review our water management plan. This would be a technical meeting to review specifics related to water balance and water quality to improve the revision of the plan. EC suggested that DFO also attend.

ANNUAL REPORT REVIEW AND WORKSHOP- NOV 28TH, 2013 - AEM, AANDC, KIA

AGNICO EAGLE

WORKSHOP AGENDA

Introduction - Stephane Robert

- “Round table” introduction
- Purpose of the meeting

Review NWB License Requirements for the Annual Report – Ryan VanEngen

- Schedule B – General Condition: the annual report shall include…

Review 2012 Annual Report – Ryan VanEngen

- Table of Contents
- Ideas for future reports and discussion

Review and Discussion of AANDC water license amendment main points/ issues – Ryan VanEngen/ Kevin Buck

Closing – Stephane Robert

PURPOSE OF THE WORKSHOP

The purpose for hosting this workshop is mainly to:

- Review Type A water license annual report requirements and the AEM annual report format
- Respond to issues raised by AANDC
- Open discussion

NWB TYPE A LICENSE – SCHEDULE B

Schedule B - General Conditions

The Annual Report referred to in Part B Item 5, shall include:

CONSTRUCTION

1. For the dikes and dams:
   a. An overview of methods and frequency used to monitor deformations, seepage and geothermal responses;
   b. A comparison of measured versus predicted performance;
   c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;
   d. As-built drawings of all mitigative works undertaken;
   e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;
   f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;
   g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams; and
   h. The monthly and annual quantities of seepage from dikes and dams in cubic metres;

WATER

2. Results of lake level monitoring conducted under the protocol developed as per Part D Item 11.

3. Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.

4. The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility;

WASTE

5. Geochemical monitoring results including:
   a. Operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock);
   b. As-built volumes of waste rock used in construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;
   c. All monitoring data with respect to geochemical analyses on site and related to roads, quarries, and the All Weather Access Road;
   d. Leaching observations and tests on pit slope and dike exposure;
   e. Any geochemical outcomes or observations that could imply or lead to environmental impact;

   f. Geochemical data associated with tailings solids, tailings supernatant, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data; and
   g. Results related to the road quarries and the All Weather Private Access Road.

6. Volumes of waste rock used in construction and placed in the Rock Storage Facilities;

7. An update on the remaining capacity of the Tailings Storage Facility;

8. Summary of quantities and analysis of seepage and runoff monitoring from the landfills;

9. A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal;

10. Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water;

SPILLS

11. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken;

MODIFICATIONS

12. A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities;

MONITORING

13. The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I;

14. The results of monitoring under the AEMP;

15. Results of monitoring pursuant to the Fault Testing and Monitoring Plan (August 2007);

CLOSURE

16. A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;

agr

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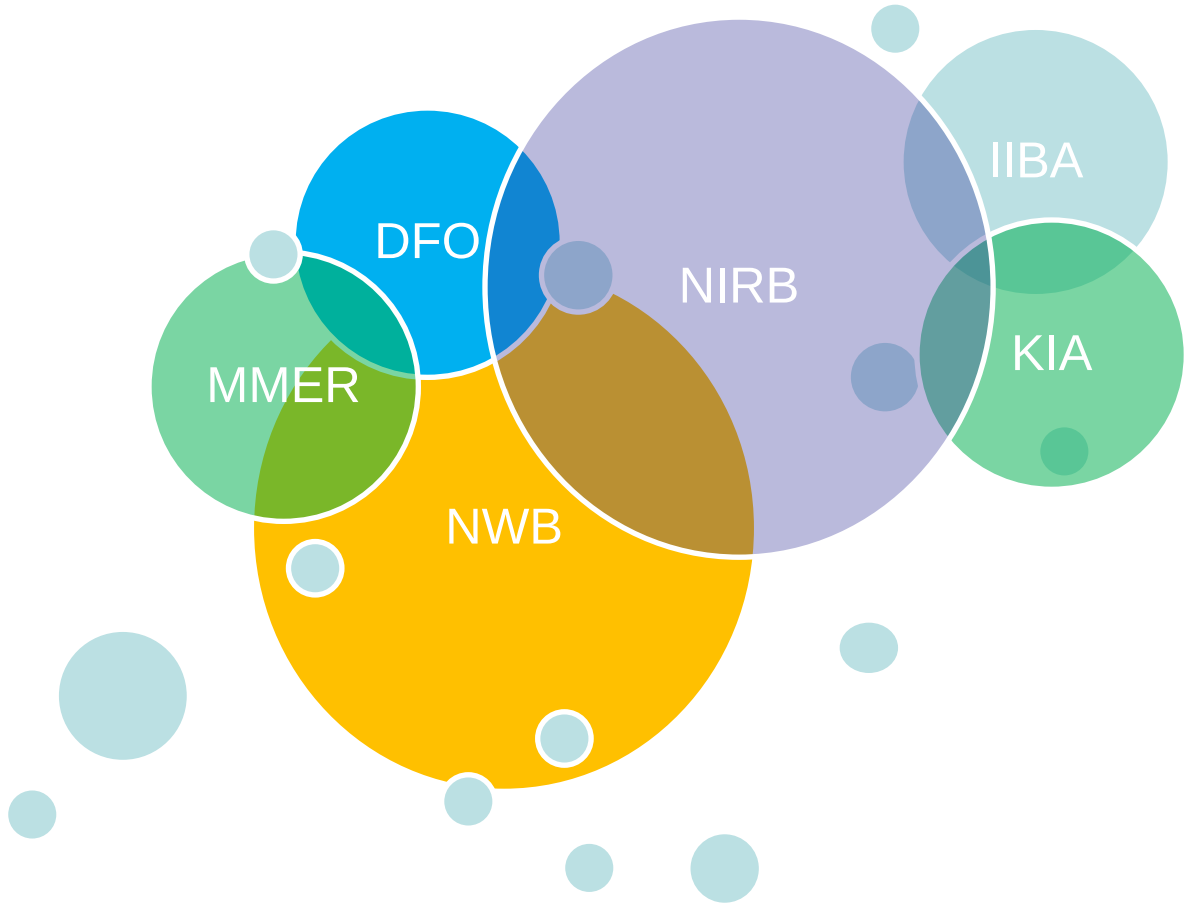
Meadowbank Gold Project - 2012 Annual Report

MERGING NWB, NIRB, KIA, & DFO ANNUAL REPORT REQUIREMENTS



AEM ANNUAL REPORT - TABLE 1.1 - EXAMPLE

AGNICO EAGLE

Table 1.1: List of Reporting Requirements

Authorization Reference	Reporting Requirement	Report Section
NIRB Project Certificate No.004 Condition 4	Take prompt and appropriate action to remedy any noncompliance with environmental laws and regulations and/or regulatory instruments, and shall report any non compliance as required by law immediately and report the same to NIRB annually.	11.2
NIRB Project Certificate No.004 Condition 8	Continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection; report the results of each re-evaluation to NIRB's Monitoring Officer, INAC and EC	8.1.9
NIRB Project Certificate No.004 Condition 15	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 during operations and closure; results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer	5.1
NIRB Project Certificate No.004 Condition 19	Report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.	5.3.3
NIRB Project Certificate No.004 Condition 23	Ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent accredited lab for analysis, on a type and frequency basis as determined by the NWB; results of analysis shall be provided to the NWB and NIRB's Monitoring Officer	8.1.13
NIRB Project Certificate No.004 Condition 29	Report to NIRB if and when [Cumberland] develops plans for an expansion of the Meadowbank Gold Mine, and in particular if those plans affect the selection of Second Portage Lake as the preferred alternative for tailings management	11.6
NIRB Project Certificate No.004 Condition 32e	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.	11.3.2
NIRB Project Certificate No.004 Condition 32f	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.	11.3.2
NIRB Project Certificate No.004 Condition 32g	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.	11.3.1
NIRB Project Certificate No.004 Condition 32h	Report all accidents or other safety incidents on the road, to the GN, KivIA [KIA], and the Hamlet immediately, and to NIRB annually.	11.3.2

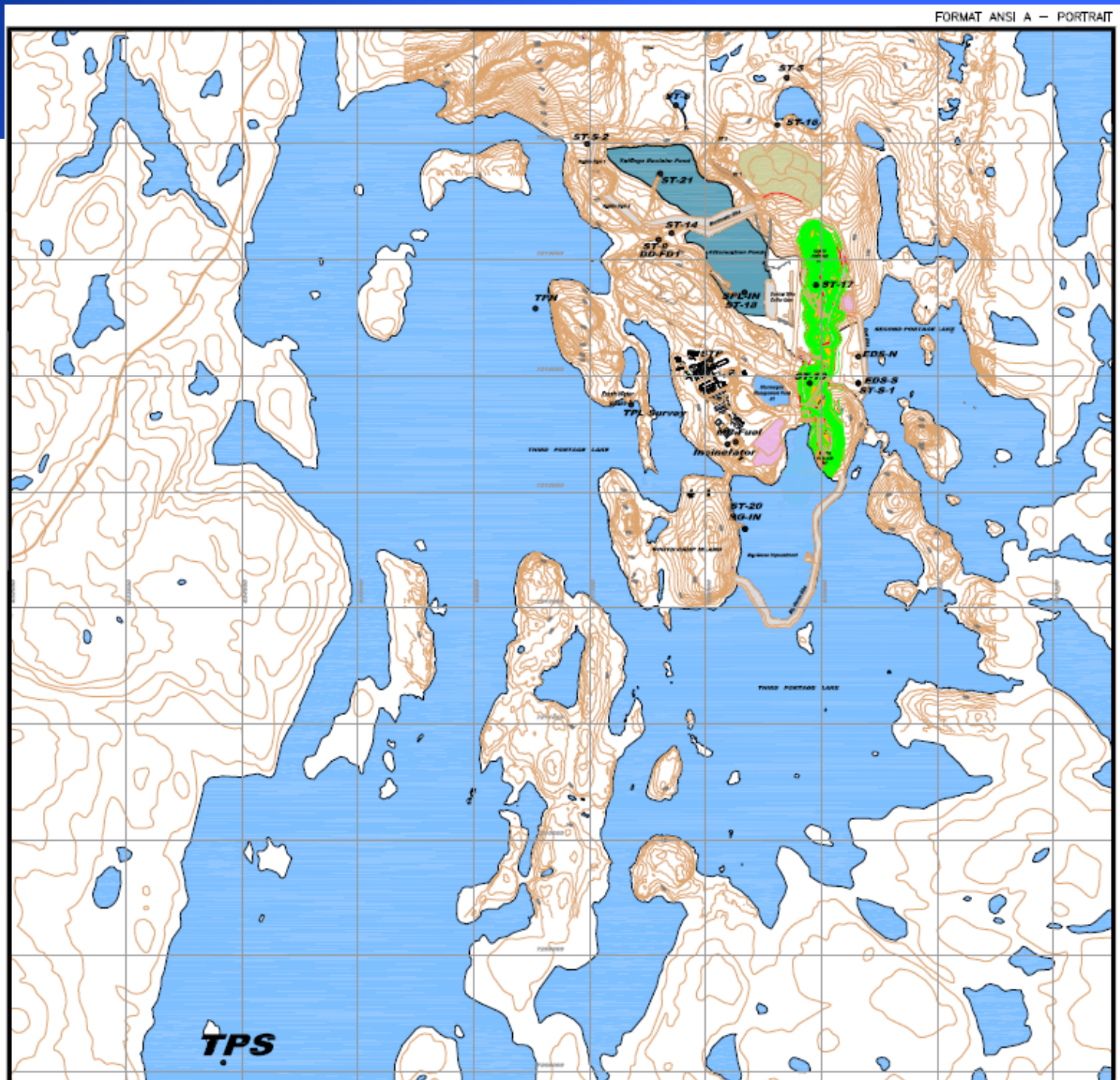
AEM ANNUAL REPORT - TABLE 1.1 - EXAMPLE

AGNICO EAGLE

NIRB Project Certificate No.004 Condition 75	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	7
NIRB Project Certificate No.004 Condition 80	File annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, INAC, and/or the NWB.	9.2.1
NIRB Project Certificate No.004 Condition 82	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.	7
NIRB Project Certificate No.004 Condition 85	Develop a detailed blasting program to minimize the effects of blasting on fish and fish habitat, water quality, and wildlife and terrestrial VECs	8.1.11
NWB 2AM-MEA0815 Schedule B-1	Construction Details for dikes and dams.	3.1
NWB 2AM-MEA0815 Schedule B-2	Results of lake level monitoring conducted under the protocol developed as per Part D Item 11.	4.1
NWB 2AM-MEA0815 Schedule B-3	Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.	4.2
NWB 2AM-MEA0815 Schedule B-4	The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility.	4.3
NWB 2AM-MEA0815 Schedule B-5	Geochemical monitoring results.	3.1
NWB 2AM-MEA0815 Schedule B-6	Volumes of waste rock used in construction and placed in the Rock Storage Facilities.	5.2
NWB 2AM-MEA0815 Schedule B-7	An update on the remaining capacity of the Tailings Storage Facility.	5.3.1
NWB 2AM-MEA0815 Schedule B-8	Summary of quantities and analysis of seepage and runoff monitoring from the landfills.	6.1
NWB 2AM-MEA0815 Schedule B-9	A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal.	6.2
NWB 2AM-MEA0815 Schedule B-10	Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.	6.3
NWB 2AM-MEA0815 Schedule B-11	A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.	7
NWB 2AM-MEA0815 Schedule B-12	A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.	11.1
NWB 2AM-MEA0815 Schedule B-13	The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I.	8

SITE FIGURE

Figure- 2



AANDC WATER LICENSE AMENDMENT- MAIN POINTS / ISSUES

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

ISSUE #2

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans -

AANDC Recommendation

The amended water licence should remove any reference made to a Mine Waste and Water Management Plan. Rather, reference should be made to the Mine Waste Management and Water Management Plans that have been implemented by Agnico Eagle.

In 2009, Agnico Eagle replaced the 2007 Mine Waste and Water Management Plan with a Mine Waste Management Plan and Water Management Plan. These plans address Part F, Item 16 of the licence … This change in management planning should be incorporated into an amended water licence.

AEM agrees and this will be part of the Type A water license renewal

ISSUE #1 AND #3

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

WATER BALANCE & WATER QUALITY MODELLING REPORT

AGNICO EAGLE

Applicable licence conditions

Part E, Item 6: The Licensee shall submit a Water Balance and **Water Quality Monitoring Reports** to the Board for review, biannually (twice a year) for two years following the commencement of operations and annually thereafter. The Report shall include a comparison of predicted and measured parameters.

Presented in the AEM annual report

Part E, Item 7: The Water Balance and **Water Quality Model** shall be re-calibrated *as necessary* in accordance with the action plan outlined in section 3.2.5.2 of the Water Quality and Flow Monitoring Plan (August 2007), and at a minimum of once every two years following the commencement of Operations. The results and implications of the re-calibrated model shall be reported to the Board.

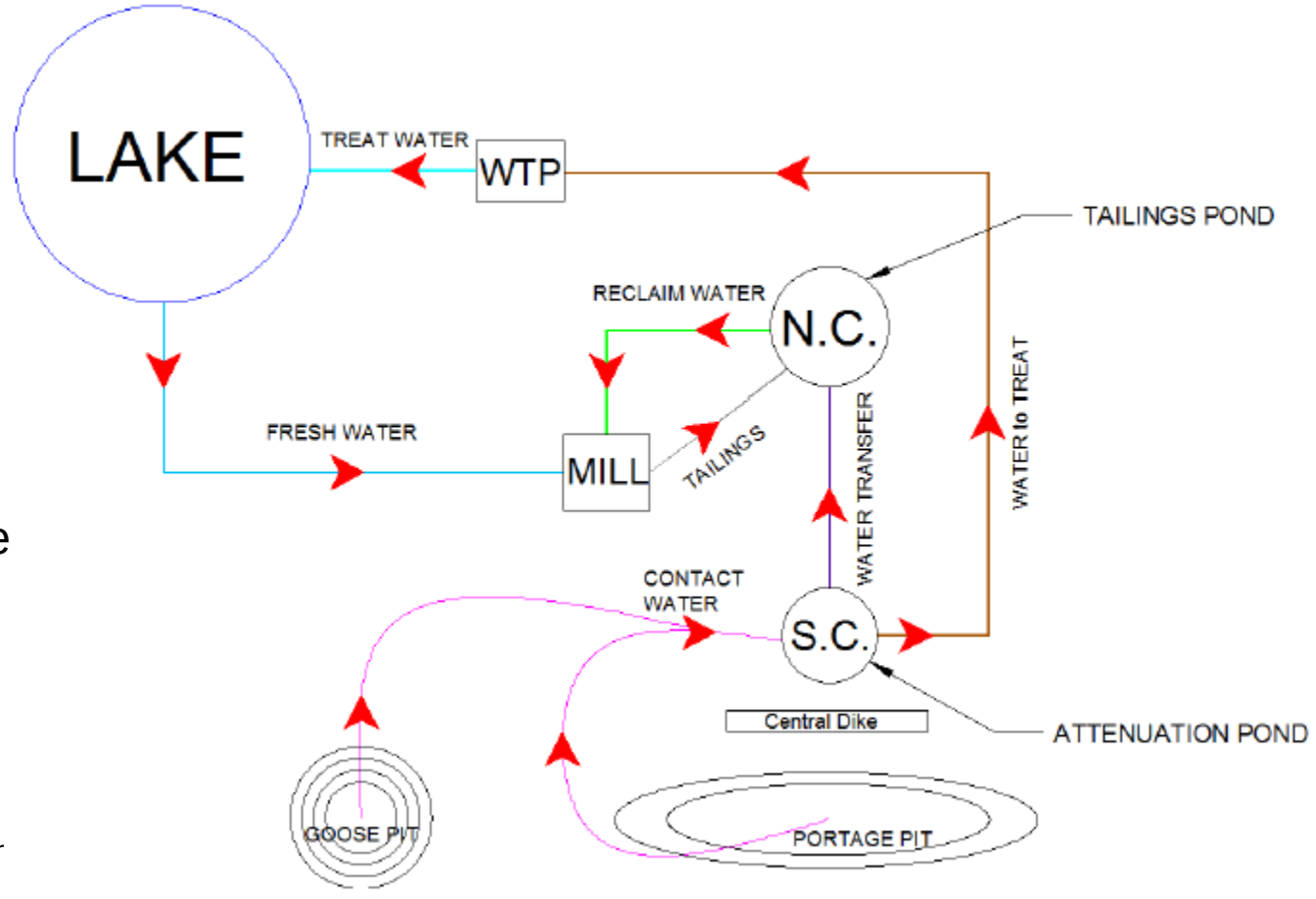
Recently reported in SNC (2012) water management plan. We will complete this annually as requested

Schedule B - General Conditions, Item 3, of the water licence requires Annual Reports to include "summaries of reporting results for the Water Balance and Water Quality model and any calibrations as required in Part E Items 6 and 7."

WATER BALANCE

As Meadowbank has progressed, our water management has transitioned from construction/ dewatering to optimizing our operations and water management .

We now have a dedicated team of water management engineers that routinely update the site wide water balance.



In - house expertise

WATER QUALITY MODELING REVIEW

Why is there a requirement for a water quality model update in the Type A water License?

To develop discharge criteria for the Type A water License.

To assist AEM in ensuring that the water quality will meet discharge criteria. This will assist us in- determining pit water quality, planning water treatment, evaluate discharge timing, etc.

AEM has met Type A License limits prior to discharging.

As we approach pit reflooding we will be reviewing our water quality model annually and ensure we meet CCME limits to protect aquatic biota prior to breaching the dikes.

4.2.2 Forecasted Concentrations in Reclaim Pond: North and South Cells

Table 4-2 summarizes the observations noted in Figures 4-1 to 4-14, specifically for the forecasted concentrations in the Reclaim Pond (North and South cells).

Table 4-2: Summary of Forecasted Concentrations in Reclaim Pond

PARAMETER	FORECASTED CONCENTRATION (mg/L)				WATER LICENSE PART F (CCME) (mg/L)
	RECLAIM POND (NORTH CELL)		RECLAIM POND (SOUTH CELL)		
	July 2012 (initial)	July - August 2014 (end)	July - August 2014	2014 to 2019	
Total Cyanide (CN)	39.26	Decrease to 14	13	Fluctuate from 8 to 11	0.5 (free CN 0.005)
Copper (Cu)	19.58	Increase to 30	25	Fluctuate from 18 to 25	0.1 (0.002)
Iron (Fe)	7.4	Increase to 14	12	Fluctuate from 8.4 to 12	n/a (0.3)
Ammonia (NH_3)	1.0	Increase to 14 (mg N/L)	11 (mg N/L)	Fluctuate from 8 to 11	16 (0.86) (mg N/L)
Nitrate (NO_3)	8.6	Decrease to 6.6 (mg N/L)	5.7 (mg N/L)	Fluctuate from 3.8 to 5.7	20 (2.9) (mg N/L)
Chloride (Cl)	626	Decrease to 490	420	Fluctuate from 420 to 280	1000 (120)
Sulfate (SO_4)	1457	Increase to 1600	1360	Fluctuate from 920 to 1600	Solubility limit of $CaSO_4$ at 10°C ~1800 mg/L

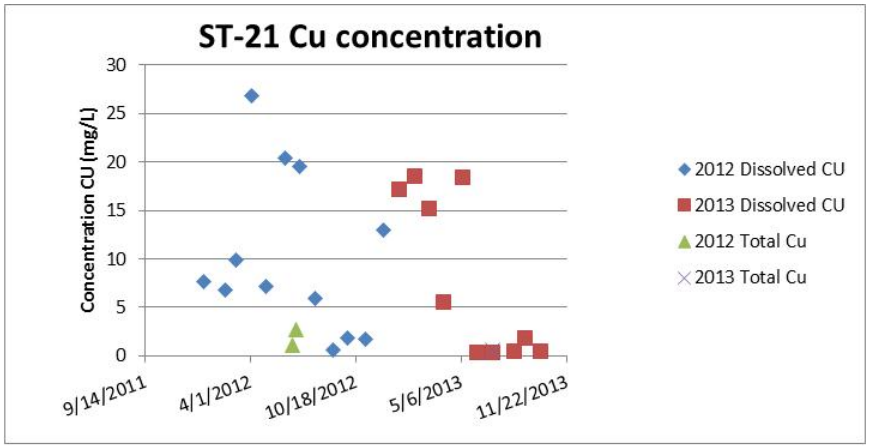
WATER QUALITY MODELLING REVIEW

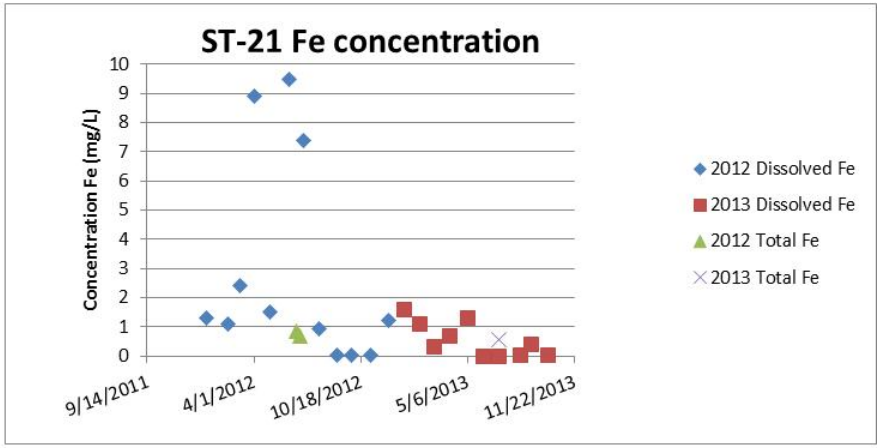
AGNICO EAGLE

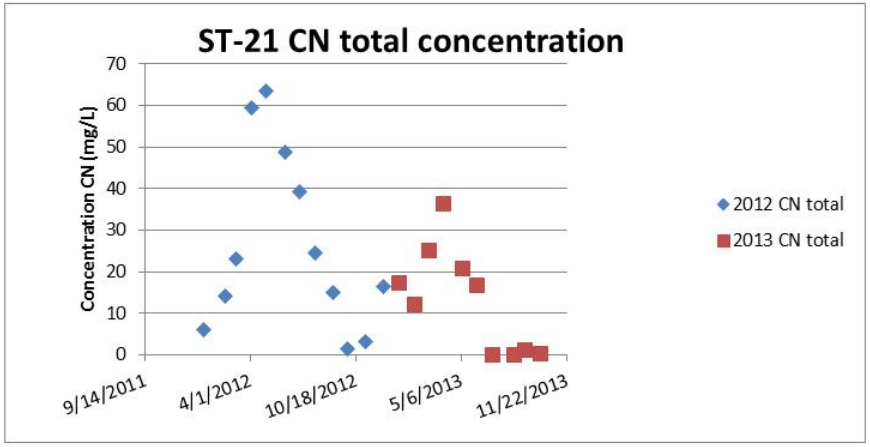
Table 4-3: Summary of Forecasted Concentrations in Portage and Goose Pits

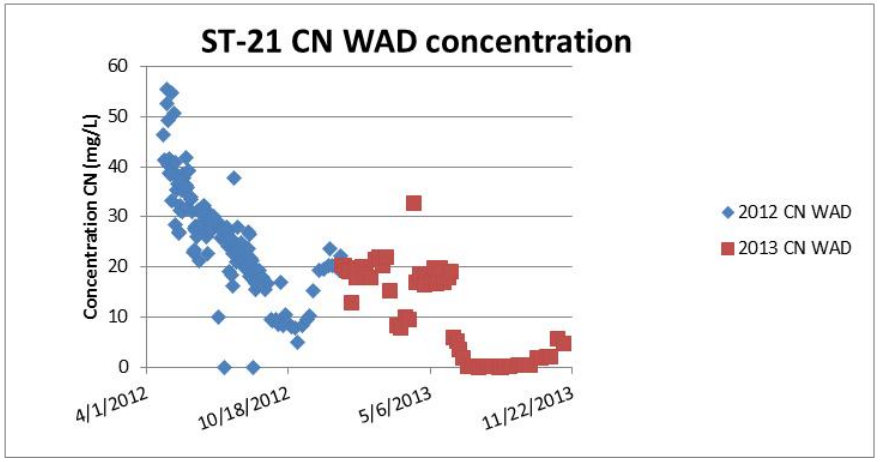
PARAMETER	FORECASTED CONCENTRATION (mg/L)				WATER LICENSE PART F (CCME) (mg/L)
	PORTAGE PIT		GOOSE PIT		
	Mar. 2015 [1] (initial)	Jan. 2025 [2] (end)	Jan. 2017 [1] (initial)	Jan. 2025 [2] (end)	
Total Cyanide (CN)	5	0.63	3.5	1.06	0.5 (free CN 0.005)
Copper (Cu)	10.2	1.4	7.8	2.3	0.1 (0.002)
Iron (Fe)	4.9	0.6	3.3	1.1	n/a (0.3)
Ammonia (NH_3)	4.7	0.6	3.2	1.0	16 (0.86) (mg N/L)
Nitrate (NO_3)	2.3	0.3	1.6	0.5	20 (2.9) (mg N/L)
Chloride (Cl)	117	22	115	37	1000 (120)
Sulfate (SO_4)	560	72	380	120	Solubility limit of $CaSO_4$ at 10°C ~1800 mg/L

EG. RECLAIM WATER QUALITY RESULTS









CONSIDERATIONS FOR FUTURE ANNUAL REPORTS

AEM is of the opinion that we meet the annual report requirements of Schedule B of the Type A water license

Are AANDC and KIA in agreement with the format of the annual report?

Is there a need to Restructure Schedule B?

(This could be done as part of the NWB type A license renewal)

We propose to host a workshop to review our water balance and water quality modeling in the first quarter of 2014.

QUESTIONS, DISCUSSION AND CLOSING

AGNICO EAGLE
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WORLD
GOLD
COUNCIL
MEMBER

Appendix G

INSPECTOR'S DIRECTION

Pursuant to section 87(1) of the *Nunavut Waters* and *Nunavut Surface Rights Tribunal Act* (SC 2002, c. 10), as amended.

To:

Agnico-Eagle Mines Ltd.
555 Burrard, Suite 375,
Box 209, Two Bentall Centre
Vancouver, British Columbia, V7X 1M8

November 8TH, 2013

- Inspector's Direction –

I, Christine Wilson, a duly designated Inspector under section 85(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (*"the *Act*"), have reasonable grounds to believe that waste has been and may continue to be deposited in contravention of section 12(1) of the *Act* and that there has been a failure of a work, related to the deposit of waste, and that the adverse effects of such deposit and failure are causing, or may cause, a danger to persons, property or the environment.

REASONABLE GROUNDS FOR BELIEF

I have personal knowledge of the matters set out herein, except where I have stated these to be based upon my information and belief, and where so stated, I believe the same to be true.

My reasonable grounds for belief are as follows:

1. It is my information and belief that:

    - Agnico Eagle Mines Ltd. ("AEM") operates the Meadowbank Gold Project; a surface gold mine and gold production mill in Kivalliq Region of Nunavut.

    - AEM holds a type 'A' water licence# 2AM-MEA0815, issued by the Nunavut Water Board on June 9th, 2008, which specifies permitted uses of water and deposits of waste relating to this project.

    - AEM, under the authorization of the water licence, mines, mills and processes ore for the purpose of gold production. By-products from the mining and milling process are stored in the Tailings Impoundment Area. This area consists of two separated facilities- the Tailing Storage Facility (TSF) for fine tailings and Portage Waste Rock Storage Facility (PWRSF) for coarse rock tailings.

    - AEM, under the authorization of the water licence, extracts rock from open pits and segregates it into waste rock and ore. Waste rock is then further delineated into potentially acid generating and non-potentially acid generating. This methodical delineation defines the location of the waste rock in the PWRSF

and/or use at the mine site. Ore is delineated further by grade and then stock piled for processing in the onsite mill. By-products of the milling process are deposited at predetermined locations in the TSF via pump and piping systems from the milling plant.

- AEM operates the Tailings Impoundment Area at the Meadowbank Gold Project.

2. On July 29th and 30th, 2013, I conducted a scheduled inspection of AEM's Meadowbank Gold Project. I was accompanied by Inspector Erik Allain and Inspector in Training Atuat Shouldice.

3. During the July 29th and 30th, 2013, inspection, Jeffery Pratt with AEM's environment division, accompanied me while conducting the inspection.

4. In the course of the July 29th and 30th inspection, I made the following observations:

    - I observed cloudy, red-colored water on the south shore of a fish bearing lake referred to in the 2005 final environmental impact statement as North Pole 2 ("NP-2") Lake.

    - I observed cloudy red-colored water within the PWRSF's sump, commonly known as -by AEM staff- and referred to in the 2AM-MEA0815 water licence table two (2) as sampling stations 16 ("ST-16").

    The following two sets of samples were collected at NP-2 Lake and ST-16 location as a split sample between AEM and AANDC.

    <u>NP-2 Lake</u>
    - one 500mL wide mouth plastic bottle for parameters of pH, total alkalinity, hardness, color, nitrates and nitrites as nitrogen, calcium, chloride, magnesium, sodium, sulphates and potassium;

    - one 500mL wide mouth plastic bottle for the parameters of total suspended solids, ammonia and oil & grease (visible in the sample);

    - one 250mL narrow mouth bottle for the parameter of total metals.

    <u>ST-16</u>
    - one 500mL wide mouth plastic bottle for testing of pH, total alkalinity, hardness, color, nitrates and nitrites as nitrogen, calcium, chloride, magnesium, sodium, sulphates and potassium;

    - one 500mL wide mouth plastic bottle for the parameters of total suspended solids, ammonia, ortho-phosphate as phosphorus and oil & grease (visible in the sample);

    - one 250mL narrow mouth bottle for the parameter of total metals.

A spilt sample is collected by filling one container and separating or splitting it into two or more samples. The split samples are then submitted to the sampling participants' laboratories, as individual samples, for analysis.
The AANDC samples were secured within plastic bags, placed in a cooler and shipped to Taiga Environmental Laboratory ("Taiga"), Yellowknife in the Northwest Territories, for analysis.
The AEM samples were sent separately to their associated laboratory for analysis.

5. On August 19th, 2013, I received a lab analysis report from Taiga for the samples collected by AANDC on July 30th, 2013, at the ST-16 and NP-2 Lake sampling locations. The lab analysis report indicated that the samples taken at ST-16 and NP-2 Lake sampling locations had elevated levels of metals when compared to samples collected the previous years at these locations. Metals such as iron, copper, manganese, arsenic and nickel, as well as elevations in magnesium, sulphates, hardness, nitrite and nitrates. Many of these elevated parameters were well above the Canadian Council of Ministers of the Environment ("CCME") guidelines for protection of aquatic life. More significant, were the levels of copper (3350 µg/L), and nickel (1330 µg/L), in the NP-2 Lake sample.

6. On August 27th, 2013, I attended the Meadowbank Gold Project accompanied by Environmental Officers Curtis Didham and Ian Rumbolt for Environment Canada ("EC") and Inspector Andrew Keim for AANDC, to collect samples to confirm the sampling results of the July 29th and 30th inspection.
I collected the following three sets of samples in duplicate at three predetermined locations – the south shore of NP-2 Lake (sample name NP-2); at the mouth of the east drainage ditch connecting NP-2 Lake to NP-1 Lake (sample name NP-2 to NP-1); and on the west side of PWRSF sump (sample name ST-16):

    - one 500mL wide mouth plastic bottle for testing of pH, total alkalinity, hardness, color, nitrates and nitrites as nitrogen, calcium, chloride, magnesium, sodium, sulphates and potassium;

    - one 500mL wide mouth plastic bottle for the parameters of total suspended solids, ammonia, ortho-phosphate as phosphorus and visible oil & grease (visible in the sample);

    - one 250mL narrow mouth bottle for the parameter of total metals;

7. On August 28th, 2013, I received a letter from AEM's Environmental Superintendent for the Meadowbank Gold Project, Kevin Buck, which detailed a possible source of the contaminated water, found at the ST-16 location, as the TSF. This letter also discussed how this may be a possibility;

    - A hydraulic gradient exists between the TSF and ST-16 location.

    - The TSF and ST-16 location were, prior to mine development, linked via a watercourse which led from NP-2 Lake to the North West arm of Second Portage Lake where the TSF is located.

8. On September 12th, 2013, I received a lab analysis report from Taiga for the samples I collected on August 27th, 2013, at ST-16, NP-2 Lake, and NP-2 to NP-1 sampling locations. The report confirmed the results from the July 30th, 2013, samples.

9. On September 12th, 2013, I requested a review of the August 27th, 2013, lab analysis report by Anne Wilson a water quality specialist with EC. I was provided the following information;

    - The presence of cyanide in ST-16 and NP-2 Lake samples indicates a link between the tailings storage facility and ST-16 location.
    - NP-2 Lake concentrations of ammonia at 9.51mg/L and total cyanide at 31.0mg/L would be expected to be acutely toxic.
    - Numerous metals in NP-2 are at concentrations which are associated with chronic to acute toxicity.
    - Determinations should be made whether there has been fish mortality.
    - Determinations should be made as to what form of cyanide is present in NP-2 Lake. Free cyanide is the most toxic, with acute toxicity at < 1mg/L.
    - NP-2 to NP-1 sample has ammonia concentrations at 2.56mg/L which could be moderately toxic, depending on temperature and pH; cyanide and metals are at levels which would contribute to toxicity.

10. It is my belief that waste was released from the ST-16 location which migrated into NP-2 Lake.

11. It is my knowledge and belief that there may be a failure of a work that is designed to retain waste within the PWRSF and prevent the migration into NP-2 Lake. This work is referred to in the report titled Preliminary AEM Report Seepage water RSF V3 Final as the Waste Rock Plug. The failure of this work may lead to further deposit of waste into NP-2 Lake.

12. It is my belief that waste has been and may continue to migrate from the ST-16 location into NP-2 Lake, which may, based on the toxicity of the waste, cause adverse effects to general water quality, and affect the biota of NP-2 Lake.

MEASURES TO BE TAKEN

Under the authority given to me, pursuant to section 87(1) of the *Act*, I hereby direct AEM to immediately:

- Conduct an investigation into the release of waste from ST-16 location into NP-2 Lake which includes determining the source of the contaminated water in ST-16 sump.

- Conduct an investigation, in consultation with an independent engineering firm, into the possible failure of the Waste Rock Plug that is designed to prevent waste from migrating out of ST-16 location into NP-2 Lake.

- Develop a Plan in consultations with an independent engineering firm:

    1. corrective measures that will be taken to immediately stop the release of waste ;

    2. long term corrective measures that will be taken to secure waste in the future.

    3. counteraction and/or remediation of the adverse impacts of the prior releases.

This Plan should be submitted to the inspector for review and include the consulting engineering firm's review with recommendations. This Plan shall include an implementation schedule and may be developed and submitted in stages, with priority placed on the immediate measures in item 1, above.
AEM will contact the inspector in the next 30 days to discuss the first submission dates of the Plan.

THE AUTHORIZING ACT

***Nunavut Waters and Nunavut Surface Rights Tribunal Act* (SC 2002, c. 10), as amended.**

Definitions

4. **"waste"** means any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means, and includes

    (a) any substance or water that, for the purposes of the Canada Water Act, is deemed to be waste;

    (b) any substance or class of substances specified by the regulations;

    (c) water containing any substance or class of substances in a quantity or concentration that is equal to or greater than that prescribed by the regulations; and

    (d) water that has been subjected to a treatment or change described by the regulations.

    "waters" means, except for the purposes of subsection 41(2), inland waters, whether in a liquid or solid state, on or below the surface of land.

Prohibitions

Deposit of Waste

12. (1) Subject to subsection (2) and except in accordance with the conditions of a licence, no person shall deposit or permit the deposit of waste

(a) in waters in Nunavut; or

(b) in any other place in Nunavut under conditions in which the waste, or any other waste that results from the deposit of that waste, may enter waters in Nunavut.

Duty to report deposits

12. (3) Where waste is deposited in contravention of this section, every person who owns or has the charge, management or control of the waste, or who caused or contributed to the deposit, shall, subject to the regulations, without delay report the deposit to an inspector.

Remedial measures

87. (1) An inspector may direct any person to take such reasonable measures as the inspector may specify, including the cessation of an activity, to prevent the use of waters or the deposit of waste or the failure of a work related to the use of waters or the deposit of waste, or to counteract, mitigate or remedy the resulting adverse effects, where the inspector believes, on reasonable grounds,

(a) that

(i) waters have been or may be used in contravention of subsection 11(1) or of a condition of a licence,

(ii) waste has been or may be deposited in contravention of subsection 12(1) or of a condition of a licence, or

(iii) there has been, or may be, a failure of a work related to the use of waters or the deposit of waste, whether or not there has been compliance with any standards prescribed by the regulations or imposed by a licence; and

(b) that the adverse effects of that use, deposit or failure are causing, or may cause, a danger to persons, property or the environment.

Powers of inspector

87. (4) Where a person fails to comply with a direction given under subsection (1), the inspector may take the measures referred to in that subsection and may, for that purpose, enter any place in Nunavut, other than a place that is designed to be used and is being used as a permanent or temporary private dwelling-place.

Recovery of Her Majesty's costs

87. (5) Any portion of the reasonable costs incurred by Her Majesty in right of Canada under subsection (4) that is not recoverable from the security furnished and maintained under section 76 may be recovered as a debt due to Her Majesty from the person to whom the direction was given.

Offences and Punishment

90. (1) Any person who contravenes subsection 11(1) or section 12, or fails to comply with subsection 11(3) or with a direction given by an inspector under subsection 87(1), is guilty of an offence and liable on summary conviction to a fine not exceeding $100,000 or to imprisonment for a term not exceeding one year, or to both.

90. (2) A licensee holding a type A licence who

(a) contravenes any condition of the licence, where the contravention does not constitute an offence under section 91, or

(b) fails, without reasonable excuse, to furnish or maintain security as required under subsection 76(1)

is guilty of an offence and liable on summary conviction to a fine not exceeding $100,000 or to imprisonment for a term not exceeding one year, or to both.

Continuing offences

90. (4) Where an offence under this section is committed on or continued for more than one day, it is deemed to be a separate offence for each day on which it is committed or continued.

Action to enjoin not prejudiced by prosecution

93. (1) Notwithstanding that a prosecution has been instituted in respect of an offence under section 90, the Attorney General of Canada may commence and maintain proceedings to enjoin conduct that constitutes an offence under that section.

Civil remedy not affected

93. (2) No civil remedy for any act or omission is affected because the act or omission is an offence under this Part.

CONCLUSION

This Direction is **WITHOUT PREJUDICE** to any further course of action that Inspectors may take with respect to any contravention of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, including an amended or subsequent Inspector's Direction, prosecution or injunction under any Act.

Inspectors will be conducting further inspections of the site to verify compliance with this Inspector's Direction.

This Direction is issued in accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. The complete text of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* is available at the Department of Justice website: http://laws.justice.gc.ca/en/search.

If you require further information, have any questions or concerns, or wish respond to the alleged facts contained in this Direction, please call or write to the undersigned at (867) 975-4296 or Christine.Wilson@aandc.gc.ca. Your comments will be considered, and where appropriate, a response provided. Any comments you make, as well as AANDC's response, will be maintained on file with this Direction in AANDC's records.

Christine Wilson
Inspector

Original signed by Christine Wilson
Inspector's Signature

Scanned copy saved in CIDMs.

Cc: Phyllis Beaulieu, Manager of Licensing, Nunavut Water Board
Ian D. Gray, Regional Director General, AANDC
Erik Allain, Manager of Field Operations, AANDC

AGNICO EAGLE

November 20, 2013

Christine Wilson
Water Resource Officer- Kivalliq Region
Field Operations Unit
Aboriginal Affairs and Northern Development Canada
Nunavut Regional Office
P.O. Box 100
Iqaluit, Nunavut X0A 0H0
Ph:867-975-4296
Fx: 867-979-6445
Christine.Wilson@aandc.gc.ca

RE: INSPECTORS DIRECTION – IQALUIT # 752612

Ms. Wilson,

Through this, letter Agnico Eagle Mines Ltd. (AEM) acknowledges receipt of **Inspector's Direction #752612**, dated November 08, 2013, issued under the Nunavut Waters and Nunavut Surface Rights Tribunal Act, relating to your observed release of possibly contaminated water into Lake NP-2 at our Meadowbank Mine. I want to assure you that AEM takes this issue very seriously and immediately following your site inspection visit of July 29th and 30th; AEM had initiated our own investigation into the observed occurrence. An interim report on these investigations was provided by AEM to AANDC and the NWB in September of 2013.

The following is a brief summary of the immediate actions taken by AEM:

- By August 04th, AEM had pumped down the containment sump at Sample Point ST-16. This immediately controlled the seepage to Lake NP2 and it also allowed AEM to confirm that Rock Storage Facility (RSF) seepage was ongoing at this location. Ponded RSF seepage water at this location was subsequently redirected to the Tailing Storage Facility (TSF) North Cell by Pumper Truck;
- AEM constructed a till plug on the upstream slope of the RSF periphery road to restrict seepage reporting to Lake NP2;
- AEM changed its tailings deposition to promote the development of a tailings beach against RF1 to restrict hydraulic flow at this location.

In addition to the above AEM did contact an independent engineering firm with appropriate expertise and understanding of the design and operation of the tailings and waste rock storage facilities at the Meadowbank Mine. AEM has subsequently retained the services of Golder Associates to assist in our investigation and to conduct their own analysis and to provide appropriate remedial recommendations.

AGNICO EAGLE

Based on our initial investigations, with the assistance of Golder Associates, we believe that given the evolution of water quality at ST-16 and the hydraulic gradient that exists between the TSF North Cell and the NP Lake, it is likely that seepage water at ST-16 contains tailings process water from the TSF. This interpretation led to the initiation of the immediate action plan described above.

Engineering personnel from Golder Associates have subsequently travelled to Meadowbank to conduct their own investigations of this issue. They are now preparing a formal engineering report that will include their findings and provide recommended actions for AEM to take to resolve this issue on a permanent basis. We expect that this report will be delivered to you, the NWB and other parties by December 20, 2013. In the interim the immediate actions that were taken by AEM have in our opinion halted any further release of contaminants at this point. Also with the onset of winter conditions there appears to be no further release of seepage.

AEM is committed to implementing the necessary actions to ensure that no seepage is released into Lake NP2 with the 2014 spring freshet.

As an aside, I wish to bring to your attention a significant variance between your field sampling results and those taken by AEM during its field investigations; specifically in your directive (under R*easonable Grounds for Belief* -item #9) you indicate that the AANDC field sampling returned a total Cyanide concentration of 31.0 mg/L. During our subsequent field investigations AEM sampled at the same location as sampled by AANDC on Aug 27 and our measured CN Total concentration (NP-South) was 0.007mg/L. In addition throughout our field investigation and monitoring program conducted throughout Aug/Sept /Oct of 2013 we never received any Total Cyanide concentration of the magnitude in NP 2 reported by AANDC. See attached our table of results.

We offer this letter in response to the specific directions that you have ordered under the “Measures to be Taken” section of your Inspector’s Direction. We continue to work with our consulting engineer to complete the “Plan” to address the “long term corrective measures to be taken to secure waste at this location in the future” and to address the “counteraction and/or remediation of the adverse impacts of the prior releases”. 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: Kevin Buck –AEM
Stephane Robert – AEM
Erik Allain – AANDC
Phyllis Beaulieu – NWB
Jeff Tulugak – KIA
Luis Manzo – KIA

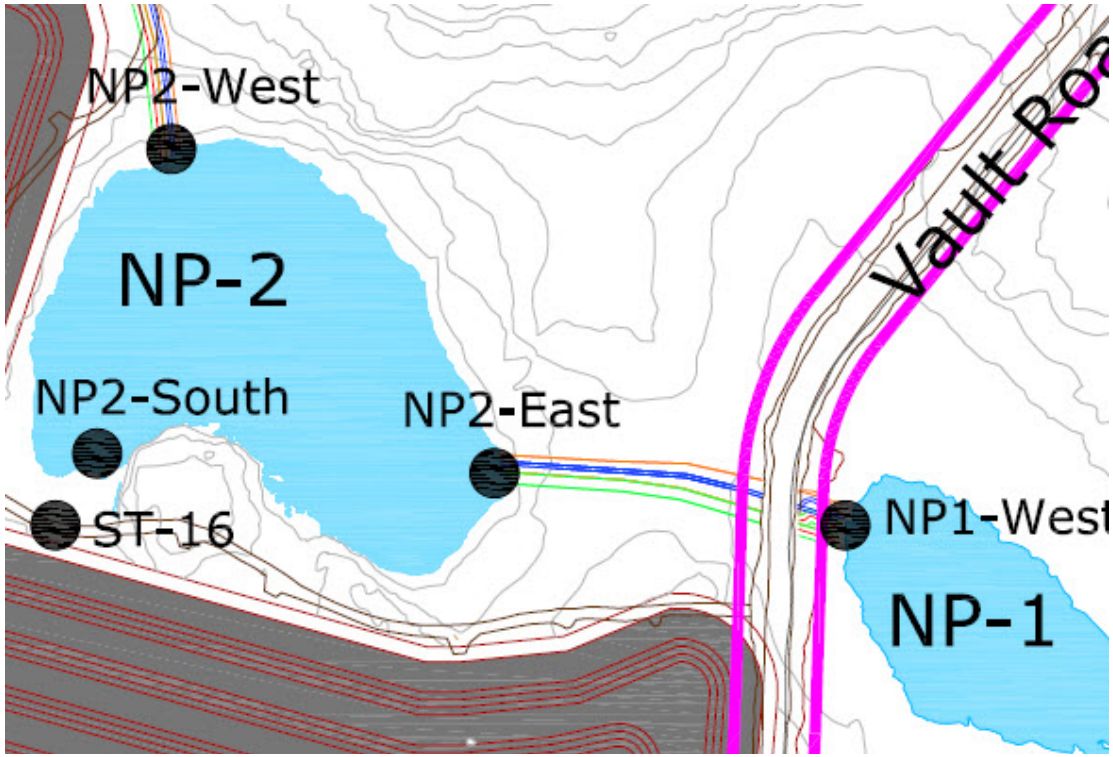
AGNICO EAGLE

Date	NP2 South				NP2 East			NP2 West		
	CN WAD	CN Total	CN Free	Ammonia Nitrogen NH3-NH4	CN Total	CN Free	Ammonia Nitrogen NH3-NH4	CN Total	CN Free	Ammonia Nitrogen NH3-NH4
8/21/2013		0.069								
8/27/2013		0.007			0.012					
8/28/2013										
8/29/2013	0.2930									
8/30/2013	0.0810				0.018			0.010		
8/31/2013	0.0694									
9/1/2013	0.0247									
9/2/2013	0.0671									
9/3/2013	0.0120									
9/4/2013	0.5440									
9/5/2013	0.0204									
9/7/2013	0.0289									
9/10/2013	0.3320	0.013	1	3.4	0.011	1	3.2	0.017	3	3.1
9/13/2013	0.0247									
9/15/2013	0.0289									
9/17/2013	0.0723									
9/19/2013	<0.01									
9/21/2013	0.0600									
9/23/2013	<0.01	0.014	1	3.6	0.014	<1	3.8	0.015	<1	3.6
9/25/2013	0.0162									
9/27/2013	<0.01									
9/29/2013	0.0332									

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

10/1/2013	0.0341									
10/2/2013	0.0772	0.030	1	3.9	0.014	1	3.9	0.017	1	3.8
10/8/2013	0.0482									
10/11/2013	0.0553									



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Appendix H

January 2014

REPORT ON

Rock Storage Facility Seepage - Meadowbank Gold Mine, Nunavut

Submitted to:
Mr. Kevin Buck
Environmental Superintendent
Agnico-Eagle Mines Limited
Meadowbank Division
PO Box 540
Baker Lake, Nunavut X0C 0A0

REPORT

Report Number: Doc 1447 1312210115_0103_14 - MB
Rev 0 Ver 1
Distribution:

1 e-copy and 2 copies : Agnico-Eagle Mines Limited, Baker Lake NU
2 copies: Golder Associés Ltée, Montréal QC

Golder Associates

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APPENDICES

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Chemical Analysis Results provided by AEM

APPENDIX B
Preliminary AEM Report - Seepage Water from Waste Rock Storage Facility at Sample Location ST-16

APPENDIX C
Tailings Storage Facilities – 2013 Instrumentation Review

APPENDIX D
Construction Summary Report Rock Storage Facility - Interim Till Plug

APPENDIX E
TSF Deposition Plan 2013-Update 2013-10-17

1.0 INTRODUCTION

On November 8, 2013, Agnico-Eagle Mines Limited (AEM) received an inspector's direction from the Aboriginal Affairs and Northern Development of Canada (AANDC) related to the seepage of water from the Portage Rock Storage Facility (RSF) into Lake NP-2. According to the received direction, the RSF seepage contravenes AEM's type A water license #2AM-MEA0815 (water license). The inspector requested that AEM:

- Conduct an investigation about the release of waste from ST-16 sump location to Lake NP-2, which includes determining the source of the contaminated water in ST-16 sump;
- Conduct an investigation, in consultation with an independent firm, about possible failure of the Till plug designed to prevent waste from migrating out of ST-16 sump into Lake NP-2;
- Develop a plan in consultations with an independent engineering firm about:
  - Corrective measures that will be taken to immediately stop the release of waste;
  - Long term corrective measures that will be taken to secure waste in the future;
  - Counteraction and/or remediation of the adverse impacts of the prior releases.

On November 15, 2013, AEM requested that Golder Associates Ltd. (Golder) prepare an assessment report regarding the RSF based on the above. The assessment report includes findings and immediate actions, as well as presenting recommendations about the immediate- and long-term corrective actions.

2.0 BACKGROUND

This section presents the basic background information for the seepage through the RSF. The first subsection describes the general configuration of the concerned area and the second describes the basis of the assessment.

2.1 TSF and RSF Overview

Figure 1 presents the general configuration of the Tailings Storage Facility (TSF) and the RSF. The RSF is adjacent to the North Cell of the TSF and is used to store potentially acid generating (PAG) and non-acid generating (non-AG) waste rock. The North Cell of the TSF is used to store tailings and reclaim water for milling processes.

Rockfill roads RF1 and RF2 are located along the north-east side of the TSF and are perimeter structures that separate the RSF from the North Cell. The East and West diversion ditches are located around the northern area of the North Cell of the TSF to keep surface water from reaching the RSF and the TSF. Lake NP-2 and NP-1 are located north and east, respectively, of the RSF.

According to AEM, the access road between the RSF and Lake NP-2 was initially constructed to provide a separation between the RSF and Lake NP-2. It was also used to construct and service the diversion ditches (East and West) in 2012; this road is constructed with non-AG rockfill. The East Ditch flows through Lake NP-2 and connects to Lake NP-1. This ditch controls the water levels in these lakes such that the water level does not rise and overflow into the active mine area (i.e., the RSF).

2.2 Basis of the Assessment

During the AANDC Water License Inspection on July 29 and 30, 2013, AEM and the AANDC inspector observed red coloured seepage (suggesting the presence of iron precipitate) flowing from the northwest side of the RSF through the road perimeter into Lake NP-2, near monitoring station ST-16. Sample location ST-16 is a known area of seepage and is in a natural low depression area that serves as a sump.

AEM and the inspector took split water samples from Lake NP-2 and station ST-16. The chemical analyses from this sampling showed that these samples had elevated levels of metals (copper and nickel) when compared to samples collected at ST-16 from 2010 to July 2013, including a sample collected on July 11, 2013. Additional samples collected in August and September 2013 from ST-16 showed elevated concentration of copper, nickel and presence of cyanide. Additional sampling in Lake NP-2 showed that the same parameters were present in this lake at lower concentrations than ST-16.

When the red-coloured seepage was observed, AEM's immediate action plan (starting on July 27) consisted of dewatering the water from the sump area at the ST-16 water monitoring station. The sump area at sampling station ST-16 was completely dewatered by August 4, 2013. This action stopped the seepage to Lake NP-2 and confirmed that seepage from the RSF was visible at base of the RSF near the ST-16 location. Seepage water from the RSF was then redirected to the TSF North Cell by pumper trucks. AEM also designed and constructed a till plug on the upstream slope of the RSF perimeter road which, combined with the pumping program keeping a low water level within the sump, prevent the seepage from reaching Lake NP-2. Construction of till plug was performed between August 26 and September 1, 2013. Pumping of the sump continued on a regular basis from July 29 until approximately mid-October when the seepage water froze.

2.3 TSF and RSF Design Bases

The designs of the TSF and RSF were reviewed. The design of the TSF requires that a tailings beach is required against all perimeter structures of the TSF to reduce seepage from the TSF. In addition, the reclaim pond is to be operated towards the centre of the TSF North Cell to reduce seepage flow from the TSF (AEM 2009; Golder 2008b).

The rockfill roads of the TSF, RF1 and RF2, are designed as unlined rockfill roads for use as pipe berms for tailings deposition. The rockfill roads are designed for tailings containment and not to limit seepage. The design is based on the expectation that the seepage from the TSF to the RSF will be limited by the deposition of tailings adjacent to the rockfill faces, the operation of the Reclaim Pond toward the centre of the facility, and the freezing of tailings in the post-closure period (Golder 2011). The design recognizes the possibility of water moving from the TSF to the RSF once the pond reaches a certain elevation. It also notes, if necessary, the need to establish a system of contact water ditches and sumps to surround the RSF to capture and allow the monitoring of surface runoff and seepage from the RSF and direct it to suitable storage/treatment facilities (Golder 2011).

The RSF is expected to freeze within two years of placement, thereby reducing the risk of acid drainage and assisting in containing the seepage of water (Golder 2011). The RSF is to be capped with an insulating layer of non-AG rock.

3.0 REVIEW OF FACTUAL INFORMATION

Golder reviewed the available information to assess the current conditions and the potential sources of the seepage.

3.1 TSF and RSF Configuration

Prior to mine development, a watercourse ran from Lake NP-2 to the northwest arm of the Second Portage Lake where the TSF is now located as shown in Figure 1.

The water surface in Lake NP-2 is at El. 141.2 m, the base of the RSF on its north side (near ST-16) is at approximately El. 142 m, and the tailings pond water level was approximately between El. 145.6 m and 146.1 m from mid-July to mid-October 2013. This information confirms that the hydraulic gradient flows from the TSF to the sump at ST-16 upstream from Lake NP-2; this gradient is the reverse to that which existed before mine development started. This suggests the presence of saturated rockfill in a thawed condition at the bottom of the RSF having its water surface at El. 142 m; this corresponds to the seepage level at the exit of the RSF on its north side.

The review of the TSF operating configuration in September 2013 shows that tailings water was pounding directly against RF1 and RF2. Further, there was no tailings beach against RF2 and less than half of RF1 had a tailings beach. By mid-October, AEM confirms that the tailings beach along RF1 was covering 90% of the structure and that no beach along RF2 was yet in place.

It is also noted that the water management system consisting of diversion ditches surrounding the RSF is not completed.Since the water catchment basin of the TSF and RSF area directes the water towards the North and South Cells of the TSF and the only seepage observed out of the area is near the natural sump at sampling station ST-16, AEM considered that the provision of a collection system was not necessary. Rather, AEM used an observational approach at the natural sump and sampling station ST-16 to ensure that the water analyses results are appropriate.

3.2 Review of Monitoring and Sample Analyses

All the laboratory testing results provided by AEM to Golder, summarized below, are presented in Appendix A.

From July 30 to August 27, 2013, various water samples were taken by AEM and the AANDC inspector at sampling station ST-16 and at various sampling station on Lake NP-2 and NP-1. The locations of these samples are shown in Figure 3.

Starting August 28, 2013, AEM implemented a short-term monitoring program that included daily monitoring of weak acid dissociable cyanide (CN WAD) at the seepage area ST-16 and at NP-2 South. This short-term cyanide program used the non-accredited onsite assay lab. The program also includes once every-two-weeks monitoring for total and dissolved metals, general chemistry as well as total and free cyanide at sampling station ST-16, NP-2 South, NP-2 East and NP-2 West. These analyses were performed by Multi-Lab, an accredited laboratory. The once every-two-weeks monitoring was temporarily stopped in October due to the frozen conditions. A monthly monitoring station has been set for the winter on Lake NP-2; refer to Figure 3. The locations of the sampling areas as part of the short-term monitoring program are shown in Figure 4.

AEM provided Golder with the results of the sample analyses described above. Historical results at station ST-16 and the results from sampling station ST-21 (located inside the TSF) were also made available for comparison purposes. Multi Lab provided comments to AEM that it is difficult to compare the results from Multi Lab and those from AEM's onsite laboratory because the onsite free cyanide analysis is based on a qualitative method rather than a distillation standardized method used for the total and WAD cyanide.

The results show that the concentrations of copper, nickel, ammonia, and cyanide exceed the CCME criteria for Protection of Aquatic Life. The result of the trout toxicity test, sampled on August 28, show that the concentration was not lethal. An additional toxicity sample was taken on Dec 9, 2013 and the result was also not lethal for trout. A sample was analysed for copper in Lake NP-1 on August 21, 2013 and showed a low concentration. The concentration of metals observed from July 30 to August 27, 2013 at sampling station ST-16 are higher than the historical results from 100 to 1,000 times. These results are similar to the results from the samples taken at ST-21 inside the TSF, except for the concentration of iron which is much higher at ST-16 than at ST-21. These results, coupled with the presence of cyanide at ST-16, indicate that the origin of the seepage water is from the TSF.

The results from the short-term monitoring program show that the concentrations of metals and cyanide at sampling station ST-16 and in Lake NP-2 decreased from August to October 2013. This is an indication that the immediate actions taken by AEM to pump and control the RSF seepage were effective in decreasing the concentrations of metals and cyanide.

3.3 Thermistor Data

Golder reviewed the thermistor data in the area of the RSF. The location of these thermistors and their temperature versus depth profiles during 2012 and 2013 are shown in Figure 5. Figure 5 was developed using the TSF - Instrumentation Review document provided by AEM and is presented in Appendix C. The following points were developed during the review of the thermistor data:

- The thermistor inside the North Cell of the TSF (T-90-2) shows that the tailings are below 0^{o}C near Saddle Dam 1. This thermal condition, coupled with the expectation that the tailings are saturated, indicates that the tailings are frozen in this area.
- The thermistor inside the RSF (RSF-1) indicates that the waste rock pile is below 0^{o}C at this location. This thermistor is located in an area where the natural ground surface is above El. 142 m.
- RF2 (T122-1) indicates that rockfill road RF2 is below 0^{o}C in this area.
- The RF1-3 thermistor is installed along the upstream slope in a PVC casing partially covered with tailings. RF1-3 indicates that the tailings are thawed from their surface at approximately El. 145 m down to approximately El. 144.2 m. Below El. 144.2 m, the temperature is below 0^{o}C; as the tailings are expected to be saturated in this location, it is inferred that the tailings are frozen below El. 144.2 m.
- RF1-1 (T121-1) indicates that the rockfill was below 0^{o}C throughout 2013 at this location. Note that the natural ground surface is relatively shallow in this area.
- RF1-2 is located close to the former watercourse (like RF1-1) but its natural ground surface is at a lower level and indicates that the rockfill is thawed at the tailings water level (El. 145.7 m) and below 0^{o}C below El. 143 m. As the tailings are expected to be saturated, the tailings are expected to be frozen below El. 143 m.

These observations indicate that some parts of the rockfill road RF1 are not frozen due to thermal conditions (i.e., temperatures above 0°C) and the lack of saturated rockfill.

From November 8 to 11, 2013, AEM installed four additional thermistors in the RSF (RSF3 to RSF6) to monitor the temperatures in the structure and in the vicinity of the former lake and water course between Lake NP-2 and the second Portage arm (North Cell). The locations of these instruments are shown in Figure 5. The available results are limited for interpretation as the instruments are still showing a cooling trend but these data will be helpful to follow the freezing of the RSF along the former water course.

The following are noted based on a review of the data to December 6, 2013 for thermistors RSF3 to RSF6, inclusive:

- Thermistor RSF3 shows that the rockfill is at temperatures ranging from 0 to -5°C.
- Thermistor RSF4 shows temperatures in the rockfill from 2 to – 10°C.
- Thermistor RSF5 shows temperatures in the rockfill from 0 to -5°C.
- Thermistor RSF6 shows that the temperature of the rockfill ranges from -2 to -9°C.

Thermistors RSF3 to RSF6, inclusive, show that the thermistors continue to adjust to the ground temperature conditions; this is expected due to their recent installation dates. Continued monitoring of these thermistors is required for future interpretation.

4.0 SUMMARY OF AEM'S MITIGATION STRATEGY

Golder reviewed AEM's preliminary report on the seepage of water from the waste rock storage facility (included in Appendix B). This report contains AEM's findings and actions for the RSF. From the review of this document and from additional information provided by AEM, the following items are noted:

- AEM established a short-term monitoring program, as presented in Section 3.2, and will keep sampling one location during the winter;
- AEM established a pumping program (by pumper truck) to keep the water level low in the sump at sampling station ST-16 and to pump the seepage back into the TSF;
- AEM constructed a till plug to limit the seepage from the RSF to Lake NP-2. AEM will increase the pumping of the seepage water into the sump. The construction summary report of this structure was provided to Golder and is presented in Appendix D. ;
- AEM modified the tailings deposition plan to promote the development of tailings beaches against RF1 and RF2 and to ensure that the reclaim pond is operated away from the rockfill roads. AEM changed the tailings discharge point on September 2, 2013 to promote the development of a tailings beach against RF1 where tailings water was pounding directly against the structure. A new deposition plan was completed by AEM on November 17, 2013 and is presented in Appendix E.
- AEM installed four additional thermistors in the RSF to monitor ground temperatures in this area.
- AEM estimated the 2014 freshet water quantities for the freshet season emergency plan preparedness.

5.0 ASSESSMENT ON RSF SEEPAGE FINDINGS AND AEM'S MITIGATION PLAN

Golder considers that the long-term design intent of the TSF and the RSF can still be met provided that the design is executed in the field. The requirements include providing tailings beaches along any of the TSF perimeter structures, including the rockfill roads, and operating the reclaim pond toward the centre of the facility, namely, away from dikes and rockfill roads. It is to be noted that the concept envisaged the possibility of seepage. This is the reason why a contact water collection system was planned as a contingency measure.

TSF and RSF Configuration

The review of the TSF operating configuration indicates that tailings water was ponding directly against RF1 and RF2; these are perimeter structures of the TSF. The formation and maintenance of tailings beaches are required at all perimeter structures of the TSF to limit seepage from the facility and to maintain the reclaim pond in a centralized location. The updated deposition plan prepared, and currently being used, by AEM focusses on beach development at RF1 and RF2.

The water management system, consisting of diversion ditches surrounding the RSF has not been required to date. AEM stated that this system has not yet been constructed due to the ability of AEM to manage the seepage appropriately historically. The pumping activities and the construction of the till plug are considered to be effective seepage control measures.

Monitoring and Sample Analysis

Golder agrees with AEM that the cause of the high metals and cyanide concentration of the RSF seepage near ST-16 is due to the ingress of process water from the TSF. This suggests the presence of saturated and thawed rockfill linking the TSF to the RSF seepage near sampling station ST-16.

From the review of the data at the sampling station ST-16 and within Lake NP-2, where the metals and cyanide concentration decreased from August 4 to mid-October, it appears that the till plug, combined with the pumping program to maintain a low water level within the sump at sampling station ST-16, were appropriate measures to prevent further seepage from reaching Lake NP-2.

Till Plug

The till plug is constructed of low permeability till material placed on a granular filter layer against the rockfill road. This structure is considered to be physically stable. In terms of seepage control, the performance of the till plug and the associated pumping keeping a low water level in the sump at the sampling station ST-16 appears to be effective in managing seepage to Lake NP-2.

Thermistor Data

From the thermistor data, it is noted that the tailings near SD1 are frozen. Freeze-back of the tailings reduces the seepage of water from the TSF. It is expected that the tailings adjacent to RF1 and RF2, following the formation of the tailing beaches in these locations, would also freeze, thereby limiting seepage through the rockfill roads to the RSF.

The flow of tailings water through the RSF is complex and cannot be readily tracked with thermistors or others instruments. The recently-installed thermistors in the RSF will allow monitoring of the ground temperatures. This information will further enable overall monitoring of thermal and seepage conditions in and around the RSF.

2014 Freshet Water Quantity

AEM has estimated the 2014 freshet water quantity in preparing the freshet season emergency plan. Golder did not review this work. This evaluation should provide suitable information to help plan for the 2014 freshet season. This may include determining if a pumper truck, the sump, and the till plug at ST-16 will be adequate during the 2014 freshet.

6.0 RECOMMENDATIONS

Based on review summarized above, Golder recommends the following:

1) AEM should continue to develop and maintain tailings beaches adjacent to RF1 and RF2 and to operate the Reclaim Pond towards the centre of the TSF. These are the key recommendations.

2) AEM should consider the installation of additional water management infrastructure which could take the form of a permanent collection and pumping system at the sampling station ST-16 current sump. Also, consideration should be given for contact water ditches and sumps in the surrounding areas of the RSF if additional seepages of contaminated water are observed in the future.

3) The seepage at station ST-16 should continue to be collected and redirected to the TSF and monitored (location, quantity, quality). Continued monitoring is strongly recommended during the winter for seepage water quantity monitoring and possible development of an ice plug in the RSF. The area at ST-16 should be kept clean of snow to allow visual observation and to ensure that water at ST-16 does not overflow over the till plug into Lake NP-2.

4) Regular inspections all around the RSF should be performed, particularly during freshet, to ensure that runoff or any observed seepage is controlled and monitored prior to being released into the environment if the analyses results meet the requirement.

5) AEM should continue to monitor the tailings and waste rock freeze back following the Thermistor Monitoring Plan in accordance with Part 1, Item 11 of the Type-A water license.

6) AEM should provide the results of the 2014 monitoring to Golder for review and comment.

7.0 REPORT CLOSURE

We trust that this report satisfies your current requirements. Please contact the undersigned should you have any questions.

GOLDER ASSOCIÉS LTÉE

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Reviewed by:

FOR

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Principal, Senior Geotechnical Engineer

FLB/YB/AB/PMB/

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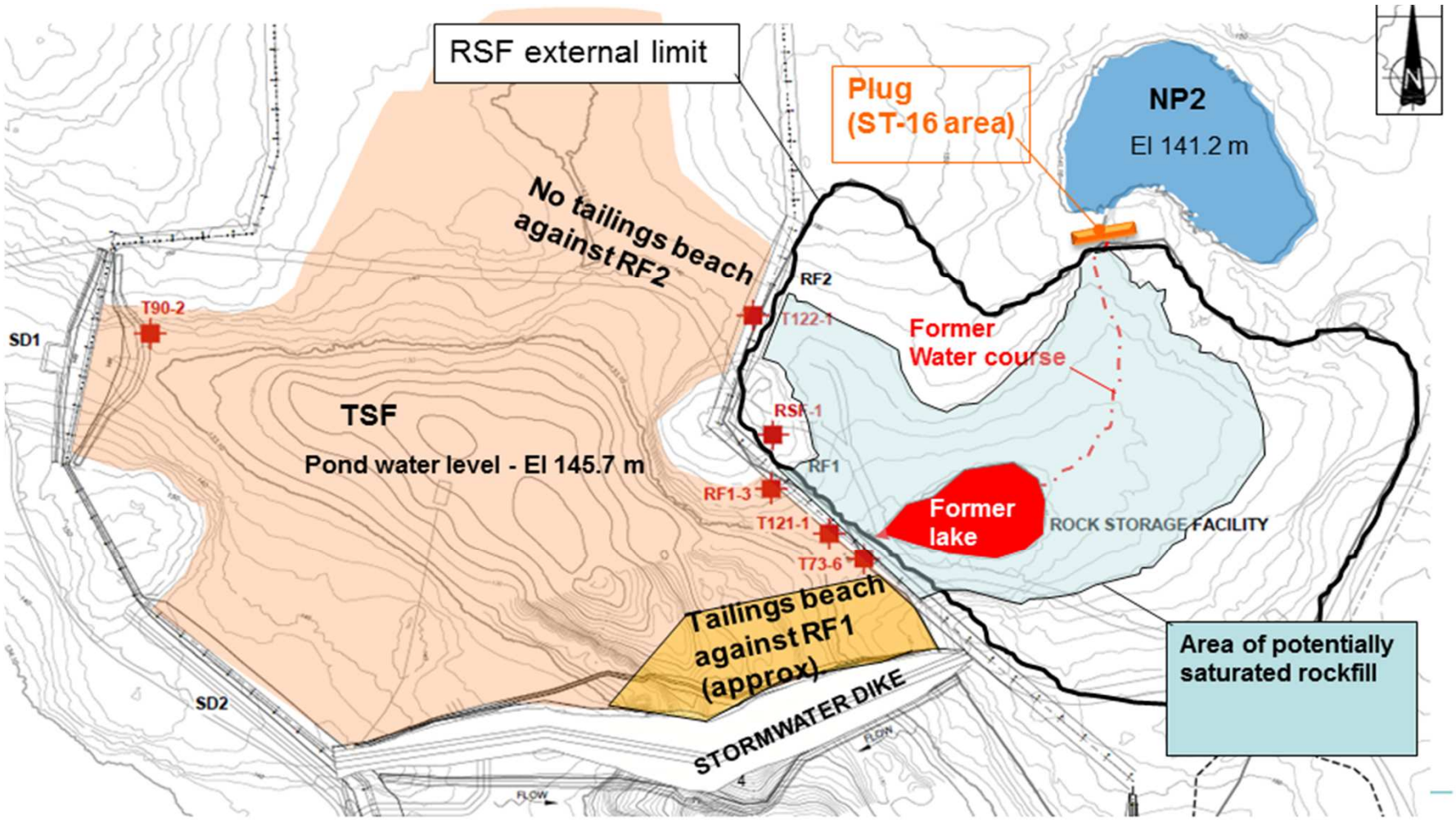
GENERAL CONFIGURATION OF THE TSF AND RSF FACILITIES



Golder Associés	Date : December 2013 Project : 13-1221-0115	AGNICO-EAGLE MINES MEADOWBANK DIVISION	FIGURE 1

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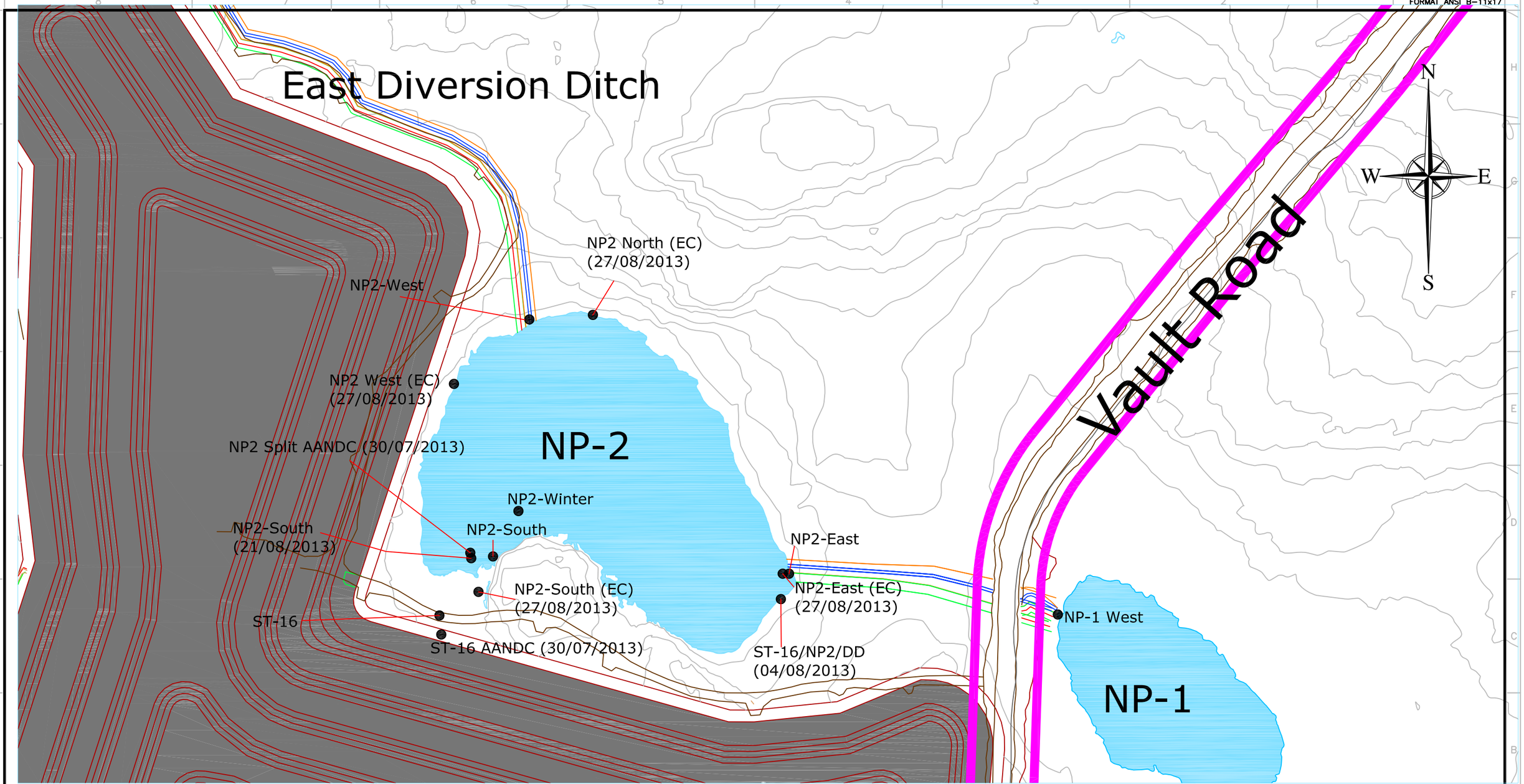

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REVISIONS

AGNICO EAGLE

DESSINÉ PAR / DRAWN BY	Marie–Pier Marcil
DATE	30–08–2013
VÉRIFIÉ PAR / CHECKED BY	
APPROUVÉ PAR / APPROVED BY	
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TITRE / TITLE
AGNICO EAGLE – Meadowbank Division

2013 Monitoring Station Seep + NP2 Lake
Sampling Location from July 30 to August 27, 2013

ÉCHELLE / SCALE	FICHIER / FILE	REVISION	FEUILLE / SHT
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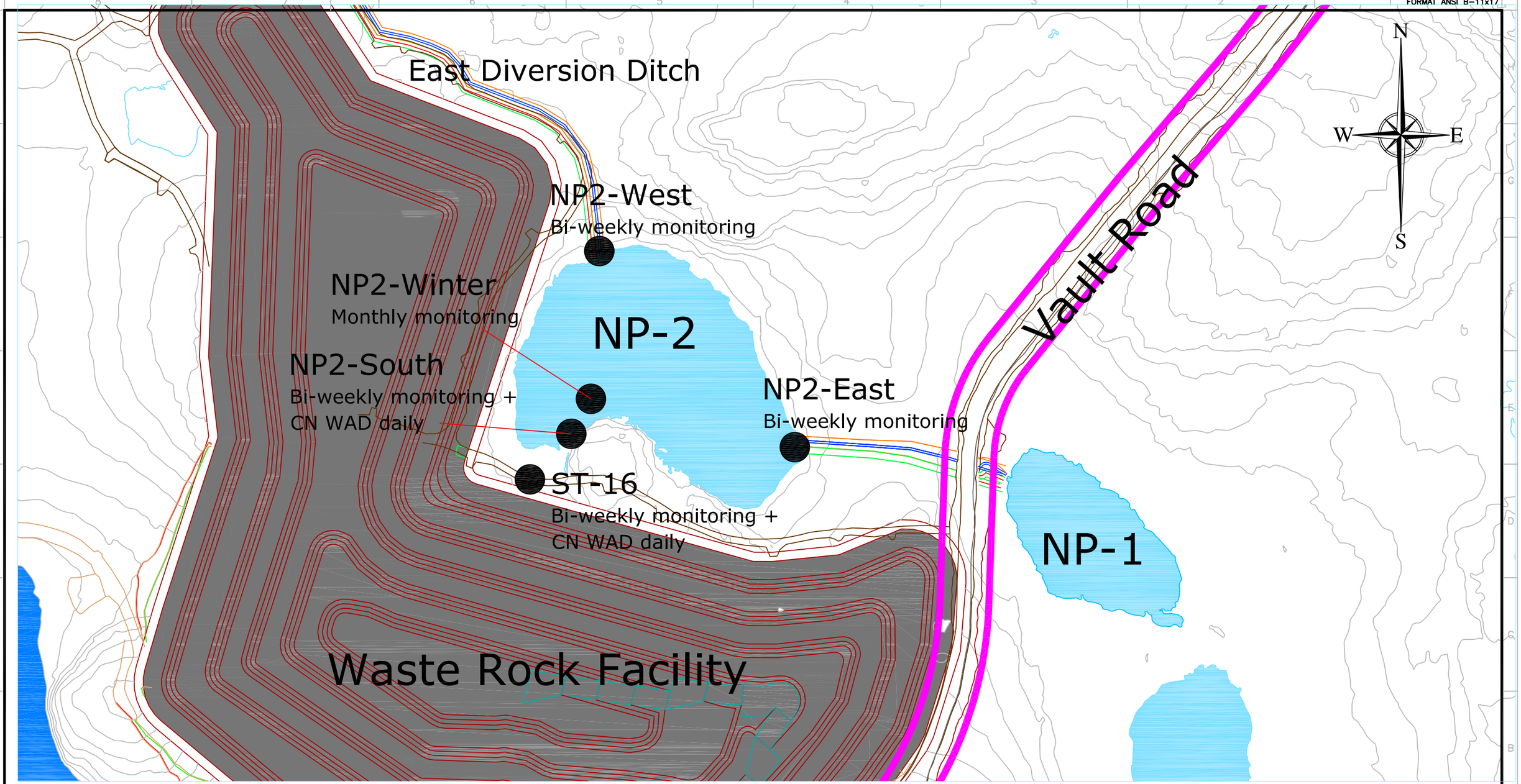

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AGNICO EAGLE

DESSINÉ PAR / DRAWN BY	Marie–Pier Marcil	DATE	30–08–2013
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TITRE / TITLE
AGNICO EAGLE – Meadowbank Division

2013 Bi–weekly/Monthly Monitoring Station RSF Seepage Short-Term Monitoring Program

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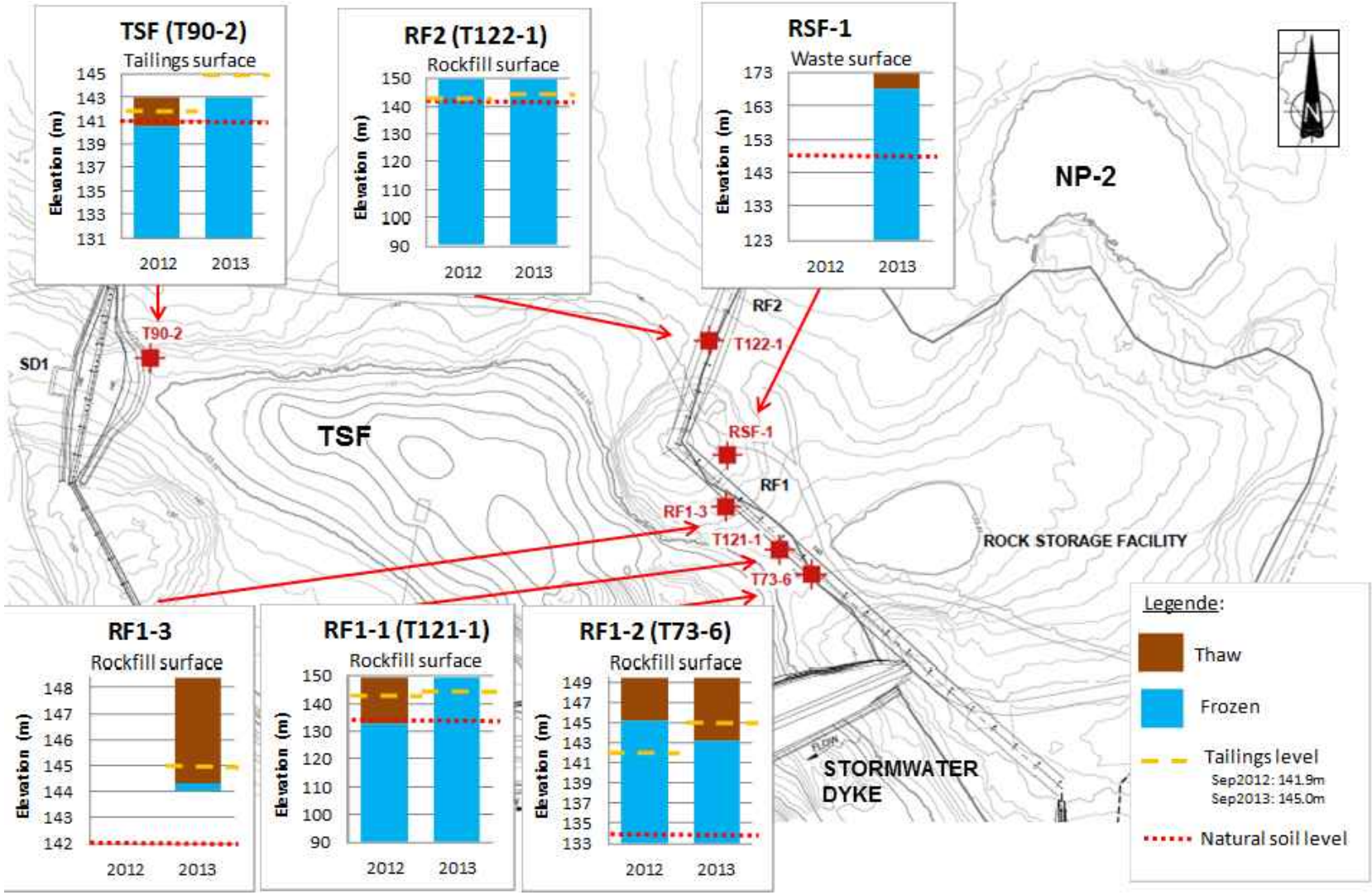

PROJECT

AGNICO-EAGLE MINES - MEADOWBANK DIVISION

TITLE

THERMISTORS LOCATION AND READINGS

Golder Associates

PROJECT No.		13-1221-0115	FILE No.	1312210115-01
DESIGN	-	-	SCALE	NOT TO SCALE
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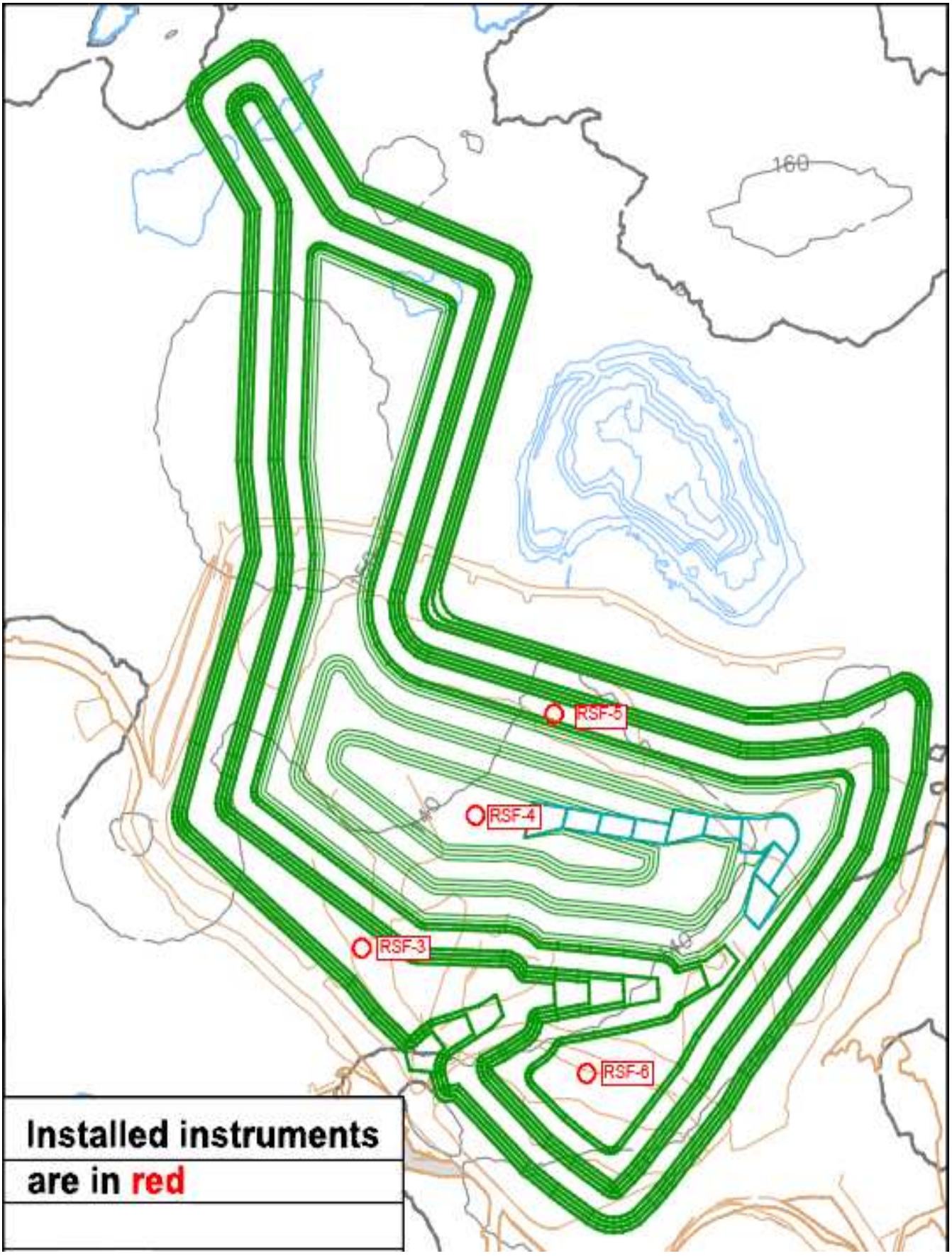
CHECK	-	-		
REVIEW	-	-		

LOCATION OF THERMISTOR INSTALLED IN THE RSF IN NOVEMBER 2013



Golder Associés	Date : Dec, 2013 Project : 13-1221-0115	Figure provided by AEM	**FIGURE 5**

APPENDIX A

Chemical Analysis Results provided by AEM

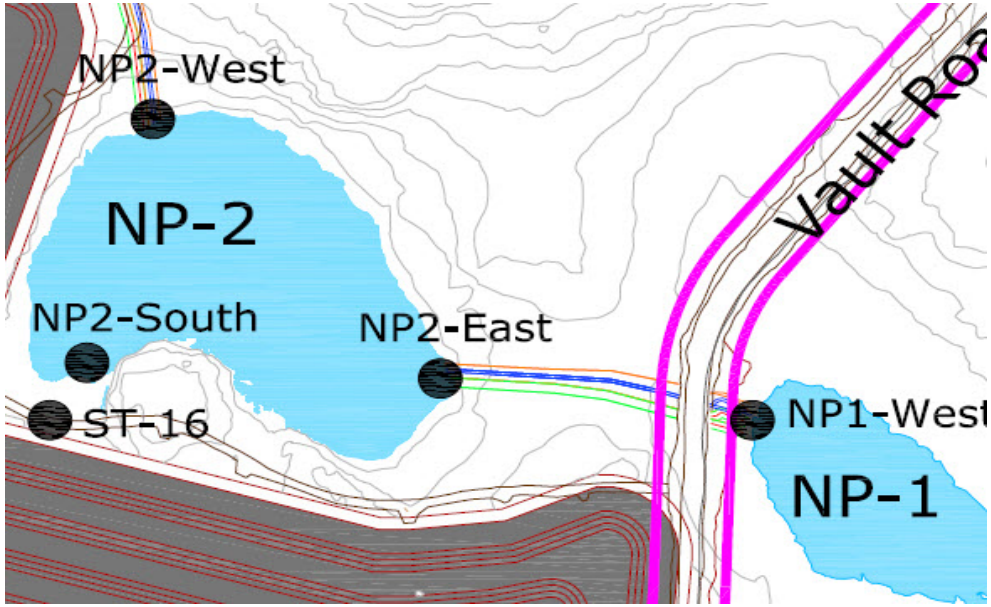
Table 1 – Historical ST-16 Results

Parameters	Date / Units	ST-16 Average 2011	ST-16 Average 2012	ST-16 11/06/2013	ST-16 04/07/2013	ST-16 Split 30/07/2013	ST-16 Split AANDC Result 30/07/2013
*pH		6.49	7.30	6.45	7.21		7.20
*Turbidity	NTU	17	34		17		123
*Conductivity	us/cm		154	420	1485		4510
Alkalinity	mg CaCo3/L	34	67	46	89	272	162
Aluminum	mg/L	0.159	0.513		0.464	0.042	0.045
Dissolved Aluminium	mg/L				0.027	< 0.006	
Ammonia	mgN/L	0.07	0.03	< 0.05	0.20	1.20	
Ammonia-nitrogen	mgN/L		0.22	0.45	7.80	34.00	
Total Dissolved Solids	mg/L	55	175	37	969	3792	
Total Suspended Solids	mg/L						50
Arsenic	mg/L	0.0020	0.0045	0.0029	0.0091	0.0139	0.0083
Dissolved As	mg/L				0.0031	0.0058	
Barium	mg/L	0.0095	0.0196		0.0741	0.1414	0.1480
Dissolved Barium	mg/L				0.0558	0.1433	
Cadmium	mg/L	0.00060	0.00004		0.00014	0.00065	0.00020
Dissolved Cadmium	mg/L				0.0001	0.0007	
Chloride	mg/L	2	3		15	450	192
Chromium	mg/L		0.0048		0.0034	0.0011	0.0010
Copper	mg/L	0.0017	0.0046	0.0028	2.3110	2.0380	3.3500
Dissolved Copper	mg/L				1.909	1.712	
Fluoride	mg/L	0.106	0.098		0.110	0.290	
Hardness	mg CaCO3/L	62	59		361	1417	1020
Iron	mg/L	1.21	1.94		1.60	4.40	21.90
Dissolved Iron	mg/L				0.17	0.06	
Lead	mg/L	0.0010	0.0056	< 0.0003	0.0015	0.0013	< 0.0001
Dissolved Lead	mg/L				< 0.0003	< 0.0003	
Manganese	mg/L	0.588	0.961		2.447	6.370	5.850
Dissolved Manganese	mg/L				2.110	6.055	
Mercury	mg/L	0.00062	0.00007		< 0.00010	0.00005	0.00015
Dissolved Mercury	mg/L				< 0.0001	< 0.0001	
Molybdenum	mg/L	0.001	0.001		0.026	0.170	0.083
Dissolved Molybdenum	mg/L				0.0204	0.1773	
Nickel	mg/L	0.0339	0.0395	0.0069	0.5149	2.0150	1.3300
Dissolved Nickel	mg/L				0.415	1.810	
Nitrate	mg/L	0.17	0.34		8.10	37.80	23.70
Selenium	mg/L	0.002	0.001		0.007	0.020	0.013
Dissolved Selenium	mg/L				0.005	0.023	

Silver	mg/L	0.0006	0.0049								0.0056
Dissolved Silver	mg/L					<	0.0002		0.0019		
Sulphate	mg/L	24	9				406		2400		1450
Thallium	mg/L	0.0025	0.0025			<	0.0050	<	0.0050	<	0.0001
Dissolved Thallium	mg/L					<	0.005	<			
Zinc	mg/L	0.005	0.008	<	0.001		0.010		0.009	<	0.005
Dissolved Zinc	mg/L						0.003		0.008		
Calcium (Ca)	mg/L										312
Magnesium (Mg)	mg/L										60
Potassium (K)	mg/L										88
Sodium (Na)	mg/L										590
Cesium	mg/L										0.0009
Rubidium	mg/L										0.0687
Ortho-Phosphate as Phosphorus	mg/L										
Antimony (Sb)	mg/L						0.0004		0.0012		0.0007
Boron (B)	mg/L						0.04		0.15		
Beryllium (Be)	mg/L					<	0.0005	<	0.0005	<	0.0001
Cobalt (Co)	mg/L						0.0729		0.3114		0.2290
Lithium (Li)	mg/L					<	0.005		0.006		0.004
Tin (Sn)	mg/L					<	0.001	<	0.001		
Strontium (Sr)	mg/L						0.44		2.14		1.40
Tianium (Ti)	mg/L						0.1300		0.5500		0.0007
Uranium (U)	mg/L						0.034		0.170		0.115
Vanadium (V)	mg/L					<	0.0005	<	0.0005		0.0011
Nitrite	mg/L						0.07		0.41		

Cyanide WAD (provided by AEM)

Date	location		
	ST-16		
	east	west	south
2013-08-21			
2013-08-27			
2013-08-28	7,280	3,38	
2013-08-29	3,960		0,2930
2013-08-30	1,520		0,0810
2013-08-31	1,290		0,0694
2013-09-01	0,970		0,0247
2013-09-02	2,830		0,0671
2013-09-03	2,500		0,0120
2013-09-04	2,490		0,5440
2013-09-05	1,600		0,0204
2013-09-07	1,650		0,0289
2013-09-10	0,671		0,3320
2013-09-13	2,150		0,0247
2013-09-15	0,459		0,0289
2013-09-17	0,443		0,0723
2013-09-19	0,493		<0.01
2013-09-21	0,070		0,0600
2013-09-23	0,050		<0.01
2013-09-25	0,063		0,0162
2013-09-27	0,148		<0.01
2013-09-29	0,556		0,0332
2013-10-01	0,091		0,0341
2013-10-02	0,204		0,0772
2013-10-08	0,154		0,0482
2013-10-11	0,069		0,0553



Data provided by AEM

Parameters	Date	ST-16						NP-2 South						NP2- winter
	Unit	30-juil-13	21-août-13	27-08-2013	10-09-2013	23-09-2013	02-10-2013	30-juil-13	21-08-2013	27-08-2013	10-09-2013	23-09-2013	02-10-2013	17-11-2013
Alaklinity	mg CaCo3/L	272			174	92	106	177			55	54	55	
Ammonia nitrogen (NH3-NH4)	mg N/L	34			11,4	7,2	8,2	27,4			3,4	3,6	3,9	
TDS	mg/L	3792			934	640	617	2854			266	277	262	
CN total	mg/L		6,47	0,036	0,18	0,068	1,2		0,069	0,007	0,013	0,014	0,03	
CN Free	mg/L				3	2,5	6				1	1	1	
pH (Env. Dept.)					7,1	7,05	7,01				7	6,73	7,47	7,36
Conductivity (Env. Dept.)					1879	1083	1095				395	442	424	501
Turbidity (Env. Dept.)	NTU				20,4	7,57	8,18				2,83	3,87	3,43	2,36
Chloride	mg/L	450			175	94,1	86	587			21,7	18,7	17,6	
Fluoride	mg/L	0,29			0,26	0,26	0,22	0,02			0,13	0,03	0,12	
Hardness	mg CaCo3/L	1417			458	216	268	1031			134	101	106	
Nitrate	mg/L	37,8			5	3,9	2,9	23,5			1,3	1,3	1,2	
Nitrite	mg/L	0,41			1	0,68	1	0,4			0,16	0,14	0,14	
Sulphate	mg/L	2400			643	338	329	1546			110	118	111	
Dissolved Aluminium (Al)	mg/L	<0.006			<0.006	<0.006	<0.006	<0.006			<0.006	<0.006	0,117	
Dissolved Arsenic (As)	mg/L	0,0058			<0.0005	<0.0001	<0.0005	0,0022			<0.0005	<0.0005	<0.0005	
Dissolved Barium (Ba)	mg/L	0,1433			0,0439	0,0223	0,032	0,1329			0,0135	0,0117	0,0133	
Dissolved Cadmium (Cd)	mg/L	0,00065			0,00009	0,00003	<0.00002	0,00022			<0.00002	<0.00002	0,00218	
Dissolved Copper (Cu)	mg/L	1,712			0,4663	0,046	0,0017	2,949			0,0081	<0.0005	0,0217	
Dissolved Iron (Fe)	mg/L	4,4			0,16	0,08	0,03	0,15			0,01	0,02	0,39	
Dissolved Lead (Pb)	mg/L	<0.0003			<0.0003	<0.0003	<0.0003	<0.0003			<0.0003	0,0011	<0.0003	
Dissolved Manganese (Mn)	mg/L	6,055			5,441	2,644	0,0337	5,427			0,1781	0,1094	0,1065	
Dissolved Mercury (Hg)	mg/L	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	
Dissolved Molybdenum (Mo)	mg/L	0,1773			0,0222	0,0122	0,0027	0,0716			<0.0005	0,0009	0,0033	
Dissolved Nickel (Ni)	mg/L	1,81			0,3017	0,1065	0,0197	1,246			0,0324	0,0269	0,0298	
Dissolved Selenium (Se)	mg/L	0,023			0,004	0,002	0,003	0,014			<0.001	<0.001	0,001	
Dissolved Silver (Ag)	mg/L	0,0019			<0.0001	<0.0003	<0.0001	0,0024			<0.0001	<0.0001	0,0007	
Dissolved Thallium (Tl)	mg/L	<0.005			<0.005	<0.005		<0.005			<0.005	<0.005		
Dissolved Zinc (Zn)	mg/L	0,008			0,019	0,014		0,007			0,008	<0.001		
Aluminium (Al)	mg/L	0,042			0,078	0,048	0,15	0,024			0,008	0,011	0,154	
Antimony (Sb)	mg/L	0,0012			<0.0001	0,0001	<0.0001	0,0004			<0.0001	<0.0001	<0.0001	
Arsenic (As)	mg/L	0,0139		0,0241	0,0044	0,0019	<0.0005	0,0068		0,0015	<0.0005	0,001	<0.0005	
Boron (B)	mg/L	0,15			0,07	0,02	0,04	0,09			<0.01	<0.01	<0.01	
Barium (Ba)	mg/L	0,1414			0,0451	0,0239	0,0331	0,1419			0,0147	0,0133	0,0133	
Beryllium (Be)	mg/L	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	
Cadmium (Cd)	mg/L	0,00065			0,00034	<0.00002	0,00004	0,0003			<0.00002	<0.00002	<0.00002	
Copper (Cu)	mg/L	2,038		3,281	0,4963	0,0583	0,1417	3,261	0,1173	0,0887	0,0081	<0.0005	0,022	
Chromium (Cr)	mg/L	0,0011			<0.0006	<0.0006	<0.0006	<0.0006			<0.0006	<0.0006	<0.0006	
Cobalt (Co)	mg/L	0,3114			0,0808	0,0333	0,0412	0,2515			0,0106	0,0087	0,0079	
Iron (Fe)	mg/L	4,4		21,3	2,9	1,1	1,5	23,6		1,9	0,55	0,42	0,42	
Lithium (Li)	mg/L	0,006			<0.005	0,016	<0.005	0,005			<0.005	0,012	<0.005	
Manganese (Mn)	mg/L	6,37			5,533	2,628	3,287	6,464			0,1975	0,1189	0,0903	
Mercury (Hg)	mg/L	0,00005			<0.00001	<0.00001	<0.00001	0,00002			<0.00001	<0.00001	<0.00001	
Molybdenum (Mo)	mg/L	0,1704			0,0234	0,0128	0,0129	0,0871			0,0015	0,001	0,0008	
Nickel (Ni)	mg/L	2,015		1,227	0,2966	0,1092	0,1501	1,465		0,1319	0,0348	0,0287	0,037	
Lead (Pb)	mg/L	0,0013		<0.0003	<0.0003	<0.0003	<0.0003	<0.0003		<0.0003	<0.0003	<0.0003	<0.0003	
Selenium (Se)	mg/L	0,02			0,005	0,002	0,004	0,014			<0.001	<0.001	0,001	
Tin (Sn)	mg/L	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	
Strontium (Sr)	mg/L	2,14			0,439	0,27	0,317	1,62			0,118	0,112	0,131	
Titanium (Ti)	mg/L	0,55			0,16	0,06	0,05	0,39			0,03	0,02	0,02	
Thallium (Tl)	mg/L	<0.005			<0.005	<0.005	<0.005	<0.005			<0.005	<0.005	<0.005	
Uranium (U)	mg/L	0,17			0,018	0,006	0,008	0,144			0,002	0,001	0,001	
Vanadium (V)	mg/L	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	
Zinc (Zn)	mg/L	0,009		0,009	0,05	0,014	0,005	0,006		0,001	<0.001	<0.001	0,002	
							mt						mt	

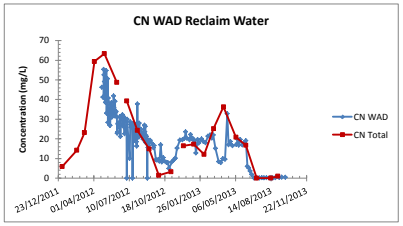
Data provided by AEM

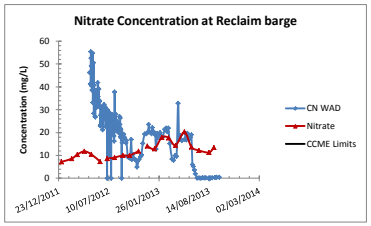
JK JK

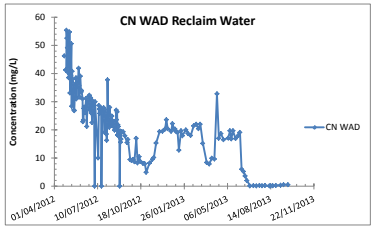
Parameters	Date	NP-2 East							NP-2 West					NP-2 North	NP-1 West	Phaser Lake		
	Unit	04-août-12	21-08-2013	27-08-2013	30-08-2013	10-09-2013	23-09-2013	02-10-2013	21-08-2013	30-08-2013	10-09-2013	23-09-2013	02-10-2013	27-08-2013	21-08-2013	10-09-2013	23-09-2013	02-10-2013
Alaklinity	mg CaCo3/L					54	54	55			54,0000	54,0000	55,0000			49	49	45
Ammonia nitrogen (NH3-NH4)	mg N/L					3,2	3,8	3,9			3,1000	3,6000	3,8000			0,08	0,32	<0.01
TDS	mg/L					281	276	264			284,0000	279,0000	263,0000			36	36	36
CN total	mg/L			0,012	0,018	0,011	0,014	0,014		0,0100	0,0170	0,0150	0,0170	0,017		0,007	<0.005	<0.005
CN Free	mg/L					1	<1	1			3	<1	1			<1	<1	<1
pH (Env. Dept.)						7,07	6,98	7,34			7,0400	6,8400	7,5400			6,83	7,12	7,57
Conductivity (Env. Dept.)						403	439	418			400,0000	446,0000	419,0000			37	56,2	60,1
Turbidity (Env. Dept.)	NTU					2,71	4,7	3,05			3,6800	3,7500	3,1400			0,7	0,68	0,56
Chloride	mg/L					21,3	19,2	16,8			20,9000	19,0000	17,1000			1,2	0,8	1,1
Fluoride	mg/L					0,12	0,02	0,12			0,0900	0,0200	0,1500			0,15	0,03	0,12
Hardness	mg CaCo3/L					122	104	108			131,0000	94,0000	102,0000			26	19	23
Nitrate	mg/L					3,1	1,3	1,4			1,2000	1,3000	1,3000			0,03	0,07	0,15
Nitrite	mg/L					0,16	0,14	0,14			0,1600	0,1400	0,1600			<0.01	<0.01	<0.01
Sulphate	mg/L					110	115	113			111,0000	118,0000	113,0000			3,9	8,3	4,2
Dissolved Aluminium (Al)	mg/L					0,012	<0.006	<0.006			0,0270	<0.006	<0.006			<0.006	<0.006	<0.006
Dissolved Arsenic (As)	mg/L					<0.0005	<0.0005	0,0006			<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	0,0006
Dissolved Barium (Ba)	mg/L					0,0133	0,0127	0,0136			0,0129	0,0114	0,0138			0,002	0,0019	0,0026
Dissolved Cadmium (Cd)	mg/L					<0.00002	<0.00002	<0.00002			<0.00002	<0.00002	<0.00002			<0.00002	<0.00002	<0.00002
Dissolved Copper (Cu)	mg/L					0,0143	<0.0005	0,006			0,0142	<0.0005	0,0048			0,0006	<0.0005	<0.0005
Dissolved Iron (Fe)	mg/L					0,02	0,03	0,02			0,0100	0,0100	0,0200			<0.01	<0.01	<0.01
Dissolved Lead (Pb)	mg/L					<0.0003	<0.0003	<0.0003			<0.0003	<0.0003	<0.0003			<0.0003	<0.0003	<0.0003
Dissolved Manganese (Mn)	mg/L					0,1889	0,1226	0,0812			0,1856	0,0995	0,0643			<0.0005	<0.0005	<0.0005
Dissolved Mercury (Hg)	mg/L					<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001
Dissolved Molybdenum (Mo)	mg/L					<0.0005	0,0008	0,0011			<0.0005	0,0007	0,0011			<0.0005	<0.0005	<0.0005
Dissolved Nickel (Ni)	mg/L					0,0312	0,0266	0,0243			0,0313	0,0238	0,0243			<0.0005	<0.0005	<0.0005
Dissolved Selenium (Se)	mg/L					<0.001	0,001	0,001			<0.001	<0.001	0,0010			<0.001	<0.001	<0.001
Dissolved Silver (Ag)	mg/L					<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001			<0.001	<0.001	<0.0001
Dissolved Thallium (Tl)	mg/L					<0.005	<0.005				<0.005	<0.005				<0.005	<0.005	
Dissolved Zinc (Zn)	mg/L					0,01	<0.001				0,0200	<0.001				<0.001	<0.001	
Aluminium (Al)	mg/L	0,046				0,122	<0.006	0,067			0,0270	0,0150	0,0790			0,023	<0.006	<0.006
Antimony (Sb)	mg/L	0,0001				0,0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001
Arsenic (As)	mg/L	<0.0005		<0.0005	<0.0005	0,0006	<0.0005	0,0015		0,0006	0,0009	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	0,0022
Boron (B)	mg/L	0,09				<0.01	<0.01	<0.01			<0.01	<0.01	<0.01			<0.01	<0.01	<0.01
Barium (Ba)	mg/L	0,0135				0,013	0,0128	0,0146			0,0143	0,0121	0,0143			0,0024	0,0019	0,0029
Beryllium (Be)	mg/L	<0.0005				<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005
Cadmium (Cd)	mg/L	<0.00002				<0.00002	<0.00002	0,00002			<0.00002	<0.00002	<0.00002			<0.00002	<0.00002	<0.00002
Copper (Cu)	mg/L	0,1713	0,0399	0,0389	0,0388	0,0302	<0.0005	0,0241	0,0406	0,0404	0,0298	<0.0005	0,0182	0,0405	<0.0005	<0.0005	<0.0005	<0.0005
Chromium (Cr)	mg/L	0,0018				<0.0006	<0.0006	<0.0006			<0.0006	<0.0006	<0.0006			<0.0006	<0.0006	<0.0006
Cobalt (Co)	mg/L	0,0132				0,0094	0,0089	0,0082			0,0104	0,0079	0,0076			<0.0005	<0.0005	<0.0005
Iron (Fe)	mg/L	0,41		0,48	0,47	0,43	0,41	0,51		0,49	0,59	0,47	0,48	0,61		<0.01	<0.01	0,04
Lithium (Li)	mg/L	0,01				<0.005	0,006	<0.005			<0.005	0,0120	<0.005			<0.005	<0.005	<0.005
Manganese (Mn)	mg/L	0,4091				0,1862	0,1301	0,0953			0,2023	0,1130	0,0939			<0.0005	<0.0005	0,0006
Mercury (Hg)	mg/L	<0.00001				<0.00001	<0.00001	<0.00001			<0.00001	<0.00001	<0.00001			<0.00001	<0.00001	<0.00001
Molybdenum (Mo)	mg/L	0,0035				0,0006	0,0008	0,0009			0,0012	0,0008	0,0008			<0.0005	<0.0005	<0.0005
Nickel (Ni)	mg/L	0,0568		0,0330	0,0354	0,0291	0,0288	0,0275		0,0363	0,0327	0,0259	0,0263	0,0319		<0.0005	<0.0005	0,0005
Lead (Pb)	mg/L	0,0099		<0.0003	<0.0003	<0.0003	<0.0003	<0.0003		0,0014	<0.0003	<0.0003	<0.0003	<0.0003		<0.0003	<0.0003	<0.0003
Selenium (Se)	mg/L	<0.001				<0.001	<0.001	<0.001			<0.001	<0.001	<0.001			<0.001	<0.001	<0.001
Tin (Sn)	mg/L	0,003				<0.001	<0.001	<0.001			<0.001	<0.001	<0.001			<0.001	<0.001	<0.001
Strontium (Sr)	mg/L	0,118				0,107	0,094	0,123			0,1050	0,1090	0,1330			0,026	0,027	0,032
Titanium (Ti)	mg/L	0,03				0,02	0,02	0,01			0,0300	0,0200	0,0100			<0.01	<0.01	<0.01
Thallium (Tl)	mg/L	<0.005				<0.005	<0.005	<0.005			<0.005	<0.005	<0.005			<0.005	<0.005	<0.005
Uranium (U)	mg/L	0,003				0,001	0,001	0,001			0,0020	0,0010	0,0010			<0.001	<0.001	<0.001
Vanadium (V)	mg/L	<0.0005				<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005
Zinc (Zn)	mg/L	<0.001		<0.001	0,008	<0.001	<0.001	0,002		0,0150	<0.001	0,0010	0,0020	0,004		<0.001	<0.001	0,001
													mt				mt	

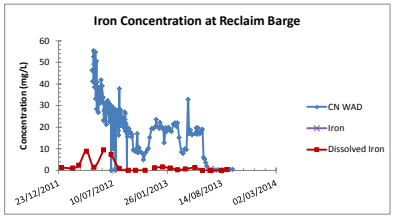
CN in the tailing pond

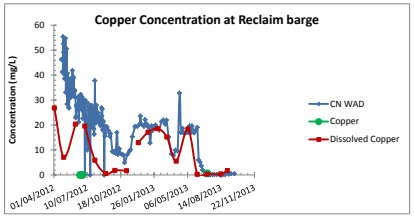
Date	CN wad (Assay lab)	CN wad (multilab)	CN free (multilab)	CN tot (multilab)
	ppm	mg/L	mg/L	mg/L
03/04/2012				59.37
24/04/2012	46.3			
26/04/2012		33.01		79.14
27/04/2012	41.3			
28/04/2012	41.2			
29/04/2012	55.4			
30/04/2012	52.6			
01/05/2012	49.2			63.38
02/05/2012	40.5			
03/05/2012	41.6			
04/05/2012	38.6			
05/05/2012	38.5			
06/05/2012	54.8			
07/05/2012	33.1			
08/05/2012	40.9			
09/05/2012	39.2			
10/05/2012	50.6			
11/05/2012	28.4			
12/05/2012	40.8			
13/05/2012	38			
14/05/2012	35.3			
15/05/2012	36.5			
16/05/2012	27.1			
17/05/2012	26.8			
18/05/2012	32.3			
19/05/2012	31.2			
20/05/2012	35.4			
21/05/2012	38.5	22.93		52.76
22/05/2012	31			
23/05/2012	36.1			
24/05/2012	37.7			
25/05/2012	35.4			
26/05/2012	36.3			
27/05/2012	41.9			
28/05/2012	35.8			
29/05/2012	31.7			
30/05/2012	39.1			
31/05/2012	39.1			
01/06/2012	34			
02/06/2012	33.5			
03/06/2012	34			
05/06/2012	31			
06/06/2012	22.9			
07/06/2012	23.5			
08/06/2012	27.6			
09/06/2012	28.1			
10/06/2012	27.3			
11/06/2012	26.1			
12/06/2012	28.1			
13/06/2012	31.2			
14/06/2012	27.8			
15/06/2012	21.2			
16/06/2012	27.5			
17/06/2012	27.5			
18/06/2012	30.7			
19/06/2012	28.6			
20/06/2012	32			
21/06/2012	32.3			
22/06/2012	27			
23/06/2012	29.8	29.7		
24/06/2012	31.4			
25/06/2012	26			
26/06/2012	27.2			
27/06/2012	22.6			
28/06/2012	30.4			
29/06/2012	27			
30/06/2012	27.7			
01/07/2012	29.7			
02/07/2012	29.7			
03/07/2012	???			
04/07/2012	30			
11/07/2012	10			
13/07/2012	28.7			
14/07/2012	27.4			
15/07/2012	25.9			
16/07/2012	27.4			
18/07/2012	27.8			
19/07/2012	???			
20/07/2012	25.9			
21/07/2012	26.9			
22/07/2012	27.3			
23/07/2012	25.9			
24/07/2012	27.9			
25/07/2012	24.1			
26/07/2012	19.1			
27/07/2012	27.2			
28/07/2012	25.74			
29/07/2012	25.8			
30/07/2012	18.5			
31/07/2012	16.3			
01/08/2012	22.8			
02/08/2012	37.8			
03/08/2012	23.7			
04/08/2012	23.6	24.0714286		
05/08/2012	23.4			
06/08/2012	20.9			
07/08/2012	28			

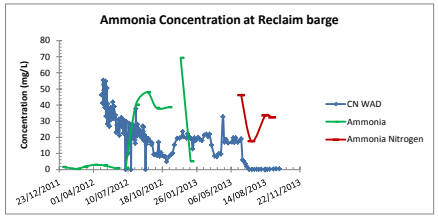


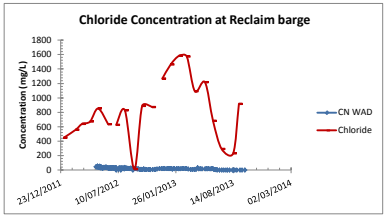


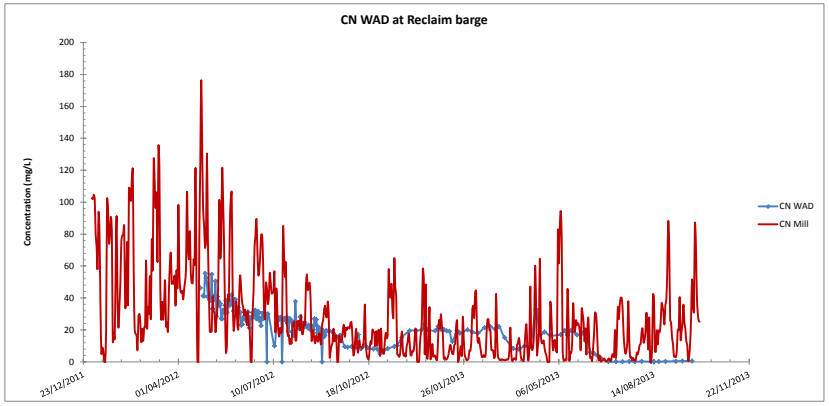












CN in the tailing pond

Date	CN wad (Assay lab)	CN wad (multilab)	CN free (multilab)	CN tot (multilab)
	ppm	mg/L	mg/L	mg/L
08/08/2012	24.4			
09/08/2012	23.3			
10/08/2012	22.8			
11/08/2012	21.7	23.5		
12/08/2012	24.9			
13/08/2012	23			
14/08/2012	22.1			
15/08/2012	21.3			
16/08/2012	23			
17/08/2012	21.3			
18/08/2012	19.9	22.2142857		
19/08/2012	22.6			
20/08/2012	21.6			
21/08/2012	20.2			
22/08/2012	27			
23/08/2012	23.6			
24/08/2012	26.4			
25/08/2012	18.2	22.8		
26/08/2012	21.8			
27/08/2012	21.2			
28/08/2012	17.7			
29/08/2012	19.4			
30/08/2012	None			
31/08/2012	19.6			
01/09/2012	15.6	18		
02/09/2012	16.7			
03/09/2012	19.3			
04/09/2012	19.3			
07/09/2012	19.3	18.65		
11/09/2012	17.9			
16/09/2012	15.5			
18/09/2012	16.6			
23/09/2012	9.45			
26/09/2012	9.19			
30/09/2012	9.53	9.36		
03/10/2012	8.68			
07/10/2012	17			
10/10/2012	8.26			
14/10/2012	10.5			
17/10/2012	8.77			
23/10/2012	8.09	10.2166667		
27/10/2012	7.96			
30/10/2012	4.91			
07/11/2012	8.22			
14/11/2012	9.57			
17/11/2012	10.2			
22/11/2012	15.3			
30/11/2012	19.4			
07/12/2012	19.5			
13/12/2012	20.3			
16/12/2012	23.6			
19/12/2012	20.4			
27/12/2012	19.5	41.7		
30/12/2012	22.2	20.85		
02/01/2013	20.4			
05/01/2013	20.3			
08/01/2013	19.3			
11/01/2013	19.1			
14/01/2013	12.8			
19/01/2013	19.7			
22/01/2013	17.9			
30/01/2013	20.0			
04/02/2013	18.7			
10/02/2013	18.0			
17/02/2013	21.4			
23/02/2013	22.0			
28/02/2013	20.4			
04/03/2013	22.0			
10/03/2013	15.2			
19/03/2013	8.4			
25/03/2013	7.9			
31/03/2013	10.0			
06/04/2013	9.6			
12/04/2013	32.8			
16/04/2013	17.0	1.24	3	19.87
21/04/2013	18.7			
27/04/2013	16.5			
08/05/2013	17.1			
12/05/2013	19.7			
15/05/2013	16.8			
19/05/2013	19.7			
25/05/2013	16.9			
31/05/2013	18			
04/06/2013	19.1			
08/06/2013	6.01			
12/06/2013	5.21			
16/06/2013	3.64			
20/06/2013	2.0			
27/06/2013	0.0967			
05/07/2013	0.156			
12/07/2013	0.0829			
19/07/2013	0.247			
25/07/2013	0.142			
01/08/2013	0.237			
11/08/2013	0.0829			
14/08/2013	0.0765			
19/08/2013	0.133			
26/08/2013	0.242			
06/09/2013	0.355			
13/09/2013	0.501			
23/09/2013	0.499			

Calendar reference	**ST-21 (a)**
Sample ID	**ST-21**
Old calendar reference	**SW2a /SW2b**
Sampling location	**Tailings reclaim pond (reclaim pond)**

Number bold - italic = < LMD

Frequency	Parameters	Date / Units	03/01/2012	13/02/2012	06/03/2012	03/04/2012	01/05/2012	05/06/2012	19/06/2012	26/06/2012	03/07/2012	02/08/2012	04/09/2012	01/10/2012
ST-21 (a)	Alkalinity	(mg CaCO3/L)	126	125	147	157	145	75			98	102	117	114
Monthly (open water)	Ammonia (NH3)	mg/L	1.6	0.44	1.8	2.9	2.6	0.73			1	40.3	48	38.2
	Chloride	mg/L	449	559	639	672	853	634			626	826	13.5	889
	Cyanide (Cn(tot))	mg/L	5.89	14.22	23.18	59.37	63.38	48.76			39.26	24.34	14.87	1.44
	Fluoride	mg/L	0.5	0.49	0.54	0.3	2.5	***0.02***			0.06	0.23	0.52	0.48
	Hardness	(mg CaCO3/L)	914	1087	1057	1369	1008	1001			574	771	1045	1313
	Nitrate (NO3)	mg/L	7.2	8.6	10.4	11.8	10.5	7.3			8.6	9.1	10	10
	Nitrite (NO2)	mg/L	0.23	0.22	0.21	0.2	0.17	0.12			0.1	0.12	0.15	0.12
	pH		8.42	8.03	8.49	9.06	9.39	8.74	7.89		8.94	8.47	8.04	7.89
	Sulphate (SO2-4)	mg SO4/L	1825	2173	2477	2384	2508	1555			1457	1551	1703	1910
	TDS	mg/L	3012	3334	3620	3843	3374	4955			2343	2590	3213	3206
	Turbidity	NTU	0.88	2.53	6.49	2.51	2.21	14.74	12.36		16.8	4.18	3.87	4.16
	Dissolved Ag	mg/L	0.006	0.008	***0.005***	***0.005***	0.005	***0.005***			0.068	***0.005***	0.005	***0.005***
	Dissolved Al	mg/L	0.02	***0.01***	***0.01***	0.02	0.41	***0.01***			***0.01***	***0.01***	0.02	0.05
	Dissolved As	mg/L	0.045	0.018	0.015	0.041	0.071	0.006			0.011	0.012	0.009	0.008
	Dissolved Ba	mg/L	0.048	0.078	0.096	0.066	0.052	0.029			0.034	0.043	0.057	0.077
	Dissolved Cd	mg/L	***0.005***	***0.005***	***0.005***	***0.005***	***0.005***	***0.005***			***0.005***	***0.005***	0.005	***0.005***
	Dissolved Cu	mg/L	7.68	6.83	9.91	26.85	7.13	20.39			19.58	5.94	0.549	1.86
	Dissolved Fe	mg/L	1.3	1.1	2.4	8.9	1.5	9.5			7.4	0.93	0.05	***0.05***
	Dissolved Hg	mg/L	***0.0005***	***0.0005***	***0.0005***	***0.0005***	***0.0005***	***0.0005***			***0.0005***	0.0005	0.0005	***0.0005***
	Dissolved Mn	mg/L	0.023	0.034	0.032	***0.005***	0.032	***0.005***			0.009	0.005	0.017	0.095
	Dissolved Mo	mg/L	0.29	0.308	0.332	0.0005	0.31	0.232			0.262	0.29	0.349	0.361
	Dissolved Ni	mg/L	0.455	0.887	1.52	0.6	1.21	2.01			2.54	2.22	1.28	1.08
	Dissolved Pb	mg/L	***0.005***	***0.005***	***0.005***	0.009	***0.005***	0.005			***0.005***	***0.005***	0.005	***0.005***
	Dissolved Se	mg/L	***0.005***	***0.005***	0.006	0.014	0.021	0.013			0.009	0.02	0.015	0.014
	Dissolved Tl	mg/L	***0.01***	***0.01***	***0.01***	***0.01***	***0.01***	***0.01***			***0.01***	***0.01***	0.01	***0.01***
	Dissolved Zn	mg/L	0.018	0.01	0.006	***0.005***	1.39	***0.005***			0.034	***0.005***	0.005	0.006
	Ammonia-Nitrogen	mg/L												
	Ag	mg/L							0.158	0.263				
	Al	mg/L							0.0049	0.0119				
	As	mg/L							0.0305	0.0321				
	Ba	mg/L							***0.0005***	***0.0005***				
	Be	mg/L							0.00055	0.00019				
	Cd	mg/L							0.0092	0.0213				
	Co	mg/L							1.038	2.744				
	Cu	mg/L							***0.0006***	0.0106				
	Cr	mg/L							0.83	0.7				
	Fe	mg/L												
	Hg	mg/L							***0.005***	***0.005***				
	Li	mg/L							0.0194	0.0314				
	Mn	mg/L							0.2209	0.2576				
	Mo	mg/L							1.354	1.68				
	Ni	mg/L							0.0006	***0.0003***				
	Pb	mg/L							0.0007	***0.0001***				
	Sb	mg/L							0.009	0.008				
	Se	mg/L							***0.001***	***0.001***				
	Sn	mg/L							1.1	0.837				
	Sr	mg/L							0.34	0.43				
	Ti	mg/L							***0.005***	***0.005***				
	Tl	mg/L							0.01	0.009				
	U	mg/L							***0.0005***	***0.0005***				
	V	mg/L							***0.001***	0.015				
	Zn	mg/L												

Calendar reference	**ST-21 (a)**
Sample ID	**ST-21**
Old calendar reference	**SW2a /SW2b**
Sampling location	**Tailings reclaim pond (reclaim pond)**

Frequency	Parameters	Date / Units	05/11/2012	03/12/2012	10/12/2012	08/01/2013	06/02/2013	05/03/2013	02/04/2013	07/05/2013	04/06/2013	04/07/2013	13/08/2013	02/09/2013
ST-21 (a) Monthly (open water)	Alkalinity	(mg CaCO3/L)	129		134	115	134	142	113	106	77	127	154	143
	Ammonia (NH3)	mg/L	38.7		69.3	5.2					46.2			
	Chloride	mg/L	872		1267	1463	1582	1572	1092	1217	683	292	232	917
	Cyanide (Cn(tot))	mg/L	3.26		16.45	17.3	12.11	25.19	36.25	20.85	16.77	0.008	0.054	0.991
	Fluoride	mg/L	0.07		0.22	21.9	0.33	0.23	0.38	0.33	0.07	0.26	1.1	0.16
	Hardness	(mg CaCO3/L)	1177		1497	1607	2116	1795	1525	1583	891	662	751	759
	Nitrate (NO3)	mg/L	11.9		14.1	12.9	17.9	17.7	14.4	20.3	13.7	12.2	11.3	13.5
	Nitrite (NO2)	mg/L	0.07		0.19	0.27	0.29	0.16	0.34	0.33	0.06	0.31	0.9	1.1
	pH		8.09	8.59	8.14	9.04	9.42	9.14	8.9	9	8.85	8.28	7.72	8
	Sulphate (SO2-4)	mg SO4/L	2332		2644	2960	3125	2876	2248	2304	1276	1085	1169	1457
	TDS	mg/L				4943	568	5354	4242	4476	2954	1988		2020
	Turbidity	NTU	4.94	1.9	1.13	1.01	36.7	21.9	43.3	8.8	17.37	9.25	5.65	20.1
	Dissolved Ag	mg/L	***0.005***		0.015	***0.005***	0.011	0.01	***0.005***	0.0138	0.0044	***0.0002***	0.0057	0.0138
	Dissolved Al	mg/L	0.02		0.04	0.05	0.34	0.02	0.08	0.093	0.136	0.152	0.14	0.204
	Dissolved As	mg/L	0.011		0.012	0.019	0.012	0.01	0.011	0.0165	0.0078	0.0137	0.0161	0.0246
	Dissolved Ba	mg/L	0.082		0.084	0.107	0.101	0.144	0.096	0.104	0.0566	0.0465	0.0606	0.0667
	Dissolved Cd	mg/L	***0.005***		***0.005***	***0.005***	***0.005***	***0.005***	***0.005***	0.00085	0.00054	0.00035	0.00068	0.00089
	Dissolved Cu	mg/L	1.71		12.96	17.17	18.55	15.21	5.56	18.43	0.2915	0.3915	0.4183	1.777
	Dissolved Fe	mg/L	***0.05***		1.2	1.6	1.1	0.3	0.67	1.3	***0.01***	***0.01***	0.01	0.38
	Dissolved Hg	mg/L	***0.0005***		0.0003	0.0002	0.0003	***0.0001***	0.0002	0.0002	***0.0001***	***0.0001***	0.0001	0.0001
	Dissolved Mn	mg/L	0.039		0.007	***0.005***	0.071	0.009	***0.005***	***0.0005***	0.0713	0.4254	0.5621	0.4087
	Dissolved Mo	mg/L	0.411		0.437	0.492	0.481	0.469	0.332	0.4128	0.2472	0.171	0.2217	0.3091
	Dissolved Ni	mg/L	0.183		0.152	0.056	0.032	0.041	0.026	0.808	0.0876	0.0962	0.2999	0.6015
	Dissolved Pb	mg/L	***0.005***		***0.005***	***0.005***	***0.005***	***0.005***	***0.005***	***0.0003***	***0.0003***	***0.0003***	0.0012	0.0045
	Dissolved Se	mg/L	0.019		0.021	0.023	0.026	0.037	0.019	0.026	0.008	0.01	0.01	0.009
	Dissolved Tl	mg/L	***0.01***		***0.01***	***0.01***	***0.01***	***0.01***	***0.01***	***0.005***	***0.005***	***0.005***	***0.005***	***0.005***
	Dissolved Zn	mg/L	***0.005***		0.006	0.005	0.569	***0.005***	0.015	0.009	0.001	0.004	0.004	0.015
	Ammonia-Nitrogen	mg/L									46.2	17.6	33.5	32.3
	Ag	mg/L												
	Al	mg/L										0.409		
	As	mg/L										0.0208		
	Ba	mg/L										0.0598		
	Be	mg/L										***0.0005***		
	Cd	mg/L										0.00043		
	Co	mg/L												
	Cu	mg/L										0.6531		
	Cr	mg/L										0.0007		
	Fe	mg/L										0.56		
	Hg	mg/L										***0.00001***		
	Li	mg/L										***0.005***		
	Mn	mg/L										0.5164		
	Mo	mg/L										0.2041		
	Ni	mg/L										0.1204		
	Pb	mg/L										0.0045		
	Sb	mg/L										0.0014		
	Se	mg/L										0.012		
	Sn	mg/L										***0.001***		
	Sr	mg/L										0.798		
	Ti	mg/L										0.29		
	Tl	mg/L										***0.005***		
	U	mg/L										0.009		
	V	mg/L										***0.0005***		
	Zn	mg/L										0.006		

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Certificate of Analysis

Request number: **13-558291**

Date Received: 2013-08-30

Date Certificate Issued: 2013-09-13

Certificate Version: 1

☑ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

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P.O. Number	Your project ID.	Project Manager
NA	29228	M. Roger Turmel

Comments

This version replaces and cancels all earlier version.

NA : Information Not Available

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Certificate of Analysis

Client: **MULTI-LAB DIRECT - Val d' Or**

Request Number: 13-558291

P.O. Number	Your Project ID.	Project Manager
NA	29228	M. Roger Turmel

Sample(s)

Lab. No.	**2428475**
Your Reference	29228 NP-2-North
Matrix	Wastewater
Sampled by	M. Samuel Tapp / Jamie Kataluk
Site sampled	Meadowbank
Date sampled	2013-08-28
Date received	2013-08-30

Parameter(s)

Method Reference		
Résultats toxicité truite	Preparation	-
QE006-01 (Accredited)	Analysis	-
	Sequential No.	NA
LC50-96h	% v/v	>100
% mortality at 100% v/v	% mort 96h	NA
CI 95% lower		NA
CI 95% upper		NA
Code Statistical method		AUCUN
Toxic units	U.T.	<1.0
Conclusion		Not lethal
Analysis details		APPENDIX

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Certificate of Analysis

Client: **MULTI-LAB DIRECT - Val d' Or**

Request Number: 13-558291

P.O. Number	Your Project ID.	Project Manager
NA	29228	M. Roger Turmel

Sample(s)

Lab. No.	**2428475**
Your Reference	29228 NP-2-North
Matrix	Wastewater
Sampled by	M. Samuel Tapp / Jamie Kataluk
Site sampled	Meadowbank
Date sampled	2013-08-28
Date received	2013-08-30

Parameter(s)

Method
Reference

Comments:

2428475 29228 NP-2-North — Truites - Type d'essai : CL50

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Saint-Augustin-de-Desmaures laboratory.

Linda Bouchard, biologist

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Results pertain only to the samples submitted for analysis.

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Appendix

Client: MULTI-LAB DIRECT **Request number:** 13-558291

BIOASSAY Rainbow trout

Lab. No:	2428475	**Sampling method:**	Grab
Your reference:	29228 NP-2-North	**Date sampled (date and hour):**	2013-08-28 08:00:00
Matrix:	Wastewater	**Date received (date and hour):**	2013-08-30 08:00:00
Sampled by:	M. Samuel Tapp / Jamie Kataluk	**State of sampled received:**	Conform
Site sampled:	Meadowbank		

Date and hour start analysis (0hrs): 2013-09-01 14:00 **Date and hour end analysis (96hrs):** 2013-09-05 14:00

Analysed by: JB JG

Organisms:	***Oncorhynchus mykiss*** ; Acclimation: ≥ 2 weeks				
	% mortality 7 days before test:<1				
Lot #:	PAV130809				
Average weight of control fish (g):	0.45	**Minimum:**	0.33	**Maximum:**	0.54
± std. dev.:	0.07				
Average fork length of control fish (mm):	36.4	**Minimum:**	32	**Maximum:**	43
± std. dev.:	3.5				
Number of fish/container:	10				
Loading density (g/L):	0.45				
Volume of test solutions (L):	10				
Height of test solutions (cm):	22				
Photoperiod:	16hrs light / 8hrs darkness				
Dilution water:	Dechlorinated municipal water				
Pre-aeration of sample:	30 minutes				
Pre-aeration and aeration rate (mL/min/L ±1):	6.5				
Pre-treatment of sample:	NA				
Protocol / Reference method:	SPE1/RM/13, 2000, mod. 05/2007				
	No modification to protocol				

sample concentration (% v/v)	number of fish 0 hrs	volume (L)	atypical or stressed 96hrs (number)	atypical or stressed 96hrs (%)	mortality 96hrs (number)	mortality 96hrs (%)	temperature (°C)		pH		dissolved oxygen (mg/L)		conductivity (µS/cm)
							0hrs	96hrs	0hrs	96hrs	0hrs	96hrs	0hrs
0.00	10	10	0	0	0	0	15.5	14.6	7.8	7.7	9.6	9.6	291
6.25	10	10	0	0	0	0	15.5	14.6	7.8	7.7	9.8	9.1	299
12.50	10	10	0	0	0	0	15.5	14.4	7.8	7.7	9.7	9.3	301
25.00	10	10	0	0	0	0	15.5	14.3	7.8	7.6	9.9	9.2	324
50.00	10	10	0	0	0	0	15.6	14.3	7.7	7.5	9.0	9.1	357
100.0	10	10	0	0	0	0	15.8	14.2	7.5	7.4	9.5	9.1	421
Sample characteristics before analysis			**Appearance**				15.8		7.5		8.9		419
			Yellow,clear										

Reference assay (Phenol)		**Geometric average:**	9.110
Reference assay date:	2013-08-30	**Lower control limit:**	6.580
LC50-96h (mg/L of Phenol):	10.82	**Upper control limit:**	11.63
Lower C.I. at 95%:	9.000		
Lower C.I. at 95%:	13.00		

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Certificate of Analysis

Request number: **13-577001**

Date Received: 2013-12-13

Date Certificate Issued: 2013-12-23

Certificate Version: 3

☑ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

MAXXAM ANALYTIQUE INC.

2690, avenue Dalton
Québec, Québec, Canada
G1P 3S4
Telephone : (418) 658-5784
Fax : (418) 658-6594

P.O. Number	Your project ID.	Project Manager
NA	B381001	Mme Martine Bergeron

Comments

Version 3: English certificate requested by the client.

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NA : Information Not Available

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Certificate of Analysis

Client: **MAXXAM ANALYTIQUE INC.**

Request Number: 13-577001

P.O. Number	Your Project ID.	Project Manager
NA	B381001	Mme Martine Bergeron

Sample(s)

Lab. No.	**2501751**
Your Reference	X08009-01R\31784
Matrix	Water
Sampled by	M. THÉRIAULT ET T. THOMSON
Site sampled	NA
Date sampled	2013-12-09
Date received	2013-12-13

Parameter(s) Method Reference		
Résultats toxicité truite	Préparation	
QE006-01 (Accredited)	Analysis	-
	Sequential No.	NA
LC50-96h	% v/v	NA
% mortality at 100% v/v	% mort 96h	0
CI 95% lower		NA
CI 95% upper		NA
Code Statistical method		NA
Toxic units	U.T.	NA
Conclusion		Not lethal
Analysis details		APPENDIX

Comments:

2501751 X08009-01R\31784 Trout - Test type : Single concentration

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Saint-Augustin-de-Desmaures laboratory.

Stephan Veilleux, biologist

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Appendix

Client: Maxxam Analytique Inc. **Request number:** 13-577001

BIOASSAY Rainbow trout

Lab. No:	2501751	**Sampling method:**	Grab
Your reference:	X08009-01R\31784	**Date sampled (date and hour):**	2013-12-09 15:30:00
Matrix:	Water	**Date received (date and hour):**	2013-12-13 13:00:00
Sampled by:	M. THERIAULT ET T. THOMSON	**State of sampled received:**	Conform
Site sampled:	NA		

Date and hour start analysis (0hrs): 2013-12-14 10:45 **Date and hour end analysis (96hrs):** 2013-12-18 10:45

Analysed by: JB GF

Organisms:	***Oncorhynchus mykiss*** ; Acclimation: ≥ 2 weeks % mortality 7 days before test:<1				
Lot #:	PAV131112				
Average weight of control fish (g):	0.45	**Minimum:**	0.34	**Maximum:**	0.52
± std. dev.:	0.07				
Average fork length of control fish (mm):	38.5	**Minimum:**	35	**Maximum:**	41
± std. dev.:	2.2				
Number of fish/container:	10				
Loading density (g/L):	0.45				
Volume of test solutions (L):	10				
Height of test solutions (cm):	22				
Photoperiod:	16hrs light / 8hrs darkness				
Dilution water:	Dechlorinated municipal water				
Pre-aeration of sample:	30 minutes				
Pre-aeration and aeration rate (mL/min/L ±1):	6.5				
Pre-treatment of sample:	NA				
Protocol / Reference method:	SPE1/RM/13, 2000, mod. 05/2007 No modification to protocol				

sample concentration (% v/v)	number of fish 0 hrs	volume (L)	atypical or stressed 96hrs (number)	atypical or stressed 96hrs (%)	mortality 96hrs (number)	mortality 96hrs (%)	temperature (°C)		pH		dissolved oxygen (mg/L)		conductivity (µS/cm)
							0hrs	96hrs	0hrs	96hrs	0hrs	96hrs	0hrs
0	10	10	0	0	0	0	14.2	15.9	7.3	7.3	9.9	9.4	270
100	10	10	0	0	0	0	14.8	15.7	6.9	7.3	9.9	9.7	564
Sample characteristics before analysis			**Appearance**				15.4		6.7		11.0		559
			Yellow, clear										

Reference assay (Phenol)		**Geometric average:**	9.16
Reference assay date:	2013-12-13	**Lower control limit:**	6.61
LC50-96h (mg/L of Phenol):	10.00	**Upper control limit:**	11.71
Lower C.I. at 95%:	8.57		
Lower C.I. at 95%:	11.60		

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APPENDIX B

Preliminary AEM Report - Seepage Water from Waste Rock Storage Facility at Sample Location ST-16

AGNICO EAGLE

MEADOWBANK MINE

Preliminary AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16

SEPTEMBER 2013

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1. **Issue**

During an AANDC Water License inspection on July 29th and 30th 2013 it was observed that “red” colored seepage from the south - east side of the Waste Rock Storage Facility was seeping through the road perimeter into Lake NP-2. Samples were taken by both the Inspector and AEM staff (split sample). Analysis results from this sampling were received by AEM on August 16th, 2013. See Photos 1 and 2 below and Table 1.

Photo 1 – Shore of NP-2

Photo 2 – ST-16 Waste Rock seepage.

Table 1 – Historical ST-16 Results

Parameters	Date / Units	ST-16 Average 2011	ST-16 Average 2012	ST-16 11/06/2013	ST-16 04/07/2013	ST-16 Split 30/07/2013	ST-16 Split AANDC Result 30/07/2013
*pH		6.49	7.30	6.45	7.21		7.20
*Turbidity	NTU	17	34		17		123
*Conductivity	us/cm		154	420	1485		4510
Alkalinity	mg CaCo3/L	34	67	46	89	272	162
Aluminum	mg/L	0.159	0.513		0.464	0.042	0.045
Dissolved Aluminium	mg/L				0.027	< 0.006	
Ammonia	mgN/L	0.07	0.03	< 0.05	0.20	1.20	
Ammonia-nitrogen	mgN/L		0.22	0.45	7.80	34.00	
Total Dissolved Solids	mg/L	55	175	37	969	3792	
Total Suspended Solids	mg/L						50
Arsenic	mg/L	0.0020	0.0045	0.0029	0.0091	0.0139	0.0083
Dissolved As	mg/L				0.0031	0.0058	
Barium	mg/L	0.0095	0.0196		0.0741	0.1414	0.1480
Dissolved Barium	mg/L				0.0558	0.1433	
Cadmium	mg/L	0.00060	0.00004		0.00014	0.00065	0.00020
Dissolved Cadmium	mg/L				0.0001	0.0007	
Chloride	mg/L	2	3		15	450	192
Chromium	mg/L		0.0048		0.0034	0.0011	0.0010
Copper	mg/L	0.0017	0.0046	0.0028	2.3110	2.0380	3.3500
Dissolved Copper	mg/L				1.909	1.712	
Fluoride	mg/L	0.106	0.098		0.110	0.290	
Hardness	mg CaCO3/L	62	59		361	1417	1020
Iron	mg/L	1.21	1.94		1.60	4.40	21.90
Dissolved Iron	mg/L				0.17	0.06	
Lead	mg/L	0.0010	0.0056	< 0.0003	0.0015	0.0013	< 0.0001
Dissolved Lead	mg/L				< 0.0003	< 0.0003	
Manganese	mg/L	0.588	0.961		2.447	6.370	5.850
Dissolved Manganese	mg/L				2.110	6.055	
Mercury	mg/L	0.00062	0.00007		< 0.00010	0.00005	0.00015
Dissolved Mercury	mg/L				< 0.0001	< 0.0001	
Molybdenum	mg/L	0.001	0.001		0.026	0.170	0.083
Dissolved Molybdenum	mg/L				0.0204	0.1773	
Nickel	mg/L	0.0339	0.0395	0.0069	0.5149	2.0150	1.3300
Dissolved Nickel	mg/L				0.415	1.810	
Nitrate	mg/L	0.17	0.34		8.10	37.80	23.70
Selenium	mg/L	0.002	0.001		0.007	0.020	0.013
Dissolved Selenium	mg/L				0.005	0.023	

Silver	mg/L	0.0006	0.0049								0.0056
Dissolved Silver	mg/L					<	0.0002		0.0019		
Sulphate	mg/L	24	9				406		2400		1450
Thallium	mg/L	0.0025	0.0025			<	0.0050	<	0.0050	<	0.0001
Dissolved Thallium	mg/L					<	0.005	<			
Zinc	mg/L	0.005	0.008	<	0.001		0.010		0.009	<	0.005
Dissolved Zinc	mg/L						0.003		0.008		
Calcium (Ca)	mg/L										312
Magnesium (Mg)	mg/L										60
Potassium (K)	mg/L										88
Sodium (Na)	mg/L										590
Cesium	mg/L										0.0009
Rubidium	mg/L										0.0687
Ortho-Phosphate as Phosphorus	mg/L										
Antimony (Sb)	mg/L						0.0004		0.0012		0.0007
Boron (B)	mg/L						0.04		0.15		
Beryllium (Be)	mg/L					<	0.0005	<	0.0005	<	0.0001
Cobalt (Co)	mg/L						0.0729		0.3114		0.2290
Lithium (Li)	mg/L					<	0.005		0.006		0.004
Tin (Sn)	mg/L					<	0.001	<	0.001		
Strontium (Sr)	mg/L						0.44		2.14		1.40
Tianium (Ti)	mg/L						0.1300		0.5500		0.0007
Uranium (U)	mg/L						0.034		0.170		0.115
Vanadium (V)	mg/L					<	0.0005	<	0.0005		0.0011
Nitrite	mg/L						0.07		0.41		

2. Background Information

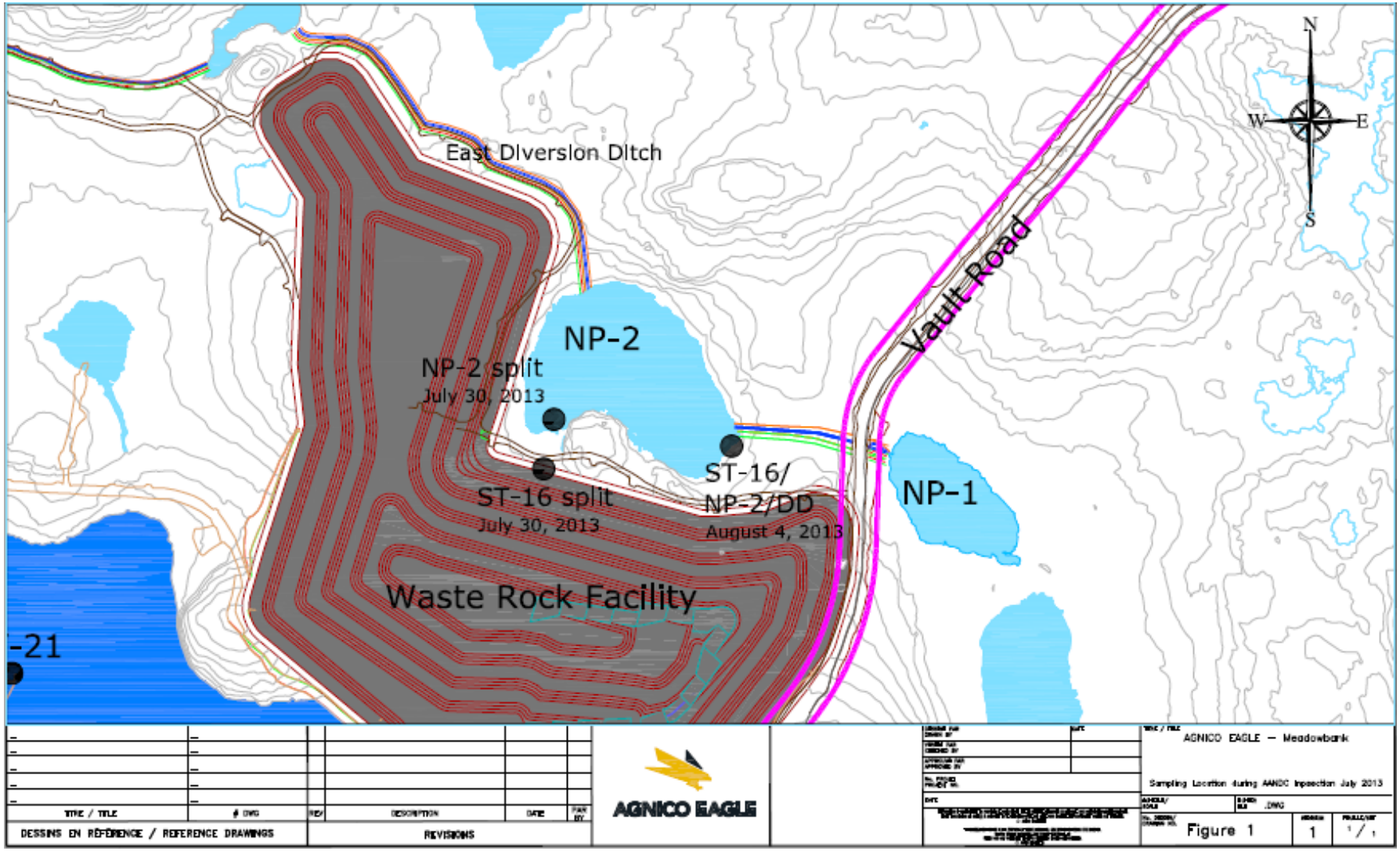
Historically, this “red” coloured water had not been observed previously at this location. The water was typically brown colored, indicative of freshet water which is usually impounded by the road and the waste rock. In the spring of 2012, a crushed NPAG rock road was constructed to isolate the sump from NP-2. Results from 2012 and initially in 2013 indicated that the water quality was good with no elevated copper or nickel and typical of freshet surface water quality (see Table 1 above). Based on the June water quality results and historical results in ST-16, AEM continued to monitor the sump as per the Type A water license.

In 2012 the construction of the East and West Diversion ditches was completed. These ditches are designed to keep freshet surface drainage from contacting the Waste Rock Storage Facility and the Tailings Storage Facility (TSF). The East ditch flows through Lakes NP- 2 and connects to Lake NP-1. After freshet there is little turnover in these lakes and the only inflows and outflows would be rainwater (See Figure 1). The ditches ensure that the water levels in these lakes do not rise and overflow into active mine areas such as the Waste Rock Facility and TSF.

In June 2013 we observed the normal brown color in the seep area initially up until approximately July 26th and 27th when the colour had changed to “red”. This is indicative of iron precipitate. The normal procedure is to have site water trucks pump out the seepage and deposit either in the TSF or use as dust suppressant in the mine pit only. Sample results from July 4th indicated that copper and nickel were elevated. This was an anomaly and our plan was to verify with the next sampling results (August 4th). There was no confirmed indication of actual seepage migrating through the perimeter road to Lake NP-2 until the red coloured seepage appeared around July 26th and 27th. At that point the red could be observed along the shoreline in NP-2. This was confined to the near shore and not in the main part of the lake. It was not observed at the exit of Lake NP-2. Removal of the seep water had previously commenced and was continuing at this point in time. **There was and has been no fish mortalities observed to date.**

As mentioned the AANDC inspector was on site July 29th and 30th, 2013 and split samples were taken. The seepage was evident in the Lake, along the near shore only (see photo 2), and we increased the removal of the seep water from the ST-16 sample location. Please see Figure 1 below for sample locations.

Figure 1 – Sampling Location during AANDC Inspection July 2013



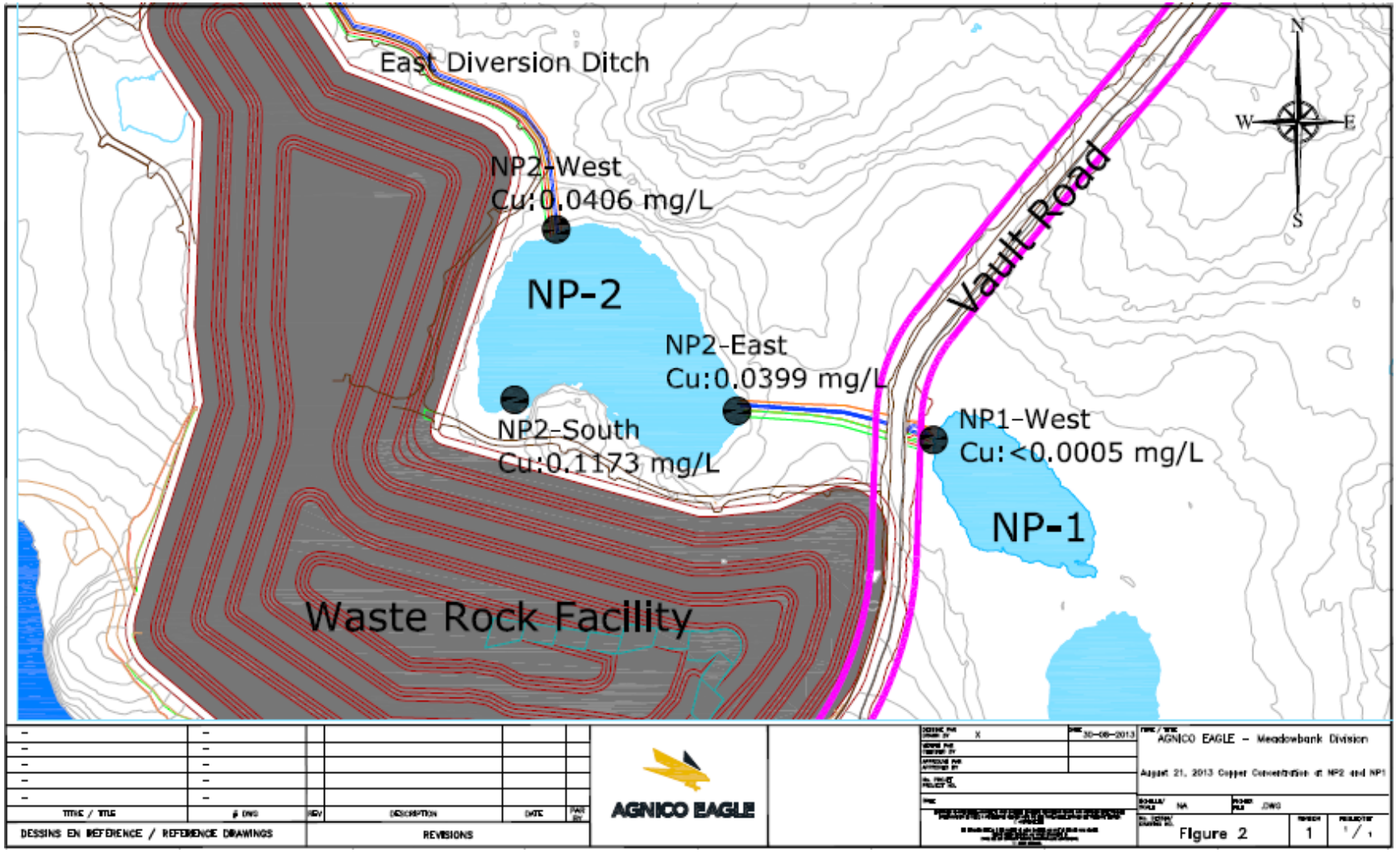
By August 4th AEM had lowered the level in the seepage area to the point where it was felt that the seepage through the road had stopped. Pumping of the sump continued and is still ongoing. Also on August 4th a sample was taken in NP-2 at the East end of the Lake in an area that exhibited clear water – see Figure 1 location.

On August 16th results were received from the sampling conducted with AANDC (see Table 1 above for results) and the certificates are attached as Appendix 1. The copper, nickel, iron, manganese and sulphate were elevated. A preliminary investigation was launched by the Environment and Engineering Departments. Pumping of the seep water continued and all of this water was directed to the TSF. On August 19th the results from AEM's August 4th sample in NP-2 Lake at the East end were received and this too indicated elevated copper at a level of 0.1713 mg/l which exceeded the CCME criteria for Protection of Aquatic Life. All of this information was forwarded to the AANDC Inspector including all analysis results.

The investigation at this time was centered on seepage from the waste rock, specifically from the PAG material. Some waste rock at the site contains copper, iron and sulphides which could explain the elevated values observed in the sample results. This was not observed historically at this site. The main immediate action was to keep the waste rock seepage pumped down to prevent migration through the road into NP-2 Lake.

Further monitoring for copper only was undertaken in NP-2 Lake on August 21st, 2013. Results were received on August 24th and are indicated on Figure 2 below. The level had dropped significantly at NP-South, East and West and was not detected in NP-1 Lake. This was an indication that the seepage to the Lake had stopped due to pumping.

Figure 2 – August 21, 2013 Copper Concentration at NP-2 and NP-1



The investigation continued and a Plug/Dike design request to prevent any seepage from migrating through the road to NP-2 Lake was submitted to AEM's Engineering Department. A design was produced (see Figure 3 below). This was an additional measure taken to augment the pumping of the seep water. Construction of the Waste Rock Plug commenced on August 26th, 2013. Also, it was observed, after the pumping out of the water to a low level, that water was still seeping from the waste rock and this included two distinct areas in close proximity (approximately 15 m apart) to each other. One was "red" colored and the other "brown" - see photos 3 and 4 below.

Figure 3 – Plug Design

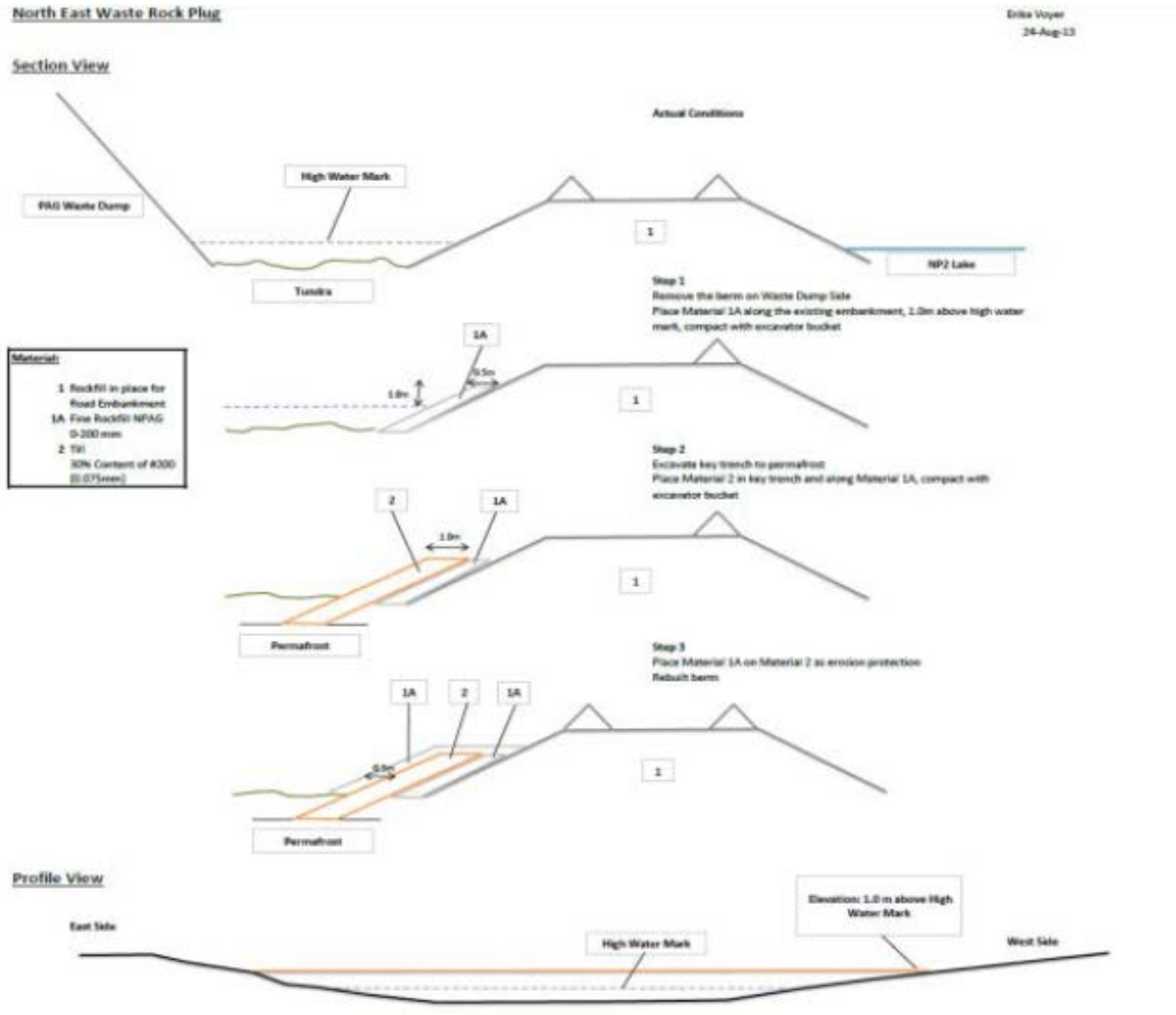


Photo 3 – Brown seepage

Photo 4 – Red seepage

A staff gauge has been placed at the seepage to determine the water level increases more definitively – see photo 5 below.

Photo 5 – Seepage Staff Gauge

On August 27th two Inspectors from AANDC and two Inspectors from Environment Canada attended the Meadowbank site and conducted sampling at the seep – ST-16 and at four locations around NP-2 Lake. AEM took duplicate samples during this visit. The construction project of the Waste Rock Plug had started and was being conducted during the visit. As previously stated AEM was of the opinion that the seepage through the road had stopped by August 21st.

Concurrent to the inspection, the preliminary investigation had determined that there was a hydraulic gradient that existed between the TSF reclaim water level and NP-2 Lake. The TSF water level was at elevation 145.7 m and NP-2 Lake was at elevation 141.2 m. Upon examining a topographical photo prior to mine development there was an indication that the former watercourse connecting the seep area to the North West Arm Second Portage Lake (now the TSF) could act as a conduit under the waste rock to the seep area – see photo 6 below. After conducting a comparison analysis of sample results in the TSF (sample station ST-21) several similarities became evident. Notably this included copper, nickel, chloride, sulphate, hardness – see comparison Table 2 below. AEM determined that is was possible that the TSF reclaim water could be migrating through the former water course to the seep area at a location along RF 1 rockfill road (TSF perimeter structure). This is the suspected migration route.

Table 2 – Comparison between ST-21 and ST-16

Parameters	Date / Units	ST-21 Average 2013	ST-21 04/07/2013	ST-16 Split 30/07/2013	30/07/2013 Split AANDC Result
*pH		8.95	8.28		7.20
*Turbidity	NTU	20	9		123
*Conductivity	us/cm				4510
Alkalinity	mg CaCo3/L	116	127	272	162
Aluminum	mg/L	0.409	0.409	0.042	0.045
Dissolved Aluminium	mg/L	0.124	0.152	< 0.006	
Ammonia	mgN/L	25.70		1.20	
Ammonia-nitrogen	mgN/L	31.9	17.6	34.0	
Total Dissolved Solids	mg/L	3504	1988	3792	
Total Suspended Solids	mg/L				50
Arsenic	mg/L	0.0208	0.0208	0.0139	0.0083
Dissolved As	mg/L	0.0129	0.0137	0.0058	
Barium	mg/L	0.0598	0.0598	0.1414	0.1480
Dissolved Barium	mg/L	0.0936	0.0465	0.1433	
Cadmium	mg/L	0.00043	0.00043	0.00065	0.00020
Dissolved Cadmium	mg/L	0.00203	0.00035	0.0007	
Chloride	mg/L	1129	292	450	192
Chromium	mg/L	0.0007	0.0007	0.0011	0.0010
Copper	mg/L	0.6531	0.6531	2.0380	3.3500
Dissolved Copper	mg/L	10.8004	0.3915	1.712	
Fluoride	mg/L	3.36	0.26	0.290	
Hardness	mg CaCO3/L	1454	662	1417	1020
Iron	mg/L	0.56	0.56	4.4	21.9
Dissolved Iron	mg/L	0.71	< 0.01	0.06	
Lead	mg/L	0.0045	0.0045	0.0013	< 0.0001
Dissolved Lead	mg/L	0.0019	< 0.0003	< 0.0003	
Manganese	mg/L	0.5164	0.5164	6.370	5.850
Dissolved Manganese	mg/L	0.0839	0.4254	6.055	
Mercury	mg/L	0.000005	< 0.00001	0.00005	0.00015
Dissolved Mercury	mg/L	0.00015	< 0.0001	< 0.0001	
Molybdenum	mg/L	0.2041	0.2041	0.170	0.083
Dissolved Molybdenum	mg/L	0.372	0.171	0.1773	
Nickel	mg/L	0.1204	0.1204	2.0150	1.3300
Dissolved Nickel	mg/L	0.1638	0.0962	1.810	
Nitrate	mg/L	15.6	12.2	37.8	23.7
Selenium	mg/L	0.012	0.012	0.020	0.013
Dissolved Selenium	mg/L	0.021	0.010	0.023	
Silver	mg/L				0.0056
Dissolved Silver	mg/L	0.0067	< 0.0002	0.0019	
Sulphate	mg/L	2268	1085	2400	1450

Thallium	mg/L	0.0025	<	0.0050	<	0.0050	< 0.0001
Dissolved Thallium	mg/L	0.01	<	0.01			
Zinc	mg/L	0.006		0.006		0.009	< 0.005
Dissolved Zinc	mg/L	0.0865		0.004		0.008	
Calcium	mg/L						312
Magnesium	mg/L						60
Potassium	mg/L						88
Sodium	mg/L						590
Cesium	mg/L						0.0009
Rubidium	mg/L						0.0687
Antimony	mg/L	0.0014		0.0014		0.0012	0.0007
Boron	mg/L					0.15	
Beryllium	mg/L	0.00025	<	0.0005	<	0.0005	< 0.0001
Cobalt	mg/L					0.3114	0.2290
Lithium	mg/L	0.0025	<	0.005		0.006	0.004
Tin	mg/L	0.0005	<	0.001	<	0.001	
Strontium	mg/L	0.798		0.798		2.14	1.40
Titanium	mg/L	0.2900		0.2900		0.5500	0.0007
Uranium	mg/L	0.009		0.009		0.170	0.115
Vanadium	mg/L	0.00025	<	0.0005	<	0.0005	0.0011
Nitrite	mg/L	0.25		0.31		0.41	

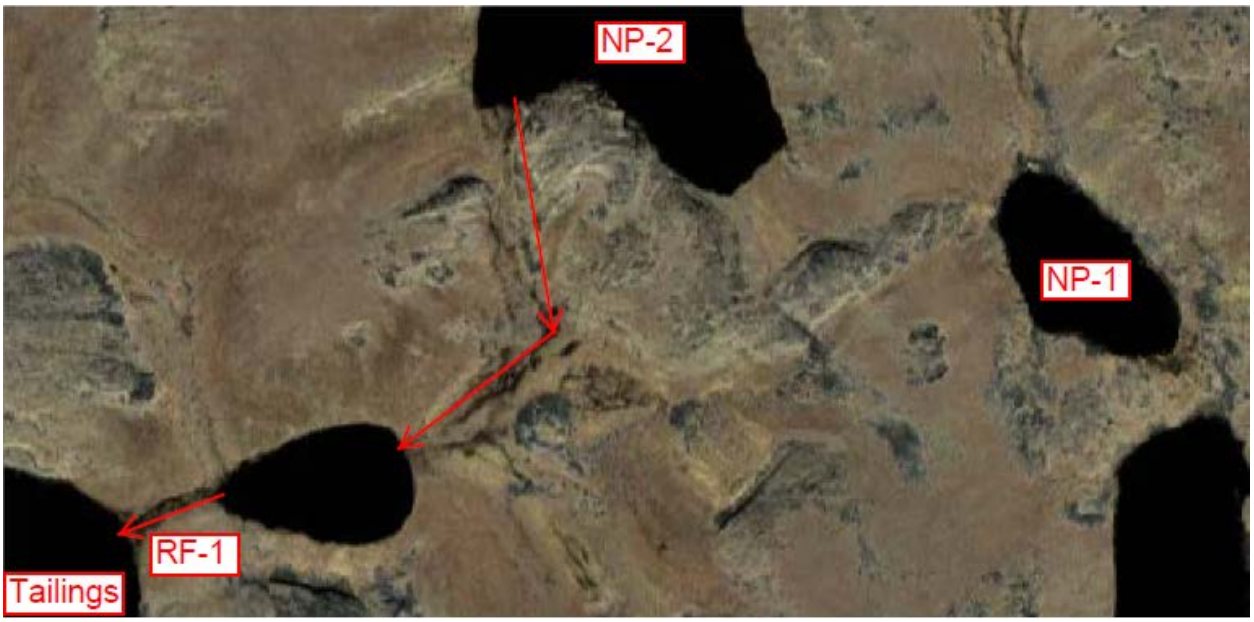


Photo 6 – Topography prior to mine development

Construction of the Waste Rock Plug was completed on September 1st. The seep areas are segregated and have been kept at low levels – see photo 7 below.

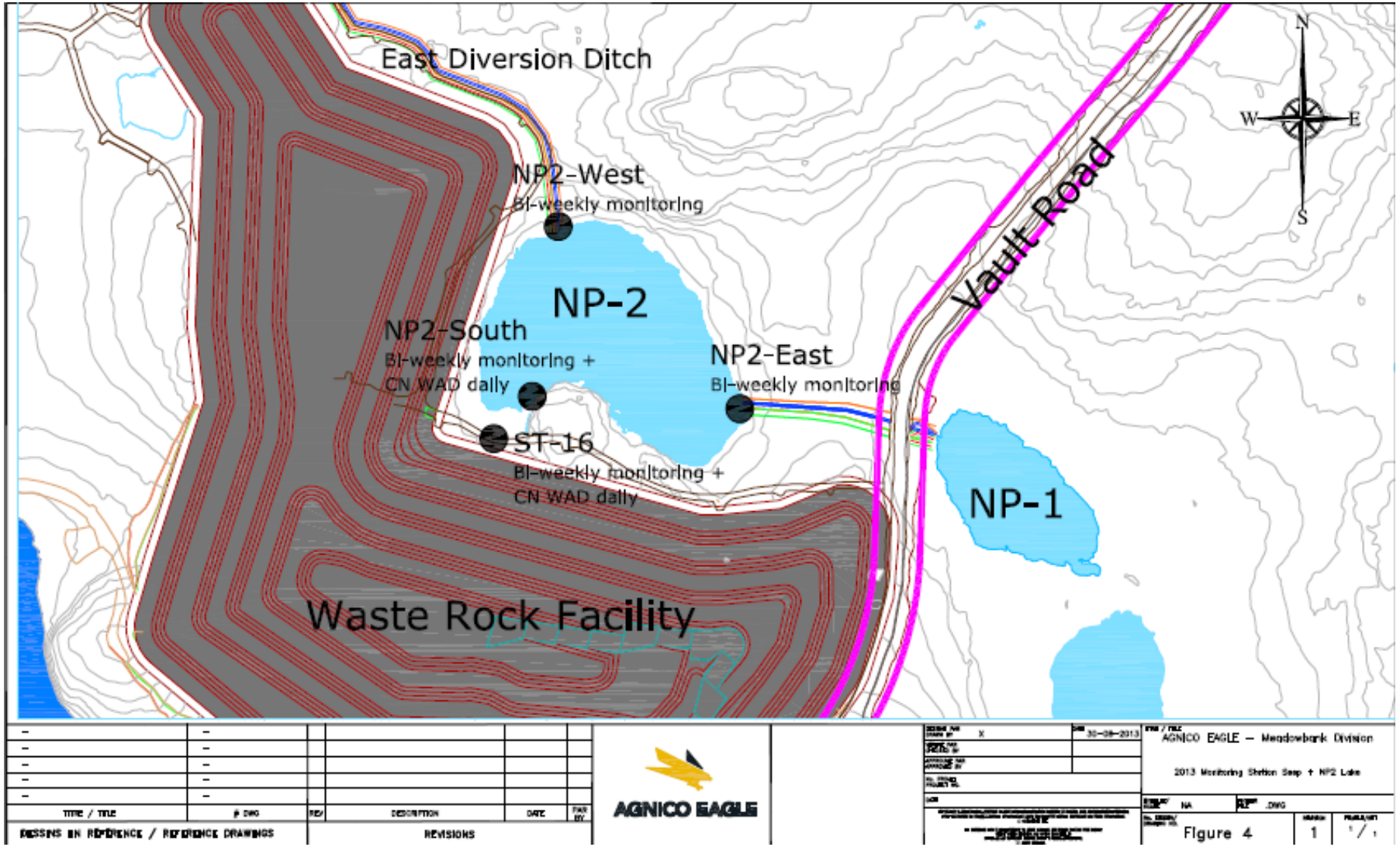
Photo 7 – Construction of Waste Rock Plug

3. Measures Taken/Action Plan

- Upon first noting the "red" seep water in NP-2 Lake (approximately July 26th) and after the initial AANDC inspection of July 30th AEM increased pumping of the seep water to prevent migration through the road. The seeps will be monitored daily and pumped out accordingly – daily if necessary;
- After receiving the sample analysis results from July 30th sampling conducted with the AANDC Inspector indicating elevated copper, nickel, etc. an investigation was started to determine the source of these metals. There was no previous history of this. Initially AEM concentrated on the waste rock properties and possible seepage of PAG rock;
- By August 28th, after noting a hydraulic gradient between the TSF and NP-2 Lake, the fact that a former watercourse connected the two areas (RF-1 and ST-16) under the Waste Rock Facility and the results of a comparative analysis of sample results from the TSF (ST-21) and the ST-16 seep area it was determined that it was possible for TSF reclaim to migrate to the seep area;
- A short term monitoring program was implemented (See Figure 4). The short term monitoring program includes daily monitoring of CN WAD using our on site assay laboratory at the seep areas ST-16 and in NP-2 Lake South location. In addition we will sample ST-16, NP-2 South, East and West bi weekly for total and dissolved metals, general chemistry as well as total and free cyanide (Group 2 and 3 of our NWB Water License parameters). Phaser Lake will be sampled also as an external reference; background samples for most metals were taken in 2003;
- A Waste Rock Plug/Dike was designed and constructed (commencing August 26th), under the supervision of the AEM Engineering Department, along the perimeter road to prevent any further seepage to Lake NP-2. This was completed on September 1st. A complete construction report and as-built drawing will be prepared;
- A staff gauge was placed in the seeps to better determine the seepage inflow;
- An internal SOP was completed (see Appendix 2) to ensure that seeps are pumped in a timely manner at the commencement of freshet and kept at a low level;
- Tailing deposition will be concentrated along the rockfill road in the area where the former watercourse was located to a level higher than the current water level in the TSF. This will direct the water away from the suspected migration route toward the reclaim barge and act as a plug. This commenced on September 2nd; and

- AEM has submitted (on September 2nd) a request for proposal from a third party engineering firm to assess why this seepage has occurred, verify the pathway under the waste rock storage area, if there any additional short term measures that can be implemented, further suggestions for management of freshet, whether an engineered collection and sump system is required for the seepage area, an evaluation of the seepage risk in the TSF and provision of recommendations for a permanent solution.

Figure 4 – Short term monitoring stations



4. Conclusion

AEM has completed a preliminary investigation into the discharge of seepage from the Waste Rock Storage Area in the location of sampling station ST-16 and determined that this material has likely seeped through the perimeter road into NP-2 Lake (fish bearing). Further to this, it appears likely that the seepage source is possibly reclaim water from the TSF migrating under the waste rock pile to ST-16 and subsequently through the perimeter road to NP-2 Lake. The seepage water at the ST-16 location has been kept to a low level and is checked daily.

Measures were implemented to stop the seepage to NP- 2 Lake and prevent it from re-occurring (Waste Rock Plug installation). Tailings deposition was changed on September 2nd to an area where the seepage is thought to be migrating. This action will also assist in pushing the water away from the rockfill perimeter structure and act as an additional “plug”.

A third party engineering firm was requested, on September 2nd, to submit a proposal to provide further assessment and recommendations, including whether additional permanent structures are required to correct this problem.

AEM is of the opinion that appropriate corrective and preventive measures have been undertaken in the short term to isolate the seepage and protect the receiving environment. For the longer term AEM plans to assess the findings of the third party engineering firm and submit any additional actions that are necessary.

APPENDIX 1
Results from the sampling conducted with AANDC

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-28320

Sampling location: SW-6(S-RSF) split (ST-6)
Sampling date: July 30, 2013

Sample name: SW-6(S-RSF) split (ST-6)
Sampling hour: N/D

Sampled by: Jeff Pratt
Date received: July 31, 2013

Matrix: Water

Drinking water distribution:

Reported on: August 16, 2013

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.

Sauf indication contraire, tous les échantillons ont été reçus en bon état.
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Analytical Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Alkalinity	272 mg CaCO3/L	M-TIT-1.0	August 01, 2013
Aluminium (Al)	0.042 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Aluminium (Al)	<0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Antimony (Sb)	0.0012 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Silver (Ag)	0.0019 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Arsenic (As)	0.0139 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Arsenic (As)	0.0058 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia nitrogen (NH3-NH4)	34 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Barium (Ba)	0.1414 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Barium (Ba)	0.1433 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Beryllium (Be)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Boron (B)	0.15 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cadmium (Cd)	0.00065 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Cadmium (Cd)	0.00065 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Chloride	450 mg/L	Sous-traitance\Multilab Direct	August 01, 2013
Chrome (Cr)	0.0011 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cobalt (Co)	0.3114 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Copper (Cu)	2.038 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Copper (Cu)	1.712 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Hardness	1417 mg CaCO3/L	Sous-traitance\Multilab Direct	August 05, 2013
Tin (Sn)	<0.001 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Iron (Fe)	4.4 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Iron (Fe)	0.06 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Fluoride (F)	0.29 mg/L	Sous-traitance\Multilab Direct	August 08, 2013
Lithium (Li)	0.006 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Manganese (Mn)	6.370 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Manganese (Mn)	6.055 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Mercury (Hg)	0.00005 mg/L	Sous-traitance\Multilab Direct	August 02, 2013
Dissolved Mercury (Hg)	<0.0001 mg/L	Sous-traitance\Multilab Direct	August 15, 2013
Molybdenum (Mo)	0.1704 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Molybdenum (Mo)	0.1773 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia (NH3)	1.2 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Nickel (Ni)	2.015 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Nickel (Ni)	1.810 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Nitrate (NO3)	37.8 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Nitrite (NO2)	0.41 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Lead (Pb)	0.0013 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Selenium (Se)	0.02 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Selenium (Se)	0.023 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

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Courriel:
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Analytical Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Dissolved Solids	3792 mg/L	M-TIT-1.0	August 01, 2013
Strontium (Sr)	2.14 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Sulfate (SO4)	2400 mg SO4/L	Sous-traitance\Multilab Direct	August 05, 2013
Thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Dissolved thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Titanium (Ti)	0.55 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Uranium (U)	0.17 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Vanadium (V)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Zinc (Zn)	0.009 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Zinc	0.008 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Multilab DIRECT

Detection limit

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Alkalinity	2	mg CaCO3/L	M-TIT-1.0	
Aluminium (Al)	0.006	mg/L	Sous-traitance	
Dissolved Aluminium (Al)	0.006	mg/L	Sous-traitance	
Antimony (Sb)	0.0001	mg/L	Sous-traitance	Yes
Dissolved Silver (Ag)	0.0002	mg/L	Sous-traitance	
Arsenic (As)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Arsenic (As)	0.0005	mg/L	Sous-traitance	
Ammonia nitrogen (NH3-NH4)	0.01	mg N/L	Sous-traitance	Yes
Barium (Ba)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Barium (Ba)	0.0005	mg/L	Sous-traitance	
Beryllium (Be)	0.0005	mg/L	Sous-traitance	
Boron (B)	0.01	mg/L	Sous-traitance	Yes
Cadmium (Cd)	0.00002	mg/L	Sous-traitance	Yes
Dissolved Cadmium (Cd)	0.00002	mg/L	Sous-traitance	
Chloride	0.5	mg/L	Sous-traitance	Yes
Chrome (Cr)	0.0006	mg/L	Sous-traitance	Yes
Cobalt (Co)	0.0005	mg/L	Sous-traitance	
Copper (Cu)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Copper (Cu)	0.0005	mg/L	Sous-traitance	
Hardness	1	mg CaCO3/L	Sous-traitance	
Tin (Sn)	0.001	mg/L	Sous-traitance	Yes
Iron (Fe)	0.01	mg/L	Sous-traitance	Yes
Dissolved Iron (Fe)	0.01	mg/L	Sous-traitance	
Fluoride (F)	0.02	mg/L	Sous-traitance	Yes
Lithium (Li)	0.005	mg/L	Sous-traitance	
Manganese (Mn)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Manganese (Mn)	0.0005	mg/L	Sous-traitance	
Mercury (Hg)	0.00001	mg/L	Sous-traitance	Yes
Dissolved Mercury (Hg)	0.0001	mg/L	Sous-traitance	
Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	
Ammonia (NH3)	0.05	mg N/L	Sous-traitance	
Nickel (Ni)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Nickel (Ni)	0.0005	mg/L	Sous-traitance	
Nitrate (NO3)	0.01	mg N/L	Sous-traitance	Yes
Nitrite (NO2)	0.01	mg N/L	Sous-traitance	Yes
Lead (Pb)	0.0003	mg/L	Sous-traitance	Yes
Dissolved Lead (Pb)	0.0003	mg/L	Sous-traitance	
Selenium (Se)	0.001	mg/L	Sous-traitance	Yes
Dissolved Selenium (Se)	0.001	mg/L	Sous-traitance	

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Detection limit

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Dissolved Solids	1	mg/L	M-TIT-1.0	
Strontium (Sr)	0.005	mg/L	Sous-traitance	
Sulfate (SO4)	1	mg SO4/L	Sous-traitance	Yes
Thallium (Tl)	0.005	mg/L	Sous-traitance	
Dissolved thallium (Tl)	0.005	mg/L	Sous-traitance	
Titanium (Ti)	0.01	mg/L	Sous-traitance	
Uranium (U)	0.001	mg/L	Sous-traitance	
Vanadium (V)	0.0005	mg/L	Sous-traitance	Yes
Zinc (Zn)	0.001	mg/L	Sous-traitance	Yes
Dissolved Zinc	0.001	mg/L	Sous-traitance	

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Alkalinity mg CaCO3/L	Standard name	STD alcalinité
	Result	158
	Accuracy	91%
	Limit	123 - 167
Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23m
	Result	5.77
	Accuracy	93.2%
	Limit	5.26 - 7.12
Dissolved Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23
	Result	6.22
	Accuracy	99.5%
	Limit	5.26 - 7.12
Antimony (Sb) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-23m
	Result	0.1885
	Accuracy	85.3%
	Limit	0.188 - 0.254
Dissolved Silver (Ag) mg/L	Blank	<0.0002
Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.3401
	Accuracy	79.8%
	Limit	0.198 - 0.368
Dissolved Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.3176
	Accuracy	95.5%
	Limit	0.236 - 0.372
Ammonia nitrogen (NH3-NH4) m	Blank	<0.01
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	2.146
	Accuracy	89.4%
	Limit	2.0 - 2.8

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Dissolved Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	2.254
	Accuracy	93.9%
	Limit	2.04 - 2.76
Beryllium (Be) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.591
	Accuracy	93.6%
	Limit	1.4 - 2.0
Boron (B) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	2.5
	Accuracy	86.8%
	Limit	2.45 - 3.31
Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23m
	Result	0.91111
	Accuracy	98.8%
	Limit	0.8 - 1.0
Dissolved Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23
	Result	0.87322
	Accuracy	97%
	Limit	0.8 - 1.0
Chloride mg/L	Blank	<0.5
	Standard name	DMR-0446-2013-CL
	Result	100
	Accuracy	99%
	Limit	87 - 111
Chrome (Cr) mg/L	Blank	<0.0006
	Standard name	DMR-0311-2013-23m
	Result	4.064
	Accuracy	99.7%
	Limit	3.44 - 4.66
Cobalt (Co) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.643
	Accuracy	94.7%
	Limit	1.33 - 1.79

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.404
	Accuracy	86.8%
	Limit	1.05 - 1.43
Dissolved Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.301
	Accuracy	95.1%
	Limit	1.05 - 1.43
Tin (Sn) mg/L	Blank	<0.001
Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	11.6
	Accuracy	89.5%
	Limit	8.9 - 12.1
Dissolved Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23
	Result	10.4
	Accuracy	99%
	Limit	8.9 - 12.1
Fluoride (F) mg/L	Blank	<0.02
	Standard name	DMR-0446-2013-12-F
	Result	2.9
	Accuracy	94.8%
	Limit	2.83 - 3.29
Lithium (Li) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	0.863
	Accuracy	97.3%
	Limit	0.714 - 0.966
Manganese (Mn) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	3.956
	Accuracy	97.5%
	Limit	3.28 - 4.44
Dissolved Manganese (Mn) mg/l	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	3.675
	Accuracy	95.2%

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Limit	3.28 - 4.44
Mercury (Hg) mg/L	Blank	<0.00001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.00418
	Accuracy	95.5%
	Limit	0.003 - 0.005
Dissolved Mercury (Hg) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.0032
	Accuracy	80%
	Limit	0.003 - 0.005
Molybdenum (Mo) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.6781
	Accuracy	96.2%
	Limit	0.599 - 0.811
Dissolved Molybdenum (Mo) mg	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.6419
	Accuracy	91%
	Limit	0.599 - 0.811
Ammonia (NH3) mg N/L	Blank	<0.05
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.232
	Accuracy	91%
	Limit	0.96 - 1.30
Dissolved Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.147
	Accuracy	92.5%
	Limit	1.05 - 1.43
Nitrate (NO3) mg N/L	Blank	<0.01
	Sample duplicate	37.8-35.3
Nitrite (NO2) mg N/L	Blank	<0.01
	Standard name	DMR-0446-2013-NO2

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Result	2.5
	Accuracy	99.2%
	Limit	2.14 - 2.90
	Sample duplicate	0.41-0.40
Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23m
	Result	0.9249
	Accuracy	97.2%
	Limit	0.8 - 1.0
Dissolved Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23
	Result	0.9053
	Accuracy	99.4%
	Limit	0.8 - 1.0
Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	1.46
	Accuracy	91.9%
	Limit	1.15 - 1.55
Dissolved Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	1.39
	Accuracy	97%
	Limit	1.15 - 1.55
Strontium (Sr) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	1.25
	Accuracy	99.2%
	Limit	1.05 - 1.43
Sulfate (SO4) mg SO4/L	Blank	<0.6
	Standard name	DMR-0446-2013-SO4
	Result	117
	Accuracy	93.6%
	Limit	99 - 121
Thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Dissolved thallium (Tl) mg/L	Blank	<0.005

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Quality control Report

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6) Sampling date: July 30, 2013

Sampling location: SW-6(S-RSF) split (ST-6) Sampling hour: N/D

Parameter		
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Titanium (Ti) mg/L	Blank	<0.01
Uranium (U) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	2.01
	Accuracy	85.1%
	Limit	1.49 - 2.01
Vanadium (V) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.950
	Accuracy	98%
	Limit	1.69 - 2.29
Zinc (Zn) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	5.07
	Accuracy	87.6%
	Limit	3.83 - 5.19
Dissolved Zinc mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	4.78
	Accuracy	94%
	Limit	3.83 - 5.19

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Additional information

Lab number: V-28320

Sample name: SW-6(S-RSF) split (ST-6)
Sampling location: SW-6(S-RSF) split (ST-6)
Sampling date: July 30, 2013
Sampling hour: N/D

Lab method	Method reference
M-TIT-1.0	MA.303-Titr Auto 2.0
M-MET-3.0	MA.200-Mét. 1.2
M-NH3-2.0	MA.300-N 2.0
M-CL-2.0	MA.300-Ions 1.3
M-CI-1.0	MA.300-Anions 1.0
M-NITR-2.0	MA.300-NO3 2.0
M-Lix-1.0	MA.100-Lix.com. 1.1
M-SULF-2.0	MA.300-Ions 1.3

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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-28321

Sampling location:	NP2 split	Sampling date:	July 30, 2013
Sample name:	NP2 split	Sampling hour:	15:00
Sampled by:	Jeff Pratt	Date received:	July 31, 2013
Matrix:	Waste Water		

Drinking water distribution:

Reported on: August 16, 2013

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.

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Analytical Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Result	Method name	Analysis date
Alkalinity	177 mg CaCO3/L	M-TIT-1.0	August 01, 2013
Aluminium (Al)	0.024 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Aluminium (Al)	<0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Antimony (Sb)	0.0004 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Silver (Ag)	0.0024 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Arsenic (As)	0.0068 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Arsenic (As)	0.0022 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia nitrogen (NH3-NH4)	27.4 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Barium (Ba)	0.1419 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Barium (Ba)	0.1329 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Beryllium (Be)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Boron (B)	0.09 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cadmium (Cd)	0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Cadmium (Cd)	0.00022 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Chloride	587 mg/L	Sous-traitance\Multilab Direct	August 01, 2013
Chrome (Cr)	<0.0006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Cobalt (Co)	0.2515 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Copper (Cu)	3.261 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Copper (Cu)	2.949 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Hardness	1031 mg CaCO3/L	Sous-traitance\Multilab Direct	August 05, 2013
Tin (Sn)	<0.001 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Iron (Fe)	23.6 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Iron (Fe)	0.15 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Fluoride (F)	0.02 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Lithium (Li)	0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Manganese (Mn)	6.464 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Manganese (Mn)	5.427 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Mercury (Hg)	0.00002 mg/L	Sous-traitance\Multilab Direct	August 02, 2013
Dissolved Mercury (Hg)	<0.0001 mg/L	Sous-traitance\Multilab Direct	August 15, 2013
Molybdenum (Mo)	0.0871 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Molybdenum (Mo)	0.0716 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Ammonia (NH3)	0.14 mg N/L	Sous-traitance\Multilab Direct	August 02, 2013
Nickel (Ni)	1.465 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Nickel (Ni)	1.246 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Nitrate (NO3)	23.5 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Nitrite (NO2)	0.4 mg N/L	Sous-traitance\Multilab Direct	August 01, 2013
Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Lead (Pb)	<0.0003 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Selenium (Se)	0.014 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Selenium (Se)	0.014 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Analytical Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Result	Method name	Analysis date
Dissolved Solids	2854 mg/L	M-TIT-1.0	August 01, 2013
Strontium (Sr)	1.62 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Sulfate (SO4)	1546 mg SO4/L	Sous-traitance\Multilab Direct	August 05, 2013
Thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Dissolved thallium (Tl)	<0.005 mg/L	Sous-traitance\Multilab Direct	August 07, 2013
Titanium (Ti)	0.39 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Uranium (U)	0.144 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Vanadium (V)	<0.0005 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Zinc (Zn)	0.006 mg/L	Sous-traitance\Multilab Direct	August 05, 2013
Dissolved Zinc	0.007 mg/L	Sous-traitance\Multilab Direct	August 05, 2013

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Multilab DIRECT

Detection limit

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Value	Unit	Method	Accreditation
Alkalinity	2	mg CaCO3/L	M-TIT-1.0	
Aluminium (Al)	0.006	mg/L	Sous-traitance	
Dissolved Aluminium (Al)	0.006	mg/L	Sous-traitance	
Antimony (Sb)	0.0001	mg/L	Sous-traitance	Yes
Dissolved Silver (Ag)	0.0002	mg/L	Sous-traitance	
Arsenic (As)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Arsenic (As)	0.0005	mg/L	Sous-traitance	
Ammonia nitrogen (NH3-NH4)	0.01	mg N/L	Sous-traitance	Yes
Barium (Ba)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Barium (Ba)	0.0005	mg/L	Sous-traitance	
Beryllium (Be)	0.0005	mg/L	Sous-traitance	
Boron (B)	0.01	mg/L	Sous-traitance	Yes
Cadmium (Cd)	0.00002	mg/L	Sous-traitance	Yes
Dissolved Cadmium (Cd)	0.00002	mg/L	Sous-traitance	
Chloride	0.5	mg/L	Sous-traitance	Yes
Chrome (Cr)	0.0006	mg/L	Sous-traitance	Yes
Cobalt (Co)	0.0005	mg/L	Sous-traitance	
Copper (Cu)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Copper (Cu)	0.0005	mg/L	Sous-traitance	
Hardness	1	mg CaCO3/L	Sous-traitance	
Tin (Sn)	0.001	mg/L	Sous-traitance	Yes
Iron (Fe)	0.01	mg/L	Sous-traitance	Yes
Dissolved Iron (Fe)	0.01	mg/L	Sous-traitance	
Fluoride (F)	0.02	mg/L	Sous-traitance	Yes
Lithium (Li)	0.005	mg/L	Sous-traitance	
Manganese (Mn)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Manganese (Mn)	0.0005	mg/L	Sous-traitance	
Mercury (Hg)	0.00001	mg/L	Sous-traitance	Yes
Dissolved Mercury (Hg)	0.0001	mg/L	Sous-traitance	
Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Molybdenum (Mo)	0.0005	mg/L	Sous-traitance	
Ammonia (NH3)	0.05	mg N/L	Sous-traitance	
Nickel (Ni)	0.0005	mg/L	Sous-traitance	Yes
Dissolved Nickel (Ni)	0.0005	mg/L	Sous-traitance	
Nitrate (NO3)	0.01	mg N/L	Sous-traitance	Yes
Nitrite (NO2)	0.01	mg N/L	Sous-traitance	Yes
Lead (Pb)	0.0003	mg/L	Sous-traitance	Yes
Dissolved Lead (Pb)	0.0003	mg/L	Sous-traitance	
Selenium (Se)	0.001	mg/L	Sous-traitance	Yes
Dissolved Selenium (Se)	0.001	mg/L	Sous-traitance	

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Detection limit

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter	Value	Unit	Method	Accreditation
Dissolved Solids	1	mg/L	M-TIT-1.0	
Strontium (Sr)	0.005	mg/L	Sous-traitance	
Sulfate (SO4)	1	mg SO4/L	Sous-traitance	Yes
Thallium (Tl)	0.005	mg/L	Sous-traitance	
Dissolved thallium (Tl)	0.005	mg/L	Sous-traitance	
Titanium (Ti)	0.01	mg/L	Sous-traitance	
Uranium (U)	0.001	mg/L	Sous-traitance	
Vanadium (V)	0.0005	mg/L	Sous-traitance	Yes
Zinc (Zn)	0.001	mg/L	Sous-traitance	Yes
Dissolved Zinc	0.001	mg/L	Sous-traitance	

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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Alkalinity mg CaCO3/L	Standard name	STD alcalinité
	Result	158
	Accuracy	91%
	Limit	123 - 167
Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23m
	Result	5.77
	Accuracy	93.2%
	Limit	5.26 - 7.12
Dissolved Aluminium (Al) mg/L	Blank	<0.006
	Standard name	DMR-0311-2013-23
	Result	6.22
	Accuracy	99.5%
	Limit	5.26 - 7.12
Antimony (Sb) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-23m
	Result	0.1885
	Accuracy	85.3%
	Limit	0.188 - 0.254
Dissolved Silver (Ag) mg/L	Blank	<0.0002
Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.3401
	Accuracy	79.8%
	Limit	0.198 - 0.368
Dissolved Arsenic (As) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.3176
	Accuracy	95.5%
	Limit	0.236 - 0.372
Ammonia nitrogen (NH3-NH4) m	Blank	<0.01
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	2.146
	Accuracy	89.4%
	Limit	2.0 - 2.8

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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Dissolved Barium (Ba) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	2.254
	Accuracy	93.9%
	Limit	2.04 - 2.76
Beryllium (Be) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.591
	Accuracy	93.6%
	Limit	1.4 - 2.0
Boron (B) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	2.5
	Accuracy	86.8%
	Limit	2.45 - 3.31
Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23m
	Result	0.91111
	Accuracy	98.8%
	Limit	0.8 - 1.0
Dissolved Cadmium (Cd) mg/L	Blank	<0.00002
	Standard name	DMR-0311-2013-23
	Result	0.87322
	Accuracy	97%
	Limit	0.8 - 1.0
Chloride mg/L	Blank	<0.5
	Standard name	DMR-0446-2013-CL
	Result	100
	Accuracy	99%
	Limit	87 - 111
Chrome (Cr) mg/L	Blank	<0.0006
	Standard name	DMR-0311-2013-23m
	Result	4.064
	Accuracy	99.7%
	Limit	3.44 - 4.66
Cobalt (Co) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.643
	Accuracy	94.7%
	Limit	1.33 - 1.79

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Courriel:
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Multilab DIRECT

Quality control Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.404
	Accuracy	86.8%
	Limit	1.05 - 1.43
Dissolved Copper (Cu) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.301
	Accuracy	95.1%
	Limit	1.05 - 1.43
Tin (Sn) mg/L	Blank	<0.001
Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23m
	Result	11.6
	Accuracy	89.5%
	Limit	8.9 - 12.1
Dissolved Iron (Fe) mg/L	Blank	<0.01
	Standard name	DMR-0311-2013-23
	Result	10.4
	Accuracy	99%
	Limit	8.9 - 12.1
Lithium (Li) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	0.863
	Accuracy	97.3%
	Limit	0.714 - 0.966
Manganese (Mn) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	3.956
	Accuracy	97.5%
	Limit	3.28 - 4.44
Dissolved Manganese (Mn) mg/l	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	3.675
	Accuracy	95.2%
	Limit	3.28 - 4.44
Mercury (Hg) mg/L	Blank	<0.00001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.00418
	Accuracy	95.5%

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Multilab DIRECT

Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
	Limit	0.003 - 0.005
Dissolved Mercury (Hg) mg/L	Blank	<0.0001
	Standard name	DMR-0311-2013-14-Hg
	Result	0.0032
	Accuracy	80%
	Limit	0.003 - 0.005
Molybdenum (Mo) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	0.6781
	Accuracy	96.2%
	Limit	0.599 - 0.811
Dissolved Molybdenum (Mo) mg	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	0.6419
	Accuracy	91%
	Limit	0.599 - 0.811
Ammonia (NH3) mg N/L	Blank	<0.05
	Standard name	DMR-0446-2013-NH3
	Result	5.3
	Accuracy	98.5%
	Limit	4.44 - 6.00
Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
	Result	1.232
	Accuracy	91%
	Limit	0.96 - 1.30
Dissolved Nickel (Ni) mg/L	Blank	<0.0005
	Standard name	DMR-0311-2013-23
	Result	1.147
	Accuracy	92.5%
	Limit	1.05 - 1.43
Nitrate (NO3) mg N/L	Blank	<0.01
Nitrite (NO2) mg N/L	Blank	<0.01
	Standard name	DMR-0446-2013-NO2
	Result	2.5
	Accuracy	99.2%
	Limit	2.14 - 2.90
Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23m
	Result	0.9249

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Quality control Report

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
	Accuracy	97.2%
	Limit	0.8 - 1.0
Dissolved Lead (Pb) mg/L	Blank	<0.0003
	Standard name	DMR-0311-2013-23
	Result	0.9053
	Accuracy	99.4%
	Limit	0.8 - 1.0
Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m
	Result	1.46
	Accuracy	91.9%
	Limit	1.15 - 1.55
Dissolved Selenium (Se) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	1.39
	Accuracy	97%
	Limit	1.15 - 1.55
Strontium (Sr) mg/L	Blank	<0.005
	Standard name	DMR-0773-2011-18a
	Result	1.25
	Accuracy	99.2%
	Limit	1.05 - 1.43
Sulfate (SO4) mg SO4/L	Blank	<0.6
	Standard name	DMR-0446-2013-SO4
	Result	117
	Accuracy	93.6%
	Limit	99 - 121
Thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Dissolved thallium (Tl) mg/L	Blank	<0.005
	Standard name	STD Tl SC0187114 1000ppm
	Result	1001
	Accuracy	99.9%
	Limit	850 - 1150
Titanium (Ti) mg/L	Blank	<0.01
Uranium (U) mg/L	Blank	<0.001
	Standard name	DMR-0311-2013-23m

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Quality control Report

Lab number: V-28321

Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Parameter		
Vanadium (V) mg/L	Result	2.01
	Accuracy	85.1%
	Limit	1.49 - 2.01
	Blank	<0.0005
	Standard name	DMR-0311-2013-23m
Zinc (Zn) mg/L	Result	1.950
	Accuracy	98%
	Limit	1.69 - 2.29
	Blank	<0.001
	Standard name	DMR-0311-2013-23m
Dissolved Zinc mg/L	Result	5.07
	Accuracy	87.6%
	Limit	3.83 - 5.19
	Blank	<0.001
	Standard name	DMR-0311-2013-23
	Result	4.78
	Accuracy	94%
	Limit	3.83 - 5.19

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Additional information

Lab number: V-28321
Sample name: NP2 split
Sampling location: NP2 split
Sampling date: July 30, 2013
Sampling hour: 15:00

Lab method	Method reference
M-TIT-1.0	MA.303-Titr Auto 2.0
M-MET-3.0	MA.200-Mét. 1.2
M-NH3-2.0	MA.300-N 2.0
M-CL-2.0	MA.300-Ions 1.3
M-CI-1.0	MA.300-Anions 1.0
M-NITR-2.0	MA.300-NO3 2.0
M-Lix-1.0	MA.100-Lix.com. 1.1
M-SULF-2.0	MA.300-Ions 1.3

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APPENDIX 2

SOP: Management of Water in Diversion Ditches, Seeps, and Collection Locations during Freshet

Water Management in Diversion Ditches, Seeps, and Collection Locations during Freshet

PROCEDURE NUMBER:			MBK-ENV-0006
People concerned	Mine, Dikes, Engineering and Environment	**Prepared by**	**Jeffrey Pratt** **Environmental Coordinator**
		Authorized by	**Kevin Buck** **Environmental Superintendent**
Effective :	**September 4, 2013**	***"Safety First, Safety Last … Safety Always!"*** ***"No Repeats" – Our Stepping Stone to ZERO HARM***	
This procedure corresponds to the required minimum standard. Each and everyone also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.			

Objective:

This procedure is put in place to give specific dates in which actions must be taken to avoid excess non-contact water impacting on site mining activity, and also to prevent excessive pooling of contact water that could lead to a release of contact water off the mine site. This procedure will keep the project in conformance with NWB license, Part D, Item 33; Part E, Item 9.

Concerned departments:

Environment

Mine

Engineering

Dyke and Dewatering

Risks/ Impacts Legend

Health & Safety

Process/quality

Costs

Environment

Management of Water in Diversion Ditches, Seeps, and Collection Locations during Freshet

Procedure	*Risks / Impacts*
Diversion Ditches	
1. No later than May 1, all diversion ditches must be cleaned free of ice and snow to allow freshet melt water to flow freely and prevent any obstructions within the diversion ditches.	Avoid Environmental Impact Avoid Excess water on Mine Site
2. Culverts under Vault road are to be steamed, if necessary, to free ice obstructions.	Avoid Environmental Impact Avoid Excess water on Mine Site and road wash out
3. Starting May 1 commence monitoring water moving through the diversion ditch system. Sampling for TSS must be completed by Environment Department, and shall initiate as soon as water flowing.	Avoid Environmental Impact
4. If TSS levels are elevated Sediment control measures must be put in place. This may include installation of silt fence, or turbidity barrier. To be conducted by Environment staff	Avoid Environmental Impact

Seep and Collection Locations	
1. May 1st begin weekly inspections of seep areas and melt water collection locations. As per NWB license, Part E, Item 9.	 Avoid Environmental Impact Avoid Excess water on Mine Site
2. At first sign of melt water collection, contact Environment Department. It will need to be determined if the water requires analysis prior to movement.	 Avoid Environmental Impact Avoid Excess water on Mine Site
3. At first sign of melt water arrange with Mine or Dyke and Dewatering to begin removing water from seep and collection locations. Be sure to get an approved disposal location from the Environment Department.	 Avoid Environmental Impact
4. Any movement of water must be recorded. Quantity of water moved and location water is drawn and dispensed must be recorded.	Required for Reporting to Government Agencies
5. All actions listed in this SOP are required corrective measures to mitigate any impacts related to surface drainage resulting from the Project's activities on off site receiving waters. As per NWB license, Part D, Item 33.	 Avoid Environmental Impact

APPENDIX C

Tailings Storage Facilities – 2013 Instrumentation Review

Tailings Storage Facilities

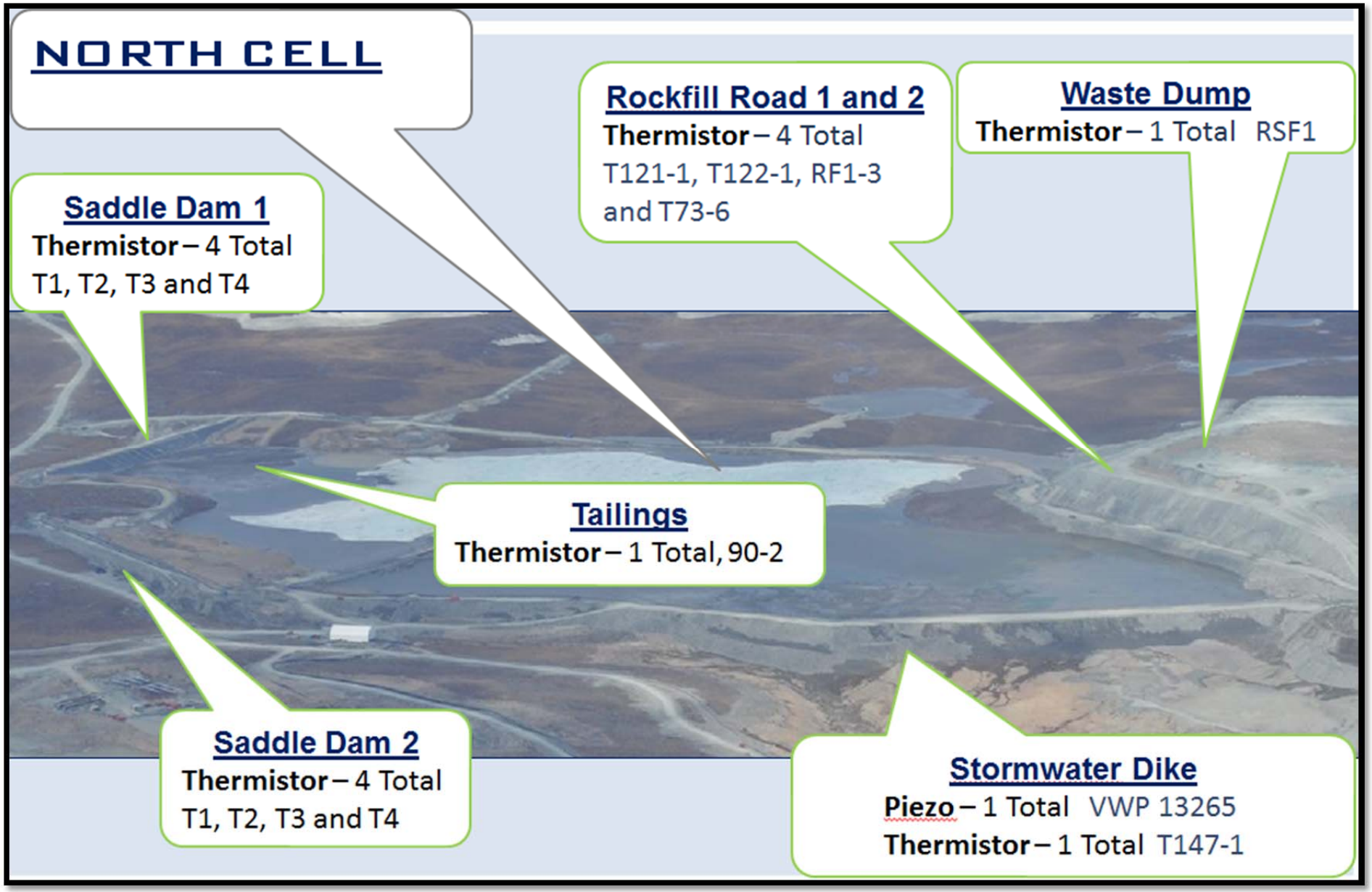
Instrumentation Review

Agnico Eagle Mines-Meadowbank Division

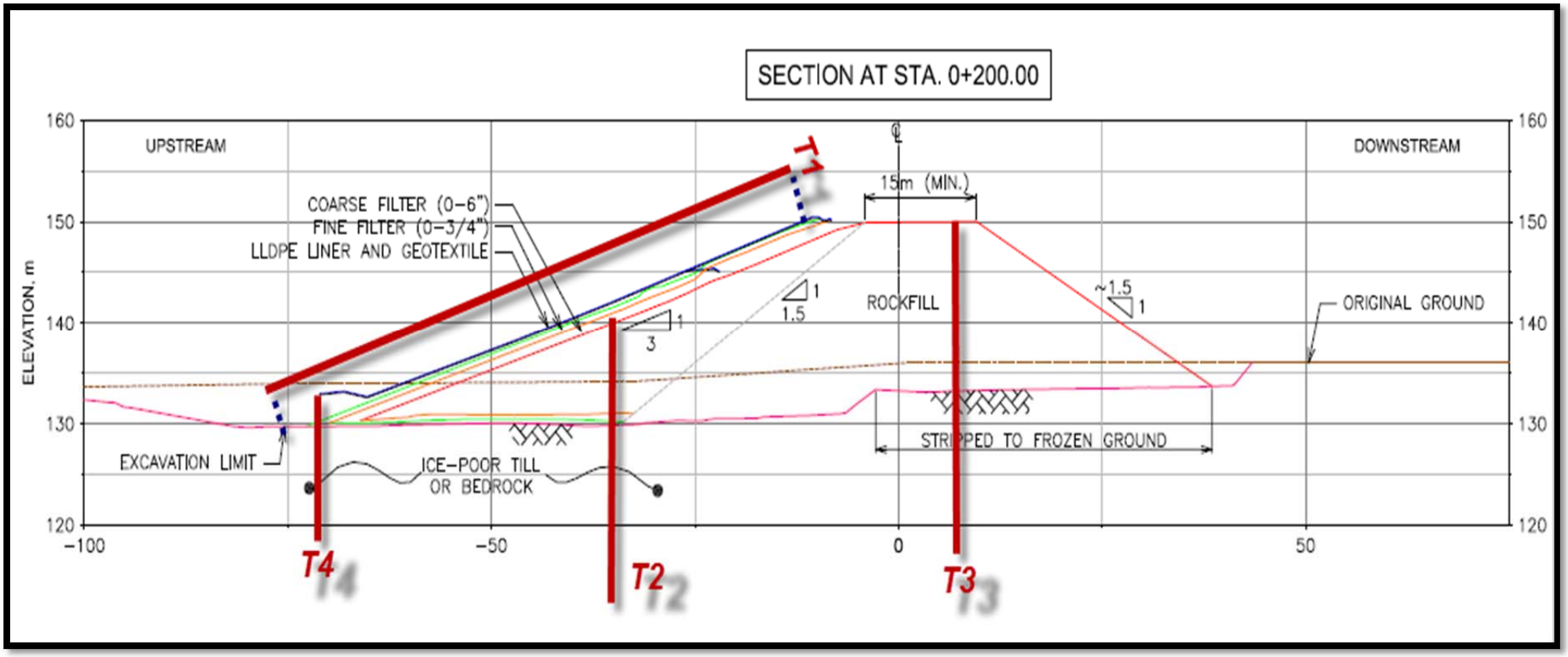
Meadowbank Dike Review Board

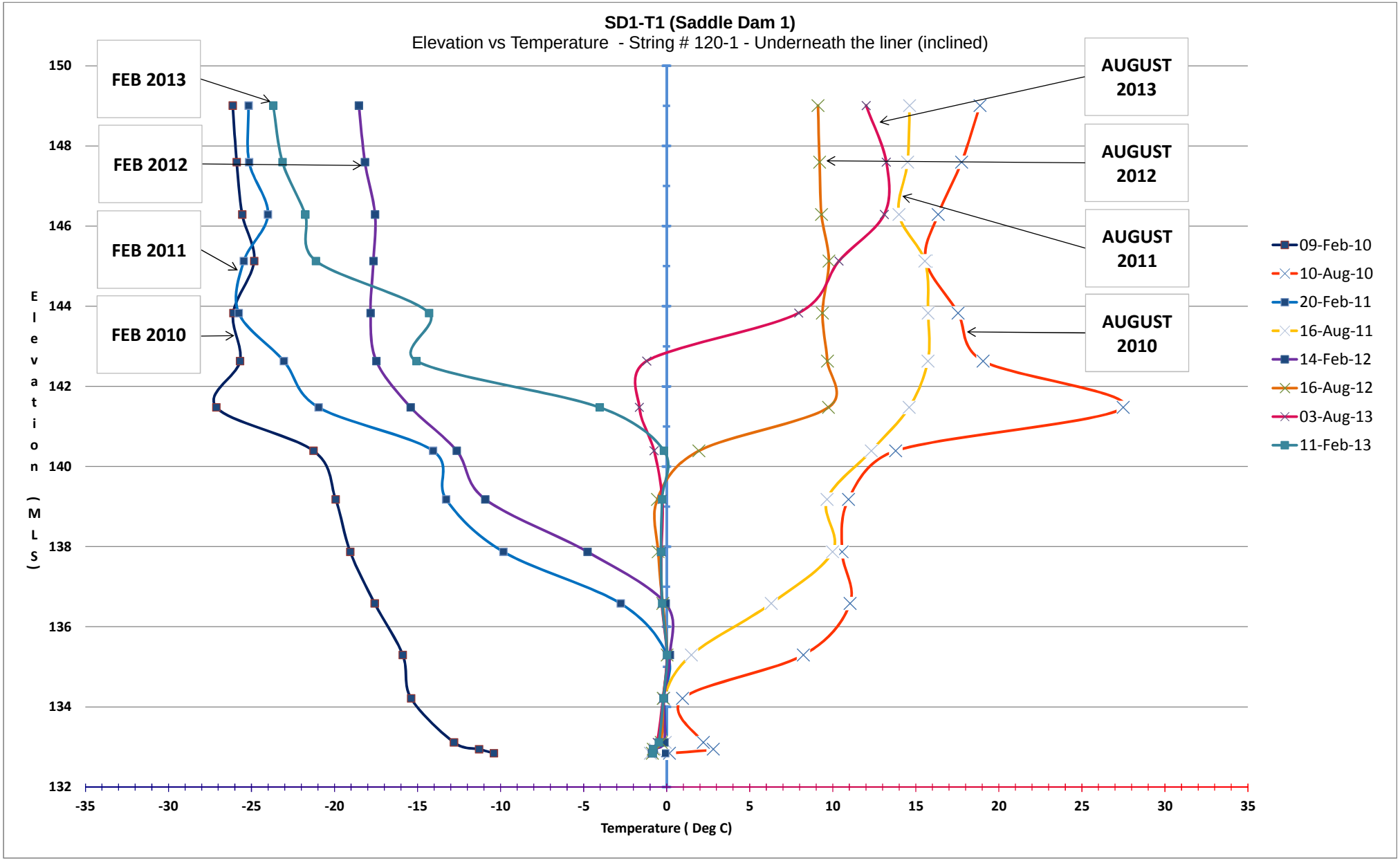
Meeting # 14 – September 9 to 11th, 2013

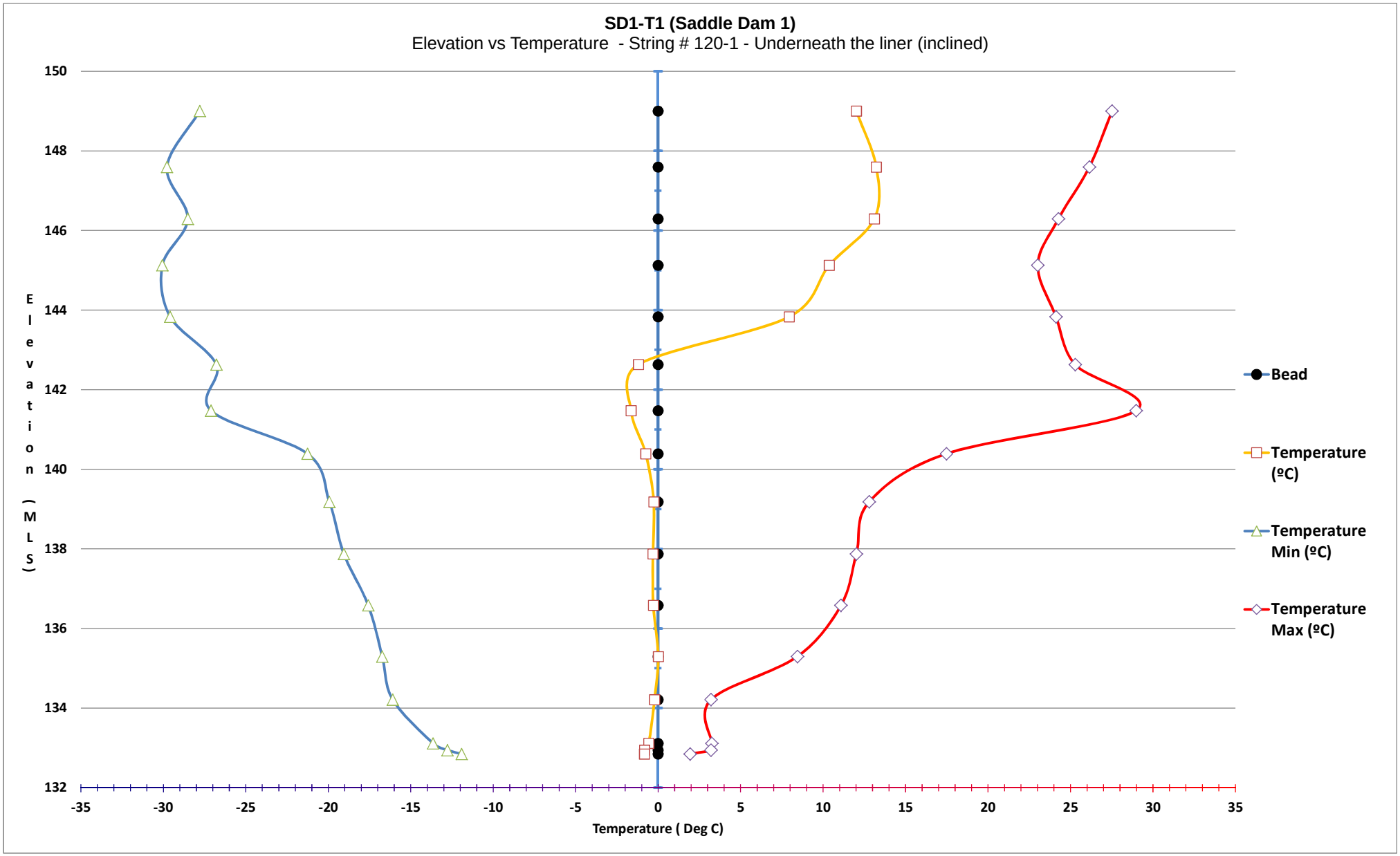
Meadowbank Mine Site, Nunavut

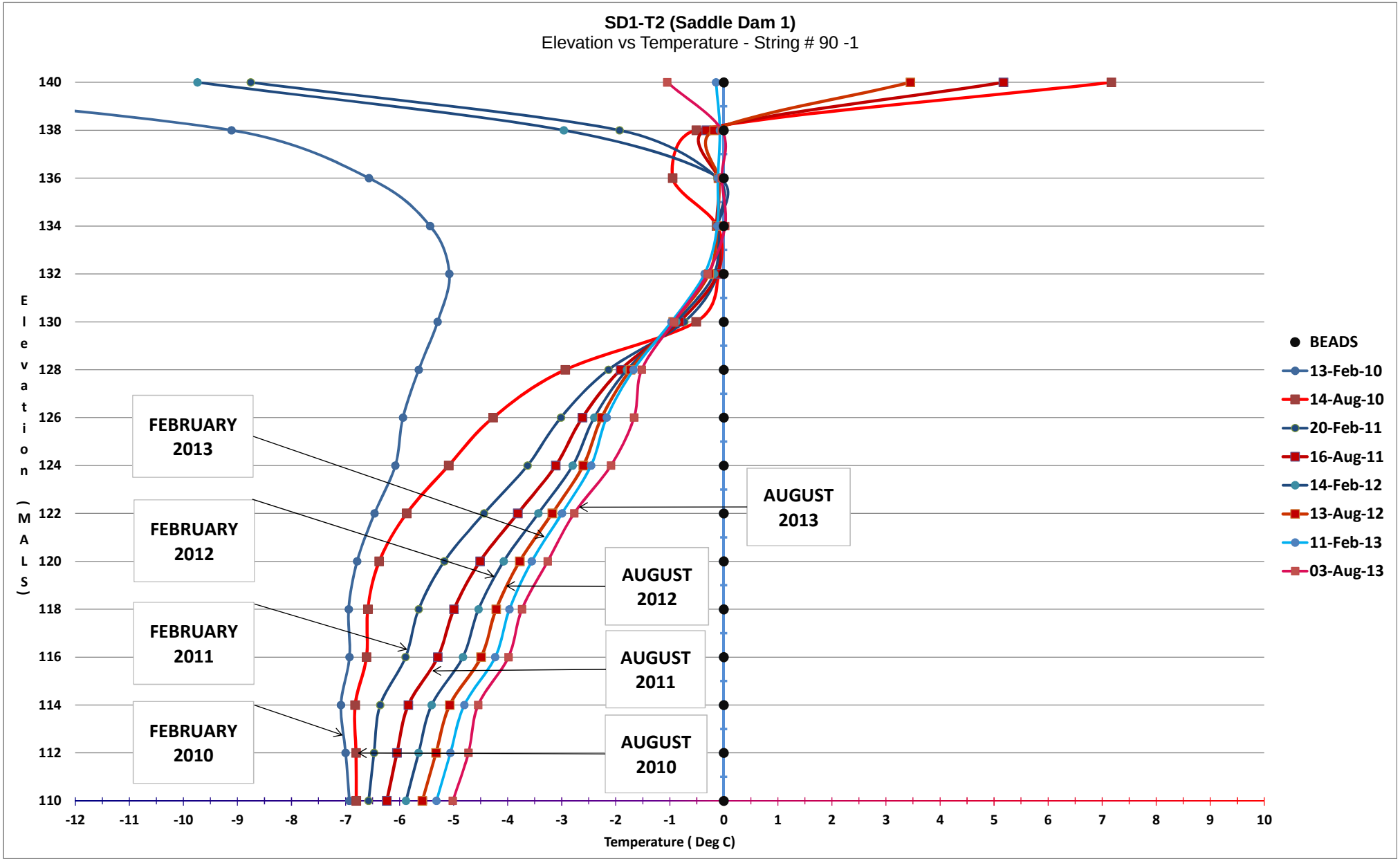

NORTH CELL
Rockfill Road 1 and 2
Thermistor – 4 Total
T121-1, T122-1, RF1-3
and T73-6
Waste Dump
Thermistor – 1 Total RSF1
Saddle Dam 1
Thermistor – 4 Total
T1, T2, T3 and T4
Tailings
Thermistor – 1 Total, 90-2
Saddle Dam 2
Thermistor – 4 Total
T1, T2, T3 and T4
Stormwater Dike
Piezo – 1 Total VWP 13265
Thermistor – 1 Total T147-1

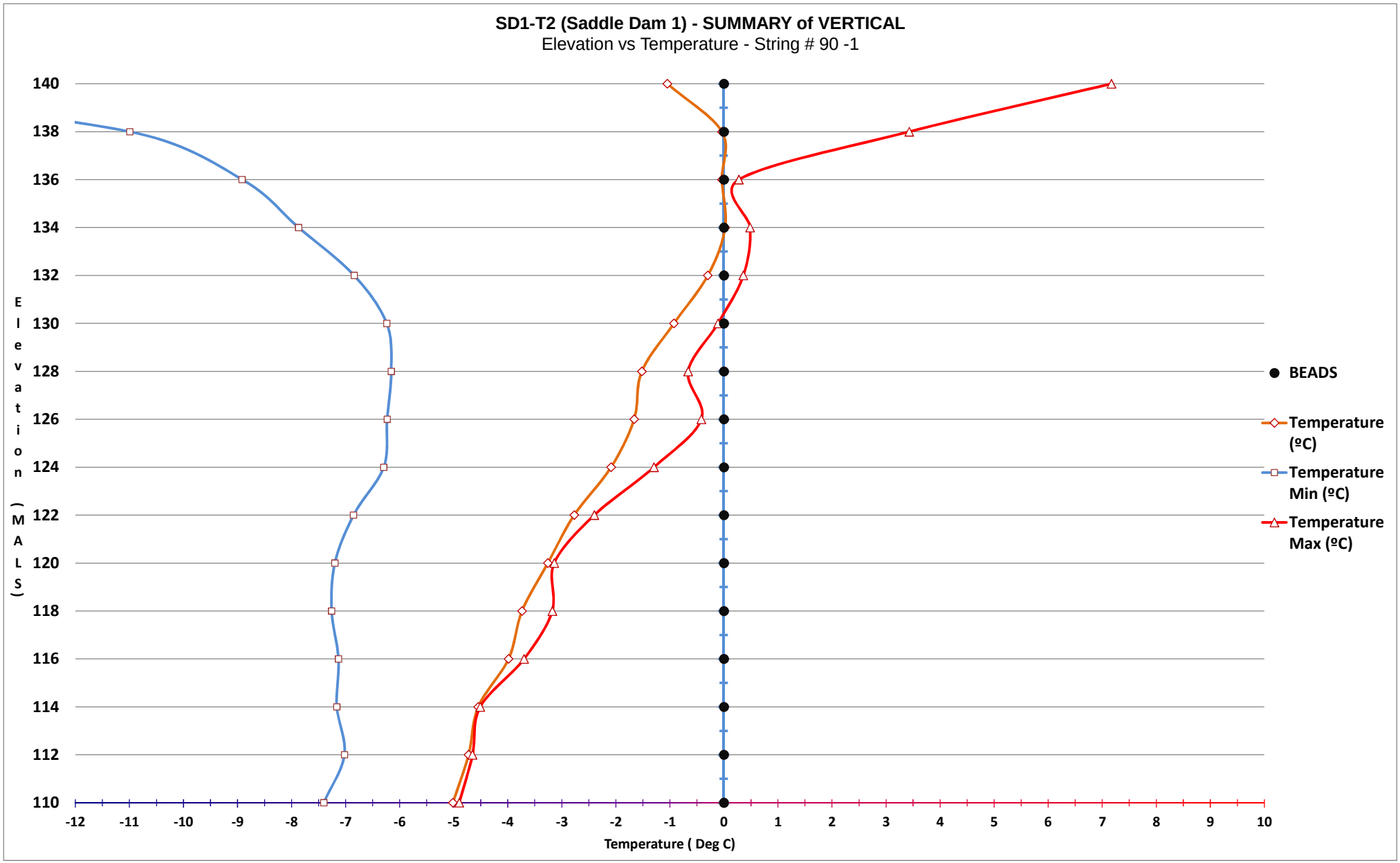
SD 1

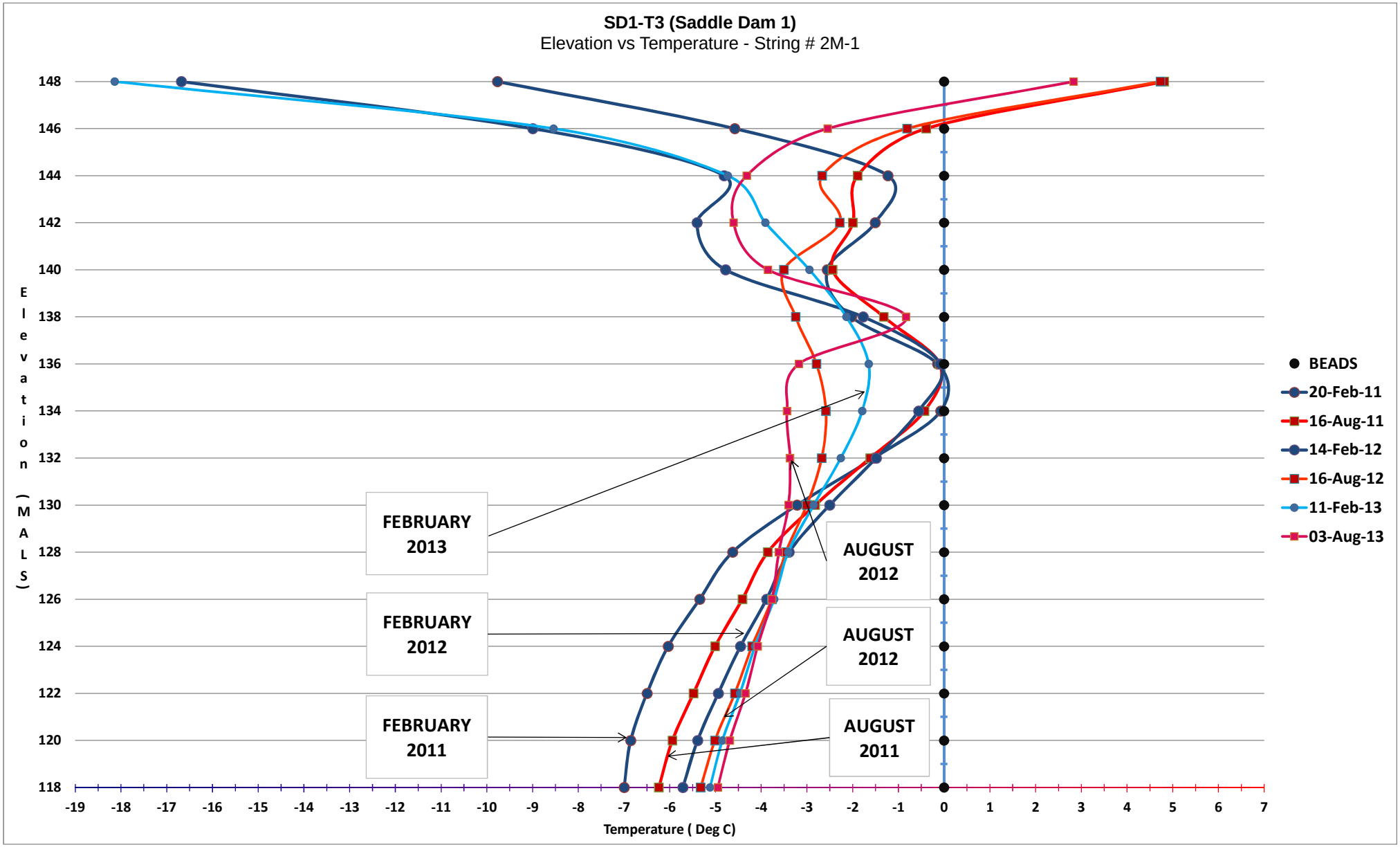

SECTION AT STA. 0+200.00
UPSTREAM
DOWNSTREAM
COARSE FILTER (0-6")
FINE FILTER (0-3/4")
LLDPE LINER AND GEOTEXTILE
15m (MIN.)
ROCKFILL
ORIGINAL GROUND
EXCAVATION LIMIT
ICE-POOR TILL
OR BEDROCK
STRIPPED TO FROZEN GROUND
ELEVATION, m
160
150
140
130
120
-100
-50
0
50
T1
T2
T3
T4

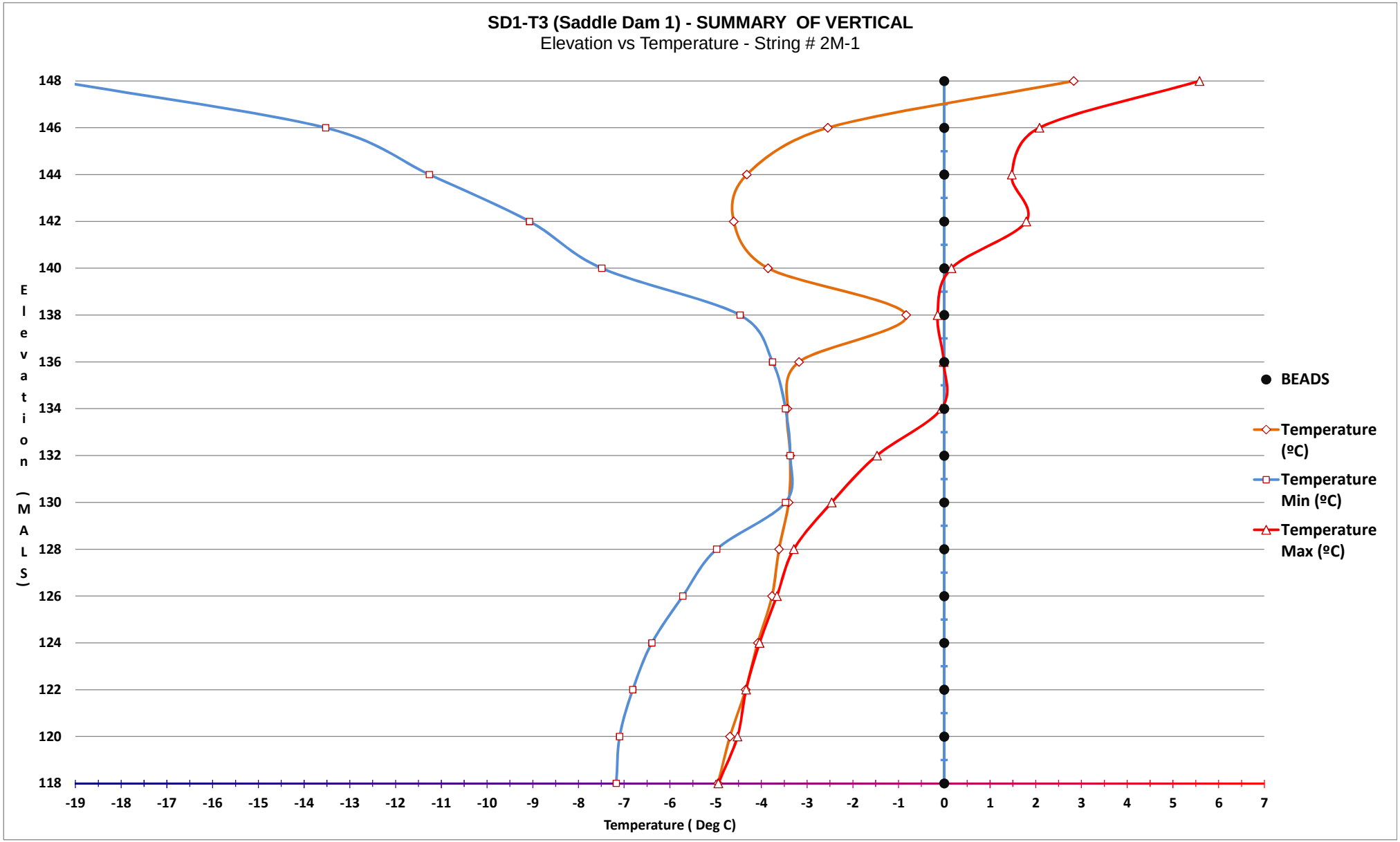

SD1-T1 (Saddle Dam 1)
Elevation vs Temperature - String # 120-1 - Underneath the liner (inclined)
FEB 2013
FEB 2012
FEB 2011
FEB 2010
AUGUST 2013
AUGUST 2012
AUGUST 2011
AUGUST 2010
09-Feb-10
10-Aug-10
20-Feb-11
16-Aug-11
14-Feb-12
16-Aug-12
03-Aug-13
11-Feb-13
Elevation (MLS)
150
148
146
144
142
140
138
136
134
132
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
Temperature (Deg C)

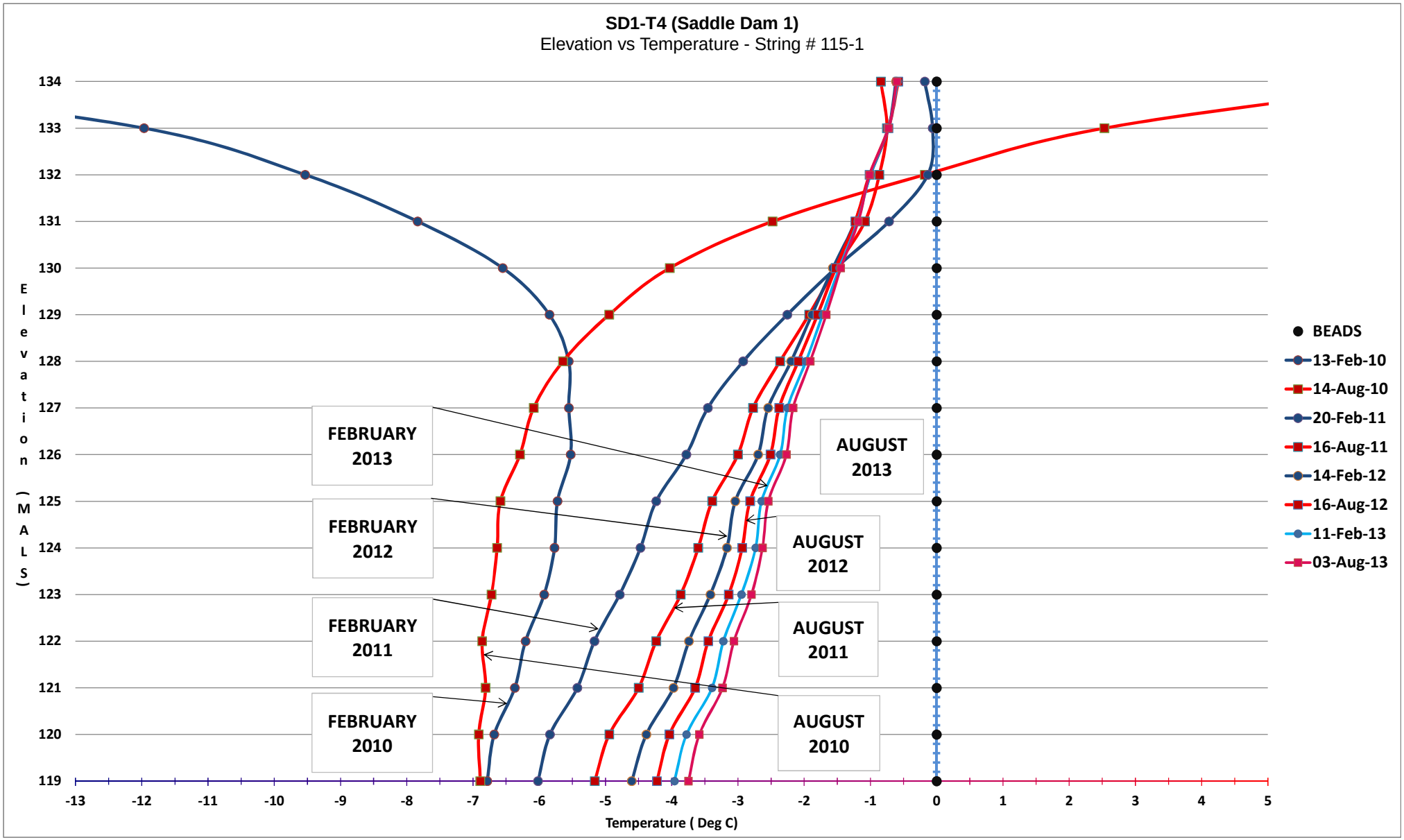

SD1-T1 (Saddle Dam 1)
Elevation vs Temperature - String # 120-1 - Underneath the liner (inclined)
Elevation (MLS)
150
148
146
144
142
140
138
136
134
132
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
Temperature (Deg C)
Bead
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)

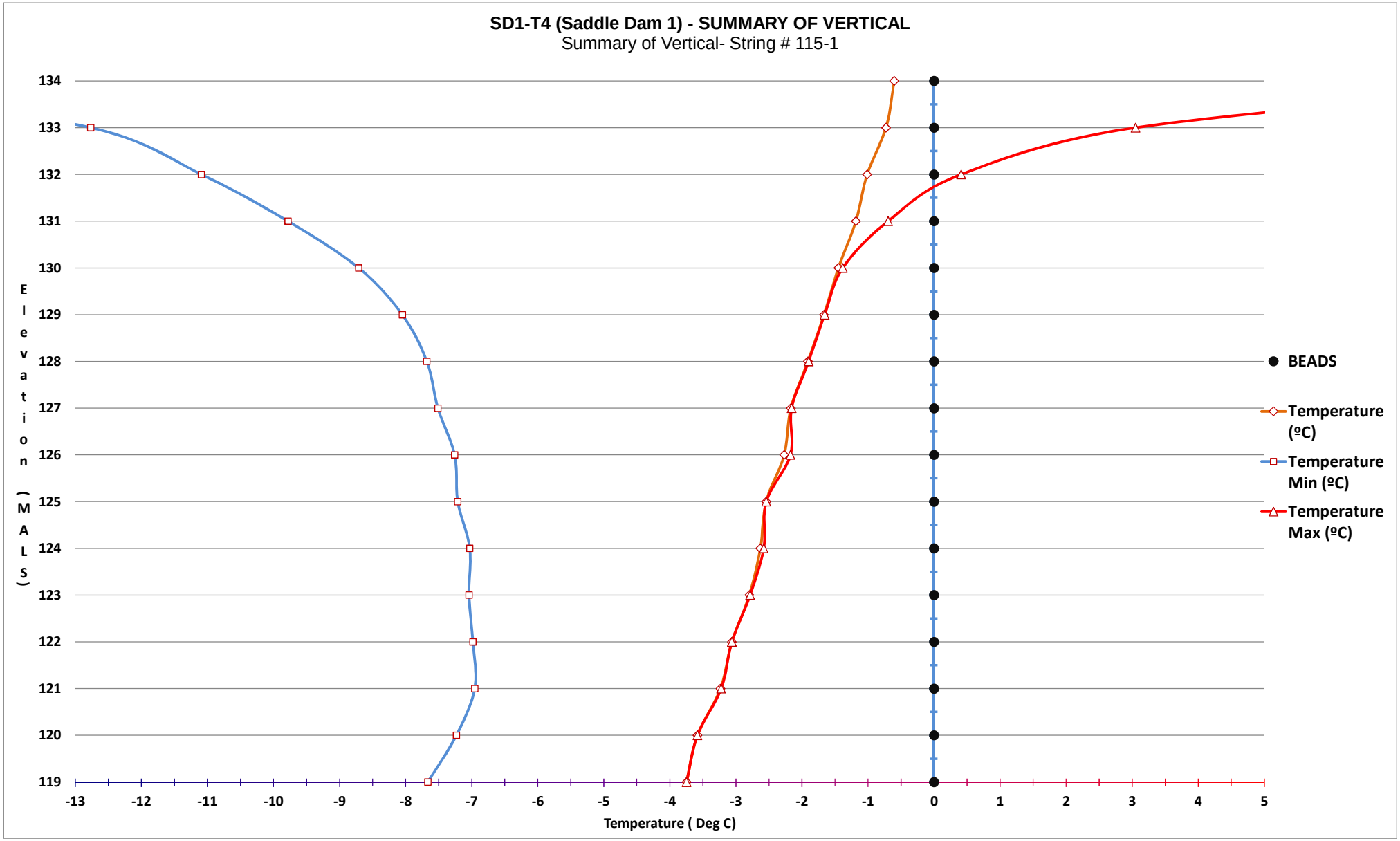

SD1-T2 (Saddle Dam 1)
Elevation vs Temperature - String # 90 -1
Elevation (MALS)
Temperature (Deg C)
FEBRUARY 2013
FEBRUARY 2012
FEBRUARY 2011
FEBRUARY 2010
AUGUST 2013
AUGUST 2012
AUGUST 2011
AUGUST 2010
BEADS
13-Feb-10
14-Aug-10
20-Feb-11
16-Aug-11
14-Feb-12
13-Aug-12
11-Feb-13
03-Aug-13

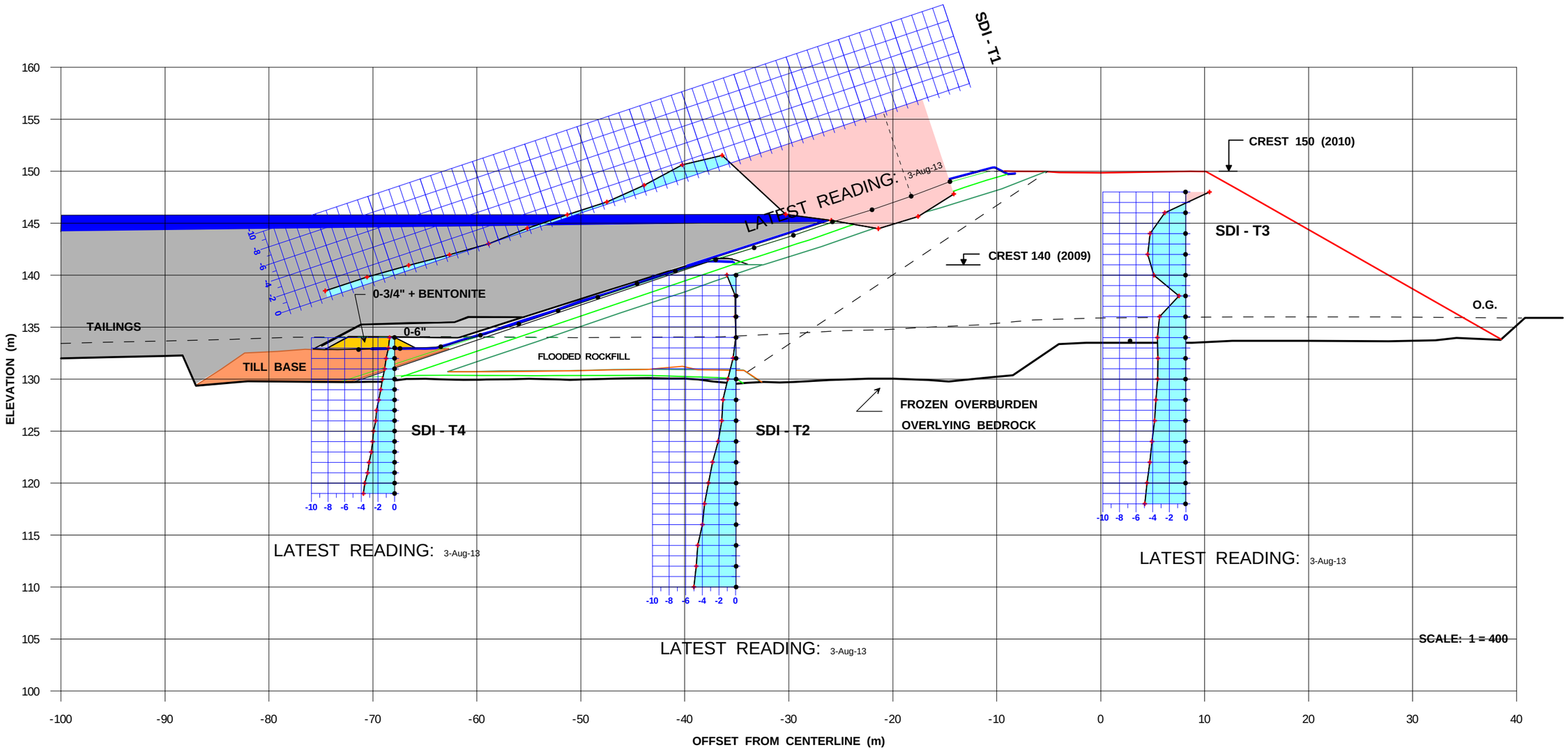

SD1-T2 (Saddle Dam 1) - SUMMARY of VERTICAL
Elevation vs Temperature - String # 90 -1
Elevation (MALS)
140
138
136
134
132
130
128
126
124
122
120
118
116
114
112
110
-12
-11
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)


SD1-T3 (Saddle Dam 1)
Elevation vs Temperature - String # 2M-1
Elevation (MALS)
148
146
144
142
140
138
136
134
132
130
128
126
124
122
120
118
-19
-18
-17
-16
-15
-14
-13
-12
-11
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
Temperature (Deg C)
BEADS
20-Feb-11
16-Aug-11
14-Feb-12
16-Aug-12
11-Feb-13
03-Aug-13
FEBRUARY 2013
FEBRUARY 2012
FEBRUARY 2011
AUGUST 2012
AUGUST 2012
AUGUST 2011


SD1-T3 (Saddle Dam 1) - SUMMARY OF VERTICAL
Elevation vs Temperature - String # 2M-1
Elevation (MALS)
148
146
144
142
140
138
136
134
132
130
128
126
124
122
120
118
-19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)


SD1-T4 (Saddle Dam 1)
Elevation vs Temperature - String # 115-1
Elevation (MALS)
134
133
132
131
130
129
128
127
126
125
124
123
122
121
120
119
-13
-12
-11
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
Temperature (Deg C)
FEBRUARY 2013
FEBRUARY 2012
FEBRUARY 2011
FEBRUARY 2010
AUGUST 2013
AUGUST 2012
AUGUST 2011
AUGUST 2010
BEADS
13-Feb-10
14-Aug-10
20-Feb-11
16-Aug-11
14-Feb-12
16-Aug-12
11-Feb-13
03-Aug-13


SD1-T4 (Saddle Dam 1) - SUMMARY OF VERTICAL
Summary of Vertical- String # 115-1
Elevation (MALS)
134
133
132
131
130
129
128
127
126
125
124
123
122
121
120
119
-13
-12
-11
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)



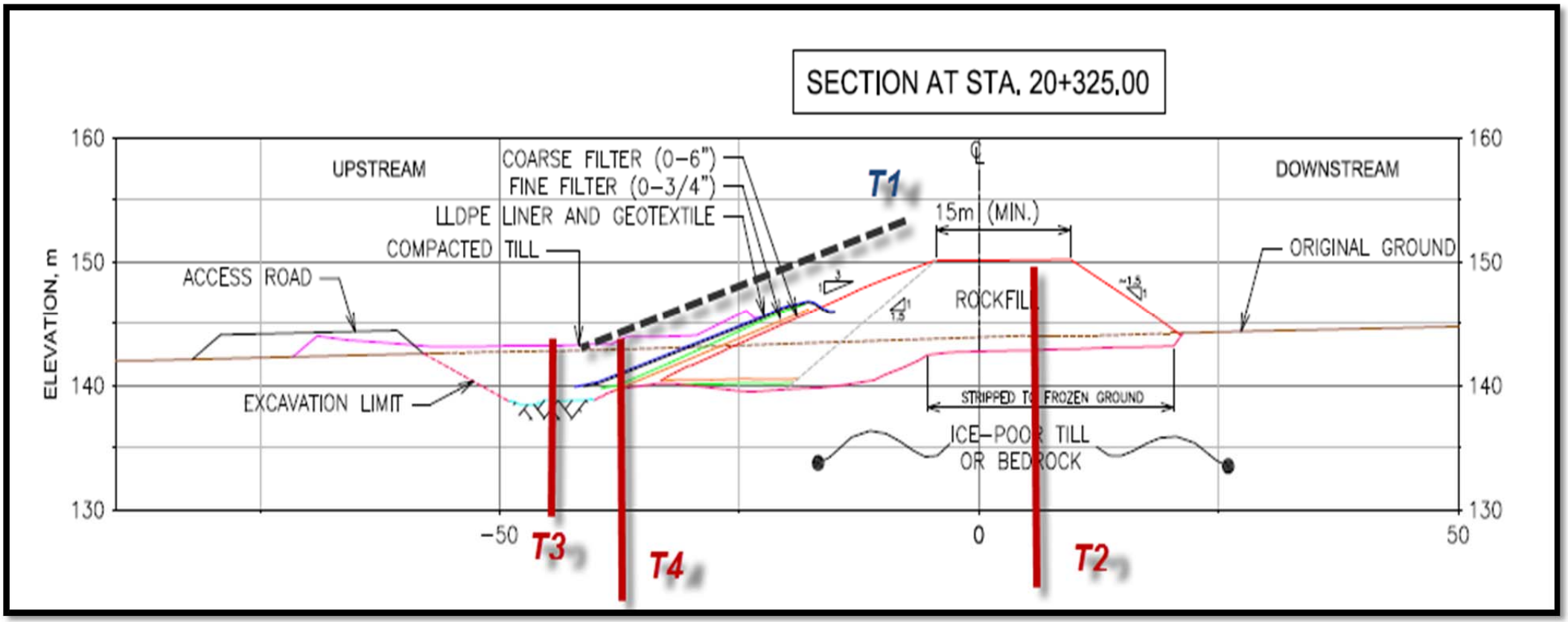
AGNICO-EAGLE MINES LIMITED - MEADOWBANK DIVISION

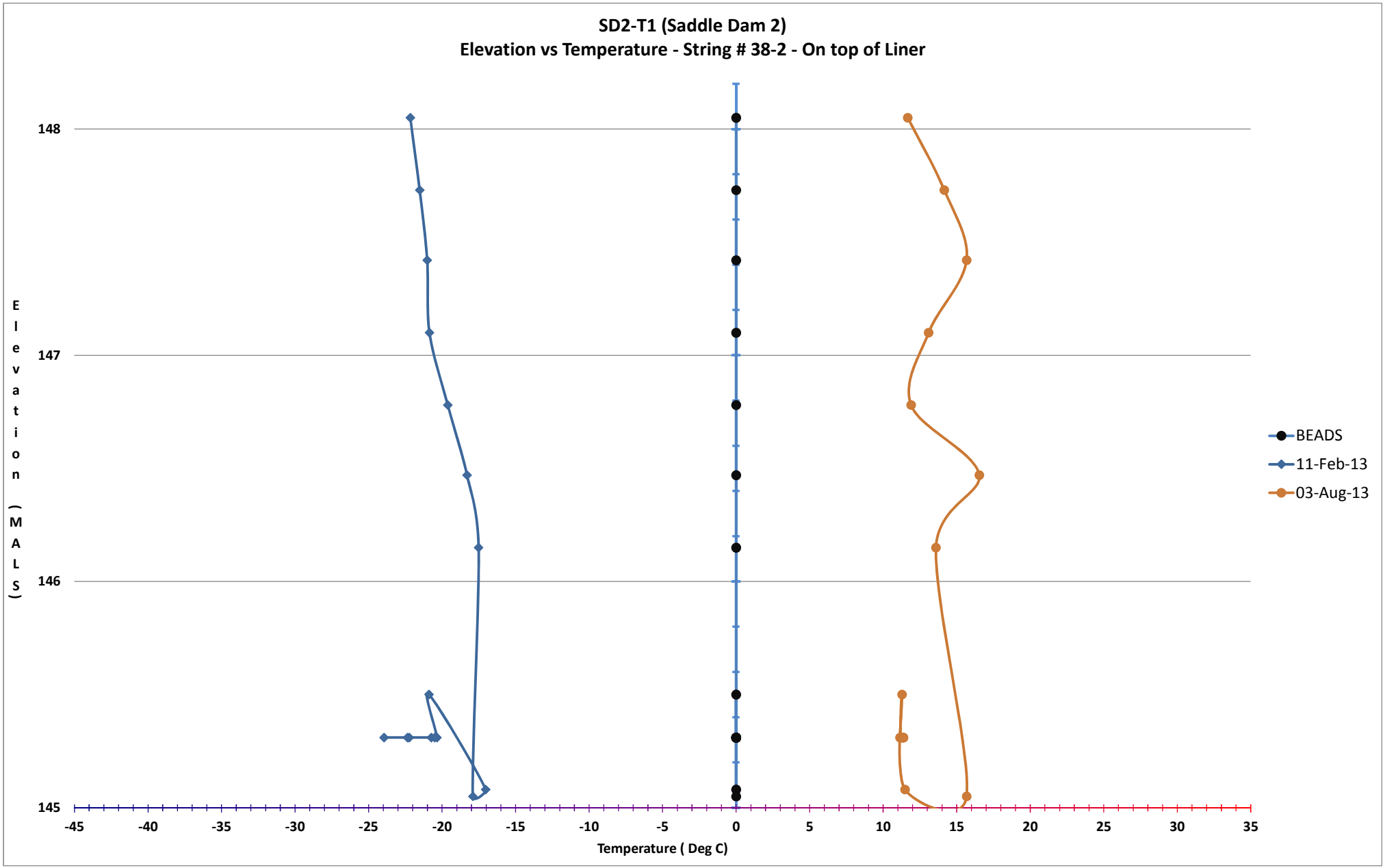
AGNICO EAGLE - MEADOWBANK MINE
SADDLE DAM 1 - GROUND TEMPERATURE MONITORING
LATEST TEMPERATURE PROFILES - AUGUST 2013
TAILINGS ELEVATION: 145 MASL WATER POND ELEVATION: 145.6 MASL

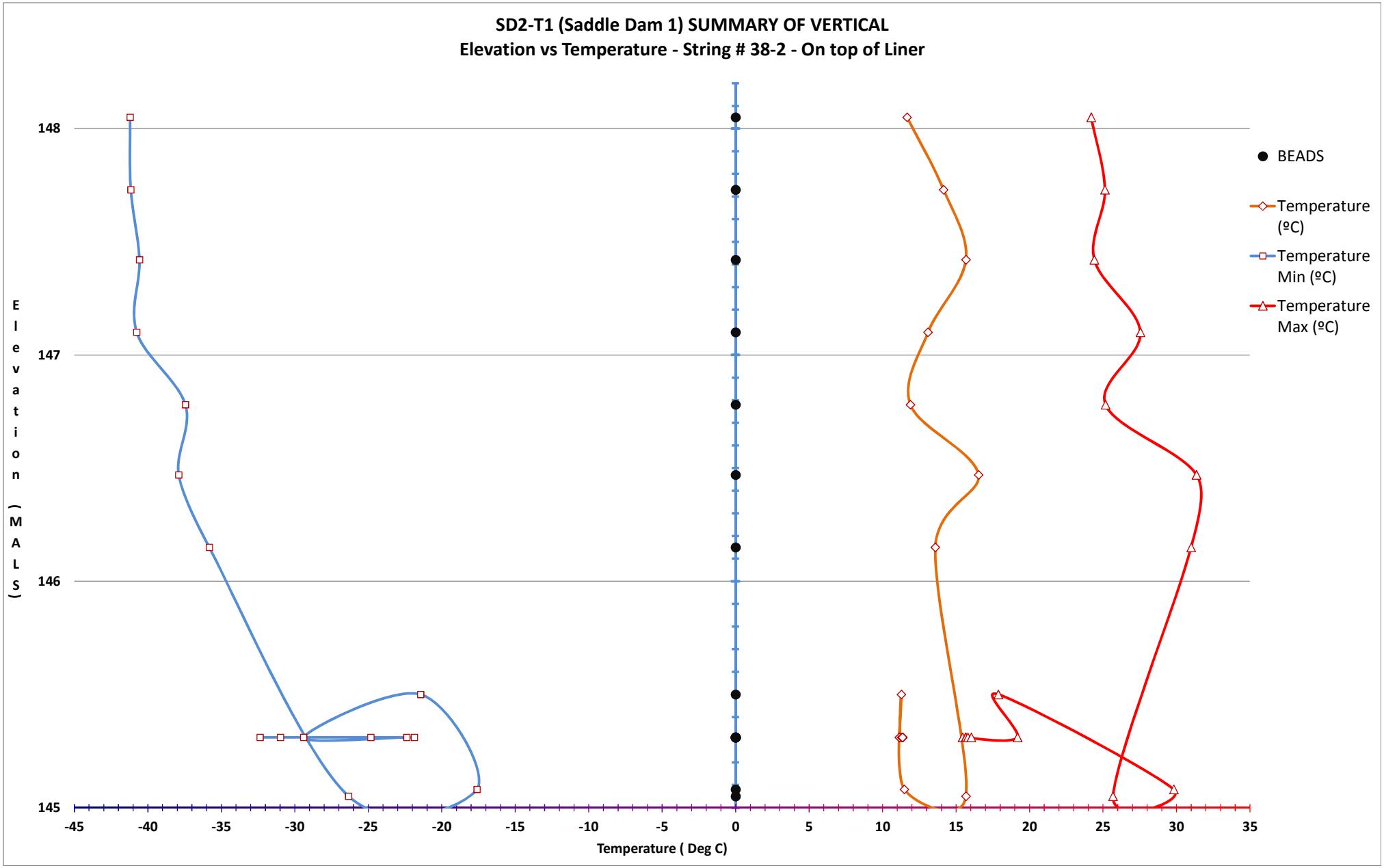
FIGURE 1

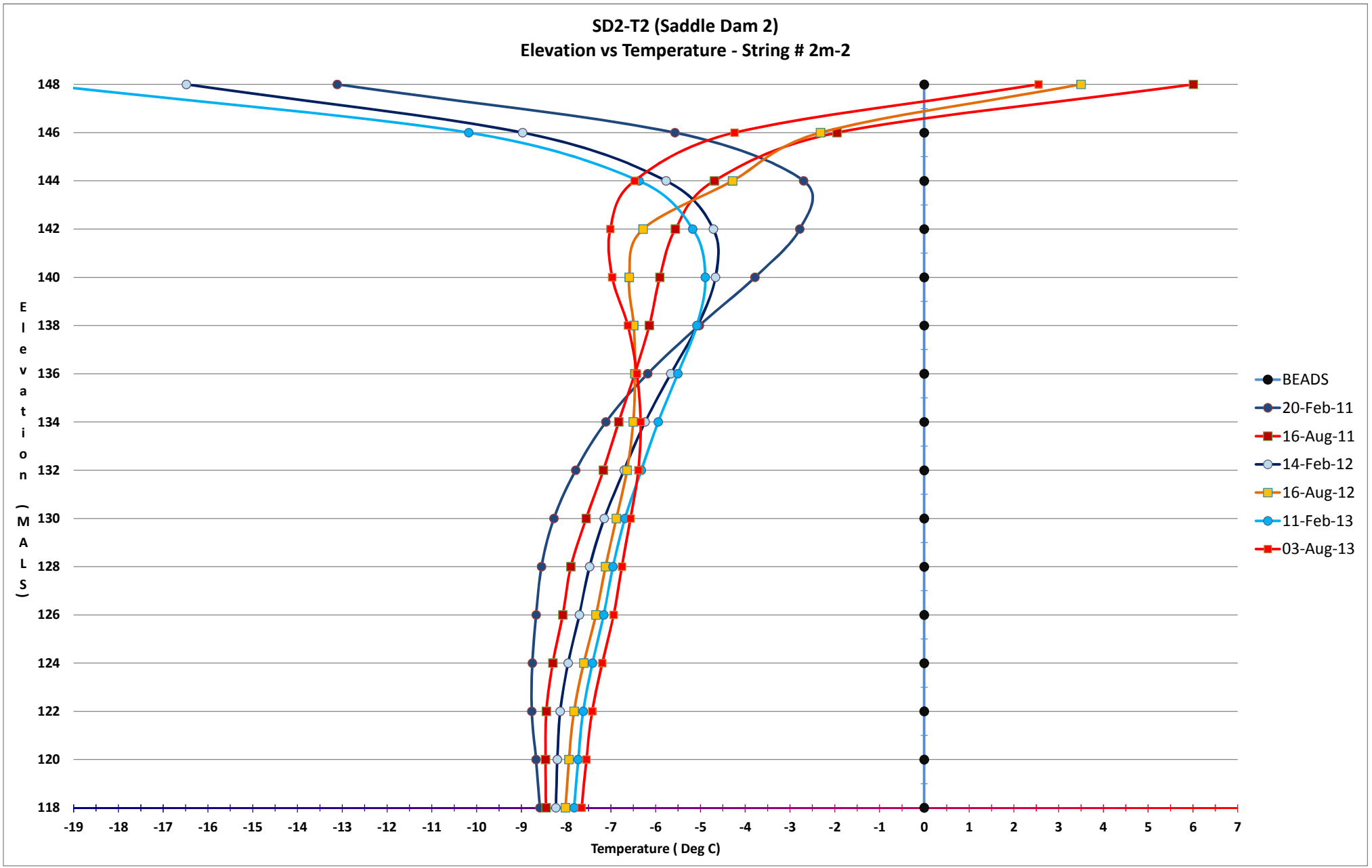
SD1 - TEMPERATURE MONITORING - FULL SECTION.GRF

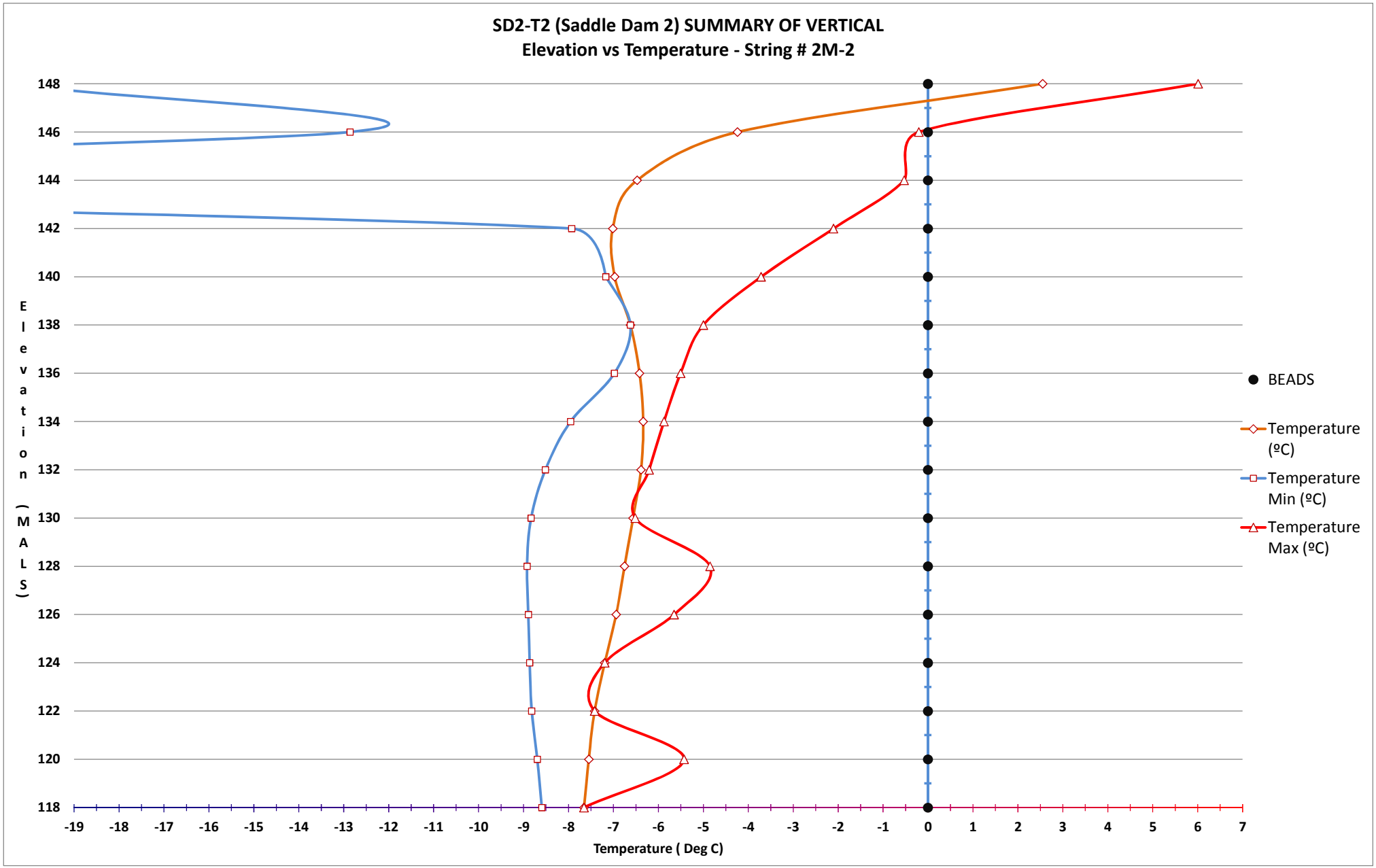
SD 2

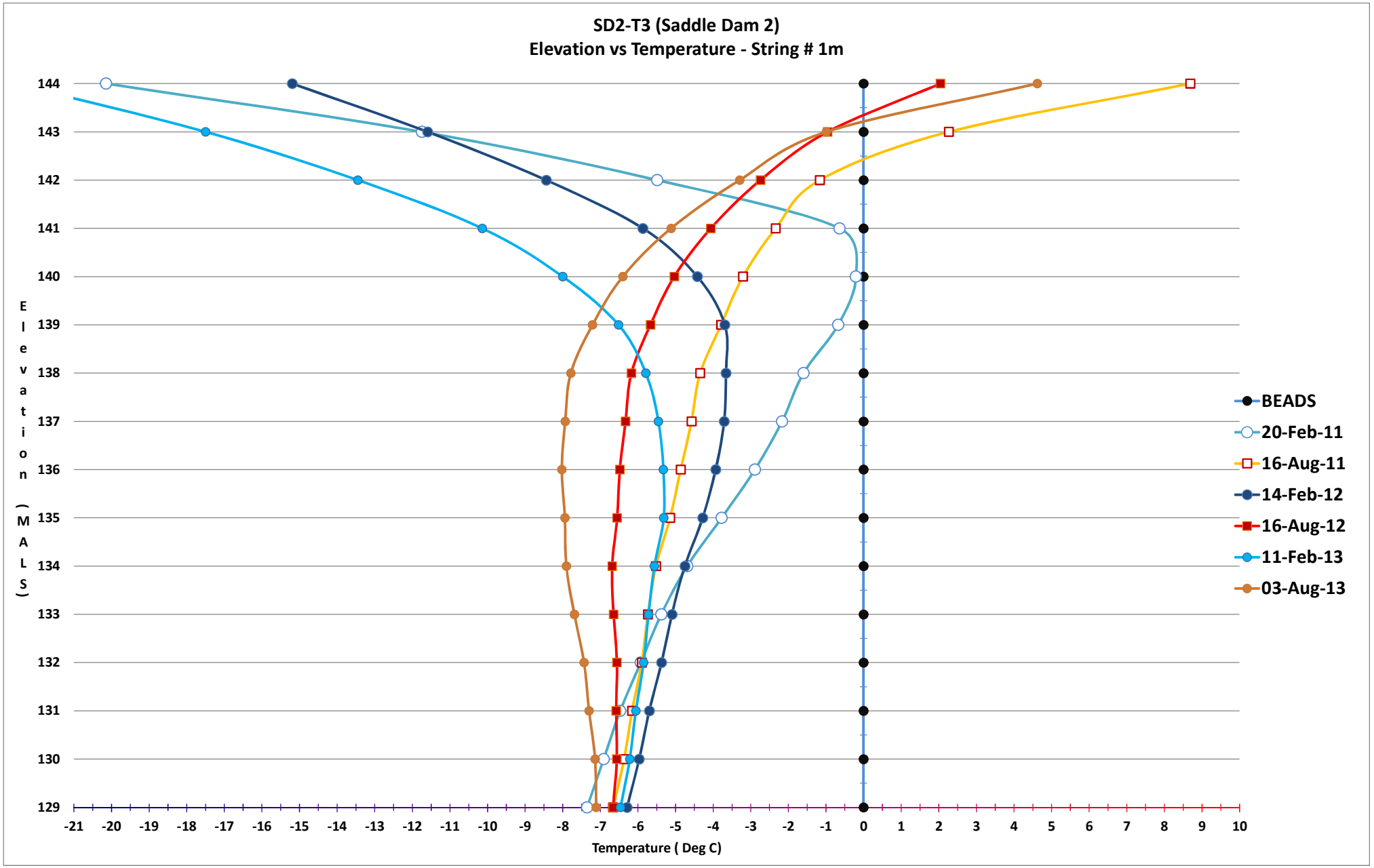

SECTION AT STA. 20+325.00
160
150
140
130
ELEVATION, m
UPSTREAM
COARSE FILTER (0–6")
FINE FILTER (0–3/4")
LLDPE LINER AND GEOTEXTILE
COMPACTED TILL
ACCESS ROAD
EXCAVATION LIMIT
T1
15m (MIN.)
DOWNSTREAM
ORIGINAL GROUND
ROCKFILL
STRIPPED TO FROZEN GROUND
ICE-POOR TILL
OR BEDROCK
T3
T4
T2
-50
0
50

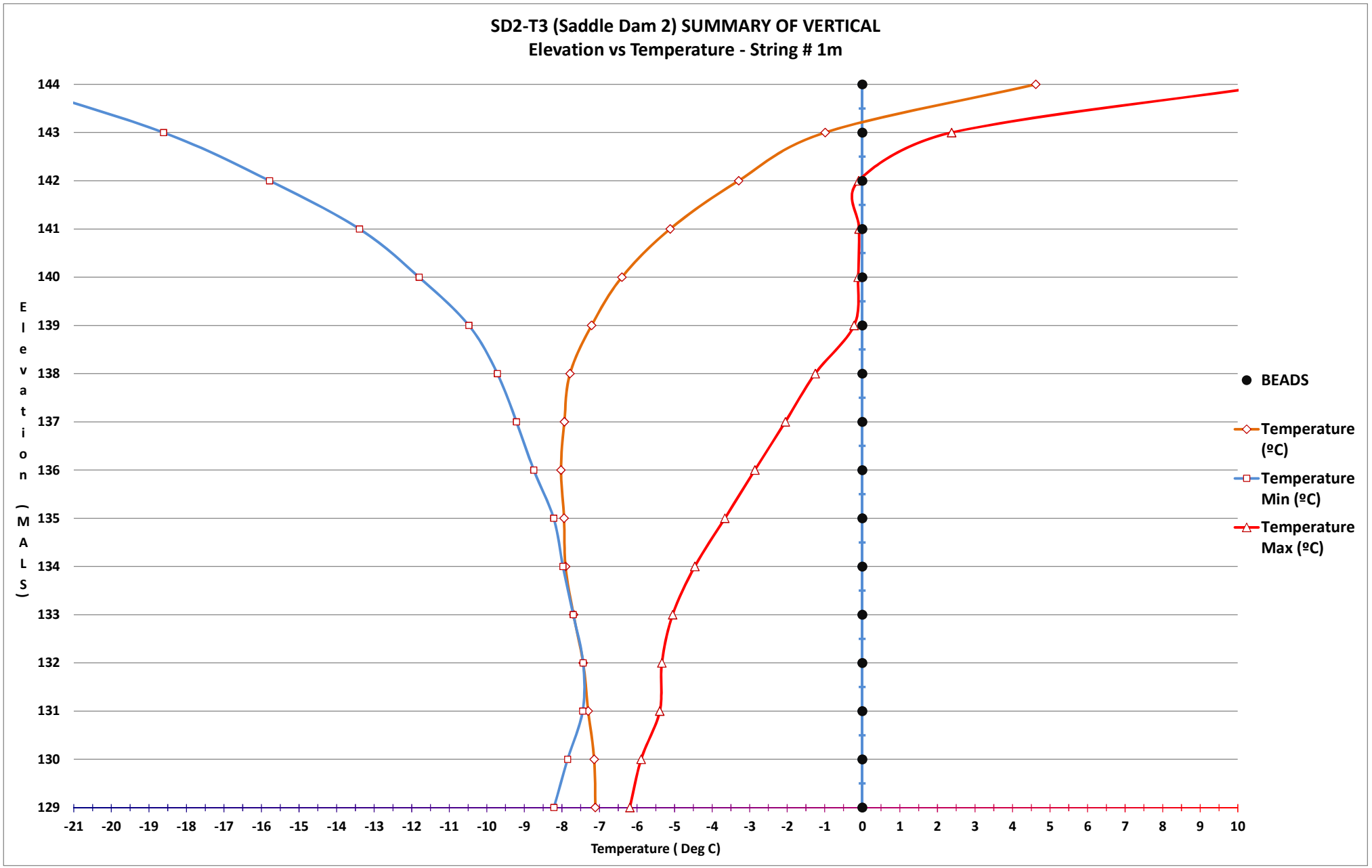

SD2-T1 (Saddle Dam 2)
Elevation vs Temperature - String # 38-2 - On top of Liner
Elevation (MALS)
148
147
146
145
-45
-40
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
Temperature (Deg C)
BEADS
11-Feb-13
03-Aug-13

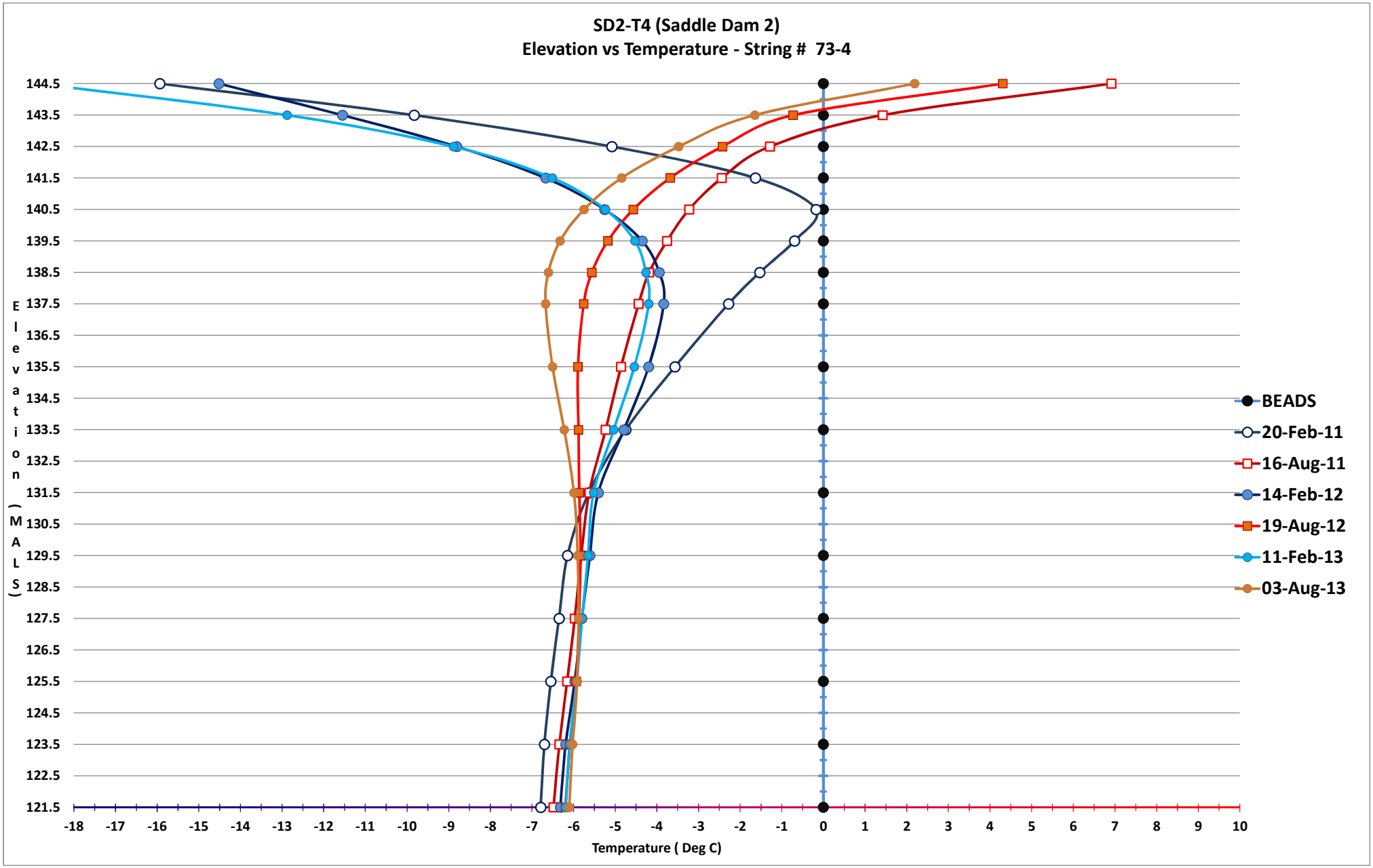

SD2-T1 (Saddle Dam 1) SUMMARY OF VERTICAL
Elevation vs Temperature - String # 38-2 - On top of Liner
148
147
146
145
Elevation (MALS)
-45
-40
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)

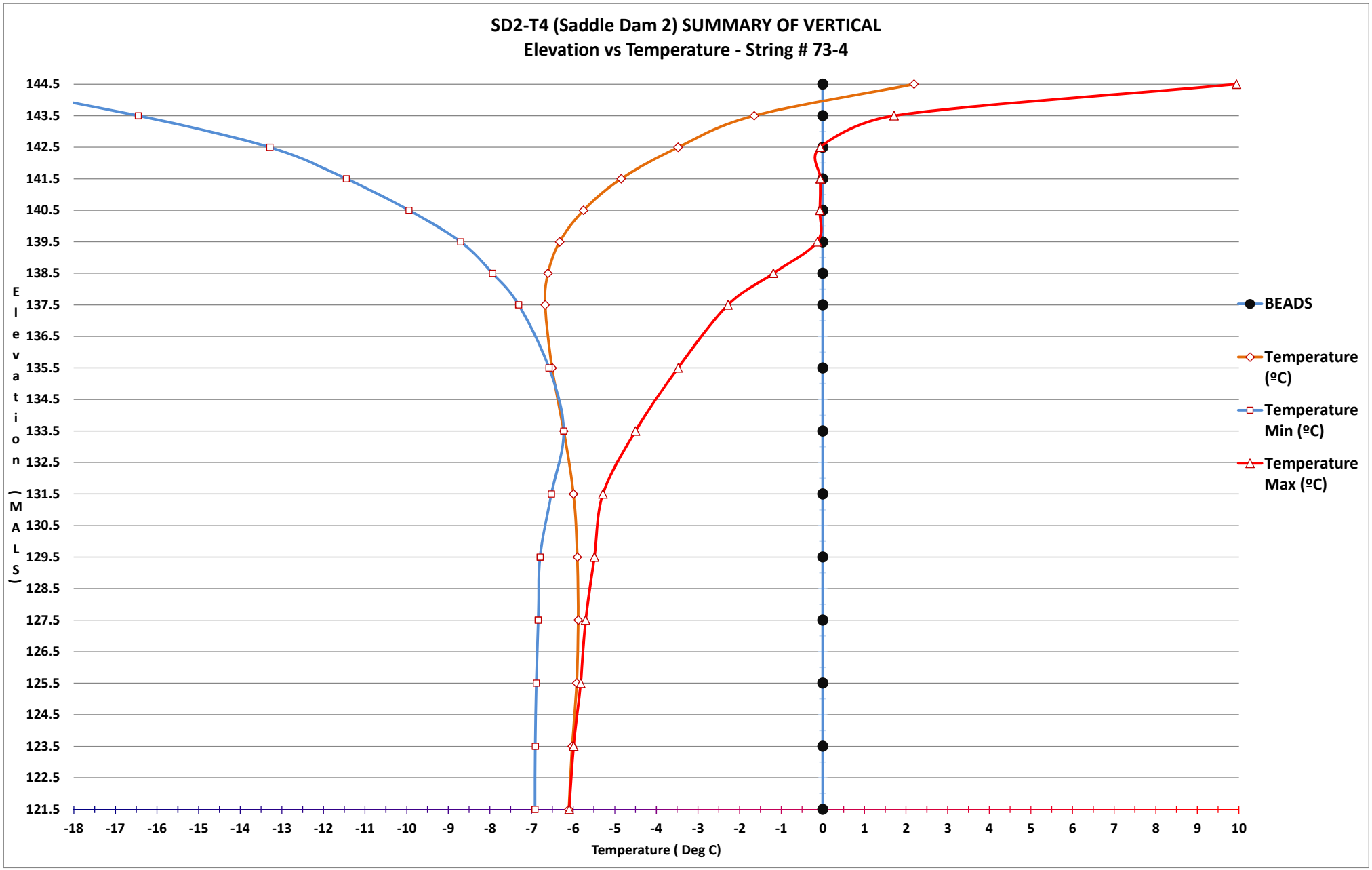

SD2-T2 (Saddle Dam 2)
Elevation vs Temperature - String # 2m-2
Elevation (MALS)
148
146
144
142
140
138
136
134
132
130
128
126
124
122
120
118
-19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7
Temperature (Deg C)
BEADS
20-Feb-11
16-Aug-11
14-Feb-12
16-Aug-12
11-Feb-13
03-Aug-13


SD2-T2 (Saddle Dam 2) SUMMARY OF VERTICAL
Elevation vs Temperature - String # 2M-2
Elevation (MALS)
148
146
144
142
140
138
136
134
132
130
128
126
124
122
120
118
-19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)

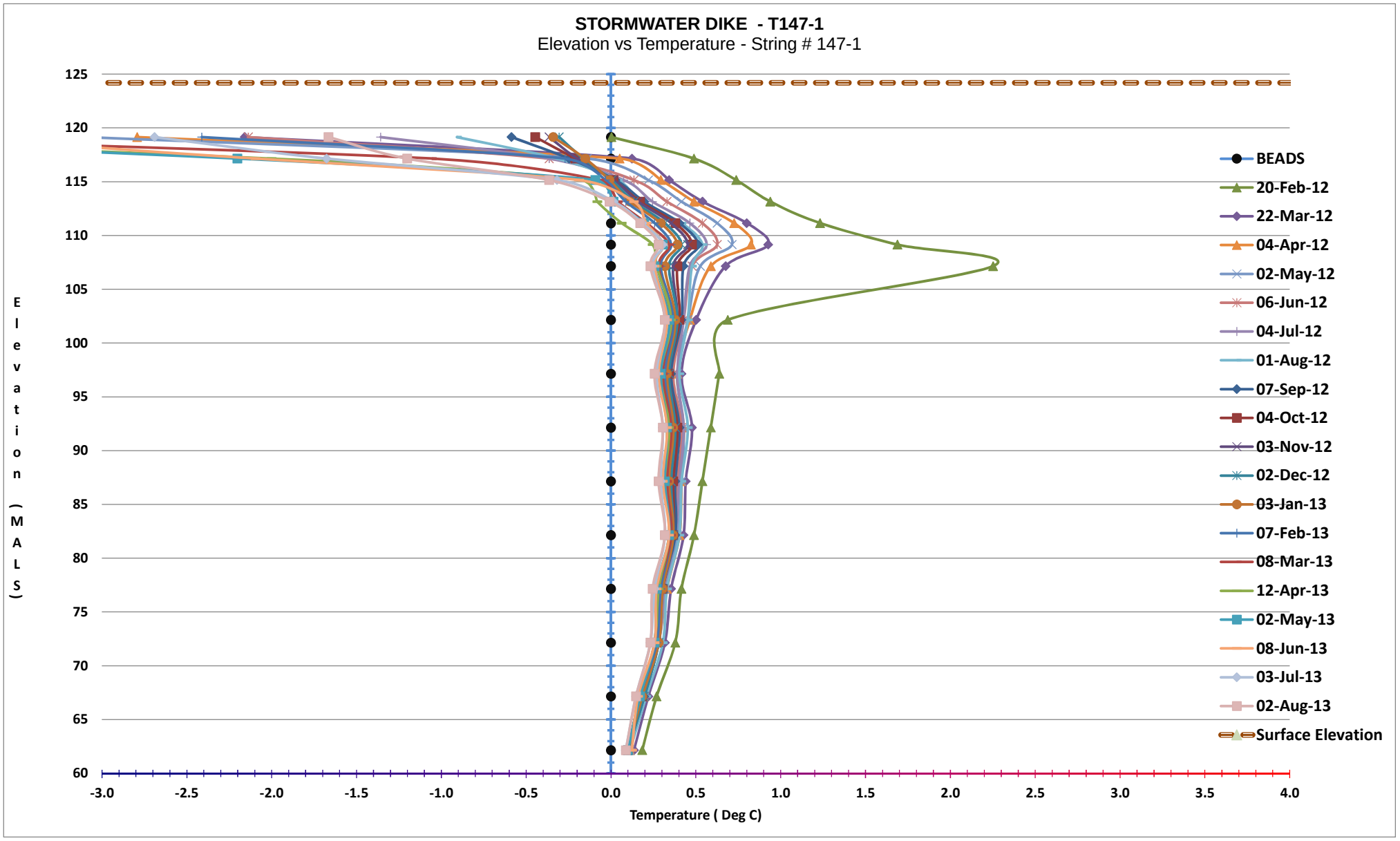

SD2-T3 (Saddle Dam 2)
Elevation vs Temperature - String # 1m
Elevation (MALS)
144
143
142
141
140
139
138
137
136
135
134
133
132
131
130
129
-21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Temperature (Deg C)
BEADS
20-Feb-11
16-Aug-11
14-Feb-12
16-Aug-12
11-Feb-13
03-Aug-13

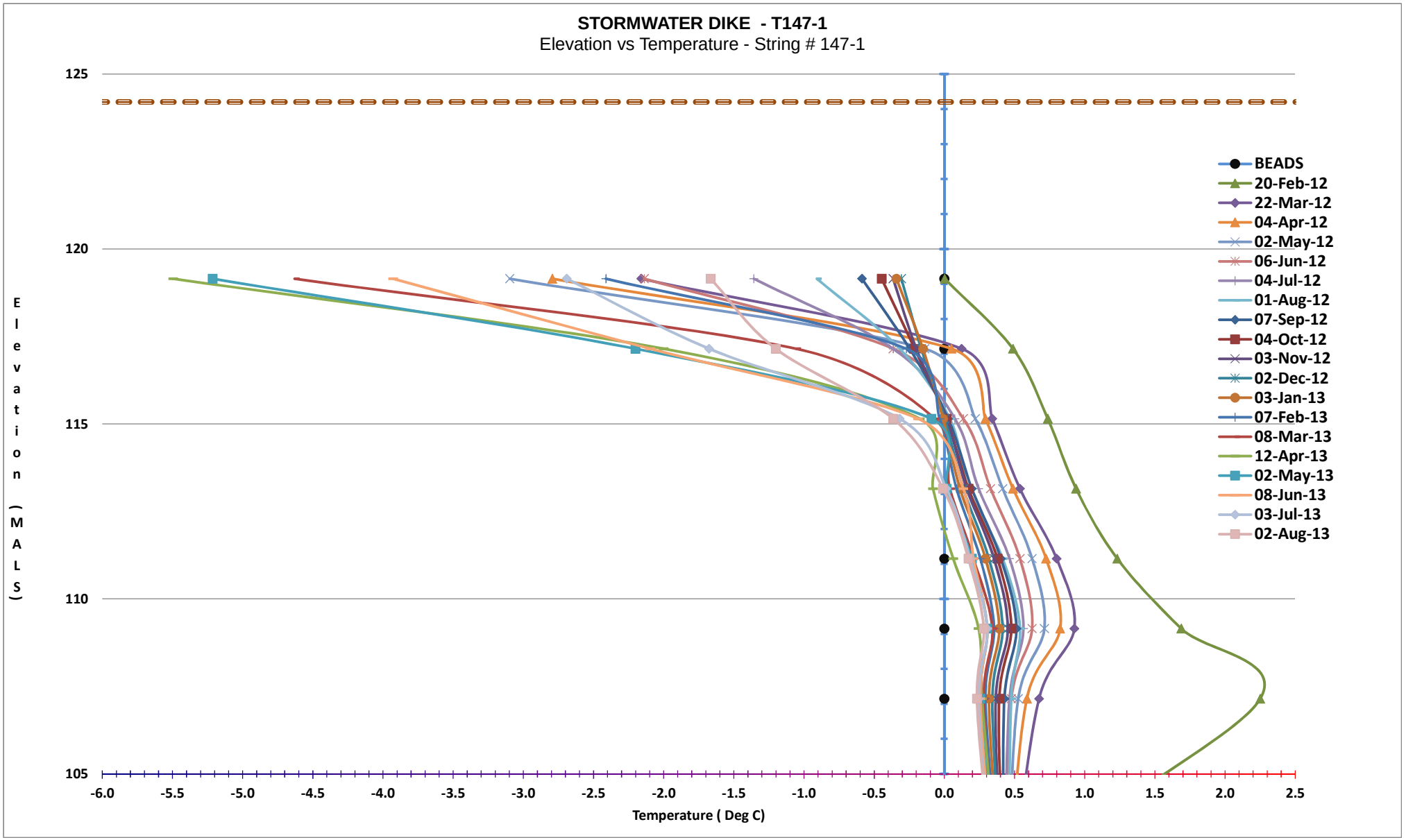

SD2-T3 (Saddle Dam 2) SUMMARY OF VERTICAL
Elevation vs Temperature - String # 1m
Elevation (MALS)
144
143
142
141
140
139
138
137
136
135
134
133
132
131
130
129
-21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)

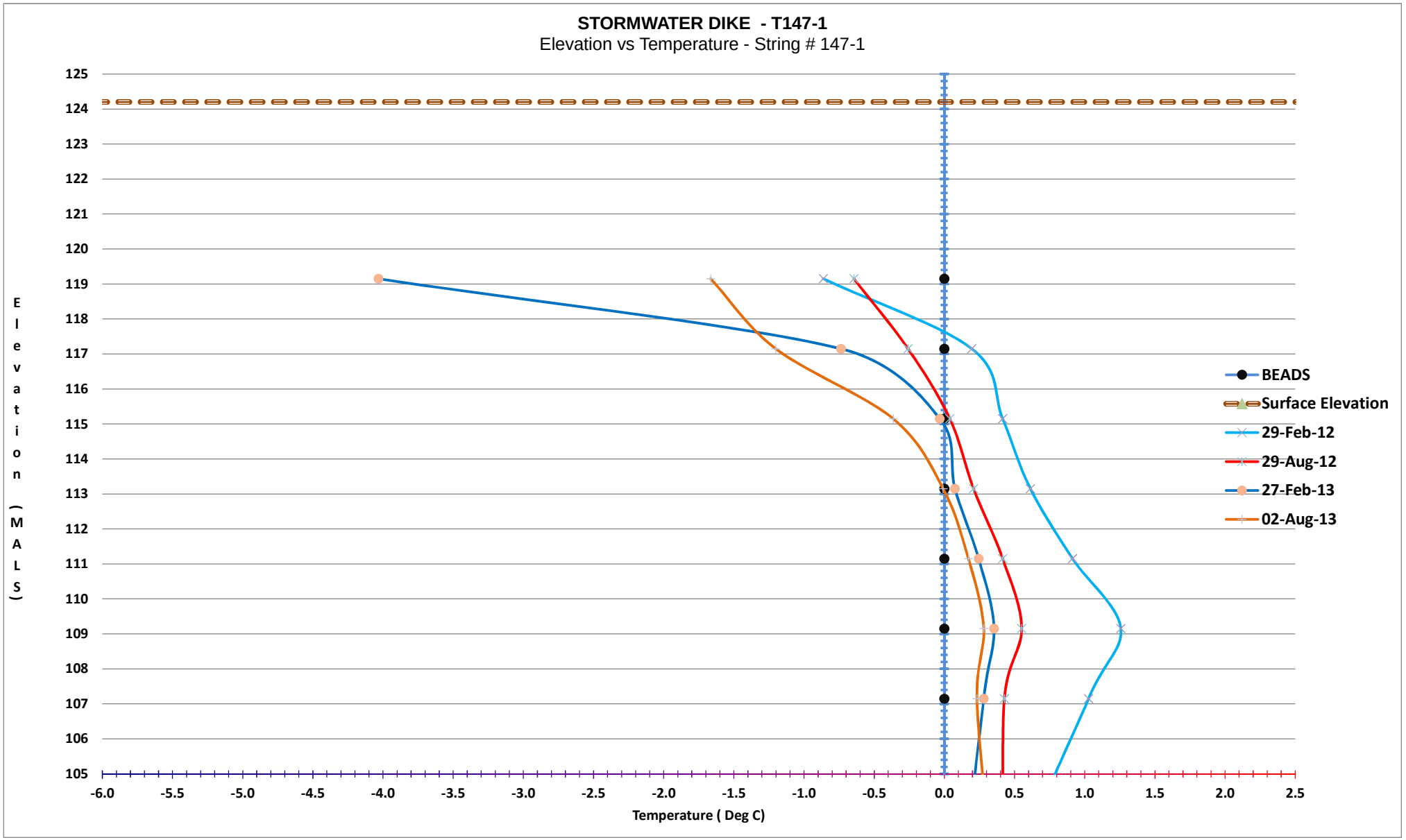

SD2-T4 (Saddle Dam 2)
Elevation vs Temperature - String # 73-4
Elevation (MALS)
144.5
143.5
142.5
141.5
140.5
139.5
138.5
137.5
136.5
135.5
134.5
133.5
132.5
131.5
130.5
129.5
128.5
127.5
126.5
125.5
124.5
123.5
122.5
121.5
-18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Temperature (Deg C)
BEADS
20-Feb-11
16-Aug-11
14-Feb-12
19-Aug-12
11-Feb-13
03-Aug-13

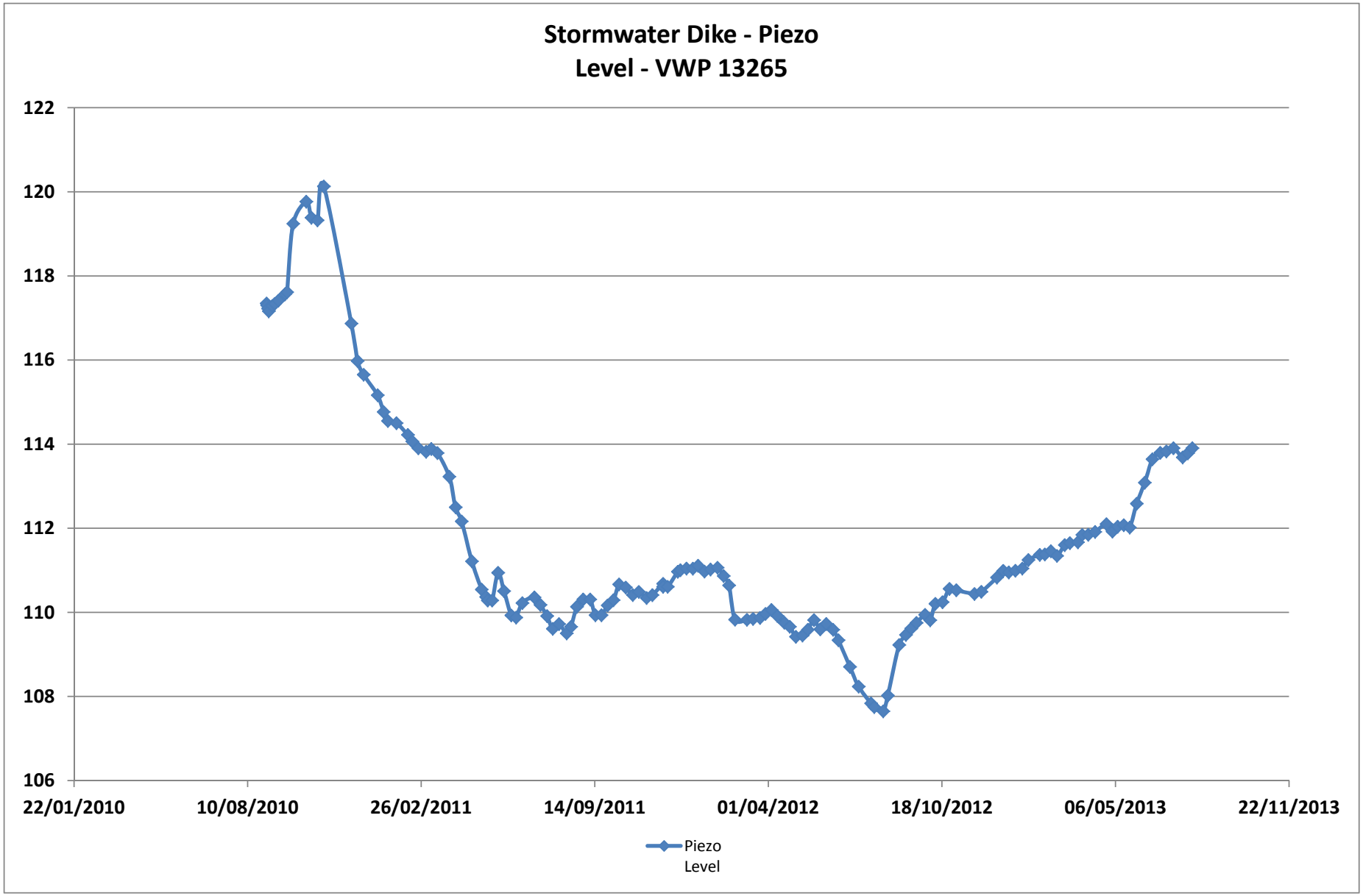

SD2-T4 (Saddle Dam 2) SUMMARY OF VERTICAL
Elevation vs Temperature - String # 73-4
Elevation (MALS)
144.5
143.5
142.5
141.5
140.5
139.5
138.5
137.5
136.5
135.5
134.5
133.5
132.5
131.5
130.5
129.5
128.5
127.5
126.5
125.5
124.5
123.5
122.5
121.5
-18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Temperature (Deg C)
BEADS
Temperature (ºC)
Temperature Min (ºC)
Temperature Max (ºC)

Stormwater

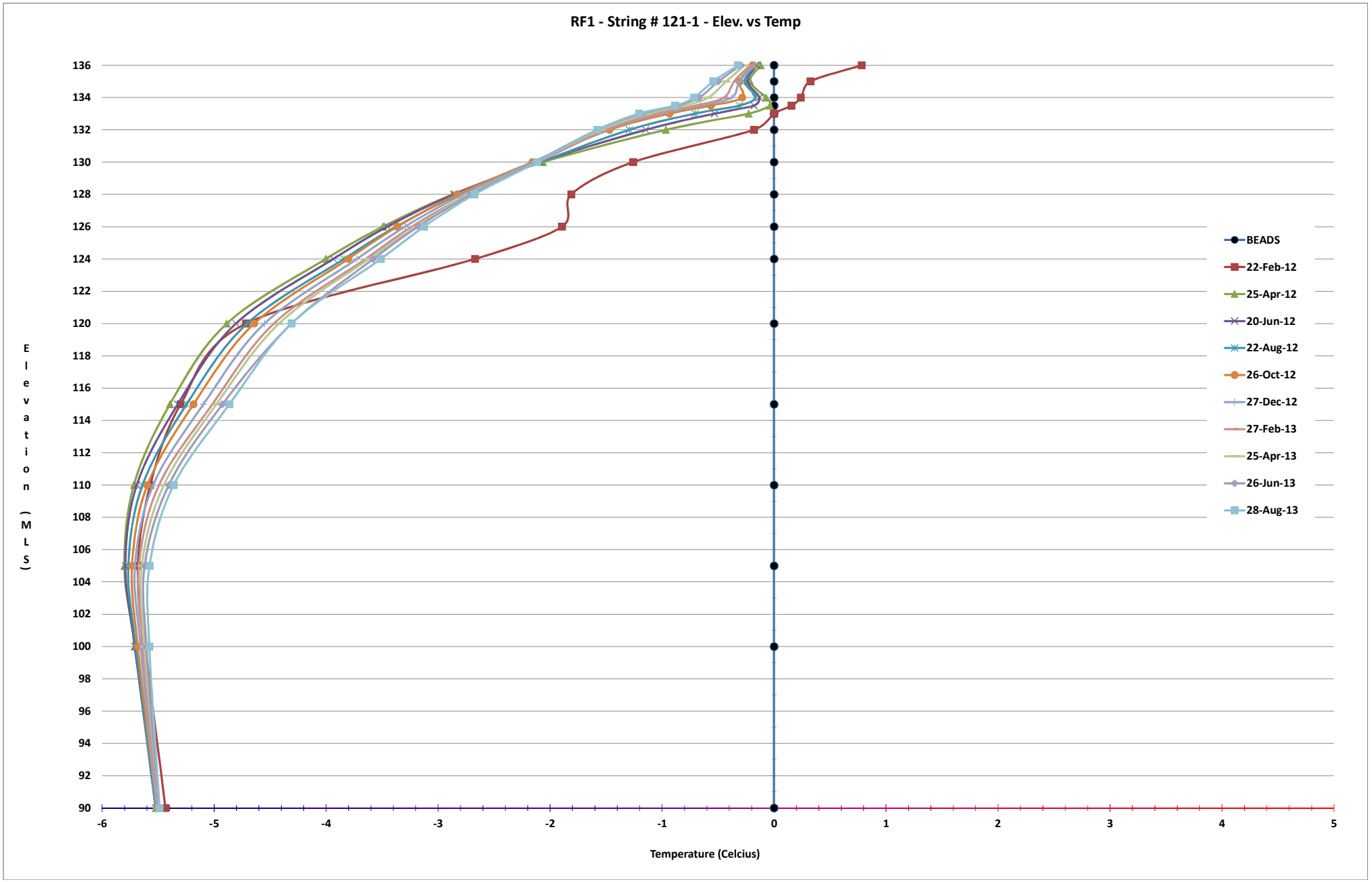

STORMWATER DIKE - T147-1
Elevation vs Temperature - String # 147-1
Elevation (MALS)
125
120
115
110
105
100
95
90
85
80
75
70
65
60
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Temperature (Deg C)
BEADS
20-Feb-12
22-Mar-12
04-Apr-12
02-May-12
06-Jun-12
04-Jul-12
01-Aug-12
07-Sep-12
04-Oct-12
03-Nov-12
02-Dec-12
03-Jan-13
07-Feb-13
08-Mar-13
12-Apr-13
02-May-13
08-Jun-13
03-Jul-13
02-Aug-13
Surface Elevation

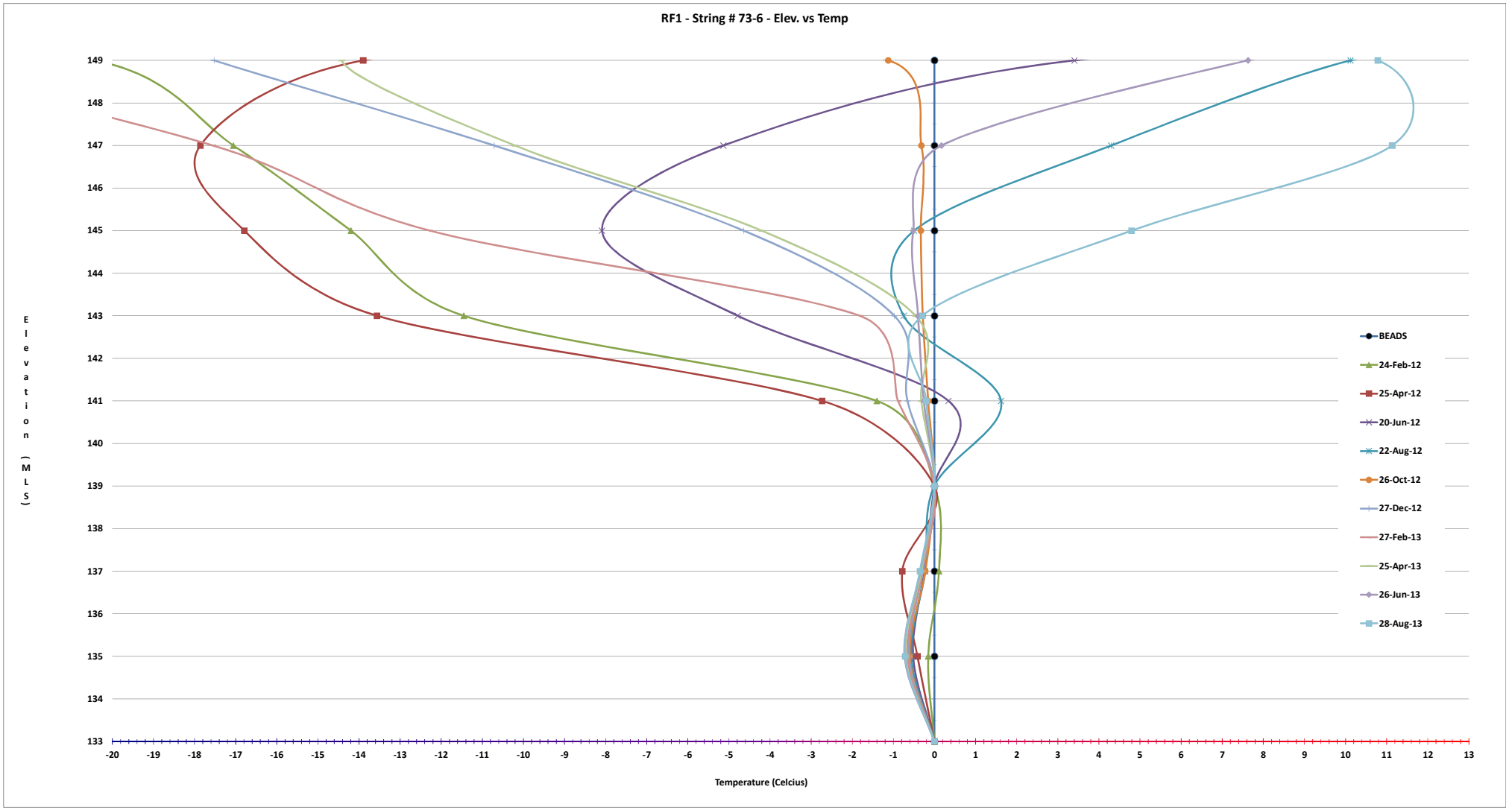

STORMWATER DIKE - T147-1
Elevation vs Temperature - String # 147-1
125
120
115
110
105
Elevation (MALS)
-6.0
-5.5
-5.0
-4.5
-4.0
-3.5
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
2.5
Temperature (Deg C)
BEADS
20-Feb-12
22-Mar-12
04-Apr-12
02-May-12
06-Jun-12
04-Jul-12
01-Aug-12
07-Sep-12
04-Oct-12
03-Nov-12
02-Dec-12
03-Jan-13
07-Feb-13
08-Mar-13
12-Apr-13
02-May-13
08-Jun-13
03-Jul-13
02-Aug-13

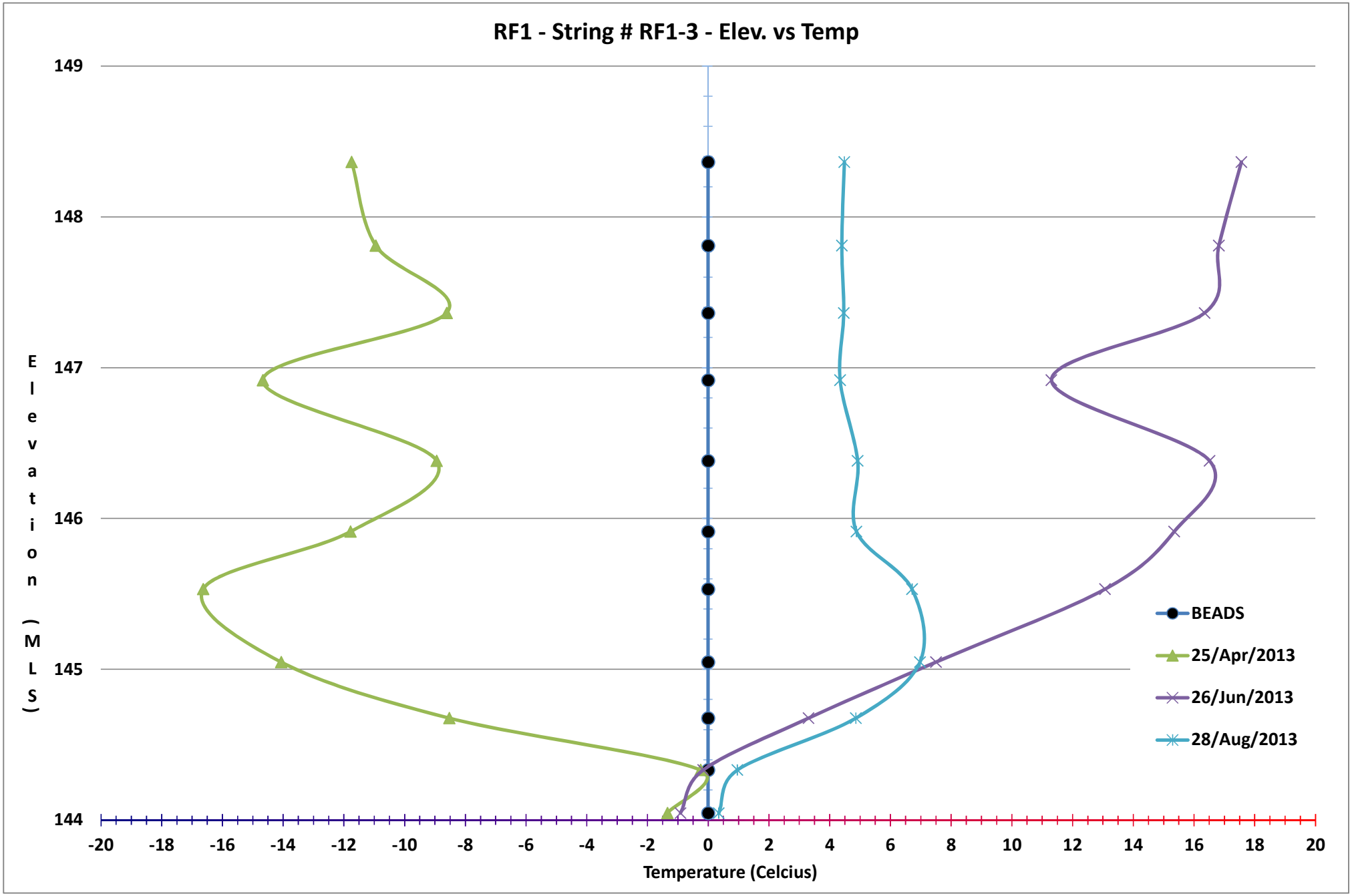

STORMWATER DIKE - T147-1
Elevation vs Temperature - String # 147-1
Elevation (MALS)
125
124
123
122
121
120
119
118
117
116
115
114
113
112
111
110
109
108
107
106
105
-6.0
-5.5
-5.0
-4.5
-4.0
-3.5
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
2.5
Temperature (Deg C)
BEADS
Surface Elevation
29-Feb-12
29-Aug-12
27-Feb-13
02-Aug-13

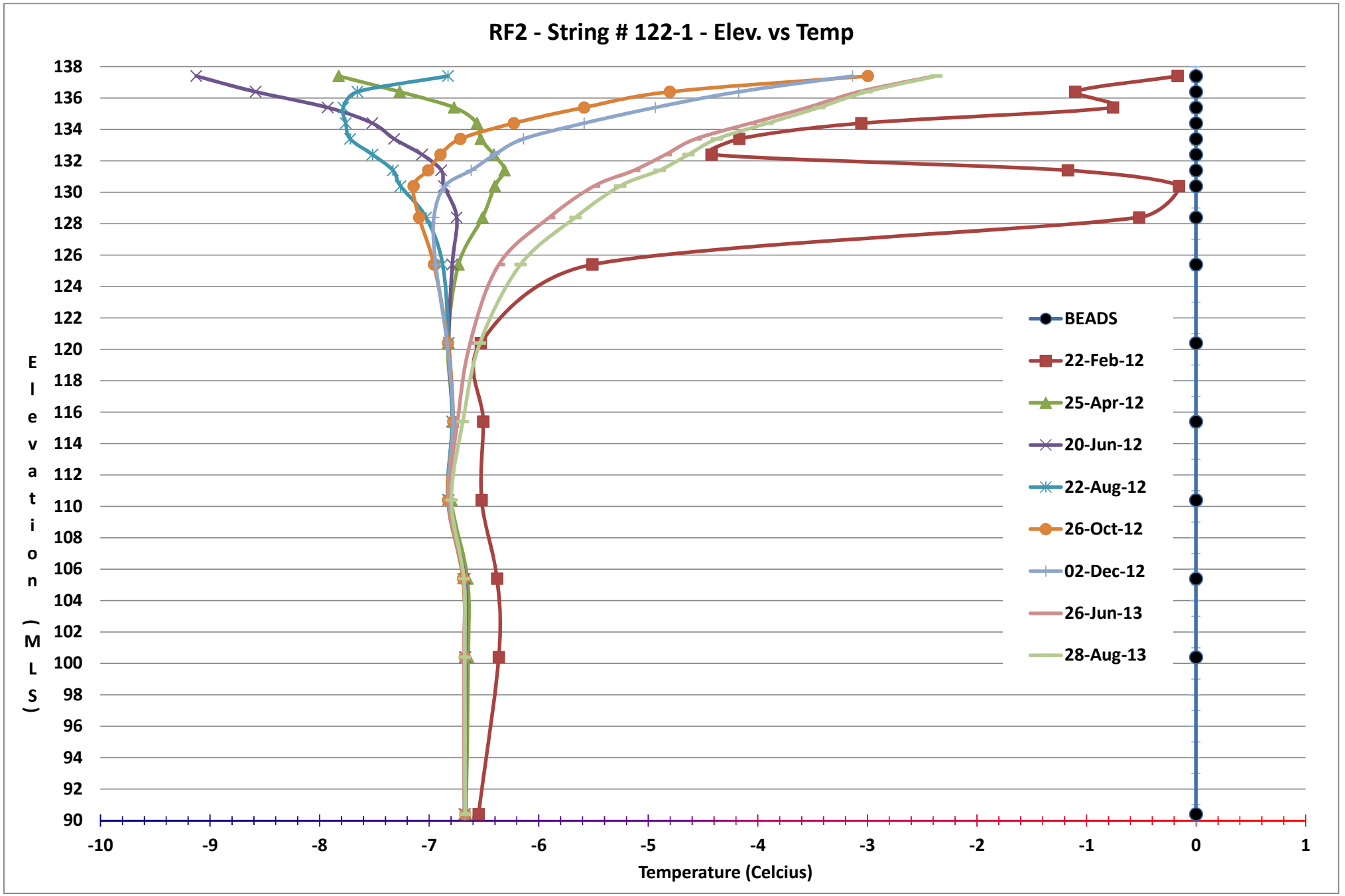

Stormwater Dike - Piezo
Level - VWP 13265
122
120
118
116
114
112
110
108
106
22/01/2010
10/08/2010
26/02/2011
14/09/2011
01/04/2012
18/10/2012
06/05/2013
22/11/2013
Piezo
Level

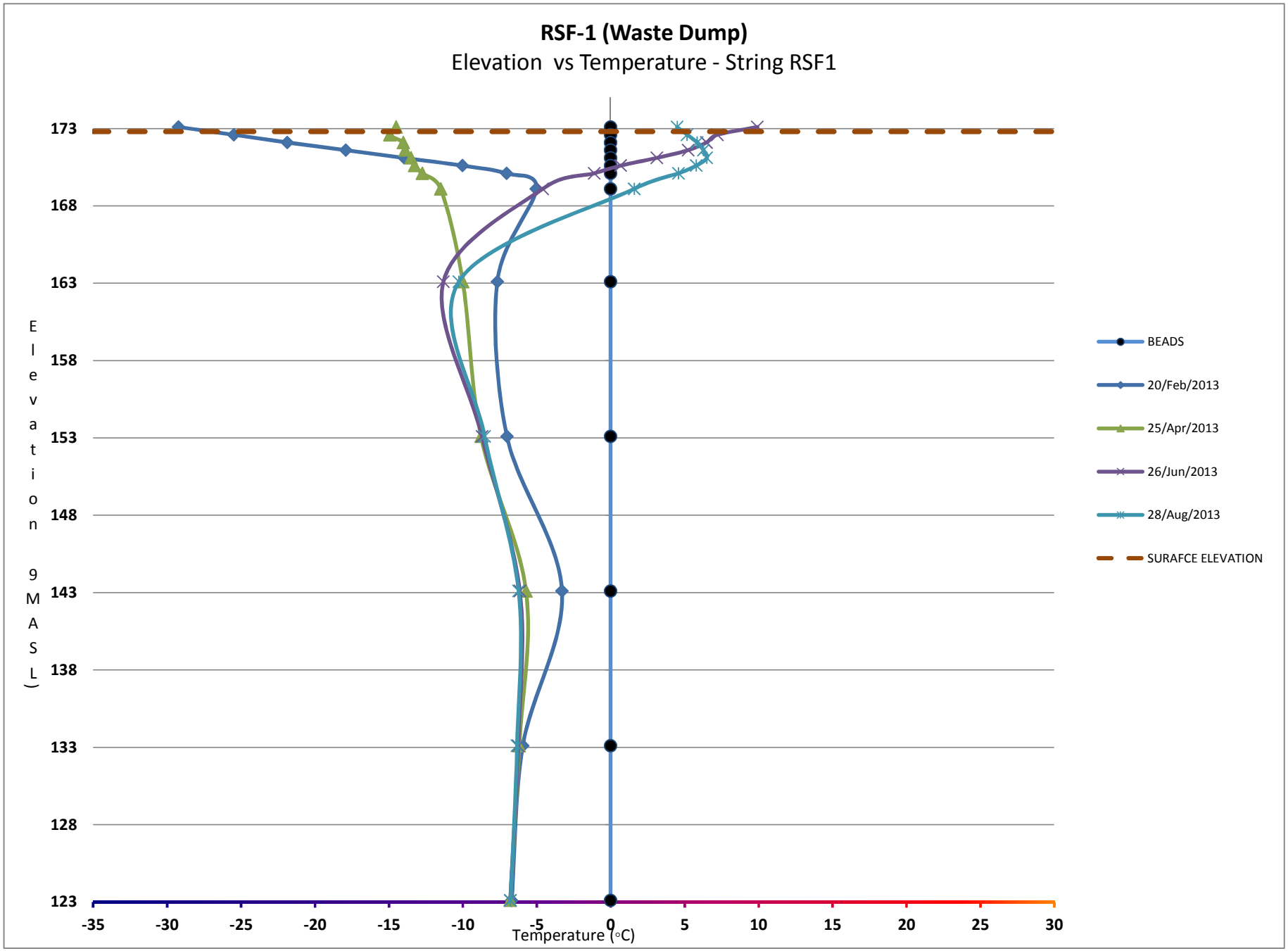
Waste Dump, RF1 and RF2

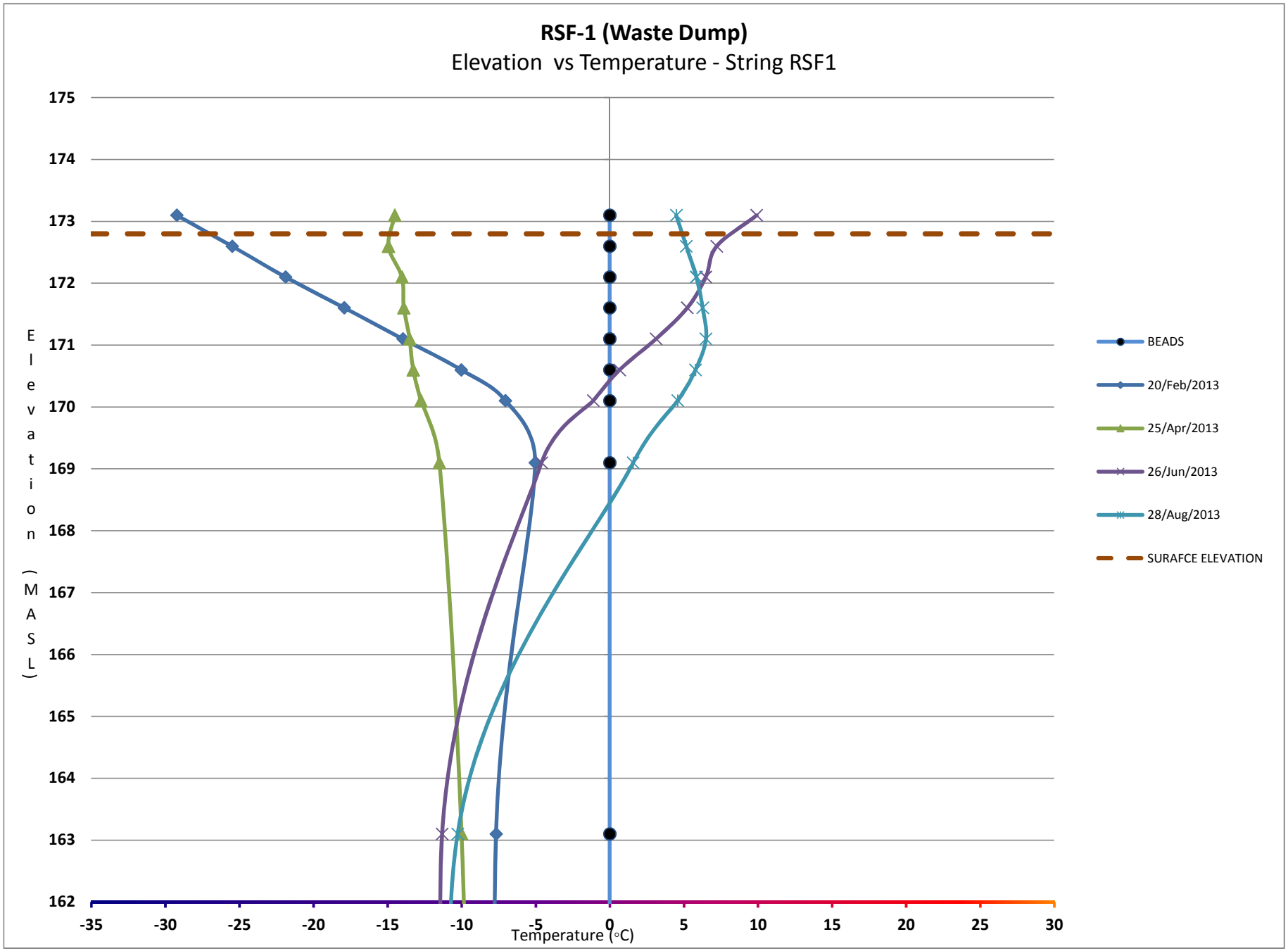

RF1 - String # 121-1 - Elev. vs Temp
Elevation (MLS)
136
134
132
130
128
126
124
122
120
118
116
114
112
110
108
106
104
102
100
98
96
94
92
90
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
Temperature (Celcius)
BEADS
22-Feb-12
25-Apr-12
20-Jun-12
22-Aug-12
26-Oct-12
27-Dec-12
27-Feb-13
25-Apr-13
26-Jun-13
28-Aug-13


RF1 - String # 73-6 - Elev. vs Temp
Elevation (MLS)
149
148
147
146
145
144
143
142
141
140
139
138
137
136
135
134
133
-20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13
Temperature (Celcius)
BEADS
24-Feb-12
25-Apr-12
20-Jun-12
22-Aug-12
26-Oct-12
27-Dec-12
27-Feb-13
25-Apr-13
26-Jun-13
28-Aug-13

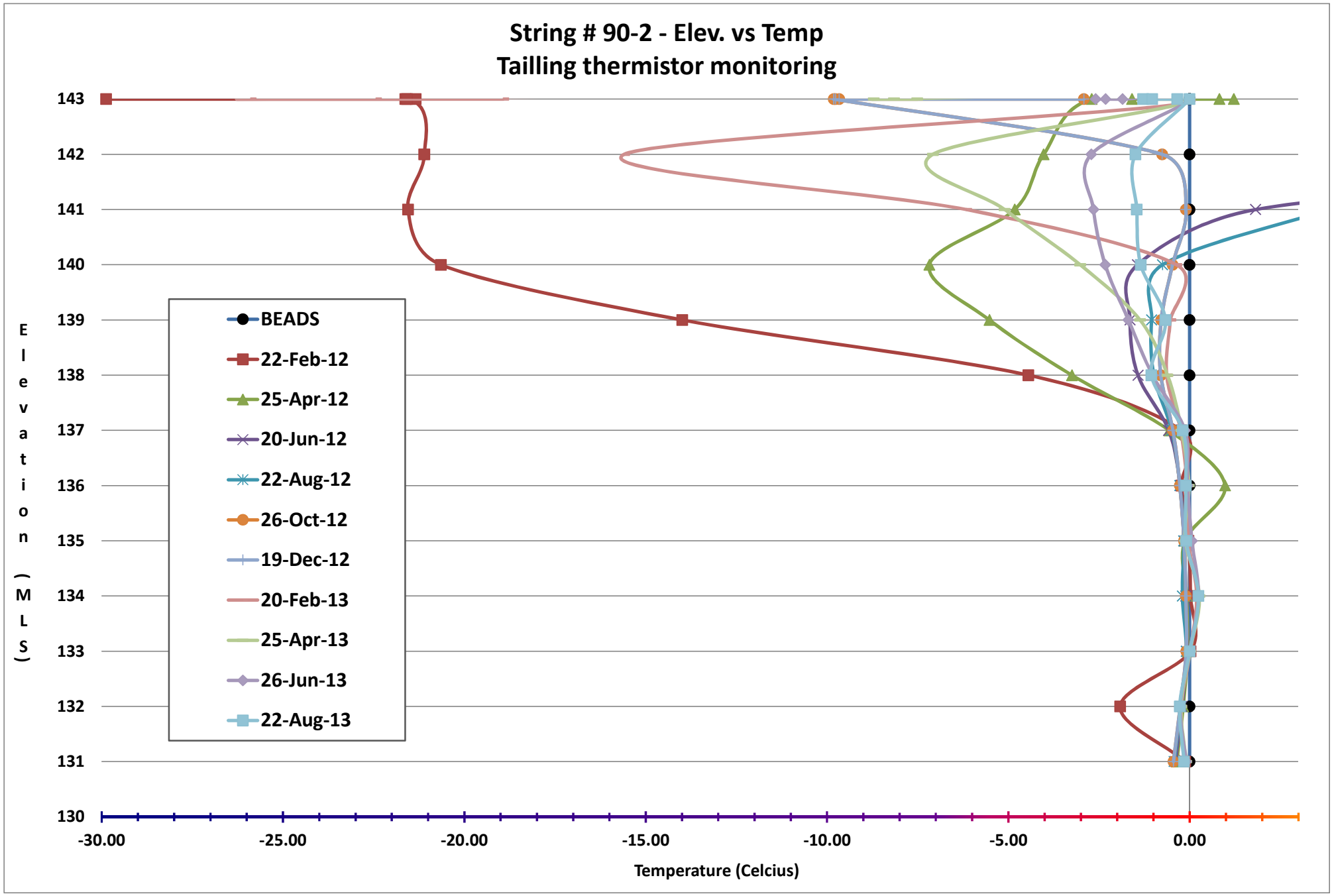

RF1 - String # RF1-3 - Elev. vs Temp
149
148
147
146
145
144
Elevation (MLS)
-20
-18
-16
-14
-12
-10
-8
-6
-4
-2
0
2
4
6
8
10
12
14
16
18
20
Temperature (Celcius)
BEADS
25/Apr/2013
26/Jun/2013
28/Aug/2013


RF2 - String # 122-1 - Elev. vs Temp
Elevation (MLS)
138
136
134
132
130
128
126
124
122
120
118
116
114
112
110
108
106
104
102
100
98
96
94
92
90
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
Temperature (Celcius)
BEADS
22-Feb-12
25-Apr-12
20-Jun-12
22-Aug-12
26-Oct-12
02-Dec-12
26-Jun-13
28-Aug-13

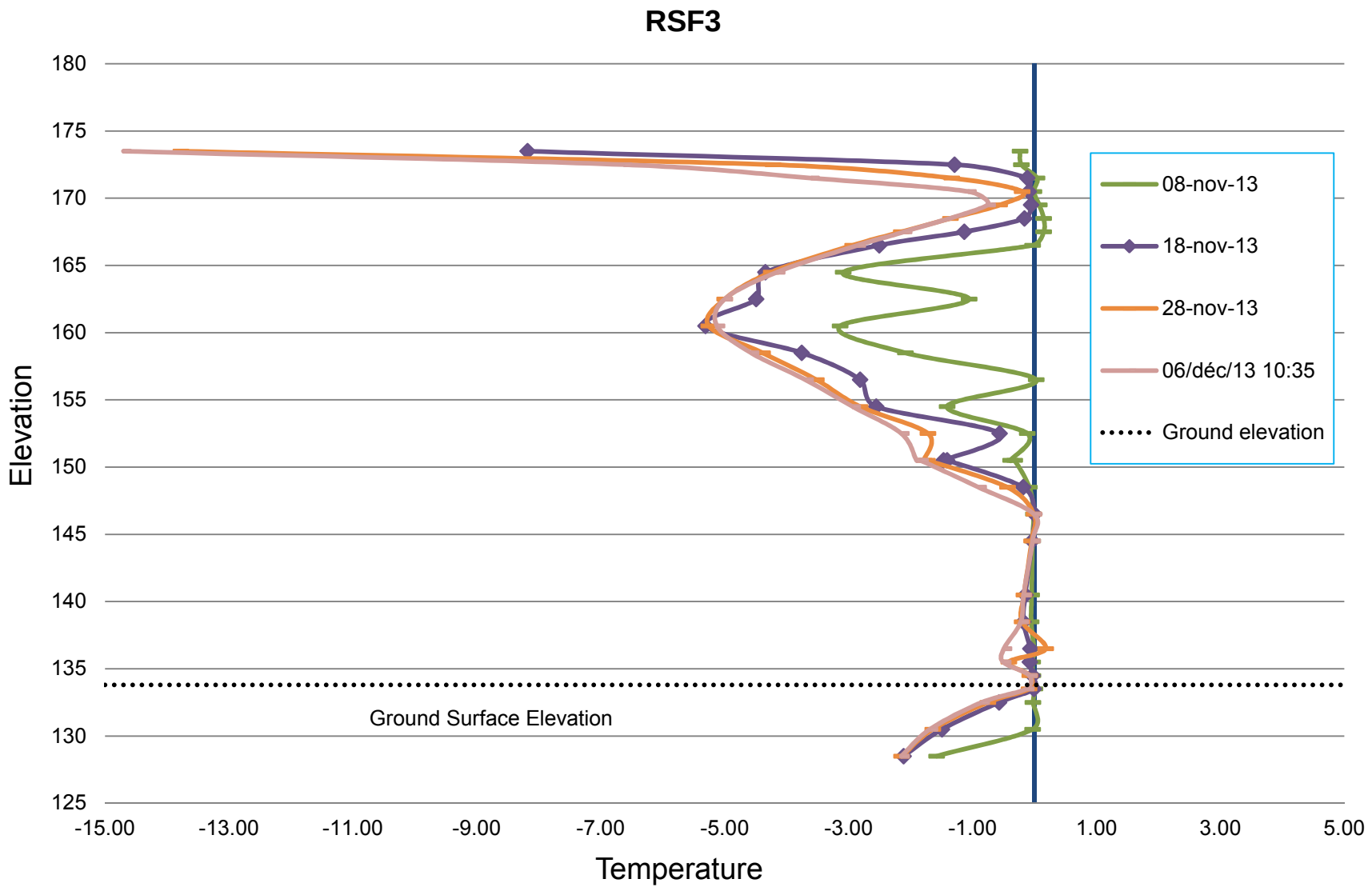

RSF-1 (Waste Dump)
Elevation vs Temperature - String RSF1
Elevation (m ASL)
173
168
163
158
153
148
143
138
133
128
123
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Temperature (◦C)
BEADS
20/Feb/2013
25/Apr/2013
26/Jun/2013
28/Aug/2013
SURAFCE ELEVATION


RSF-1 (Waste Dump)
Elevation vs Temperature - String RSF1
Elevation (MASL)
175
174
173
172
171
170
169
168
167
166
165
164
163
162
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Temperature (◦C)
BEADS
20/Feb/2013
25/Apr/2013
26/Jun/2013
28/Aug/2013
SURAFCE ELEVATION

Tailings


String # 90-2 - Elev. vs Temp
Tailling thermistor monitoring
143
142
141
140
139
138
137
136
135
134
133
132
131
130
Elevation (MLS)
BEADS
22-Feb-12
25-Apr-12
20-Jun-12
22-Aug-12
26-Oct-12
19-Dec-12
20-Feb-13
25-Apr-13
26-Jun-13
22-Aug-13
-30.00
-25.00
-20.00
-15.00
-10.00
-5.00
0.00
Temperature (Celcius)

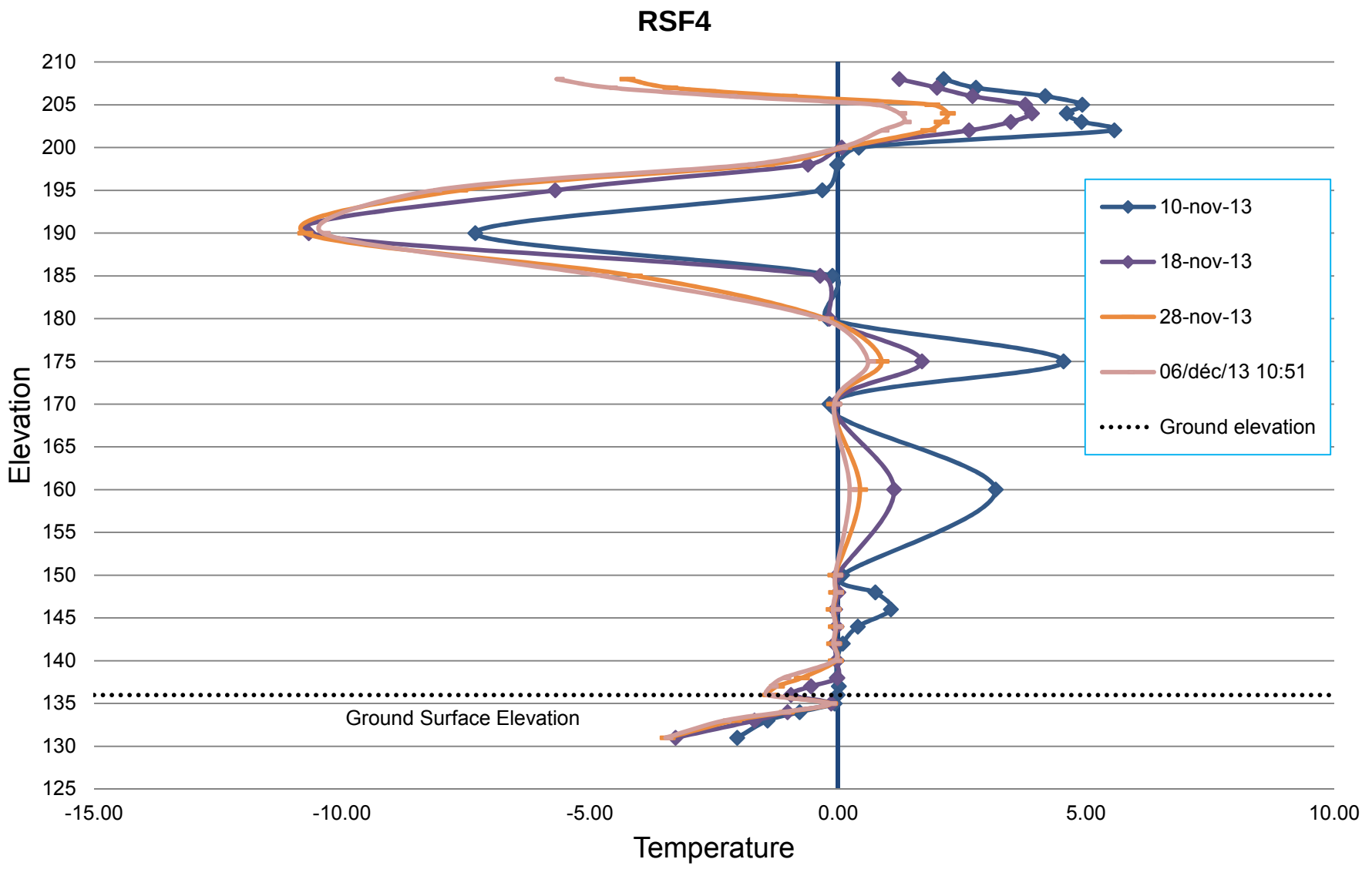
Portage Rock Storage Facilitie Newly Installed Thermistor



Golder Associés	Date : December 2013 Project : 13-1221-0115	Figure and data provided by AEM	**FIGURE C2-A**

N:\Actif\2013\1221\13-1221-0115 AEM- RSF Seepage Report - Meadowbank\5 Préparation livrables\Rev A\Appendix C - TSF and RSF Thermistor Data\Appendix C2 - New RSF Thermistor(b).xlsx

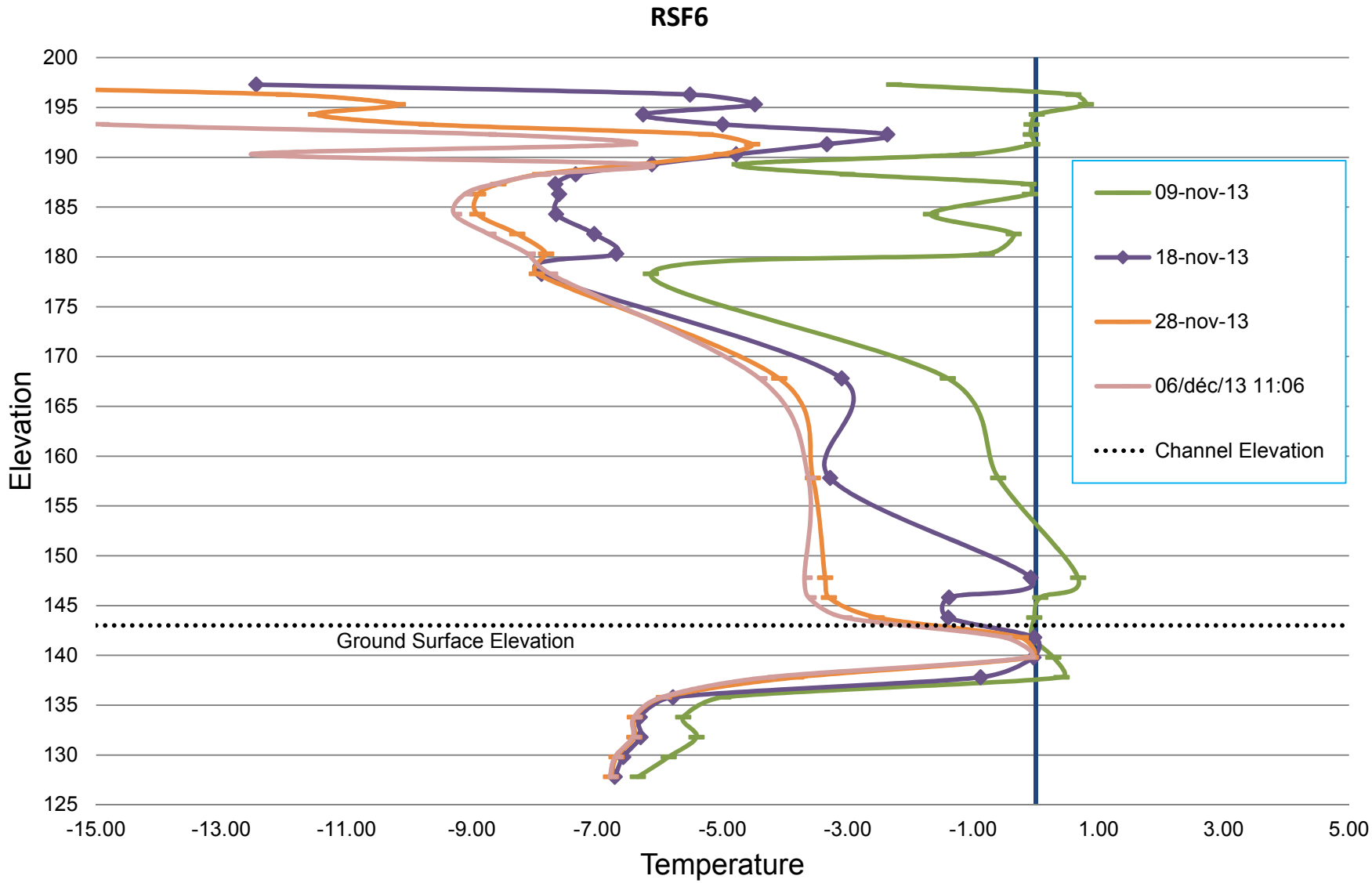
Portage Rock Storage Facilitie Newly Installed Thermistor



Golder Associés	Date : December 2013 Project : 13-1221-0115	Figure and data provided by AEM	**FIGURE C2-B**

N:\Actif\2013\1221\13-1221-0115 AEM- RSF Seepage Report - Meadowbank\5 Préparation livrables\Rev A\Appendix C - TSF and RSF Thermistor Data\Appendix C2 - New RSF Thermistor(b).xlsx

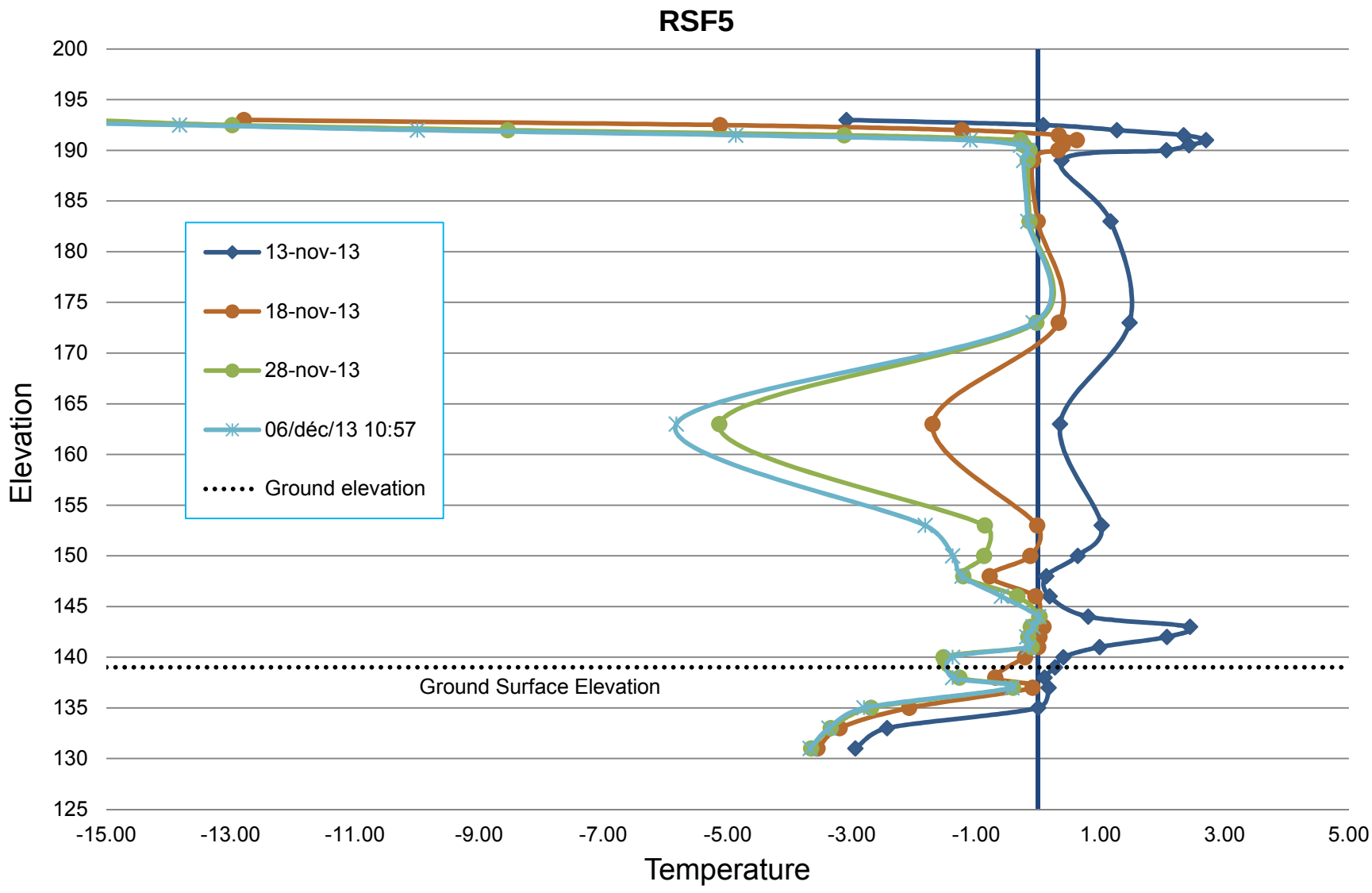
Portage Rock Storage Facilitie Newly Installed Thermistor



Golder Associés	Date : December 2013 Project : 13-1221-0115	Figure and data provided by AEM	FIGURE C2-D

N:\Actif\2013\1221\13-1221-0115 AEM- RSF Seepage Report - Meadowbank\5 Préparation livrables\Rev A\Appendix C - TSF and RSF Thermistor Data\Appendix C2 - New RSF Thermistor(b).xlsx

Portage Rock Storage Facilitie Newly Installed Thermistor



Golder Associés	Date : Project :	December 2013 13-1221-0115	Figure and data provided by AEM

FIGURE C2-C

N:\Actif\2013\1221\13-1221-0115 AEM- RSF Seepage Report - Meadowbank\5 Préparation livrables\Rev A\Appendix C - TSF and RSF Thermistor Data\Appendix C2 - New RSF Thermistor(b).xlsx

APPENDIX D

Construction Summary Report Rock Storage Facility - Interim Till Plug

CONSTRUCTION SUMMARY REPORT
ROCK STORAGE FACILITY – INTERIM TILL PLUG

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT

OCTOBER 30TH, 2013

EXECUTIVE SUMMARY

The construction of the Interim till plug at Meadowbank was conducted from August 26th 2013 and September 1st 2013. The till plug is located on the upstream side of the access road to the North Cell Ditches, between the Waste Rock Storage Facility (RSF) and the NP2 lake. The till plug is designed and constructed as a zoned earth fill structure intended to block seepage coming from the RSF to go into NP2 lake and facilitate seepage collection on the upstream side.

Work carried out during construction of the till plug included excavation of soft sediment, till placement and water seepage control work. This construction report issued by AEM presents the general construction procedure.

As-Built data have been sent to the Tailings Storage Facility (TSF) designer for integration of the structure in the North Tailings Cell revised design.

DOCUMENT CONTROL

Document Version	Date	Revised Section	Revision
Draft	2013-09-30		
Final	2013-10-30		

CONSTRUCTION SUMMARY REPORT
ROCK STORAGE FACILITY – INTERIM TILL PLUG

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CONSTRUCTION SUMMARY REPORT
ROCK STORAGE FACILITY – INTERIM TILL PLUG

SECTION 1.0 - INTRODUCTION

The Portage Rockfill Storage Facility (RSF) at Meadowbank is located in the north portion of the main mine site, adjacent to the Tailing Storage Facilities (TSF). The Rockfill Roads (RF1 and RF2) along the west side of the RSF are part of the TSF North Cell. The North Cell Diversion Ditches (Diversion Ditches) are located around the North Cell to keep freshet surface drainage water from contacting the RSF and the TSF. The East ditch flows through Lake NP-2 and connects to Lake NP-1. Figure 1 presents the general arrangement of the TSF and RSF.

During an AANDC Water License inspection on July 29th and 30th 2013, it was observed that red colored seepage from the northwest side of the RSF was seeping through the road perimeter into Lake NP-2. Samples were taken by both the Inspector and AEM staff (split sample). Analysis results from this sampling were received by AEM on August 16th, 2013. The results received shown that the water collecting in the sump behind the waste dump and that seeped to NP-2 could originate from the supernatant tailing water.

To avoid further contamination of the Lake NP-2, design and construction of an interim till plug was undertaken by Agnico Eagle Mines (AEM). This construction was aimed to reduce the amount of seepage reported to NP-2 lake and to increase the pumping of the seep water contained within the sump. This construction is considered as a first step emergency action and further investigation will be undertaken to assess, prevent and control possible seepage from the TSF and RSF.

Following assessment of the situation, future permanent structures might be constructed if required. The interim plug structure might be incorporated to the permanent containment structure.

The construction work for the till plug was done by Fernand Gilbert Limited (SANA) under the supervision of AEM. The construction surveillance was done by AEM representatives. Survey of the work was completed by AEM.

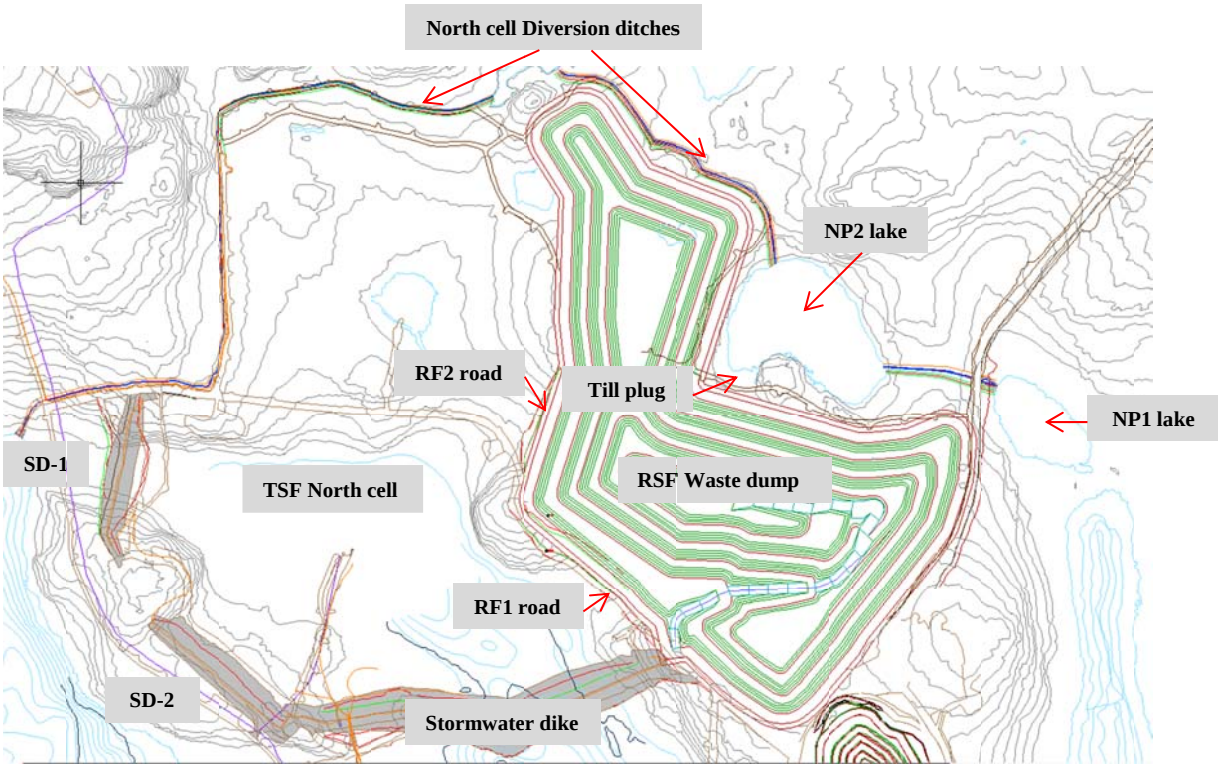


Figure 1: General arrangement of the TSF and RSF

SECTION 2.0 - SCOPE

This construction summary report presents the general construction procedure for the till plug conducted between August 26th 2013 and September 1st 2013 at Meadowbank. Work procedures and construction steps are summarized in this report. A review of the proposed design and technical specifications is presented, followed by the description of construction activities. The site inspection during construction, operation and monitoring are then presented.

SECTION 3.0 - DESIGN AND TECHNICAL SPECIFICATIONS

Design and Technical Specifications were elaborated by AEM Engineering prior to the start of the till plug construction and are resumed in the following section. Typical sections from the original design are available in Figure 2.

3.1 FILL MATERIALS AND PLACEMENT SPECIFICATIONS

The construction of the till plug includes three different zones of material. The requirements for each zone are described below.

3.1.1 Zone 1 – NPAG Rockfill

- The selected fill material consists of waste clean blasted rock from Portage/Goose pit composed of non-potentially acid generating (NPAG) rocks;
- The existing road along NP2 Lake and the RSF includes NPAG Rockfill material.

3.1.2 Zone 1A - Fine Rockfill (0-500 mm)

- The selected fill material consists of waste clean blasted rock (0-500 mm) from Portage/Goose Pit and is composed of NPAG rock;
- No topsoil, unsuitable organic soils, snow, ice are allowed in this zone;
- Lift thickness specified: 500 mm to 1 000 mm before compacting;
- Compaction achieved during placement with excavator bucket.

3.1.3 Zone 2 –Till

- Natural till is obtained from stripping of the Goose Pit or excavation in the Central Dike;
- Non-dispersive soil, including glacial till or clay with fines (sieve # 200 or <0.075 mm) content of minimum 30%, moisture requiring from -2% to +2% of OMC (Optimum Moisture Content).
- No topsoil, unsuitable organic soil, snow, ice, frozen lumps;
- Lift thickness specified: 300 mm to 500 mm before compacting;
- Compaction achieved during placement with excavator bucket.

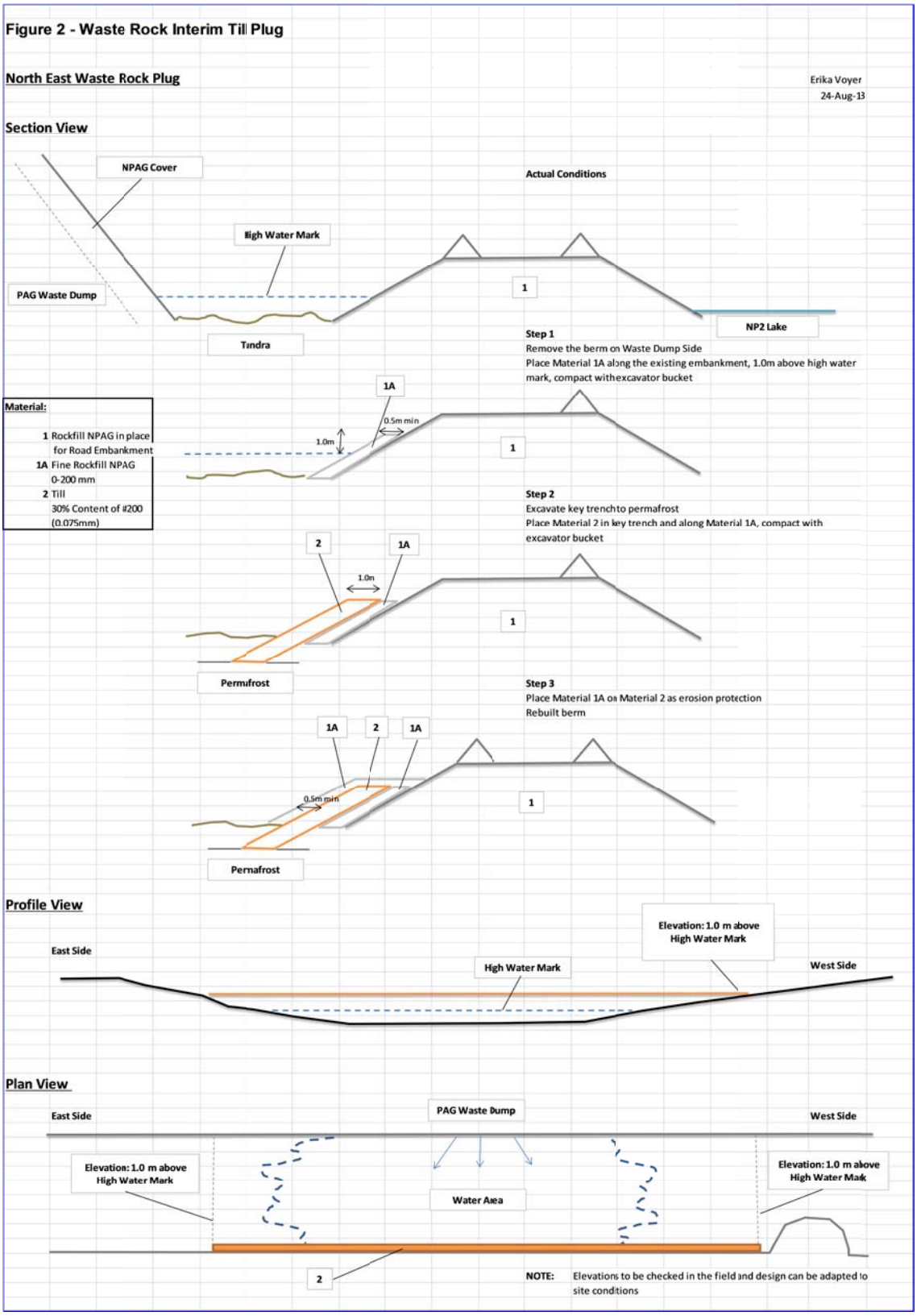


Figure 2: design drawings of the interim waste rock storage facility till plug to prevent seeping water from reaching NP-2 lake.

SECTION 4.0 - CONSTRUCTION ACTIVITIES AND DESCRIPTION OF THE WORK

The scope of work for the construction of the till plug conducted from August 26th 2013 to September 1st 2013 consists of activities listed in the following major work items:

- Sump dewatering and seepage control;
- Placement of the transition layer of Zone 1A "Fine Rockfill" along the road;
- Excavation of the trench below the road elevation;
- Zone 2 "Till" placement in the excavation and along the road;
- Zone 1A "Fine Rockfill" placement over the till as erosion protection.

These items are discussed in the following sections below.

Please note that in order to have the smallest section of the road exposed to seepage at any given time, all works was done in small section not wider than 3-4 meters. The steps followed were: preparation of the upstream slope, excavation of the foundation and till placement. Final cover for erosion protection placement over the till layer was done once before the end of the day. This sequence of events was also chosen to minimize the exposure time of the permafrost to the elements and prevent it to thaw. The concept of the design was to have a foundation composed of either bedrock or permafrost.

Selected photographs of the work progress taken throughout the construction program, showing various aspects of the construction work, are available in Appendix A.

As-built drawings are available in Appendix B.

4.1 SUMP DEWATERING AND SEEPAGE CONTROL

The first step prior to all works in the area is to pump the seepage water from the two main channels out of the till plug area. In order to control the water level through the entire construction period, a water truck from SANA was hauling (as needed) 14,000 litres of seepage water and disposed of it in the tailings pond over the Stormwater dike. A 3" diesel pump (model Godwin CD103) was placed within the 2 main deepest channels to keep them as empty as possible to allow the working area to be as dry as possible for the beginning of the excavation. The pump was moved as the work progresses.

Figure 3: view of the 2 main channels and the pumping station after the completion of the works.

4.2 TRANSITION LAYER OF ZONE 1A NPAG ROCKFILL ALONG THE ROAD

According to the design, a transition layer 1A needs to be put in place prior to the excavation and till placement along the entire upstream side of the road (on the RSF side). As the primary constituent material of the road was already fine NPAG soapstone, the 1A layer was replace by remodeling the in-situ material. The coarser material encountered was removed from the slope and the remaining finer soapstone was flattened and recompacted with the excavator bucket to create a 2 in 1 slope. The preparation of the road upstream slope began 1m above the high water marks left on the tundra after freshet, on both eastern and western abutments of the natural topographic low.

4.3 EXCAVATION OF THE TRENCH BELOW THE ROAD

Excavation of the unfrozen deleterious material was realized with a CAT 345 excavator. The excavation depth was adapted according to the material encountered. Unfrozen tundra, soft till and/or sediments were removed until refusal either on frozen till or bedrock. The foundation exposed was then cleaned and approved by AEM representative before further works performed. The excavation depth over the entire length of the road was ranging from 0.5 to 2.5 m deep (averaging around 1.3m). The deepest portions that had been excavated were the 2 main seepage channels and the shallowest were the eastern and western abutments that were directly over bedrock. As suggested by the Environment department, the excavation debris was put in front of the trench to act as a first barrier against any extraordinary event that might happen in the

area. During the excavation, most of the water flooding the trench was flowing from the actual road structure itself and not from the tundra.

4.4 ZONE 2 TILL PLACEMENT IN THE EXCAVATION AND ALONG THE ROAD

Once a zone of 4-5m wide was excavated and the foundation exposed and approved by the AEM representative, a till layer of at least 500mm was placed in the excavation and compacted with the shovel bucket. The selected till was chosen to meet the specifications presented in section 3.1.3. The till was coming from a stock pile that was built in 2012 for Central dike construction, hauled with 50T trucks and dumped in the slope where it was pick up and spread with the excavator. Prior to any till placement, all the material coarser than 150mm was automatically discarded by the operator.

4.5 ZONE 1A FINE ROCKFILL PLACEMENT OVER THE TILL AS EROSION PROTECTION

Once the till layer was completed, a protective layer of fine filter has to be put in place to prevent any erosion of the layer. The selected material was fine soapstone that was hauled with 50T trucks from SANA. The rock was coming from Goose pit and dumped over the till blanket to be spread, placed and compacted by the excavator bucket. Every boulders or rocks over 500mm was discarded by the operator. The thickness of the protective layer was at least 500mm and has been adapted to the topography of the excavation.

SECTION 5.0 - QC CONTINUITY TESTING AND RESULTS

5.1 SITE INSPECTION AND PROCEDURE REVIEW

AEM representatives routinely conducted visual observation of work procedure during the construction. Review of the work procedure was done on a daily basis and corrections were made if needed. Daily survey was conducted by AEM representatives for daily progress and to ensure that limits and grades were followed correctly during the construction. Photographs of the work progress were taken throughout the construction program recorded. Daily report for each shift work were issued and filed by AEM representatives. The foundation of the trench was also assessed, approved and surveyed by the AEM representative prior to all material placements but no report was filed on this activity.

SECTION 6.0 - OPERATION AND MONITORING

Since the completion of the works, the water level is closely monitored by the both Environment and Engineering departments. A staff gauge has been placed at the seepage location to determine and visually quantify the water level increases. A visual daily inspection of the area is done after to ensure we keep the level as low as possible. Whether the water became too high, the Mine department or SANA is advise and a water truck is sent to the area to pump the water and dispose of it in the tailings pond. This operation will be continued until weather permitting in fall 2013 and will be restarted as soon as freshet begins in 2014.

SECTION 7.0 - SUMMARY AND CLOSURE

The construction of the interim till plug was conducted between August 26th and September 1st 2013. Construction was completed in accordance with the requirements of the construction design elaborated by AEM.

During the course of the work, one (1) field change was made to the proposed design to optimize the construction activities.

A visual monitoring program consisting of frequent field visit by the Geotechnical team was put in place to insure the integrity of the structure. As part of their normal routine, a water sampling campaign, of both upstream and downstream sides of the structure, is conducted by the Environment department.

APPENDIX A
Selected Till plug Construction Photos

Figure 1: Excavation of the active layer until reaching the permafrost. Between 0.5 and 3.8 m were required to reach proper foundation.

Figure 2: excavation of the foundation to permafrost / bedrock). The width of the trench at the bottom was at least one bucket wide. Note the excavated material is discarded on the upstream side.

Figure 3: till placement with the excavator bucket and compaction.

Figure 4: preparation of the transition NPAG on the roadside. Once excavation completed, soapstone was flattened and compacted before any till placement. Note the coarser material discarded from the till (red arrow).

Figure 5: final till placement over an entire section after 1 day of work. The till is flattened and compacted before any rockfill placement.

Figure 6: Final placement of soapstone rockfill protective layer (1A) over the till, once compacted.

Figure 7: water accumulation along the side of the road before works begin. View of the eastern channel.

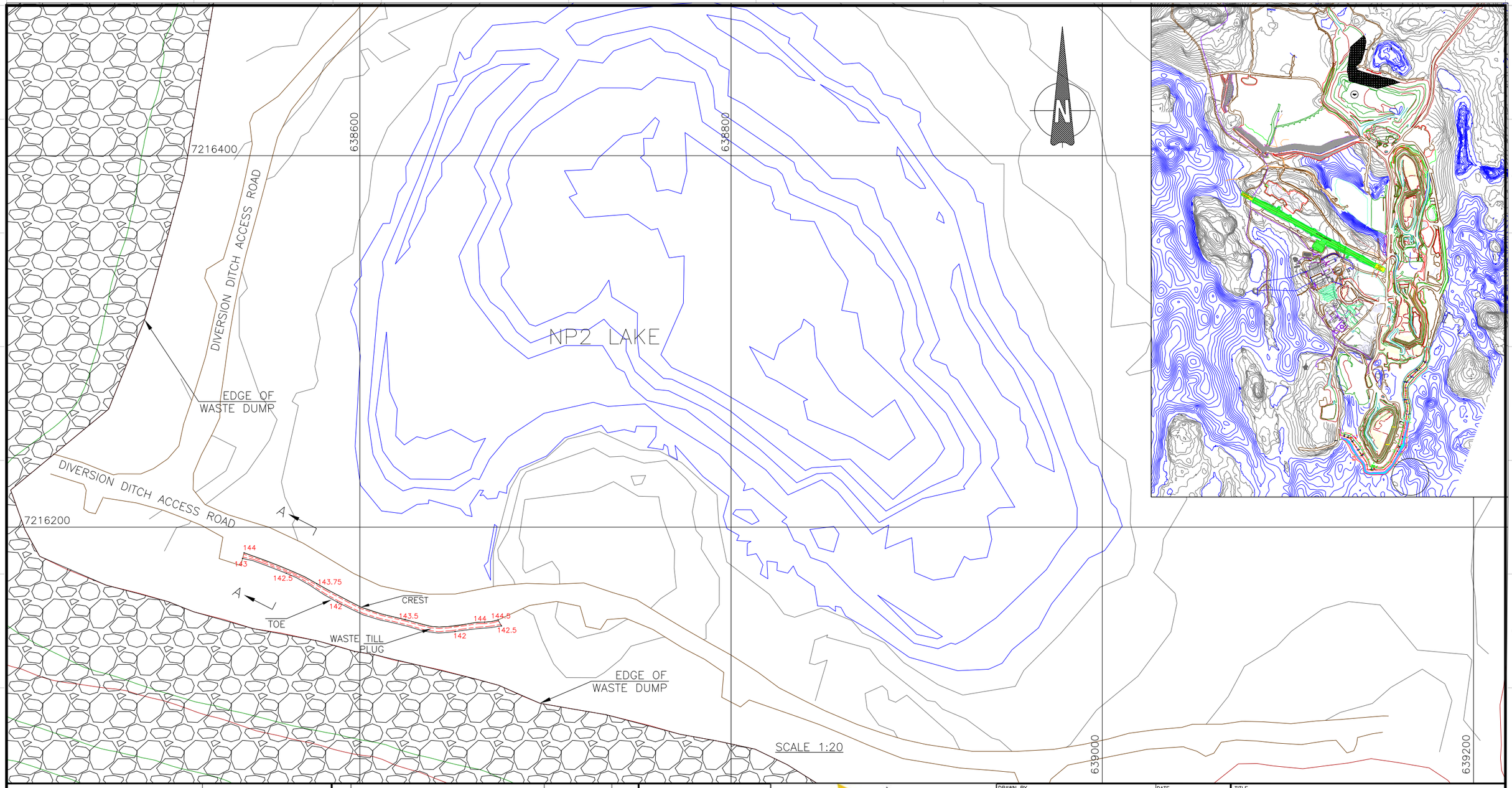
Figure 8: water accumulation along the side of the road before works begin. View of the western channel.

Figure 9: water control during the construction. A small 3" electric pump and a 3" diesel pumps were used.

Figure 10: photo of the final result of the entire till plug from West to East. The actual pumping station and the 2 active seepage channels are visible on the eastern abutment.

APPENDIX B
As-built drawings

FORMAT ANSI B – LANDSCAPE



TITLE	# DWG
REFERENCE DRAWINGS	

REV	DESCRIPTION	DATE	BY
REVISIONS			

AGNICO EAGLE
MEADOWBANK

DRAWN BY	T. DAHM	DATE 2013/10/29
CHECKED BY	P.GAGNON	2013/10/30
APPROVED BY		
PROJECT NO.		
DATE		

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TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION

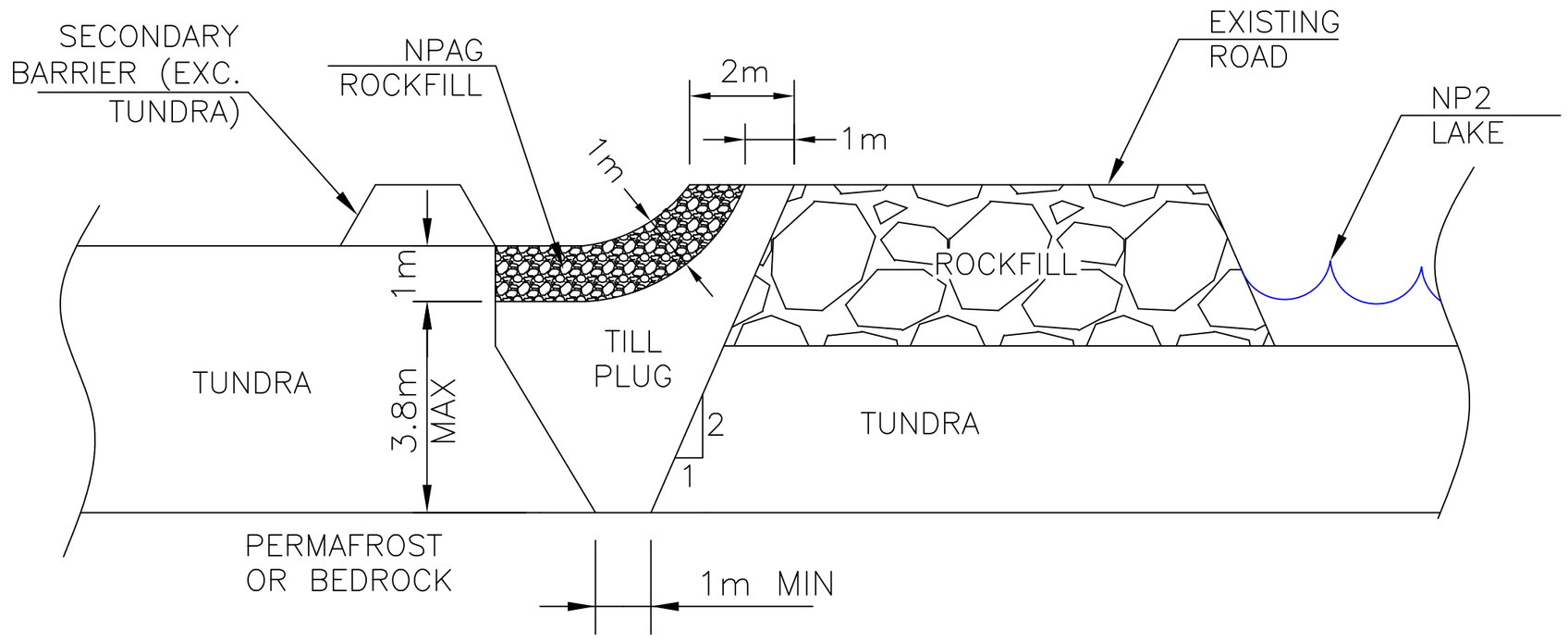
WASTE DUMP TEMPORARY TILL PLUG AS–BUILT

SCALE	FILE
AS NOTED	.DWG

DRAWING NO.	REVISION	SHEET
		1 / 1

X:\Waste Rock Plug\As–Built\Waste Till Plug.dwg, 30 Oct 2013

WASTE DUMP SIDE



MATERIAL:
TILL: 30% CONTENT OF #200 (0.075mm)
ROCKFILL: 0–150mm
FINE ROCKFILL NPAG

SECTION VIEW A–A

TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

DRAWN BY	T. DAHM	DATE 2013/10/29
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DATE		

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WASTE DUMP TEMPORARY TILL PLUG TYPICAL SECTION

SCALE	FILE	REVISION	SHEET
1:100	.DWG		1 / 1

DRAWING NO.

APPENDIX E

TSF Deposition Plan 2013-Update 2013-10-17

TAILINGS DEPOSITION PLAN UPDATE 2013-11-17

North Cell TSF model guideline

GUIDELINE

- Avoiding ice accumulation on the dike liner;
- Prevent tailings beach to reach the reclaim barge;
- Reclaim water pond maximum elevation of 148m;
- A minimum of two days per month of discharge by the by-pass of the booster pump is assumed for maintenance activities;
- Tailings beach to reach elevation 150m;
- Limit as much as possible deposition at the north end of the tailings pond during winter to reduce risk of freezing pipe;
- Raise beach on RF1 and RF2 to prevent tailings water from seeping out of the North Cell;
- Raise beaches on all external structures such as the roads around the tailings pond to prevent reclaim water from seeping towards the diversion ditches.

South Cell TSF model guideline

GUIDELINE

- Avoiding ice accumulation on the Central Dike liner;
- Prevent tailings beach to reach the reclaim barge;
- A minimum of two days per month of discharge by the by-pass of the booster pump is assumed for maintenance activities;
- Modelization of phase 1 of this cell, closure of this cell to be determined.

Model Parameters and assumptions

ASSUMPTIONS

- Deposition points will be moderately mobile in time (i.e. we can extend them on the tundra, and retract them as we deposit tailings throughout time);
- Ice formation in the reclaim pond during winter months follow the ice model table.
- Deposition points are added towards the end of life of the cell for closure purposes;

Ice Model	
Month	Ice thickness (m)
January	1.1
February	1.5
March	1.8
April	1.8
May	1.1
June	0
July	0
August	0
September	0
October	0.2
November	0.5
December	0.8

PARAMETERS

- The water balance used in this model assumes reclaim flow changes in function of season: summer 70 m^3/h fresh water (FW) & 380m^3/hr reclaim water (RW), and winter 90 m^3/h FW & 360 m^3/h RW;
- The model assumes a tailings dry density and a water balance that incorporates ice entrapment of 1.21t/m^3 for both the North and South Cell;
- Sub aerial tailings slope set at 0.5% for both North and South Cell
- Sub aqueous tailings slope set at 2.3% for the North cell (obtained from summer 2013 bathymetric analysis) and 4% for the South Cell (taken from the 2012 Golder Deposition plan of the North Cell) as this value seems to better represent the start of a new cell.

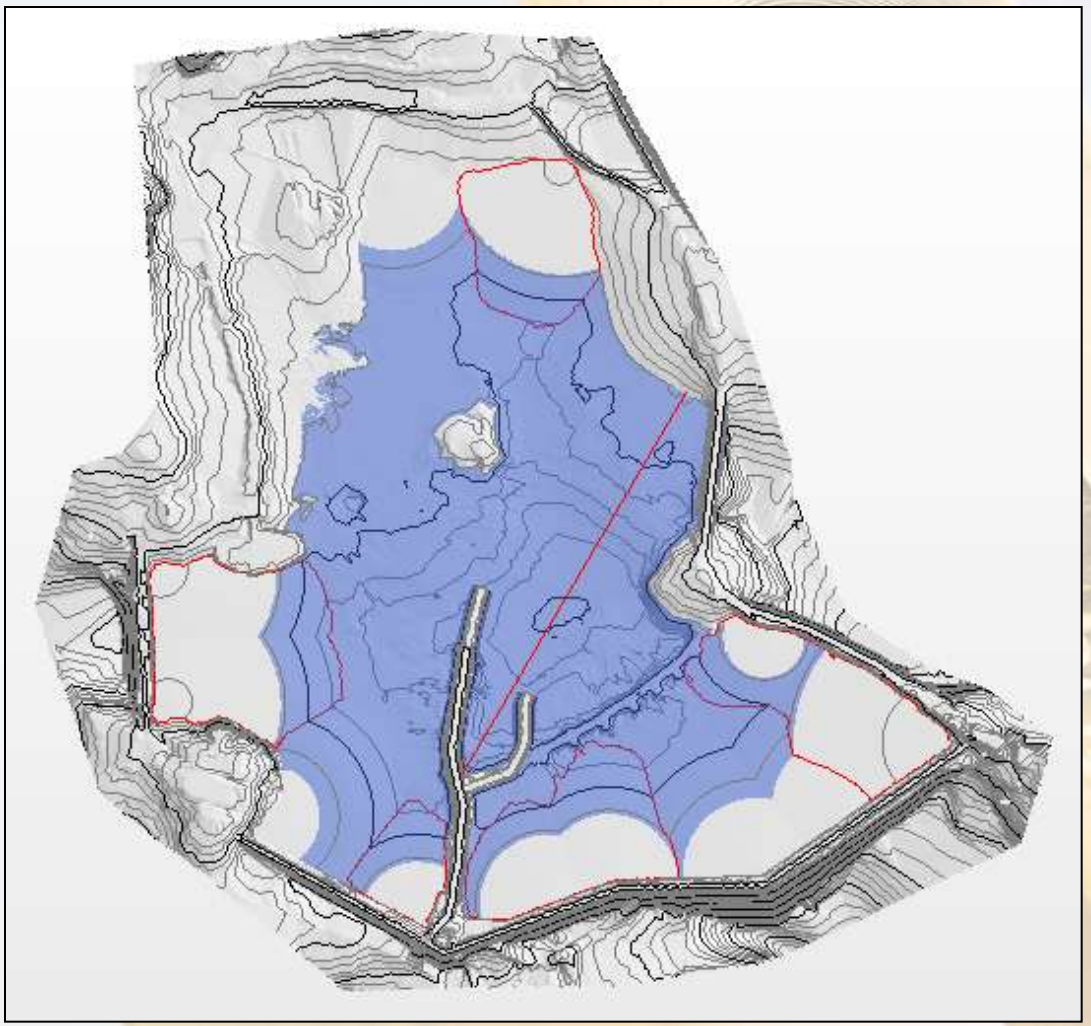
TSF deposition plan schedule

North and South Cell deposition phases

Period	Active Cell – Phase	Description
Current – September 2014	North Cell – Phase 1	- Bring the North Cell to the beginning of the winter 2014; the decreasing size and volume of the pond adversely affects the amount of free water due to ice formation, thus the North Cell cannot be closed off during the 2014/2015 winter.
October 2014 – June 2015	South Cell – Phase 1	- South Cell deposition during the winter months
July 2015 - September 2015	North Cell – Phase 2	- North Cell closure
September 2015 – End of mine life	South Cell - Phase 2	- South Cell deposition until end of mine life ***Still on-going; therefore will not be presented***

NORTH CELL DEPOSITION PLAN
PHASE 1

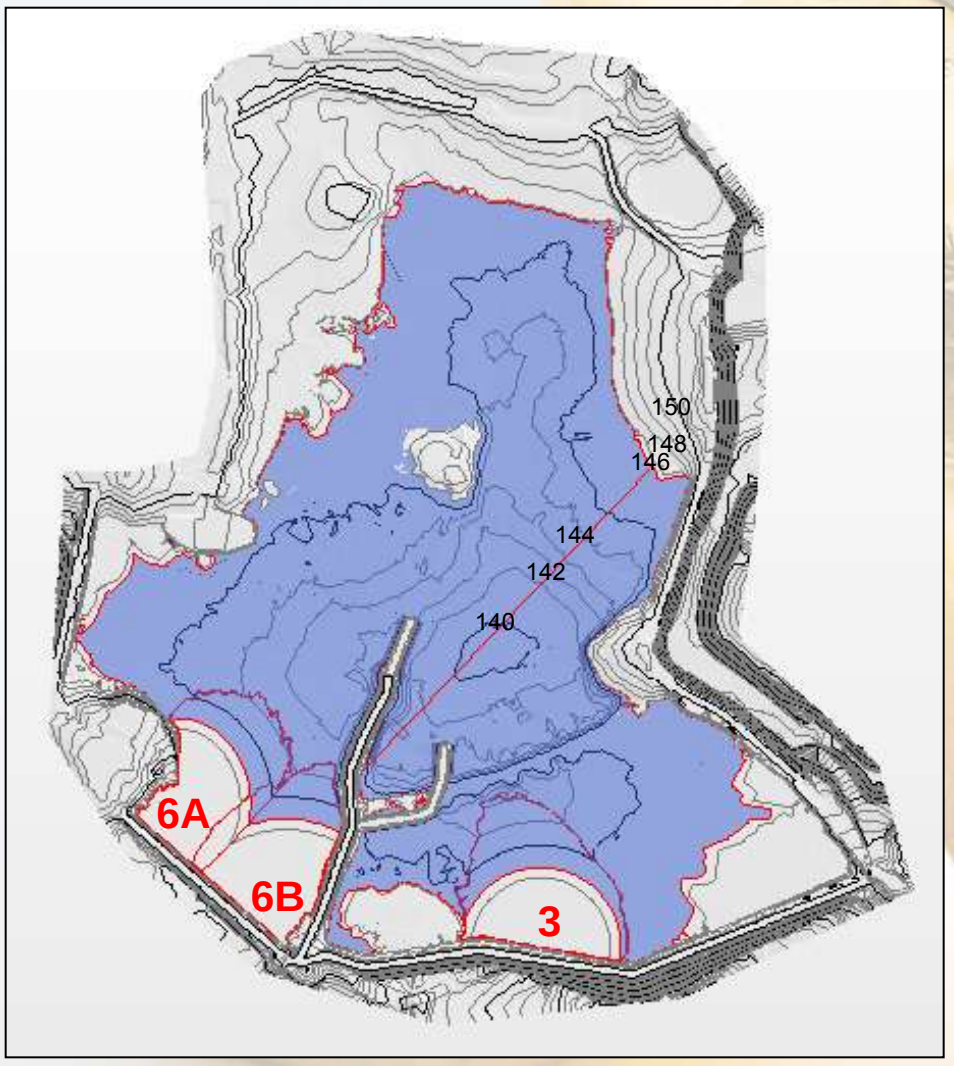
Section View Plot



A section view along the alignment shown on the diagram will be included for each month. This will show a section view plotted on an elevation graph to show the change in pond topography across the reclaim water barge area. Left limit of the chart represents the barge area and as you look to the right on the graph you are going towards deposition point 7 (North-eastern direction).

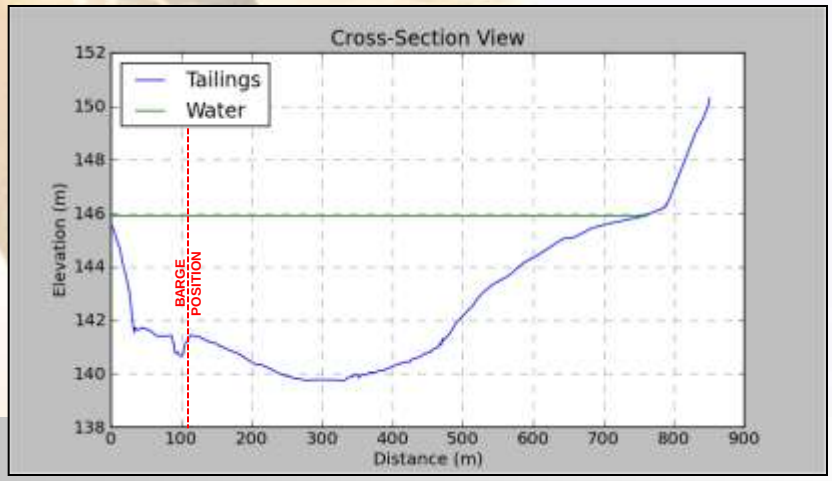
North Cell TSF deposition plan
From 09/16/2013 to 09/30/2013

Duration	Deposition Point	Tonnes
7	6B	76,120
5	3	60,725
3	6A	35,488



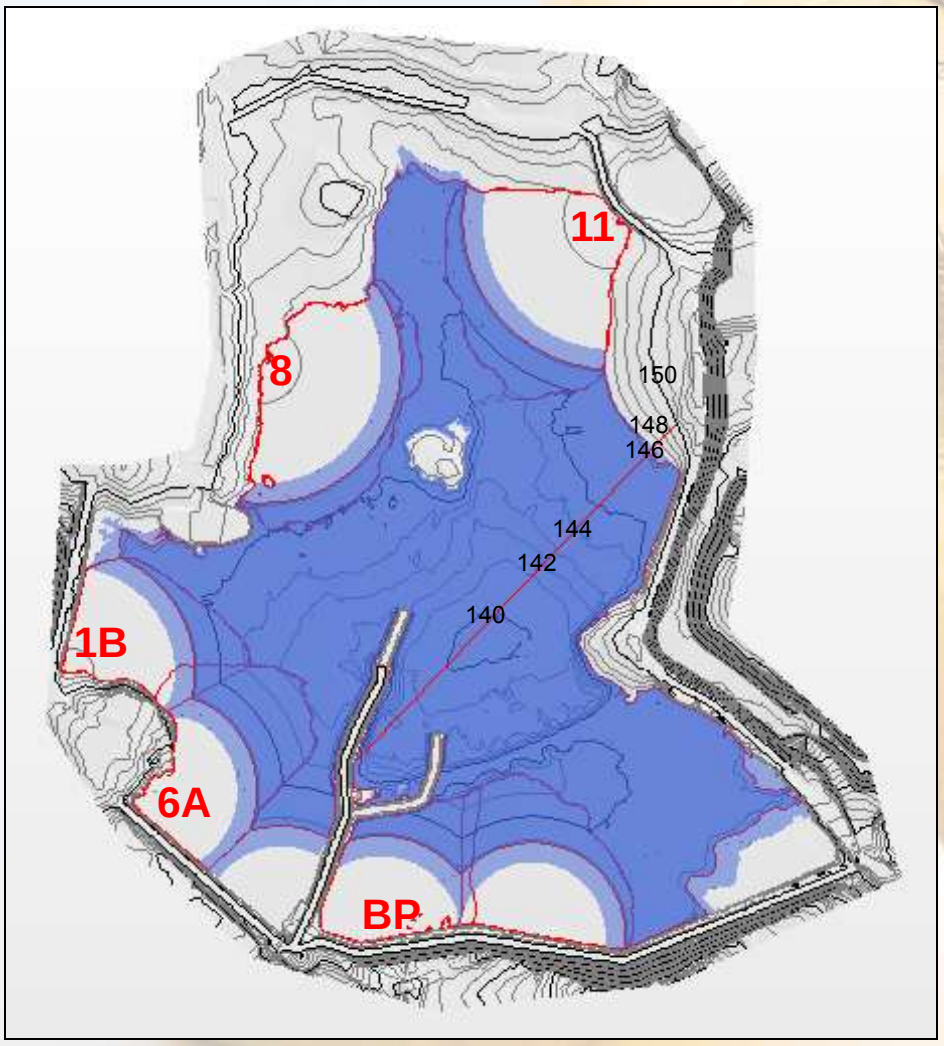
MODEL INPUT	
Water Balance Volume (m³)	1 455 036
Ice thickness (m)	0.00
Tonnes (t)	172 177

MODEL RESULTS	
Pond volume (m³)	1 416 508
Pond depth (m)	6.248
Pond elevation (m)	145.903
Min pond ele (m)	139.655
Ice thickness (m)	0
Unfrozen water elevation (m)	145.903
Ice volume (m³)	0
Ice ratio (%)	0
Transfer from South Cell (m³)	0



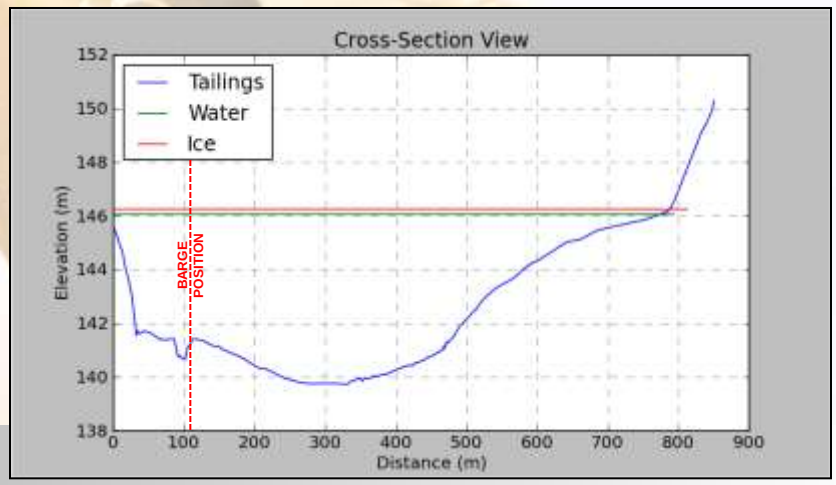
North Cell TSF deposition plan October 2013

Duration	Deposition Point	Tonnes
3	BP	43,009
3	6A	35,470
3	3	38,009
5	1B	56,733
12	11	145,711
5	8	66,857



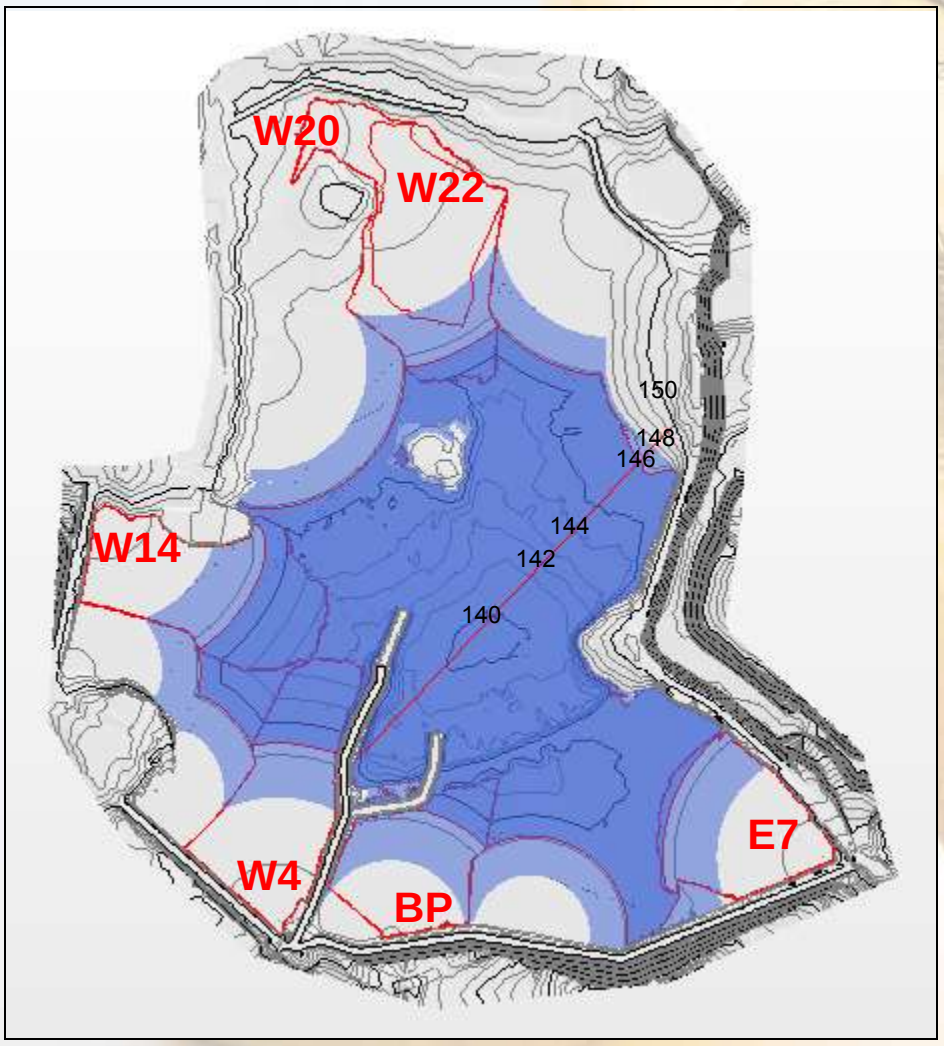
MODEL INPUT	
Water Balance Volume (m³)	1 503 962
Ice thickness (m)	0.20
Tonnes (t)	363,600

MODEL RESULTS	
Pond volume (m³)	1 362 552
Pond depth (m)	6.608
Pond elevation (m)	146.263
Min pond ele (m)	139.655
Ice thickness (m)	0.186
Unfrozen water elevation (m)	146.077
Ice volume (m³)	141 410
Ice ratio (%)	9%
Transfer from South Cell (m³)	140 000



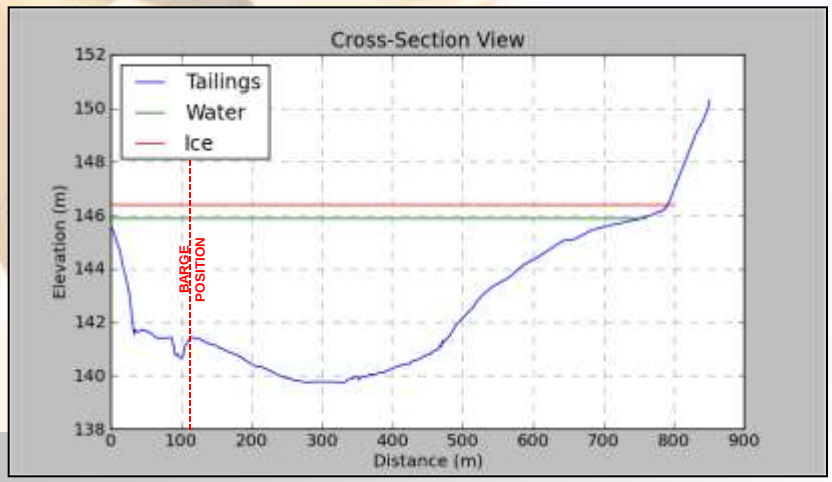
North Cell TSF deposition plan
November 2013

Duration	Deposition Point	Tonnes
2	BP	20,474
5	W22	51,004
5	W20	55,385
6	W14	71,786
6	W4	71,875
3	E7	27,937



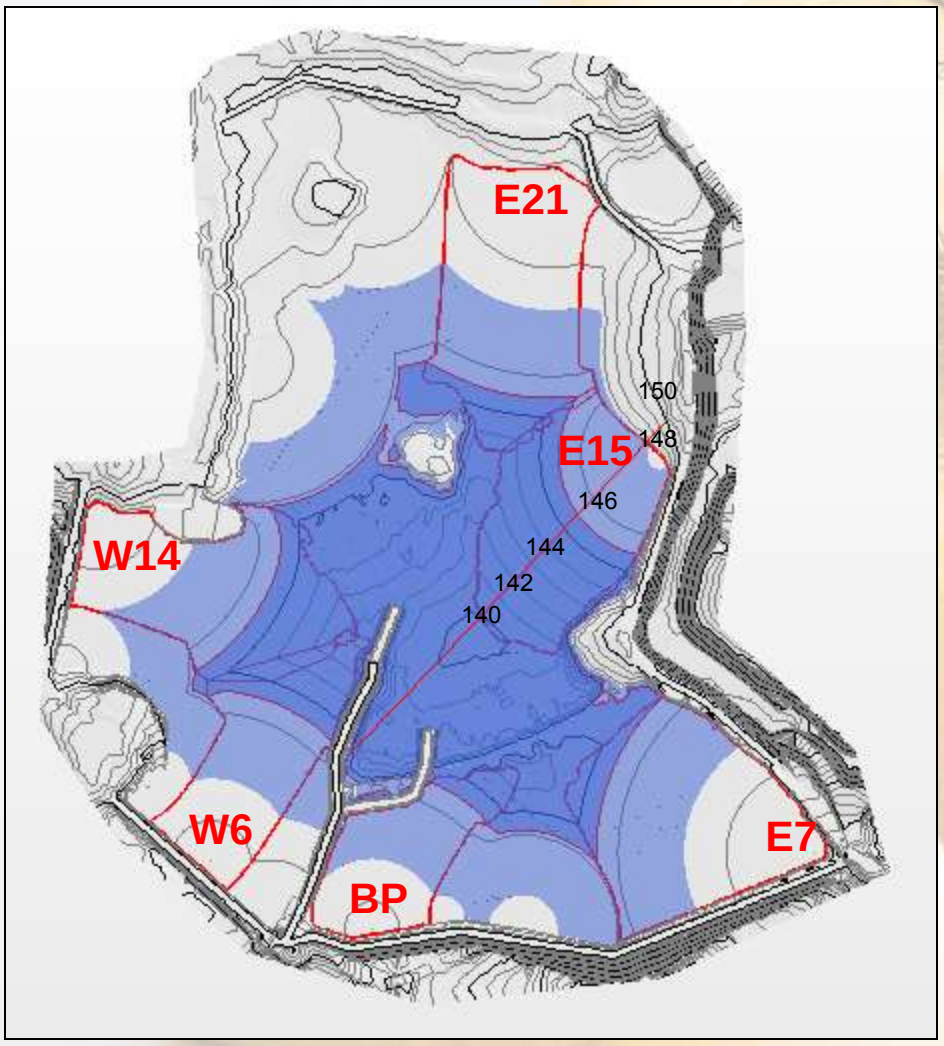
MODEL INPUT	
Water Balance Volume (m³)	1 443 996.00
Ice thickness (m)	0.50
Tonnes (t)	321 180

MODEL RESULTS	
Pond volume (m³)	1 122 802
Pond depth (m)	6.735
Pond elevation (m)	146.390
Min pond ele (m)	139.655
Ice thickness (m)	0.50
Unfrozen water elevation (m)	145.890
Ice volume (m³)	321 194
Ice ratio (%)	22%
Transfer to South Cell (m³)	0



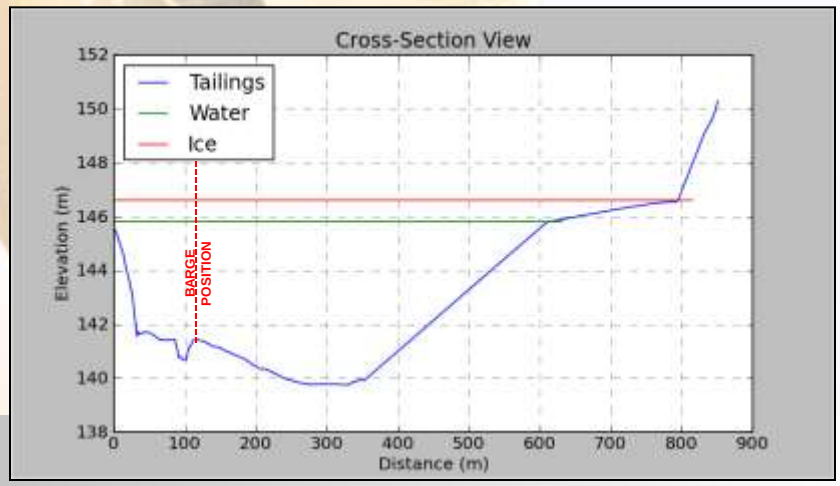
North Cell TSF deposition plan December 2013

Duration	Deposition Point	Tonnes
2	BP	23,445
5	E7	70,165
6	W18	70,259
6	W12	70,252
6	E21	71,365
4	E15	47,694



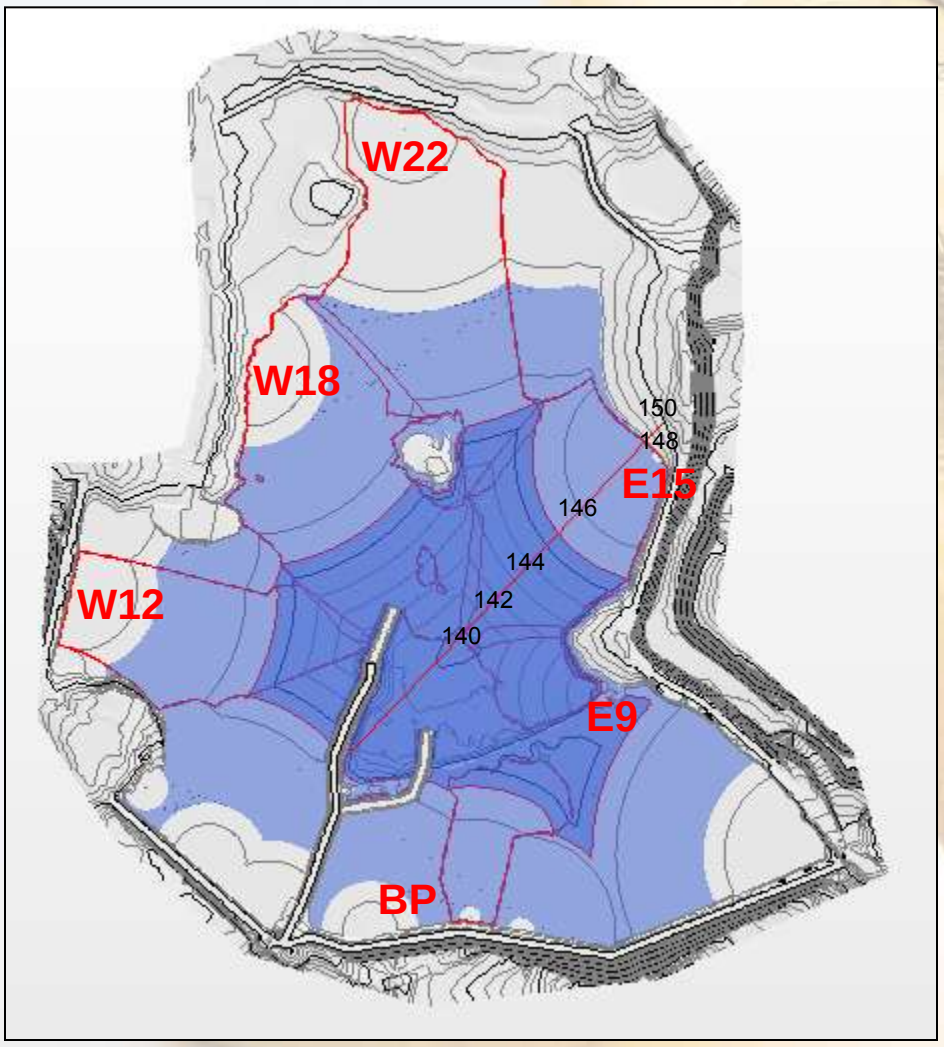
MODEL INPUT	
Water Balance Volume (m³)	1 372 715
Ice thickness (m)	1.10
Tonnes (t)	369,660

MODEL RESULTS	
Pond volume (m³)	887 636
Pond depth (m)	6.869
Pond elevation (m)	146.610
Min pond ele (m)	139.741
Ice thickness (m)	0.501
Unfrozen water elevation (m)	145.798
Ice volume (m³)	485 079
Ice ratio (%)	35%
Transfer to South Cell (m³)	0



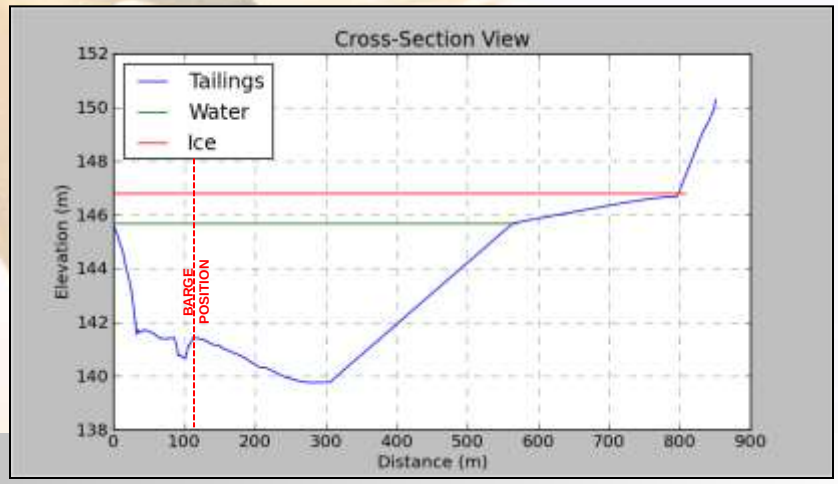
North Cell TSF deposition plan
January 2014

Duration	Deposition Point	Tonnes
2	BP	23,196
3	E9	34,873
8	W22	92,932
7	W18	81,366
4	W12	46,472
7	E15	81,419



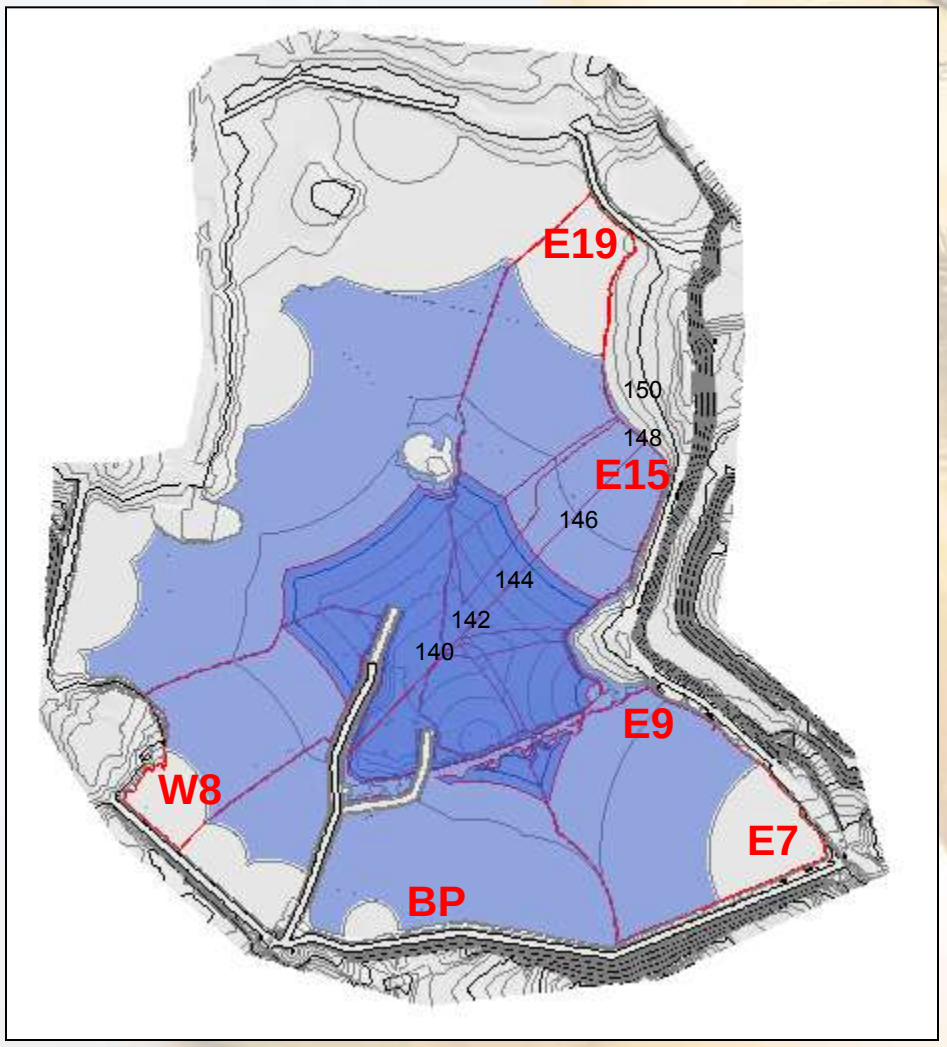
MODEL INPUT	
Water Balance Volume (m³)	1 300 648
Ice thickness (m)	1.10
Tonnes (t)	360,995

MODEL RESULTS	
Pond volume (m³)	669 758
Pond depth (m)	6.039
Pond elevation (m)	145.701
Min pond ele (m)	139.662
Ice thickness (m)	1.11
Unfrozen water elevation (m)	146.809
Ice volume (m³)	630 890
Ice ratio (%)	49%
Transfer to South Cell (m³)	0



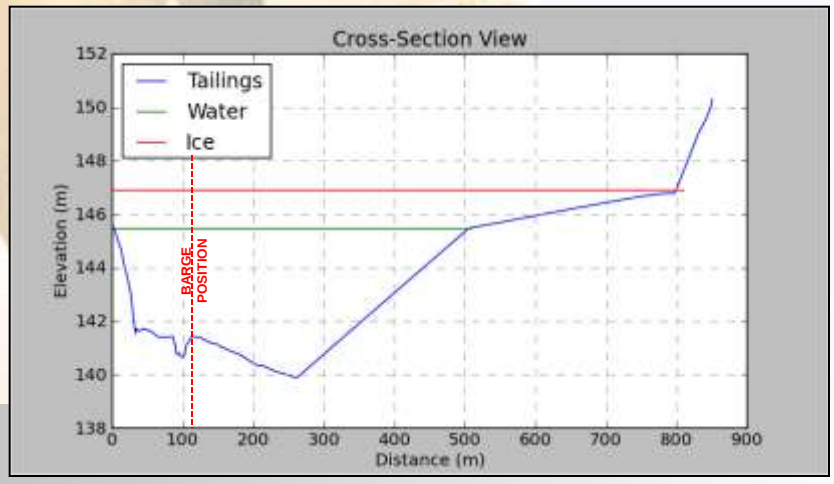
North Cell TSF deposition plan
February 2014

Duration	Deposition Point	Tonnes
2	BP	20,669
2	E9	20,665
4	E7	41,080
6	W8	62,027
8	E19	82,452
6	E15	62,077



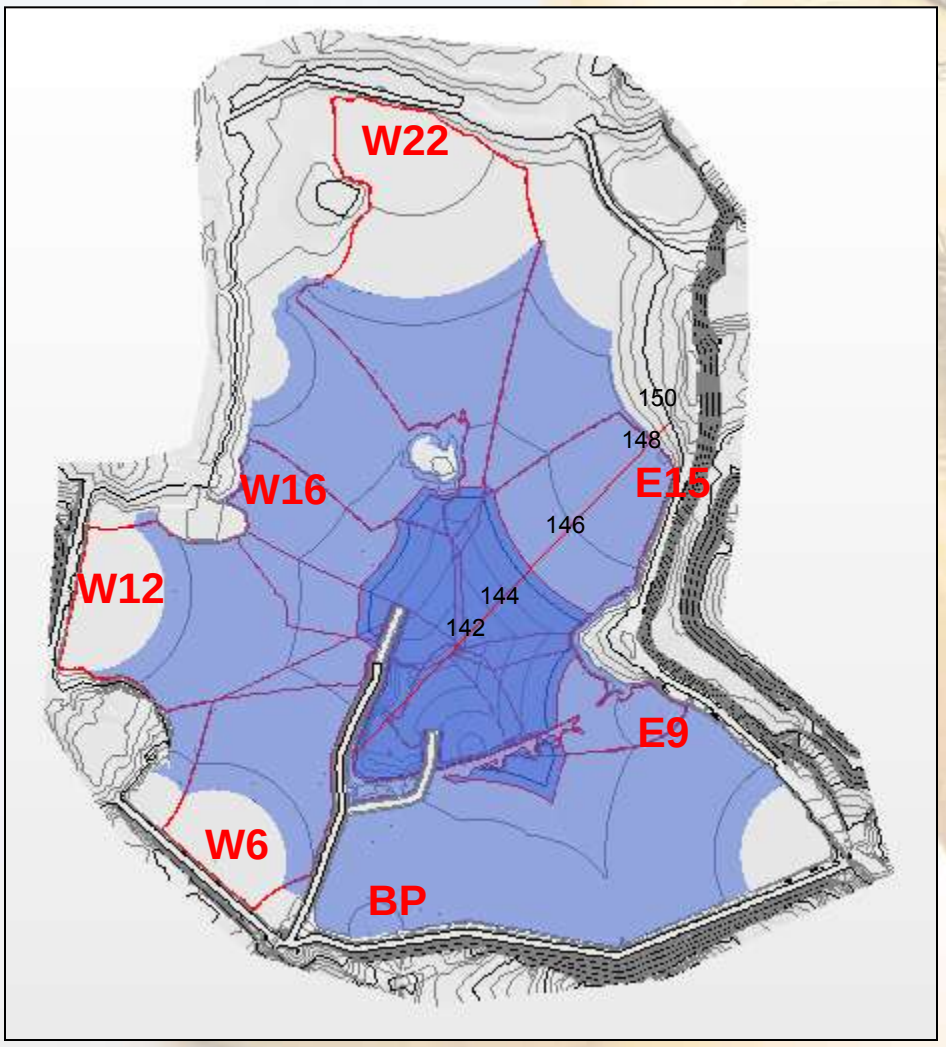
MODEL INPUT	
Water Balance Volume (m³)	1,185,974
Ice thickness (m)	1.50
Tonnes (t)	288,988

MODEL RESULTS	
Pond volume (m³)	459 343
Pond depth (m)	7.029
Pond elevation (m)	146.978
Min pond ele (m)	139.874
Ice thickness (m)	1.504
Unfrozen water elevation (m)	145.474
Ice volume (m³)	797 203
Ice ratio (%)	65%
Transfer to South Cell (m³)	0



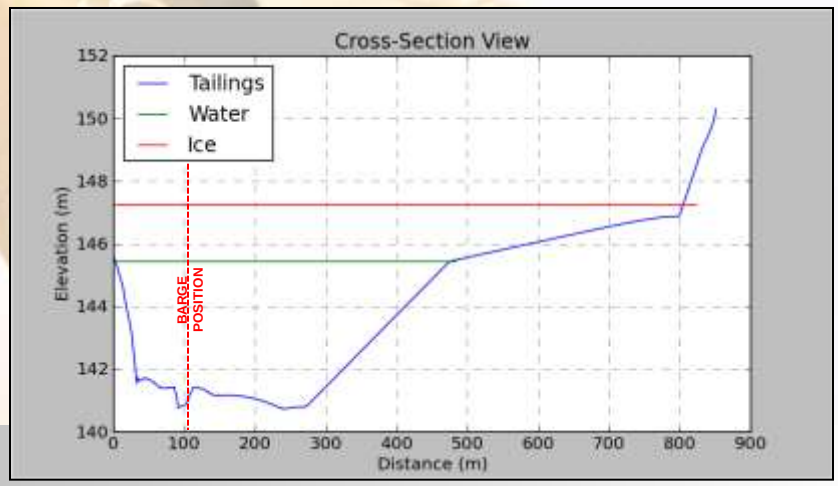
North Cell TSF deposition plan March 2014

Duration	Deposition Point	Tonnes
2	BP	20,662
5	W22	58,960
6	W16	70,926
6	W10	70,984
4	E15	47,335
4	E9	47,188
4	W6	47,771



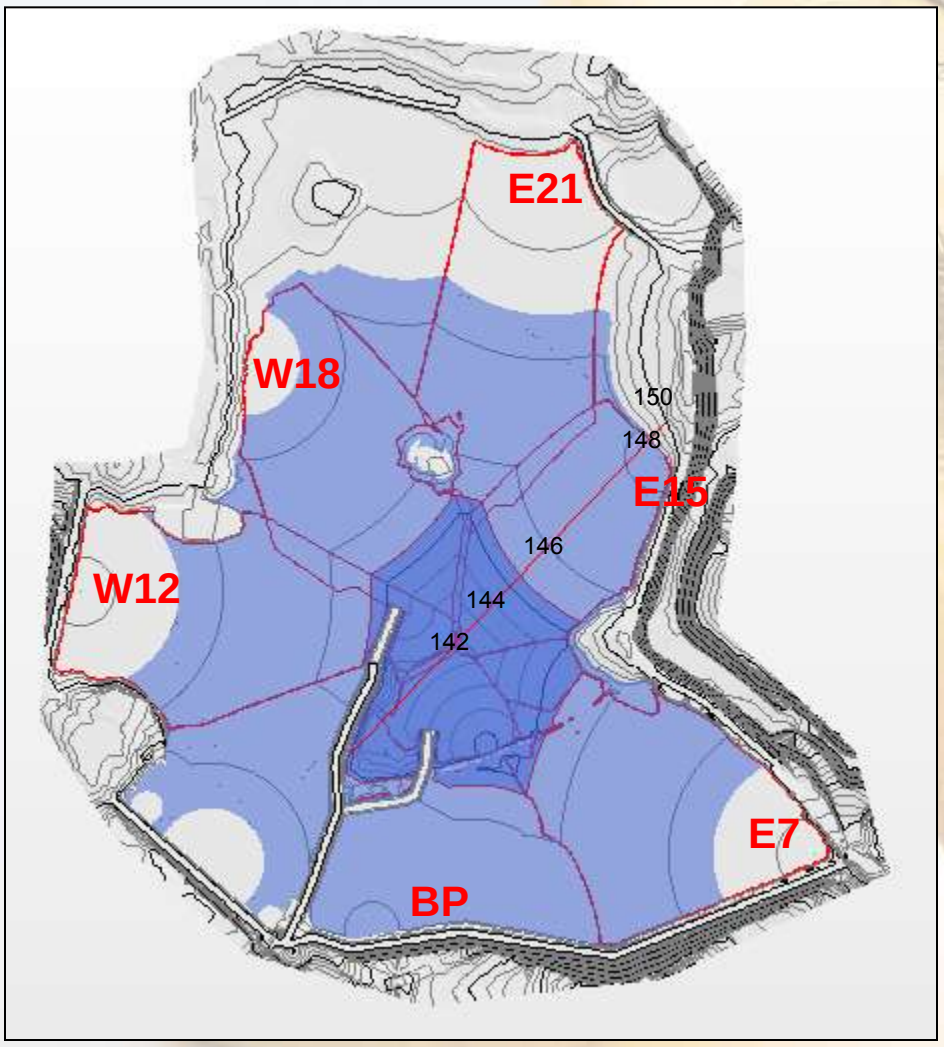
MODEL INPUT	
Water Balance Volume (m³)	1 163 247
Ice thickness (m)	1.80
Tonnes (t)	367,009

MODEL RESULTS	
Pond volume (m³)	309 900
Pond depth (m)	6.728
Pond elevation (m)	147.245
Min pond ele (m)	140.517
Ice thickness (m)	1.795
Unfrozen water elevation (m)	145.450
Ice volume (m³)	853 347
Ice ratio (%)	73%
Transfer to South Cell (m³)	0



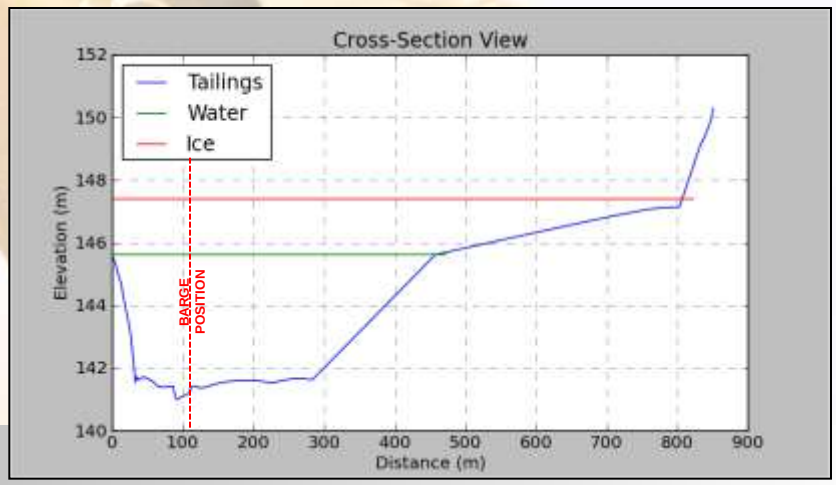
North Cell TSF deposition plan
April 2014

Duration	Deposition Point	Tonnes
2	BP	23 478
6	E7	70 435
6	W18	70 435
6	W8	70 435
6	E21	70 435
4	E15	46 956



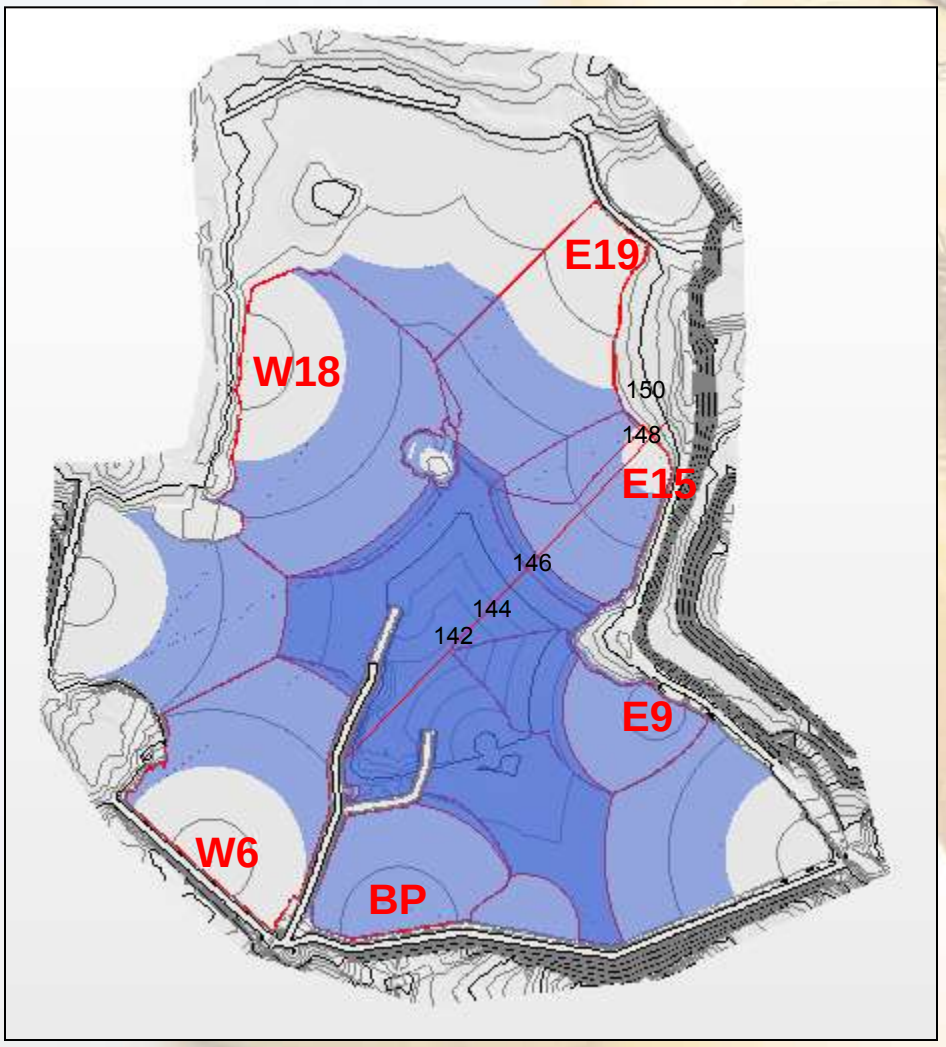
MODEL INPUT	
Water Balance Volume (m³)	1,054,214
Ice thickness (m)	1.80
Tonnes (t)	348,990

MODEL RESULTS	
Pond volume (m³)	260 298
Pond depth (m)	6.699
Pond elevation (m)	147.411
Min pond ele (m)	140.712
Ice thickness (m)	1.780
Unfrozen water elevation (m)	145.631
Ice volume (m³)	833 459
Ice ratio (%)	76%
Transfer to South Cell (m³)	0



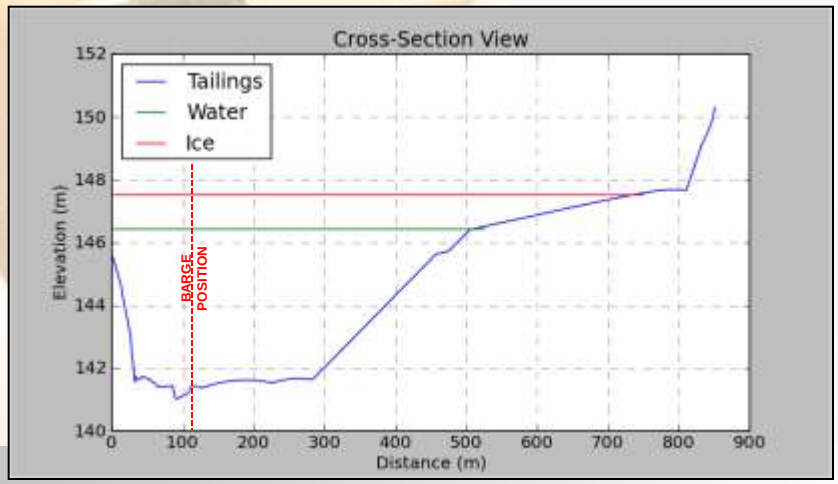
North Cell TSF deposition plan
May 2014

Duration	Deposition Point	Tonnes
2	BP	23,401
9	W18	93,536
6	W6	64,411
6	E19	64,344
4	E15	41,497
4	E9	41,577



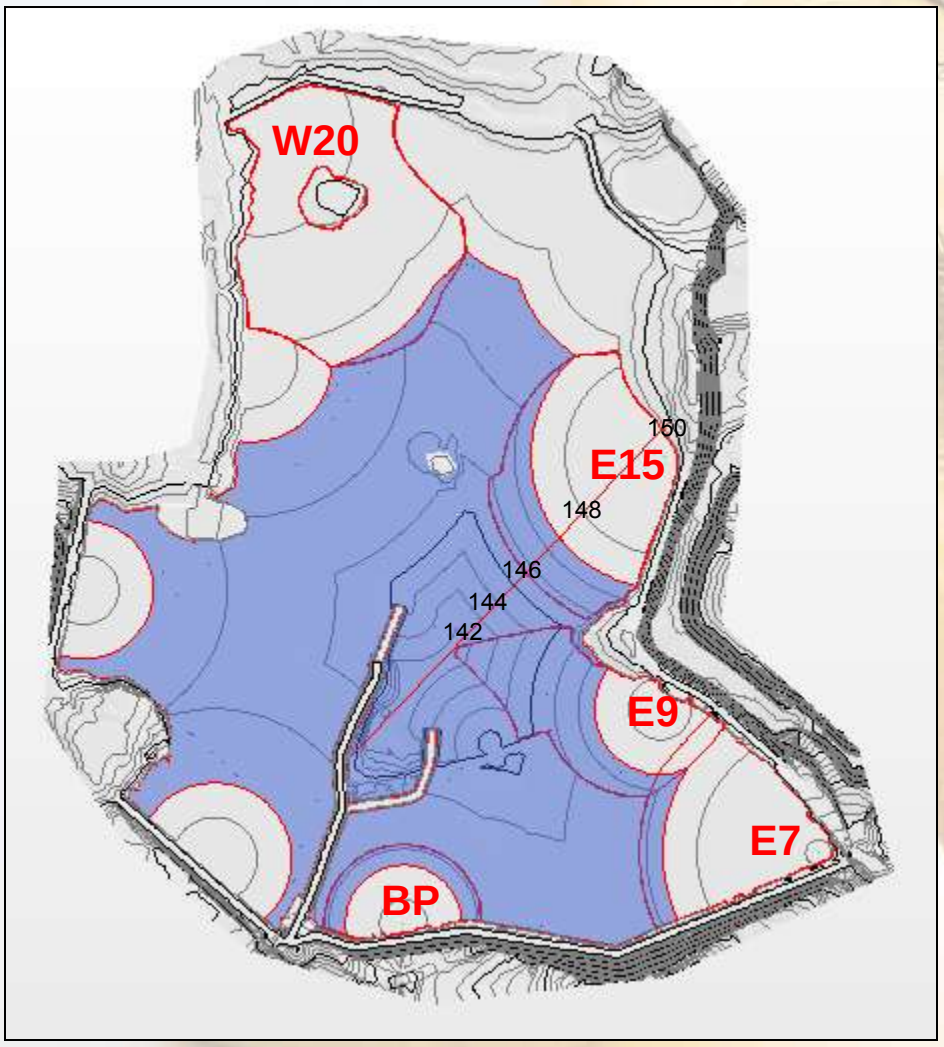
MODEL INPUT	
Water Balance Volume (m³)	1 044 070
Ice thickness (m)	1.10
Tonnes (t)	325,004

MODEL RESULTS	
Pond volume (m³)	412 777
Pond depth (m)	6.047
Pond elevation (m)	147.518
Min pond ele (m)	141.471
Ice thickness (m)	1.108
Unfrozen water elevation (m)	146.410
Ice volume (m³)	631 293
Ice ratio (%)	60%
Transfer to South Cell (m³)	0



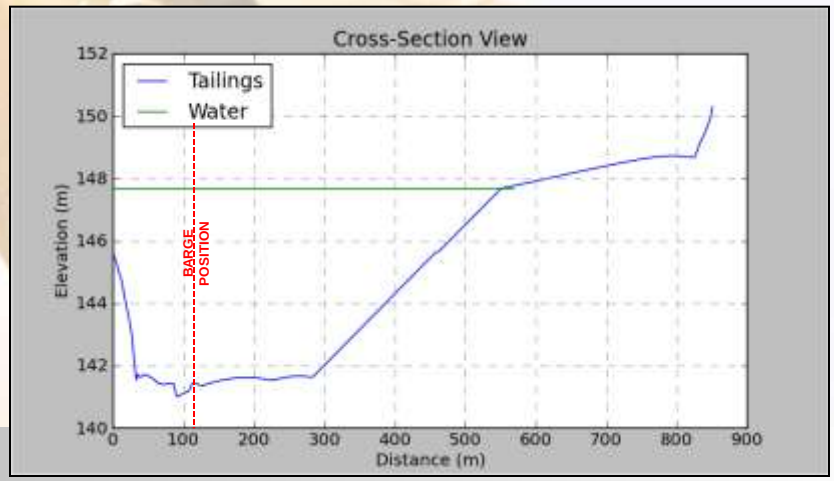
North Cell TSF deposition plan
June 2014

Duration	Deposition Point	Tonnes
2	BP	23,377
9	W20	105,309
4	E9	46,790
9	E15	70,141
6	E7	70,141



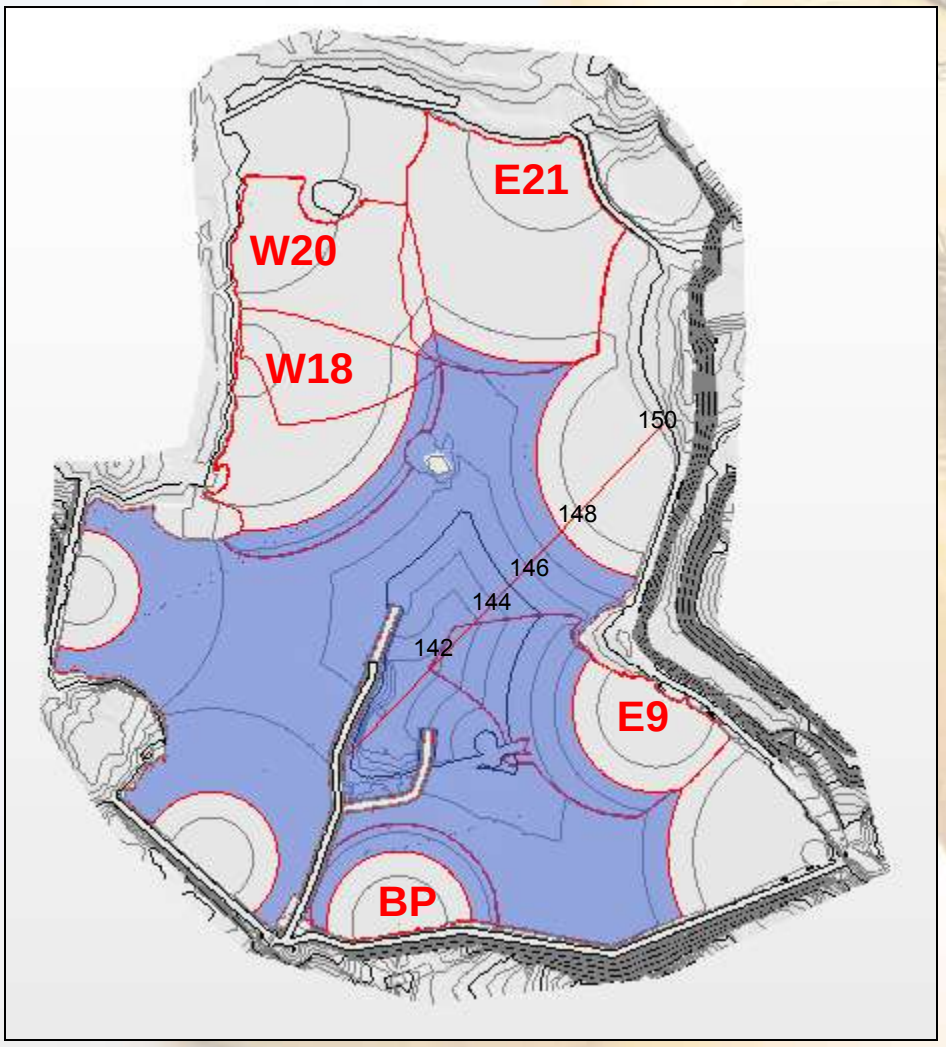
MODEL INPUT	
Water Balance Volume (m³)	1 059 689
Ice thickness (m)	0
Tonnes (t)	354 990

MODEL RESULTS	
Pond volume (m³)	1 056 178
Pond depth (m)	6.202
Pond elevation (m)	147.682
Min pond ele (m)	141.480
Ice thickness (m)	0
Unfrozen water elevation (m)	147.682
Ice volume (m³)	0
Ice ratio (%)	0
Transfer to South Cell (m³)	0



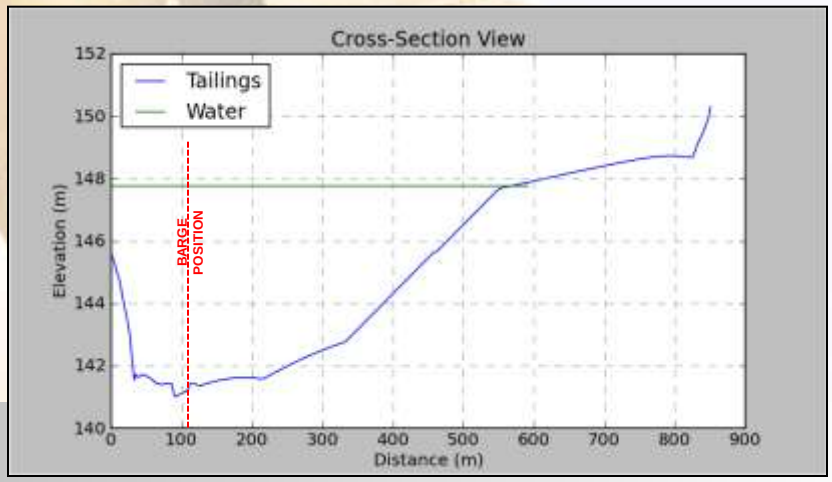
North Cell TSF deposition plan
July 2014

Duration	Deposition Point	Tonnes
2	BP	23,269
9	E21	104,342
6	E9	69,856
5	W20	58,066
9	W18	104,633



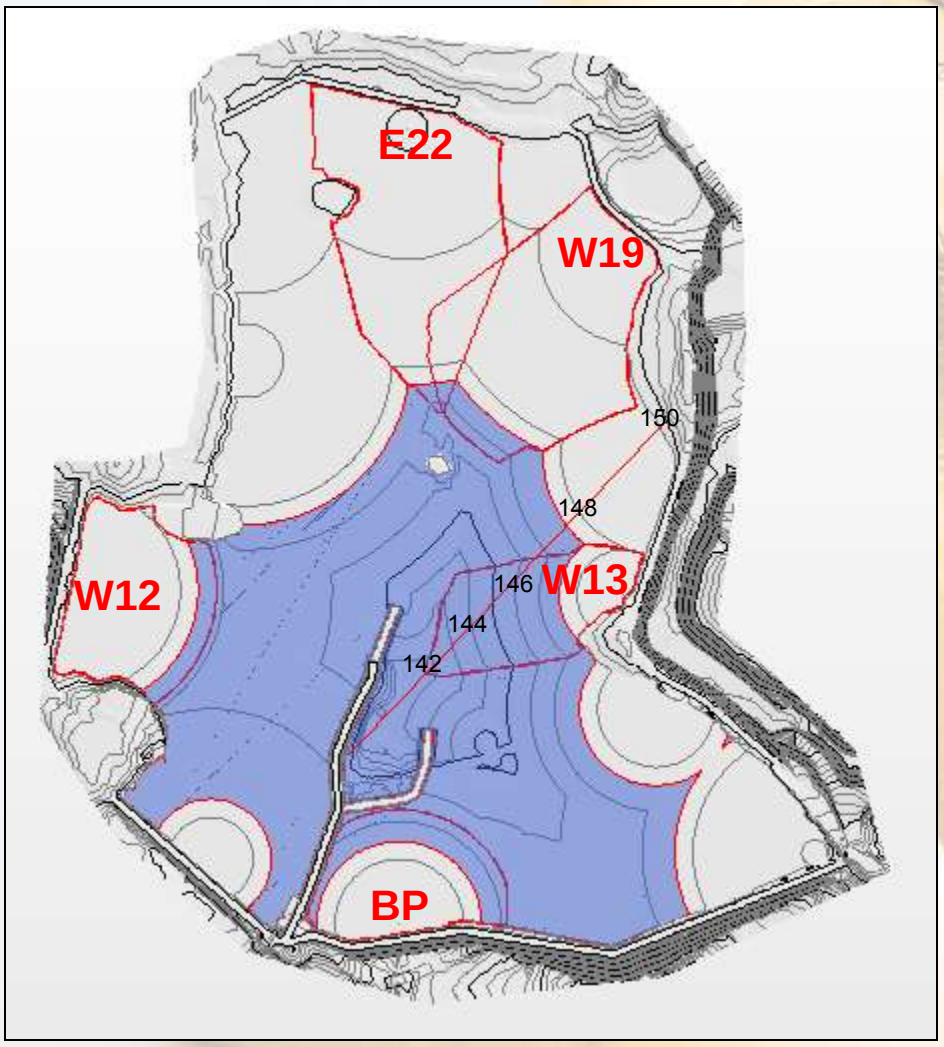
MODEL INPUT	
Water Balance Volume (m³)	999 244
Ice thickness (m)	0
Tonnes (t)	354,234

MODEL RESULTS	
Pond volume (m³)	994 558
Pond depth (m)	6.219
Pond elevation (m)	649 483
Min pond ele (m)	141.549
Ice thickness (m)	0
Unfrozen water elevation (m)	147.768
Ice volume (m³)	0
Ice ratio (%)	0
Transfer to South Cell (m³)	0



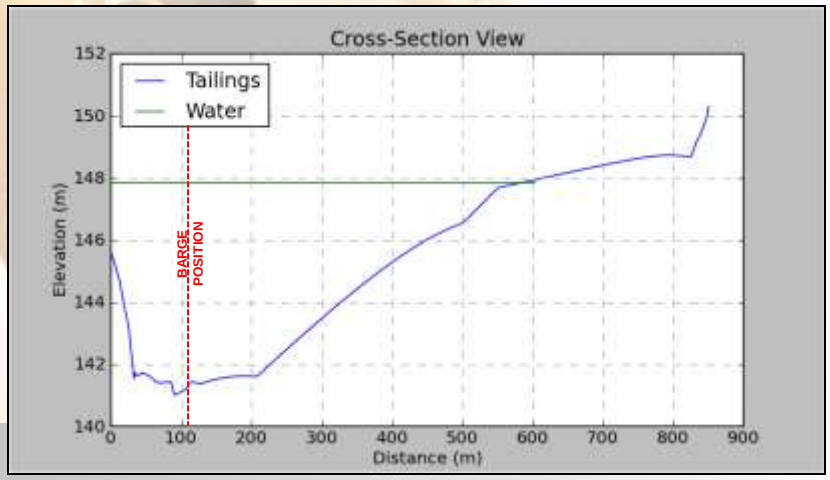
North Cell TSF deposition plan
August 2014

Duration	Deposition Point	Tonnes
2	BP	23,401
9	W18	93,536
6	W6	64,411
6	E19	64,344
4	E15	41,497
4	E9	41,577



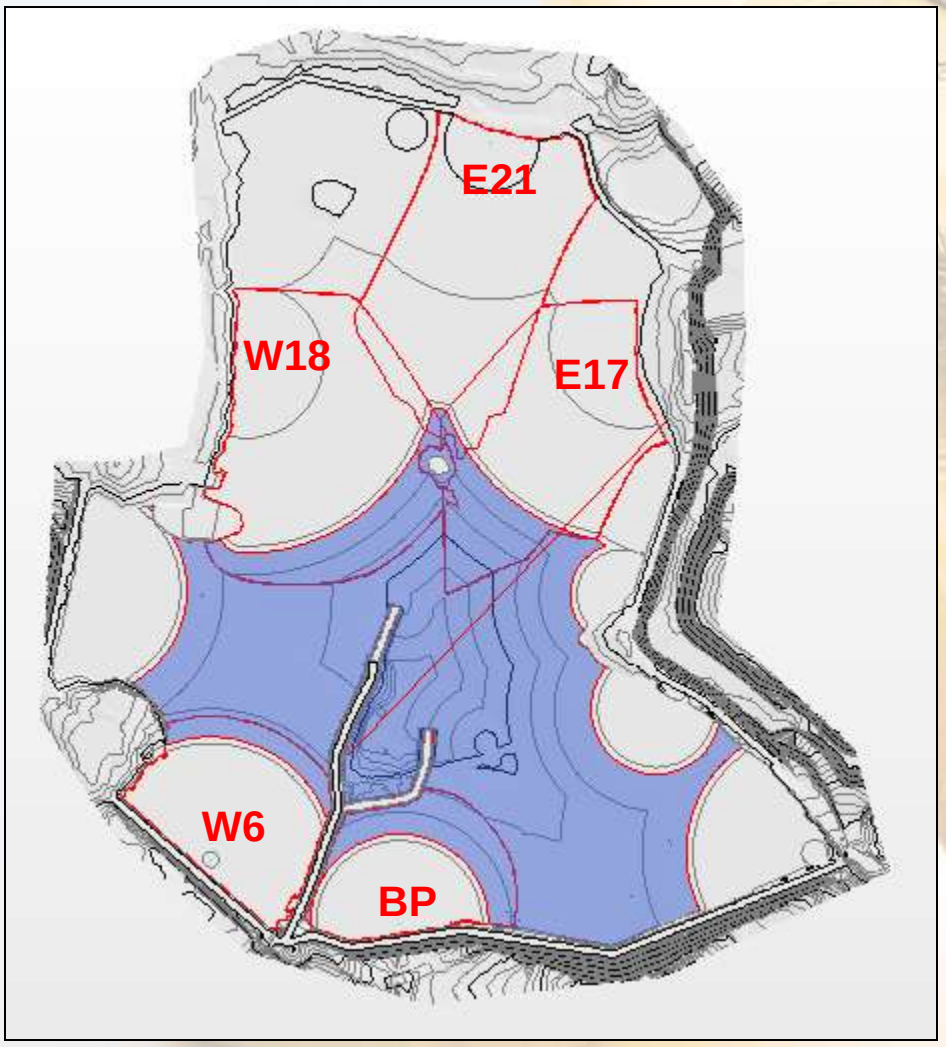
MODEL INPUT	
Water Balance Volume (m³)	1,197,430
Ice thickness (m)	0
Tonnes (t)	354,234

MODEL RESULTS	
Pond volume (m³)	911,888
Pond depth (m)	6.047
Pond elevation (m)	147.855
Min pond ele (m)	141.808
Ice thickness (m)	0
Unfrozen water elevation (m)	147.855
Ice volume (m³)	0
Ice ratio (%)	0
Transfer to South Cell (m³)	0



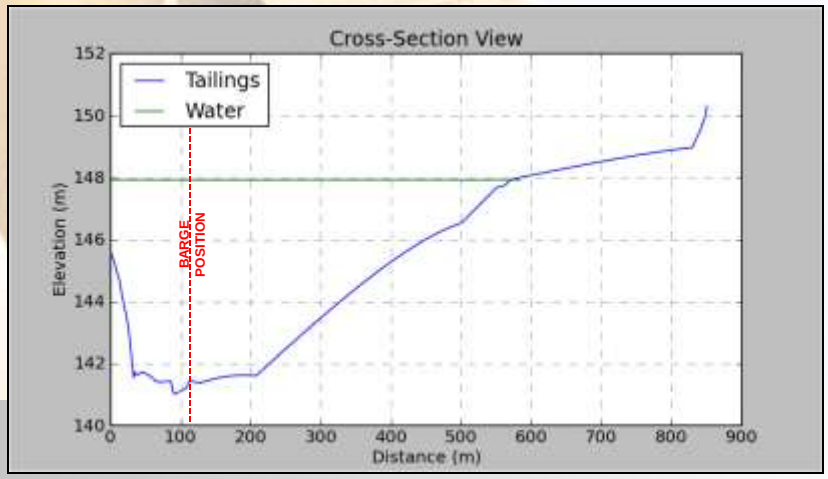
North Cell TSF deposition plan
September 2014

Duration	Deposition Point	Tonnes
2	BP	23,265
6	E21	69,639
8	W18	92,798
8	E17	92,949
6	W6	69,749



MODEL INPUT	
Water Balance Volume (m³)	892 523
Ice thickness (m)	0.00
Tonnes (t)	348,990

MODEL RESULTS	
Pond volume (m³)	889 585
Pond depth (m)	6.423
Pond elevation (m)	147.939
Min pond ele (m)	141.516
Ice thickness (m)	0
Unfrozen water elevation (m)	147.939
Ice volume (m³)	0
Ice ratio (%)	0
Transfer to South Cell (m³)	0



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WORLD GOLD COUNCIL MEMBER

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Golder Associates

Appendix I

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR **11-08-2013**	REPORT TIME **14:00**	[X] ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR **11-04-2013**	OCCURRENCE TIME **09:00**		

C	LAND USE PERMIT NUMBER (IF APPLICABLE) **KIOL-BL-14**	WATER LICENCE NUMBER (IF APPLICABLE) **NWA-2AM-MEA0815**
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION **MEADOWBANK MINE SITE**	REGION ☐ NWT [X] NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES **65** MINUTES **01** SECONDS **00**	LONGITUDE DEGREES **96** MINUTES **03** SECONDS **48**
F	RESPONSIBLE PARTY OR VESSEL NAME **AGNICO EAGLE MINES LTD**	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION **BAKER LAKE X0X 0A0**
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION

H	PRODUCT SPILLED **Potential Process Water**	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES **Unknown, > 5 m3**	U.N. NUMBER **N/A**
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER

I	SPILL SOURCE **Unknown**	SPILL CAUSE **Unknown**	AREA OF CONTAMINATION IN SQUARE METRES **Unknown**
J	FACTORS AFFECTING SPILL OR RECOVERY **Water Freezing**	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT

K — ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS

Seepage noted November 4.

See chronology of events, map, and photos attached.

Samples of seep have been taken and sent to accredited lab for RUSH analysis. Investigation continues. Currently a containment is being 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 an taken to the Tailings Storage Facility.
Further follow-up information and updates will be provide as the investigation moves forward.

L	REPORTED TO SPILL LINE BY **Jeffrey Pratt**	POSITION **Environment Coordina**	EMPLOYER **Agnico Eagle Mines**	LOCATION CALLING FROM **MEADOWBANK**	TELEPHONE **8677634610**
M	ANY ALTERNATE CONTACT **Kevin Buck**	POSITION **Environment Superint**	EMPLOYER **Agnico Eagle Mines**	ALTERNATE CONTACT LOCATION **MEADOWBANK**	ALTERNATE TELEPHONE **8677634610**

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

Assay Road Seepage – Actions/Planning

Nov 4/13

- Seepage Reported in area in front of Assay Lab

Nov 5/13

- Meeting held with Mill staff, Env, and Manager to try to determine source The following was checked; leach pad (appears to be no leakage), reclaim and tailings line (no apparent leaks). Determine there is a two inch sump line from Assay Lab to mill, new underground freshwater drain pipe, and freshwater line from lake goes under road; freshwater line to camp in same area as fire protection line.

Nov 6/13

- Senior Env Tech determines seep still evident. Meeting held with Mill, Mine, Env, Manager. Mill reports that there is no leakage from Assay Lab sump line. Will test freshwater overflow pipe. Env to sample seepage for Copper, Iron, CN – to be submitted to on and off off site labs. Possibly excavate freshwater line Nov 7 to check for leaks depending on overflow line test.
- Freshwater drain checked for leakage with flow test – appears to be no leak. Investigation to continue Nov 7 with check of Fire Protection water line and fresh water line from barge for leakage.

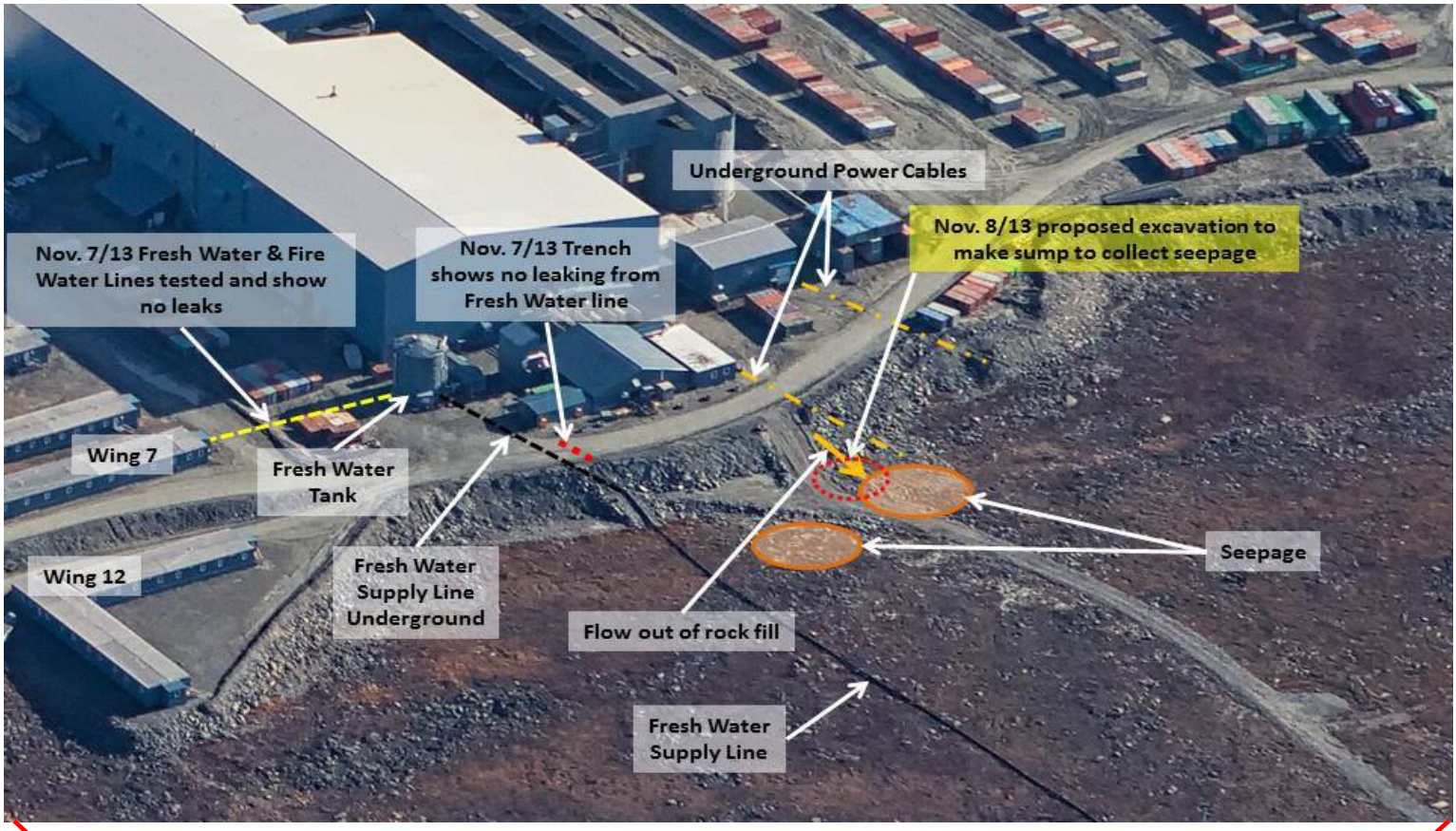
Nov 7/13

- Meeting held – 0930 – Site Service, Power Plant, Mill, Env, Mine, Manager. Excavation around freshwater line will commence, JHA will be done. To determine if freshwater is leaking out.
- Env to submit samples to Multi Lab – Cu, Fe, CN Total of seep and leach tank overflow – RUSH analysis requested.
- Pressure test on fire protection line near freshwater tank at mill – no leakage confirmed by SS. Also testing freshwater line to camp.

Nov 8/13

- Freshwater line to camp checked no leakage found
- Meeting held – 0900 – Site Service, Power Plant, Mill, Enviro, Eng., Mine, Manager.
- Installation of containment to hold back any further seepage from migrating forward – joint effort between S.S., Mine, Enviro, Eng., also electrician present to watch utilities.
- Once containment is in place delineation of seepage source to take place. This will not take place without input from all associated departments. Meeting will take place shortly after containment is finalized.

Area of Concern



Photos of Area Mo

AGNICO EAGLE

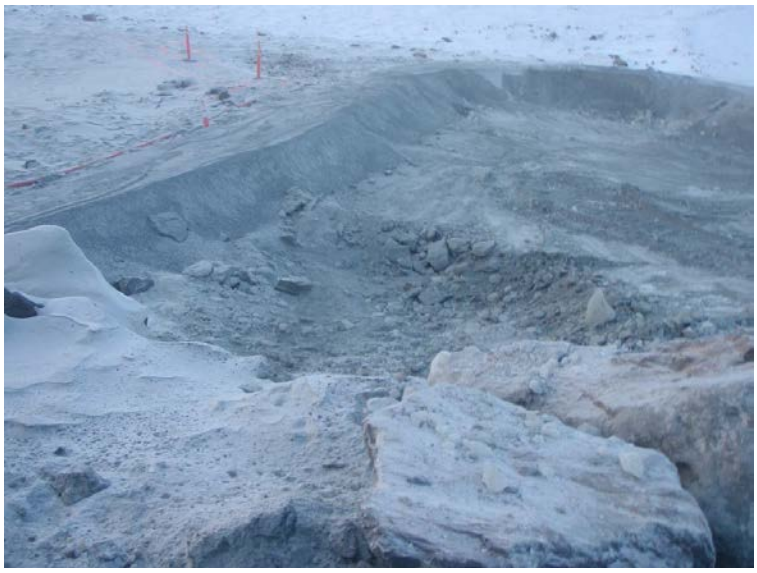
November 12, 2013

RE: Update to Meadowbank Spill – Report #13-379 – Assay Lab Road Seep

Good afternoon,

This letter is intended to give an update to the spill report that was submitted on November 8, 2013. This spill report is GN Spill Report 13-379.

- No material has reached lake
- Confirm spillage is from the process plant due to CN analysis on site – CN present, samples sent to off-site accredited lab for analysis – results not available yet
- A bermed area was erected around the area which had the frozen seepage fluid. Once the bermed area was created
- All contaminated ice was removed from the area and was taken to the Tailings Storage Facility
- AEM will continue to remove any build of ice in this area on a regular basis.
- AEM has developed a drilling program to identify exact area of leakage – sources that will be checked include area around leach tank containment (concrete containment), area In front of mill in conjunction with testing of sumps in mill for leakage
- An updated will be provided when drilling program completed



Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

AGNICO EAGLE

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: Kevin Buck –AEM
Stephane Robert – AEM
Marie-Pier Marcil – AEM

AGNICO EAGLE

November 12, 2013

RE: Update #2 to Meadowbank Spill – Report #13-379 – Assay Lab Road Seep

Good morning,

In response to the information requested by Christine Wilson, Water Resource Officer for AANDC, please find the questions below in bold and AEM's response following:

- **The coordinates for the seepage ponds (contaminated area). As mentioned ALL spills forms must have the correct coordinates.**

The coordinates for the spill are as follows:

North 14W 0637900 7213863 and South 14W 0637920 7213842

- **When will the drill program ensue?**

Currently the drill program is scheduled to begin Friday November 15, 2013.

- **From the seepage pond to the lake, what is the approximate distance?**

The approximate distance from the outside of the berm is around 150 meters, so from the seep to the lake is around 165 meters.

- **Has the rate of flow been established?**

The rate of flow is estimated at ~2 Liter per hour. In addition to I would like to add that there has been approximately 5 m3 of ice removed from the seepage containment area.

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

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- **Also as mention previous the contact information on all reporting forms must be correct with the extension. In an emergency situation the lead agency must be able to contact the reporter directly and not go through the office in Baker Lake. In some cases, such as this spill, I was not the person to receive the report and the phone number on the form was incorrect (and previous forms …clerical error I am sure).**

AEM extends its sincerest apologies for this. The number will be corrected on all future spill reports. Thank you for bringing this to our attention.

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: Kevin Buck –AEM
Stephane Robert – AEM
Marie-Pier Marcil – AEM

AGNICO EAGLE

November 19, 2013

RE: Update to Meadowbank Spill – Report #13-379 – Assay Lab Road Seep

Good morning,

This letter is intended to give a resume of the spill report GN Spill Report 13-379 that was submitted on November 8, 2013

On October 8, 2014 a spill was reported to the GN Spill Line and to AANDC Inspector Christine Wilson.

- On November 4, 2013 a seepage was reported in area in front of Assay Lab, at the Meadowbank Mine site. Coordinates for spill North 14W 0637900 7213863 and South 14W 0637920 7213842. The distance to the lake from the spill location is approximately 165 meters. The rate of flow was estimated at ~2 Liter per minute. A meeting was held and decision made to go forward with an installation of containment to hold back any further seepage from migrating. A bermed area was erected around the area which had the frozen seepage fluid. Once the bermed area was created, all contaminated ice was removed from the area and was taken to the Tailings Storage Facility. The following areas were checked; leach pad (appeared to be no leakage), reclaim and tailings line. Many lines were sampled, all lines that ran through the area where the seepage was occurring no leaks were found on any of these. Environment sampled seepage for Copper, Iron, CN – to be submitted to AEM lab – results would indicate if it is leach pad water. AEM Lab results of Copper/Iron sampling Cu at 4+ ppm and Fe at 1.2 ppm – similar to tailings. CN is also present at average 12.6 ppm. A pressure test on fire protection line near freshwater tank at mill was performed, no leakage confirmed. Also, testing was performed on the freshwater line to camp. The freshwater line to camp was checked, no leakage found. A drilling program was then planned by Engineering and Environment to determine the source of the seepage and to possibly delineate any plume. At the same time the mill began checking sumps in the mill for seepage.

Regional Office:
93, Rue Arseneault
Bureau 202
Val d'Or, Quebec J9P 0E9
Tel: 819-825-3744

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

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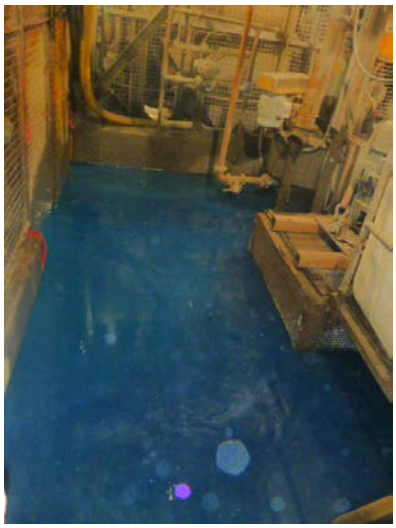
Update from November 10 –November 18, 2013.

- No process water has reached lake (contain in the berm area)

- Investigations took place through-out the mill area to determine where the source of process water was leaking from

- A drilling campaign took place Nov 15 – 17, with a total of 21 holes being drilled the seep location and the mill area (see figure 1). Out of the 21 holes,
  - 4 holes were wet and sample water was obtained (blue)
  - 4 holes were drilled and wet and no sample could be obtained
  - 13 holes were drilled dry (green)

- To try and determine the source of the leakage, water was added to the sumps with tracer dye within the Mill. By doing this, the location of the seepage was determined to be in the CIP sump.



- The seepage area increased due to the testing of the sumps and water seeped out of the previous reported location as well as an adjacent area at the base of the assay lab road. Another containment berm was immediately constructed, this water was sampled (CN WAD taken at our on-site assay lab = 4.23ppm Copper = 2.55, Iron = 1.64). Please note the attached diagram for reference. Additional samples will be sent to our off site accredited lab on Monday Nov 18. Samples were also taken in Third Portage Lake using AEM's on site assay lab. Results to date indicate "no detect" in the lake. See attached table of sample results and location.

- Crews removed any build of ice in this area and continue to remove it on a regular basis.

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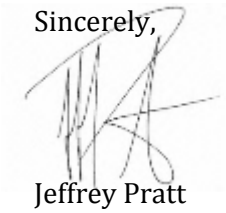
- AEM is now working on a plan to properly seal the CIP sump, in the meantime all water has been removed from this sump to prevent any further seepage and allow for repairs.

- The bermed containment area is to prevent access to wildlife and unauthorized personnel.

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,



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CC: Kevin Buck –AEM
Stephane Robert – AEM
Marie-Pier Marcil – AEM

CN WAD Results from Drilling Campaign

Hole ID	1A	4D	201	202	203
Date	CN ppm	CN ppm	CN ppm	CN ppm	CN ppm
Nov 15	1.09	4.19			
Nov 16				7.45	0.967
Nov 17			16	9.45	1.98

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Date	Assay lab results													
	Assay road seep North			Assay road seep South			Drinking Water Raw water			2nd Berm			TPL		
	CN WAD (ppm)	Cu (ppm)	Fe (ppm)	CN WAD (ppm)	Cu (ppm)	Fe (ppm)	CN WAD (ppm)	Cu (ppm)	Fe (ppm)	CN-WAD (ppm)	Cu (ppm)	Fe (ppm)	CN-WAD (ppm)	Cu (ppm)	Fe (ppm)
11/4/2013				8.94											
11/5/2013	8.77			17.9											
11/6/2013	6.73	3.68	20.1	17.6	4.05	1.68									
11/7/2013															
11/8/2013	39			36.1											
11/9/2013	47.2														
11/10/2013	28.9														
11/11/2013	43.8														
11/12/2013	17														
11/13/2013	17.1						<0.01								
11/14/2013	25.9														
11/15/2013	19.7	8.06	1.13				<0.01	0.02	0.04						
11/16/2013	4.78	2.24	1.27				<0.01	0.03	0.13	4.23	2.55	1.64	<0.01	0.04	0.06
11/17/2013	7.5	3.86	1.09				<0.01	<0.01	0.02						

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DRAWING NO.

FORMAT ANSI C–LANDSCAPE

Assay Lab Road

Assay Lab

2nd Berm

Fresh Water Line

Containment Area

2nd Retention Berm built on the 15th

Ramp

Retention Berm

Assay Road Seep North

Assay Road Seep South

Leach Pad

TPL

N

Leak

CIP area (approx)

CN = 16 ppm

CN = 9.45 ppm

CN = 1.98 ppm

CN = 1.09 ppm

CN = 4.19 ppm

KEY PLAN

- Phase 1 and 2 - Drilled, Wet and CN
- Phase 1 and 2 - Drilled and Wet (No sample)
- Phase 1 and 2 - Drilled and Dry
- Phase 1 and 2 - Not Drilled
- Grab Sample

GENERAL NOTES

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TITLE	# DWG

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	BY	APP.	CLIENT

REVISIONS

AGNICO-EAGLE
MEADOWBANK DIVISION

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION

Mill Leakage Investigation

DRAWN BY	DATE
CHECKED BY	
APPROVED BY	
SCALE N.T.S.	DATE
DRAWING NO.	
PROJECT NO.	REVISION / SHEET 1 / 1

V:\DATA MANAGEMENT\2013\Special project\Assay Rd. Seep\Drilling project\CAD\Investigation results summary.dwg, 18 Nov 2013

FILE NO. .DWG

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December 10, 2013

RE: Update # 4 to Meadowbank Spill – Report #13-379 – Assay Lab Road Seep

To: AANDC, KIA, NWB, GN Conservation Officer.

Hello,

Please note this update on the Assay Road Seep which is in addition to the resume titled ***Update 3 to Meadowbank Spill Report #13-379*** that was submitted on November 19, 2013.

There has been no seepage of water and no further buildup of ice noted from the seep location since November 24, 2013. Based on the ice removal to date it can be confirmed that the initial estimate of 1 L/M is an accurate measure of flow from the seep. The Coordinates for the seep locations are attached in Table 1.

AEM held a meeting to update the Baker Lake hamlet council on November 28, 2013 in Baker Lake.

AEM has contracted EBA Engineering Consultants Ltd. operating as EBA, A Tetra Tech Company (EBA) and requested a proposal which is summarized below. AEM has accepted the proposal and the Phase 1 report is scheduled for completion around mid-January. EBA's scope of work for Phase 1 is as follows:

1. Review all relevant information, including the results of all probehole drilling and water chemistry testing results. Prepare recommendations for further drilling, sampling and testing if deemed to be required.

2. Review mill and assay building design drawings, of particular interest is the design of the floor, containment areas, sumps and foundations of these buildings. It will be important for us to understand fully where the leaks are happening. It would be preferred if the suspected leak sources could be marked on the mill building drawings before they are sent to us. In addition, any photos showing the identified cracking would be a big help in understanding where the main issues are thought to be.

3. Review of any QA/QC testing information for the foundation preparations and structural backfill placement for the mill and assay buildings. Some of this information may be in EBA's files as we were providing QC testing services to the contractor during construction.

4. Development of a suspected reason for the structural failure of the mill containment areas and sumps that has led to the release of process water into the environment.

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5. Preparation of a brief report that discusses the findings of the above review. The report will also include recommendations and a timeline for work that could be carried out in Phase 2.

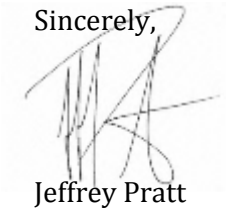
AEM will wait for recommendations from EBA prior to commencing any further drill programs or containment construction.

AEM also has a team of construction civil engineers and on site staff working on an action plan that will address repairs to containment structures within the mill. Repairs will move ahead after recommendations are received from EBA.

In the interim AEM continues with the short term action plan consisting of daily visual monitoring of the seep area, sampling and removal of accumulated ice if necessary, monthly sampling at an accredited lab (on site testing daily at our own lab) of the raw water from TPl (results negative thus far for parameters of concern – cyanide, copper, iron), monitoring the levels of the 3 monitoring wells located just outside of the mill in the flow path (levels stable since Nov 24) and active pumping of all containment areas (if necessary) within the mill (water pumped back into process). This will minimize and/or eliminate the leakage.

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,



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Stephane Robert – AEM
Marie-Pier Marcil – AEM

Table 1 - Seepage locations

Location Name	Northing	Easting
Assay Road Sample North	637909.6	7213851.9
Assay Road Sample South	637920.1	7213834.3
Assay Road Sample 2nd Berm	637899.4	7213875.9

Appendix J

2012 – 2013 Annual Monitoring Report

for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
November 2013

Report Title:	The Nunavut Impact Review Board's 2012 – 2013 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:	Sophia Granchinho, M.Sc., EP
Monitoring Period:	October 2012 – September 2013
Date Issued:	November 22, 2013
Cover photos:	1) Front end loader bucket 2) Bridge at kilometre 23 3) Outflow into Third Portage Lake 4) Tailings storage facility 4) Baker Lake dock facility

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LIST OF ACRONYMS

AANDC	Aboriginal Affairs and Northern Development Canada
AEM	Agnico Eagle Mines Ltd.
AEMP	Aquatic Effects Management Program
AWPAR	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
KivIA	Kivalliq Inuit Association
km	kilometre
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

In December 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 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 [004].

This report provides findings that resulted from the Board's monitoring program for this Project from October 2012 to September 2013.

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 access road from the hamlet of Baker Lake to the Meadowbank mine site was completed in 2008 and the road opened to mine-related transportation in March 2008. The Meadowbank Gold Mine entered the operations phase of the project in February 2010, and is currently entering its fourth year of operations. By the end of 2012, the Meadowbank mine had reportedly produced 366,030 ounces of gold, an increase from 2011 in which the mine had reportedly produced 270,801 ounces of gold.

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 ML fuel tanks to a combined total of six 10 ML fuel tanks.

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 that additionally 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 Monitoring Officer was informed during the September 2013 site visit that the airstrip expansion had been completed in April 2013.

Following a request by the Hamlet of Baker Lake and the Proponent in 2008, in November 2009 the NIRB formally amended the Meadowbank Gold Mine Project Certificate [No. 004] pursuant to NLCA 12.8.2 to include a modified Condition 32 and an approval by the Board to change the name of the holder of the Project Certificate [No. 004] from Cumberland Resources Ltd. to Agnico-Eagle Mines Ltd (NIRB, 2009).

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

During the 2012 year, AEM started pit operations of the Bay Goose pit; completed the construction of the Vault road; commenced initial stripping and quarry construction near the Vault pit; installed thermistors in the waste rock storage facility and tailings pond to measure freeze back; completed the construction of the Central Dike to an elevation of 115 metres; and completed dewatering activities related to the Central Dike.

AEM applied for an amendment to its Type A Water Licence (No. 2AM-MEA0815) with the NWB on April 23, 2013 to increase the amount of freshwater drawdown and use from the Third Portage Lake from the originally permitted amount to a total of 1,870,000 cubic metres per year (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. This request is further discussed in Section 2.2.4.

In July 2013 AEM also applied for amendments to its existing *Fisheries Act* Authorizations No. NU-03-0190 – All Weather Private Access Road (AWPAR) 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.

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. 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 all weather private access road (access road) 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 access road.

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). The current Project owner, AEM, indicated in its December 2011 Reserves and Resources Report that Meadowbank has proven and probable gold reserves of 2.2 million ounces; lower than the initial value predicted (AEM, 2011). Further, in February 2012, AEM issued a press release announcing that its Meadowbank ore reserves had been reduced as a result of it being unable to economically mine the lower grade ore which has also resulted in a

mine life that is reduced by approximately 3 years from initial estimates (AEM, 2012). AEM provided a revised mine plan to the Kivalliq Inuit Association (KivIA) in 2012 and predicted that its Meadowbank operations were scheduled to be completed by 2018 instead of 2020 (AEM, 2012).

2.0 MONITORING ACTIVITIES

2.1. REPORTING REQUIREMENTS

2.1.1. General Reporting Requirements

During the 2012 – 2013 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 Meadowbank Project Certificate [No. 004] for the current monitoring period of October 2012 through September 2013:

- AEM's 2012 Annual Report to the NWB, NIRB, DFO, AANDC and KivIA which included:
- Revised *Fisheries Act* Authorization for Second Portage and Third Portage (NU-03-0191.3)
- Revised *Fisheries Act* Authorization for Vault Lake (NU-03-0191.4)
- Revised Landfarm Design and Management Plan, version 2 (2012)
- Groundwater Monitoring Plan, version 3 (2012)
- 2012 Groundwater monitoring and water quality Report, Meadowbank Mine, Nunavut
- Emergency Response Plan, version 4 (2012)
- Hazardous Materials Management Plan, version 2 (2012)
- Oil Handling Facility Oil Pollution Emergency Plan, version 1 (2012)
- Spill Contingency Plan, version 3 (2012)
- Wildlife Protection and Response Plan, version 2 (2012)
- Incinerator Waste Management Plan, version 4 (2012)
- Operation and Maintenance Manual, version 3 (2013)
- Core Receiving Environment Monitoring Program (CREMP), Design Document, version 2 (2012)
- Aquatic Effects Management Program (AEMP), version 2 (2012)
- All Weather Private Access Road, 2012 Water Quality Management Report

The following reports have not been forwarded to the NIRB and remain 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
- Groundwater Plan (to be submitted August/September 2013)

2.1.2. Annual Report as per Project Certificate [No. 004] 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 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).

In April 2013 the NIRB received AEM's *Meadowbank Gold Project 2012 Annual Report* (2012 Annual Report) (AEM, 2013a) and 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. The NIRB received comments from the following parties regarding AEM's 2012 Annual Report:

- Aboriginal Affairs and Northern Development Canada
- Environment Canada
- Fisheries and Oceans 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 the Board sets forth 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 [No. 004].

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 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. It appears from the review of the 2012 annual report that AEM's community meetings may not have included a discussion with community members on AEM's plans for expansion. The Monitoring Officer was informed during the 2013 site visit that the airstrip expansion occurred in April 2013.

2.2.1.2. Screening Decision Report 11EN010

2.2.2. Compliance with the NIRB Project Certificate

Within its 2012 Annual Report, AEM provided a summary of exploration activities undertaken as permitted by the Board within its screening decision report.

2.2.2.1. Compliance Achievements

a) Condition 33(2)

33(2) Cumberland shall update the Access and Air Traffic Management Plan to: … 2. to facilitate monitoring of the environmental and socio-economic impacts of the private road and undertake adaptive management practices as required, including responding to any concerns regarding the locked gates.

In its 2012 Annual Report, AEM provided a summary of reported road usage and harvesting activities since the construction of the road began in 2007. Total caribou harvest activities within 5 kilometres of the access road appeared to have increased every year up to 2011 followed by a decrease in 2012. AEM's report indicated that road use was important to hunters in the winter season, despite relatively unrestricted access to other areas in the Baker Lake area. Harvesting along the access road in the winter season has increased every year since 2008 with a peak observed in November 2012.

2.2.2.2. AEM Responses to the Board's 2012 Recommendations

The Board made a number of recommendations as a result of its 2011 – 2012 monitoring efforts including the 2012 site visit. The following provides an overview of AEM's responses to the Board's recommendations as outlined in correspondence provided to the NIRB on January 9, 2013.

a) Appendix D and the Annual Report

Following review of the 2011 Annual Report it was noted that AEM did not provide a full discussion and summary on the post-environmental assessment monitoring program (PEAMP) for the Project as required. The Board recommended 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). In its response, AEM indicated a need for further clarification from the NIRB on how best to present the data and to summarize the results. AEM also indicated that it had worked closely with regulatory agencies and continually refined and updated monitoring programs to reflect changes to the mine site and to ensure the effectiveness of the monitoring studies to evaluate and predict mine related impacts. In addition, AEM indicated that it would submit a 2012 Aquatic Effects Monitoring Program (AEMP) annual report which would provide a complete summary of the related aquatic monitoring programs to both the NWB and the NIRB and further, that it would propose a reporting structure that summarizes the data in a means that meets the expectations of the NIRB.

b) Terrestrial wildlife impact predictions

The Board requested that AEM provide a full analysis of the predicted impact thresholds against the actual results of surveys conducted in 2011 for raptor nest surveys, mine site ground surveys, hunter harvest surveys, and the caribou radio-collaring program. In its response, AEM provided summary tables that compared the 2011 monitoring data to the impact prediction thresholds for all the requested surveys with the exception of mine site ground surveys. Mine site ground surveys had been conducted as a general surveillance of the mine site to ensure activities were not causing any unpredicted harm to wildlife, to evaluate waste management procedures and evaluate spills. As a result, there were no specific thresholds to be compared to, as that type of survey would be employed for operational due diligence and have not been specified in the original TEMP.

c) Compliance with licences and authorizations

The Board requested that AEM indicate what next steps it would pursue in regards to its on-site water management practices. The Board had requested that this be provided once the results of AEM's investigations regarding the increased use of reclaim water which would decrease requirements of freshwater became available. In its response, AEM indicated that it intended to minimize freshwater use at the Meadowbank site and that it had been investigating and designing methods to reduce freshwater usage. Since the summer of 2012, AEM reported an increase in its recirculation and use of reclaimed water for the SAG mill. AEM applied for an amendment to its Type A Water Licence (No. 2AM-MEA0815) with the NWB in April 2013 in order to allow for an increase in the amount of freshwater drawdown and use from the Third Portage Lake from the originally permitted amount to 1,870,000 m^3/year in 2013; and, to 1,150,000 m^3/year for each year after to 2018.

d) Cyanide levels in water quality results

In 2011, Environment Canada (EC) noted that cyanide (CN) values reported by AEM were above the Canadian Council of Ministers of the Environment (CCME) guidelines for water samples collected in 2010 and suggested that AEM review the source of the high CN values. In its 2011 Annual Report, AEM indicated that CN was detected in old empty sampling bottles that had been stored for an extended period of time (> 8 months) and that further testing was ongoing and the results and interpretation would be provided in the 2012 Annual Report. In 2012, the Board requested that AEM provide a plan of action to ensure future contamination of sampling bottles did not occur. The recommendation included updating site procedures to require the replacement of sampling bottles more frequently in order to avoid CN contamination, and working with the laboratory contracted to determine the source of CN at the mine site.

In its response, AEM indicated that it had updated its procedures and now replaces sample bottles on a monthly basis to ensure that shelf life at the site is minimal. Further, AEM indicated that they had no additional instances of increased levels of CN in its effluent to Third Portage Lake during the 2012 reporting period.

e) Proposed pilot remediation program

In 2012, the Board requested that AEM keep the NIRB informed as to the development of the contaminated soil storage/pilot remediation site and that copies of the revised landfarm management plan or any other related plans be provided to the NIRB. AEM provided a

revised Landfarm Design and Management Plan as part of its response which included a discussion on the pilot remediation site.

f) 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…"

The Board recommended in 2012 that AEM provide a plan including an estimated date by which the defective wells would be replaced or re-established in order to establish a robust groundwater quality data monitoring program. The NIRB also requested an updated map showing where the wells would be installed. In its response, AEM indicated that actions would be taken in 2013 to remove the blockage at groundwater well MW11-02 (Second Portage Arm) or to replace the well. No discussion was provided on how or whether other defective wells at Goose and Portage open pits would be repaired or replaced. AEM did indicate that though not all wells continue to be functional, the monitoring conducted to date had been achieving the purpose of the NIRB Condition, which is to evaluate the consequence of pit water quality on the effectiveness of water management and treatment plans.

The Board also recommended that AEM keep the NIRB informed of the status of the re-evaluation of the groundwater well monitoring program in order to monitor ongoing compliance with Condition 8. In its response, AEM provided several methodologies that were being considered to more effectively achieve the purpose of NIRB Condition 8; a target date for the submission of a Groundwater Plan was to be August/September 2013. For 2013, AEM committed to recover operable wells that had previously been blocked (monitoring wells MW11-02 and MW08-03).

In its 2011 Annual Report, AEM indicated that the groundwater chemistry at one of the wells sampled (MW11-01) had higher values of several parameters compared to samples taken from wells in previous years from the same area. In 2012 the Board recommended that AEM conduct further studies to accurately determine the source of contamination in the well, with a focus on determining whether the increased values were related to the movement of groundwater through the formation within the Goose Island Pit. In its response, AEM indicated that the apparent contamination at the well would not be investigated further. AEM suggested that the contamination at this well occurred during installation partly from the well grout (causing the elevated pH) and by brine addition during drilling (causing the high salinity). AEM also indicated that the Goose pit was not yet in operation during the groundwater monitoring program in September 2011 and therefore, the observed contamination of groundwater at this well in 2011 was not likely related to the activities of the mine or groundwater flow from the tailings storage facility. AEM noted that follow-up monitoring could not be conducted as this well was damaged during 2012 site operations and had been subsequently decommissioned.

The Board also recommended that AEM provide a more detailed discussion regarding the mitigation measures to be put into place in order to address the observed higher values

recorded at well MW11-01. AEM indicated in its response that monthly monitoring results of the sump water quality at Goose pit, initiated in June 2012, were low and representative of a mixture of formation water and lake water and not highly saline as compared to water quality observed at MW11-01. AEM indicated that no mitigation measures would be put in place to address the elevated calcium chloride (CaCl) observed at well MW11-01 as it was not anticipated to cause a noticeable increase in salinity concentrations of pit sump waters. Monitoring of sump water quality at Goose pit was proposed to be continued as a substitution for the damaged monitoring well MW11-01.

g) Quality assurance/quality control (QAQC) – Condition 23

23. "For the purposes of monitoring quality assurance and quality control ("QA/QC"), Cumberland shall ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent accredited lab for analysis,…"

The Board requested that AEM provide a discussion of the exceedances observed for the duplicate samples during the analyses of the 2011 results, as well as an indication as to whether further studies were planned in order to address the results observed for the QA/QC monitoring. In its response to the Board's 2012 recommendation, AEM indicated that given the high number of samples collected in 2011, it was common to have a few relative percent difference (RPD) exceedances as a result of the discrete differences in the original and field duplicate samples. Further, AEM stated that given the variability of these exceedances (occurring with different parameters, on different dates for different sampling programs) and the high number of successful samples, it was apparent that field QA/QC standards were maintained during the sampling in 2011. AEM indicated that its technicians would continue to follow the standard QA/QC procedures submitted in January 2009 and that AEM would also review and update the QA/QC plan in consideration of the NIRB's recommendations.

h) Wildlife Deterrents – Condition 25

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…"

In 2012, the Board requested that AEM provide information on the type of deterrents it plans to use in the future to deter falcons and ravens at the Meadowbank site and at the Baker Lake bulk fuel storage facility, and to provide discussion as to the effectiveness of such deterrents at these sites and any alternatives that may be considered. In its response, AEM indicated that peregrine falcon activity and nesting had increased along the AWPAR due to the construction of ideal perch and protected nesting sites in the region. For quarry sites not in operation, AEM stated that no deterrent methods would be used. For any peregrine falcon activity or nesting near the mine operations, AEM has developed a Peregrine Falcon Management and Protection Plan and would also consult with a raptor expert to provide site specific protective measures and if needed, deterrence recommendations to ensure falcon protection.

Decoys had been installed at the Baker Lake bulk fuel storage facility to deter ravens from continuing to nest, and AEM indicated that it would continue to monitor these sites to discourage nesting. If a nest is observed, AEM has indicated that they would immediately contact the Government of Nunavut, Department of Environment (GN DoE).

i) Spills and clean-up – Condition 26

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."

The Board requested that AEM provide a monitoring plan for the spill at km 22, requesting specifically, that AEM provide information on what conditions must be met to discontinue monitoring of this area in 2 years. In its response, AEM re-iterated that several plans had been put into place to prevent future spill occurrences along the access road with the main focus being on controlling the speed of all vehicles. The speed limit along the AWPAR was reposted and drivers have been given warnings if speeding along the road. Another of AEM's focuses has been to increase road maintenance and safety procedures, and to provide onsite training of staff of the use of the road. AEM also indicated that there were no spills along the AWPAR during 2012. The NIRB notes from AEM's 2012 Annual Report that a total of 4 environmental spills occurred along the access road in 2012 however all spills were below the threshold which requires their being reported to the Government of Nunavut (GN) spill hotline.

For the spill near km 22/23, AEM indicated that clean-up of the spill residues had been completed in the fall of 2012. Approximately 550,000 litres of water was treated at the site in 2012. AEM also indicated that the maritime barriers would remain in the watercourse throughout the 2013 freshet as a precaution, and that monitoring would be conducted in 2013 and 2014. Remedial measures would also be undertaken by AEM if hydrocarbon levels are detected in the water samples taken. No discussion was provided by AEM on what conditions must be met to discontinue monitoring of this area.

In 2012, the Board also requested that AEM develop and put into place an action plan designed to prevent wind-blown debris from the waste piles and/or to establish additional on-site waste management practices. The Board also requested that AEM report on the effectiveness of this waste management action plan in its annual reporting to the NIRB. AEM indicated that its staff are expected to use their best efforts to prevent windblown debris by ensuring that any bulk waste not going to the incinerator is bagged and that all organic waste is stored in closed top bins. Annual clean-up of the site is conducted after freshet and field crews pick up wind-blown materials when encountered.

j) All weather private access road – Condition 32(items e through g)

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's 2011 Annual Report did not include information regarding Condition 32(e), 32(f) or 32(g) and that it appeared that the report provided results based on the *original* Condition 32 issued December 2006 by the NIRB. The Board reminded AEM that its annual reports were expected to speak to the *amended* Condition 32 that was issued by the NIRB on November 20, 2009. Further, the Board recommended that AEM provide information on the compliance status to Condition 32(e) and 32(f) for the 2011 year and that it provide records of consultation with the community of Baker Lake in 2011 as to the private nature of the access road and the non-mine access that is allowed for traditional Inuit activities. In its response to the Board's 2012 recommendations, AEM indicated that they conduct quarterly meetings with the Baker Lake Community Liaison Committee and that an annual meeting was held with the community of Baker Lake in October 2011. Meeting minutes were provided in the response.

Furthermore, the Board recommended that AEM provide information on the authorized non-mine use of the road as required under Condition 32(g). The Board requested that AEM provide an assessment of the environmental and socio-economic impacts of the access road as spoken to in Condition 33 *[…2. to facilitate monitoring of the environmental and socio-economic impacts of the private road and undertake adaptive management practices as required,...]*. In its response, AEM indicated that they had implemented the use of electronic records to prevent future loss of hardcopy records (most of the 2011 records were lost in a fire). In addition, AEM noted that there were no accidents up to that date involving mine related truck traffic and locals using ATV's. AEM also provided information and a comparison of the usage of the road as related to harvesting activities. It was noted that although increases in the number of caribou harvested within 5 km of the AWPAR have been recorded each consecutive year since the AWPAR construction, the total harvests per participant within the 5 km of the AWPAR have increased only marginally. AEM also noted that the road appeared to be important to hunters in the winter season.

k) <u>Monitoring of country foods – Condition 67</u>

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

In 2012, the Board recommended that AEM notify the NIRB of any plans for follow-up studies that may be conducted as a result of the preliminary quantitative risk assessment (PQRA) report recommendations, specifically for chromium exposure to caribou and chromium concentration in lichen at both reference and mine site locations. In its response, AEM indicated that it would complete another wildlife screening level risk assessment (WSLRA) in 2014 and during this re-evaluation and analysis, the chromium levels at

reference and mine-site stations would be re-assessed and if necessary, additional samples may be collected to evaluate chromium speciation.

l) Dust and air 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."

The Board recommended that air monitoring stations be kept in place until more data is collected. However, if more suitable locations for dust monitoring were identified, the Board requested that AEM provide a description of the new location for the atmospheric monitoring station, including an updated map. Further, the Board requested that AEM provide a discussion and rationale as to why two out of the four stations monitored exceeded the maximum allowable concentrations of total fixed dust fall during the months of November/December at a time when the mine roads would usually be expected to be covered with snow.

In its response, AEM indicated that the location of the stations were determined in consultation with EC in July 2011. However, Station #4 was installed prior to the construction of the Vault road which, after realignment, placed the station within approximately 10 feet of the road. The station was re-positioned by AEM to 100 metres east of the road to be indicative of the original intended location (approximately 100 metres from the road). The other stations were not changed from the initial location as agreed upon with EC. In regards to the two stations exceeding the maximum allowable concentrations, AEM indicated that during the November and December months, construction of the Vault road was ongoing and that was the explanation for these stations having been affected.

m) 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 2012, the Board requested that AEM provide the information requested by EC regarding incinerator combustion operations, and that any corrective measures employed be identified and described in future annual reports. AEM, in its response, indicated that there were some initial operational problems during the use of the incinerator in the first 1.5 years of incinerator operation. AEM also indicated that since that time they had committed to proper personnel training and operations of the unit. Furthermore, AEM indicated that results from 2012 stack testing showed that emissions were below EC's criteria for dioxins, furans and mercury, illustrating that the unit temperatures were maintained to ensure complete combustion of wastes. The NIRB notes however, that in reviewing the available 2012 Incinerator Daily Report Logbook, the incinerator temperature in the secondary chamber were below the recommended 1000 ºC temperature on several occasions (see Section 2.2.2.4 for further discussion).

n) 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. In 2013, it was noted by the Monitoring Officer during the site visit that no dust suppressant techniques were being applied to the access road from Baker Lake (gatehouse) to the Meadowbank site but that AEM did use CaCl and water as a dust suppressant at the mine site itself. The same issue was noted during the 2011 and 2012 site visits. In the Board's 2012 recommendations to the Proponent, it was requested that dust control for the access road be addressed by the Proponent. Further, the Board recommended that AEM provide a plan which details the future dust monitoring studies that would be conducted along the access road including a discussion of potential adaptive management strategies that may result from these studies.

In its response to the Board's recommendations, AEM indicated that it had implemented a road dust control program at the mine site that focuses on road safety by controlling dust and protecting the environment and public health. The focus of dust control was at the mine site and the road between the mine site and the Meadowbank exploration camp as these have the highest volume of road traffic. AEM indicated that it also provided CaCl to the hamlet of Baker Lake to be applied to the section of road between AEM's barge landing area and the Baker Lake Gatehouse in response to the increased traffic during the sealift period. However, AEM has indicated that to treat the full length of the Meadowbank AWPAR it would require an approximate amount of 2.8 million litres of CaCl. Given the large volume of material required, AEM expressed concern that it could cause adverse environmental impacts and noted that there is no guarantee that the two applications would be adequate. AEM had indicated that it was not willing to introduce this amount of CaCl into the local environment until it better understands the potential environmental effects of using CaCl and until it can confirm that the dust currently generated along the AWPAR is causing harm. AEM also indicated that monitoring studies to date have not identified dust deposition as a potential concern to the terrestrial or aquatic environments.

AEM indicated that it would continue to monitor air quality around the site and has proposed a study to evaluate dustfall at selected locations along Vault Pit road, along the road to the exploration camp and along additional sections of the AWPAR. A study design was also presented by AEM.

It was noted during discussions held as part of the 2013 site visit that dust control trial studies were conducted in the summer of 2013 (see Appendix I for further details) and that AEM is awaiting the results from the studies to determine the best options to deal with the dust created at the mine site and along the access road.

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 to provide comments on the WSLRA and the PQRA reports 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. In its response, Health Canada 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. With respect to the PQRA report, Health Canada indicated that it would require additional information to provide comments on the human health assessment that was completed by AEM. The request for additional information was forwarded to AEM and in turn AEM responded and provided the information requested by Health Canada. At the writing of this report, Health Canada has not provided a response and/or comments in regards to the additional information provided by AEM.

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 [No. 004]. These items are discussed further in the Memo and Recommendations provided under separate cover to the Board for its consideration.

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

In the 2012 annual report AEM provided a description of how blast holes were sampled and analyzed for the percentages of sulphur and carbon. However, there was no discussion provided on how the numbers compare with predictions made in the FEIS. Further, no discussion was provided on the re-evaluation of rock disposal practices, the results from systemic sampling of the waste rock and tailings and how tailings management has been enhanced. It is noted that an updated mine waste rock and tailings management plan was submitted with the 2012 annual report.

b) 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.

AEM indicated that the Daily Report Logbook entries for the incinerator operation were only available for the months of March, May, June and December with the remaining daily logbook entries being misplaced for the other months. In the review of the available 2012 Incinerator Daily Report Logbook, the NIRB notes that the incinerator temperature in the secondary chamber was below the recommended 1000 ºC temperature on several occasions. It is noted that there were 17 burn cycles where the secondary chamber was less than 1000 ºC, 9 burn cycles where the secondary chamber was less than 900 ºC and 1 burn cycle where the secondary chamber was less than 600 ºC. It was previously noted by EC[1] 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.

Incinerator stack testing was completed in 2012 and the results indicate that AEM had been operating below the CCME Canada Wide Standards for Dioxins and Furans.

c) 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 2013 Site Visit Report (Appendix I), to date, dust suppression techniques have not been applied to manage dust along the access road. However, AEM has indicated that it intends to determine the best options to deal with the dust created along the access road, should it be shown to cause an effect.

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

Conditions:

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.

Commitments:

34. The shipping company will have spill equipment on board with crew trained to deploy the equipment.

35. The Coast Guard will be notified as soon as a spill has occurred and, if required, will provide further spill support.

[1] 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.

38. Cumberland will request that the shipping company contracted to carry fuel for the project carry out practice drills deploying their spill equipment in various locations within the inlet.

On August 9, 2012 an accidental spill of approximately 200 litres of diesel fuel occurred in Baker Lake at AEM's marshalling facility. The fuel spill occurred during discharge operations by the barge vessel (MT Dorsch) at the Baker Lake mine site marine manifold. Based upon the 2012 annual report received from AEM, the marine hose had been scuffed or rubbed worn on a rock, causing a puncture in the hose which led to a fuel leak. The crew of the vessel immediately started the clean-up of the area with assistance from AEM employees. AEM used additional material 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 Monitoring Officer was informed of this spill by the GN-Department of Environment on August 9, 2012.

On August 11, 2012 AEM held a community meeting to discuss the spill, to discuss AEM's clean-up response and the next steps that would follow after the spill. AEM indicated that it would be working with the shipping company (Woodward) to determine what might be done to prevent future spills and that it would be setting up some additional spill response kits near the shore in order to prepare for any potential future spills. During the 2012 and 2013 site visits, the Monitoring Officer noted that there were two environmental emergency sea-cans at the Baker Lake laydown facility; one contained booms and absorbent pads while the other contained a boat and supplies for the boat.

On August 14, 2012 the NIRB contacted TC requesting information on the spill, including the legislation that would apply and the follow-up required by AEM or 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. No further information has been provided by TC with regards to the investigation and/or outcome from the incident.

In AEM's 2012 Annual Report, it indicated that samples were collected by AEM staff at 3 locations within Baker Lake near the area of the spill as well as in the vicinity of the Baker Lake Water Supply intake. The results showed no exceedences of CCME drinking water criteria or traces of any substance associated with diesel fuel.

2.2.3. Compliance Monitoring by Authorizing Agencies

On April 30, 2013 the NIRB requested that authorizing agencies with a mandate or jurisdictional responsibility for the Meadowbank project provide comments and information with respect to compliance monitoring for the 2012 – 2013 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 2012 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. Aboriginal Affairs and Northern Development Canada (AANDC)

AANDC's Water Resource Officers conducted two inspections in 2012 for compliance with the Type A Water Licence as issued by the NWB (Licence No. 2AM-MEA0815). AANDC noted the following issues after the site inspections:

March 2012

- Exceedance of total allowable water usage limit of 700,000 m^3 per year as stipulated in the water licence.
- Use of quarry pits #5 and #22 for contaminated soil.

July 2012

- Use of quarry pit #22 for contaminated soil.

AANDC noted that conditions 8 to 30 and conditions 78 to 80 of the NIRB's project certificate had been incorporated into the Type A Water Licence. AANDC also noted that the Proponent had not clearly illustrated how the requirements of conditions 22 and 23 were met in its 2012 Annual Report and requested further clarification from AEM. Regarding Condition 80, AANDC noted that AEM committed to updating the mine closure plan using revised life of mine calculations, as well as liability estimates which give consideration to the updates of Portage waste rock facility reclamation work.

2.2.3.2. Fisheries and Oceans Canada (DFO)

A site visit was conducted by DFO in August 2012 with no compliance issues having been reported as observed by the DFO officer at the AEM site.

2.2.4. Compliance with Instruments

2.2.4.1. Nunavut Water Board Licence

As indicated earlier in this report, 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 to 1,870,000 m^3/year in 2013 and to 1,150,000 m^3/year for each year thereafter until 2018. The NIRB received correspondence from the NWB on July 15, 2013 acknowledging AEM's amendment application and requesting that the NIRB confirm whether any screening, reconsideration or review of the proposed amendment would be required. The NIRB released correspondence on

August 6, 2013 indicating that the NIRB would consider two avenues under the NLCA (Sections 12.4.3 and 12.8.2) to determine the impact assessment requirements applicable to AEM's amendment application. 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 Water Licence amendment application on or before August 20, 2013.

The NIRB received comments from EC and AANDC, and a request for clarification from DFO. Both AANDC and EC were of the opinion that the increase in water withdrawals from Third Portage Lake would not necessarily constitute a change in scope from the activity that was originally reviewed by the NIRB in 2006. Further, the increase in water usage would be adequately captured under Condition #47 of the Project Certificate [004] which requires the Proponent to take an adaptive approach to managing water flow in Third Portage Lake, including verification of the maintenance of water levels. Both AANDC and EC indicated that environmental consideration associated with the amendment request would be adequately addressed through the water licence amendment process.

On October 1, 2013 the NIRB issued correspondence indicating that the application to amend 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 therefore, the amendment application was exempt from the requirement for screening pursuant to Section 12.4.3 of the NLCA and the amendment activities therein would remain subject to the terms and conditions of the NIRB Project Certificate [004].

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.

The NIRB released correspondence on September 26, 2013 NIRB would consider two avenues under the NLCA (Sections 12.4.3 and 12.8.2) to determine the impact assessment requirements applicable to AEM's 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.

2.2.4.3. Compliance with other licences and authorizations as described in the 2012 Annual Report

AEM noted that inspections were conducted by AANDC, KivIA, EC, DFO, NIRB and GN-DoE. Compliance issues were identified by both AANDC and EC during various inspections. AEM complied with directions issued by these agencies, however, it did not meet certain requirements of the NWB Water Licence (No. 2AM-MEA0815) while moving through the NWB's Water Licence amendment process. In 2010, 2011 and 2012, AEM reported that it had exceeded the total allowable annual water usage limit of 700,000 m^3 as stipulated in the water licence. As indicated in Section 2.2.4.1, AEM applied for an amendment to its water licence with NWB in April 2013. This application is currently under review by the NWB.

AEM noted within its 2012 Annual Report that samples taken in the secondary containment areas of the bulk fuel storage tanks at the Bake Lake marshalling facility contained elevated levels of total oil and grease which exceeded the water quality limit of 5 mg/L as stipulated in the NWB Type A Water Licence (No. 2AM-MEA0815). However, no discussion was provided within the 2012 Annual Report as to why this value exceeded the limit or the steps taken to ensure that this is corrected and that total oil and grease would remain below the limits set by the water licence for Tanks 5 and 6.

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.

In addition to requesting comments on compliance monitoring on April 30, 2013 the NIRB requested that authorizing agencies provide comments and information with respect to effects monitoring as follows:

a) Whether the conclusions reached by AEM in the *2012 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 2012 Annual Report and a *summary* of the comments received from parties.

2.3.1. NIRB's Review of AEM's 2012 Annual Report

Appendix D of the Project Certificate provides an outline of the requirements of what is expected within 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 2012 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 following is a summary of the NIRB's review of AEM's 2012 Annual Report:

2.3.1.1. Aquatic Environment

Water quality

AEM noted in its 2012 annual report that the original water quality predictions in the FEIS did not adequately predict actual water quality in the pits. AEM did not provide a discussion on the original predictions nor an analysis of whether these adequately predicted the actual water quality in the pits. Further discussion would be required to determine if the original predictions need to be updated.

Groundwater monitoring program

The groundwater monitoring program was conducted in July 2012 with samples successfully collected at only one monitoring well (MW08-02). AEM indicated that monitoring at the three other wells could not be completed due to several complications; i.e., ice bridge inside the well pipe, damage of a well, and blockage of well. 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 to the fragility of the wells and their operating within an arctic environment. During the NIRB's 2013 site visit, AEM indicated to the Monitoring Officer that several methodologies were being considered to address the groundwater monitoring program, including utilizing production wells to more effectively achieve the purpose of NIRB Condition 8. AEM, in its response to the Board's 2012 recommendations, indicated that it planned to submit a Groundwater Plan by August/September 2013 and that this would discuss the different methodologies being considered. To date, this document has not been received by the NIRB.

2.3.1.2. Noise Quality

Noise monitoring occurred at three of the five previously determined monitoring locations around the Meadowbank site. AEM indicated that this was due to both malfunctions and difficulties with software. From the NIRB's review of the 2012 Noise Monitoring Report (AEM, 2013b), it appears 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. Further, it is noted that three out of the five daytime results and three out 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 are sustained for an unreasonable amount of time, additional mitigation measures may be recommended.

AEM indicated in its 2012 annual report that since noise level and terrestrial wildlife monitoring have been conducted in a manner that addresses the impacts predicted in the FEIS, these monitoring programs were judged to be effective and the effects of noise identified in the FEIS have not appeared to be occurring as predicted. However, in reading the results from the monitoring data from 2012, several values exceeded the calculated PSL of 55 dBA which may have a potential impact upon the environment, including terrestrial wildlife. This could require further analysis of the significance of noise monitoring data in order to substantiate claims that noise has not had an effect. There was no clear link made between the potential effects of noise on wildlife and how habitat effectiveness has or has not been affected by noise.

2.3.1.3. General

Condition 32: All weather private access road

Through the NIRB's review of AEM's 2012 Annual Report, it was noted that information had been provided with regards to Condition 32(f), 32(g) and 32(h). However, from the records provided, it appears that AEM did not hold a meeting in the hamlet of Baker Lake as per Condition 32(e) for the 2012 year. Further details required by the Board pursuant to Condition 32 are discussed in Section 2.2.2.2.

Condition 40: Gathering of Traditional Knowledge information

Condition 40 requires that AEM report on Traditional Knowledge (TK) gathered annually to both the KivIA and the NIRB. No information was provided in AEM's 2012 Annual Report regarding any additional TK collected from residents of Chesterfield Inlet on marine mammals, cabins, hunting and other local activities in the Inlet.

2.3.2. Effects Monitoring by Authorizing Agencies

2.3.2.1. Aboriginal Affairs and Northern Development Canada

AANDC noted that both its own and AEM's sampling results from the attenuation point were in compliance with applicable regulations. Further, AANDC pointed out that AEM's 2012 summary of results from the CREMP appeared to be consistent with the predictions made in the environmental assessment, notably that the project would have no significant impact to the freshwater environment.

However, AANDC pointed out that in 2012 the pit water quality model showed great differentiation from actual values. This resulted in AANDC having recommended that AEM improve its pit water quality model to better predict water quality.

Socio-economic effects monitoring

AANDC noted that it continues to work collaboratively in partnership with the Kivalliq Socio-Economic Monitoring Committee to monitor, evaluate and report on the socio-economic impacts of the Meadowbank mine in order to satisfy the NIRB's Project Certificate requirements.

2.3.2.2. Environment Canada

EC provided comments and recommendations on AEM's incineration process, air quality monitoring results and groundwater monitoring throughout the 2012-2013 monitoring period.

Incineration

As a result of its review of Appendix E2 within AEM's 2012 Annual Report, EC requested further clarification on the amount of waste that had been incinerated. Specifically, whether the waste had been weighed prior to being loaded into the incinerator, and also, the total mass of waste incinerated annually. EC also requested that AEM clarify how often the burner operation of the incinerator had been below-optimal levels. EC requested that AEM should provide the results of the second stack tests that were conducted to determine compliance with the CCME Canada Wide Standards for Dioxins and Furans. EC also requested clarification on the details of the waste stream used for the stack tests and for clarification as to when in the burn cycle these tests were conducted.

Air quality

EC pointed out within its submission that Appendix G7 of AEM's 2012 Annual Report indicated that particulate matter (PM_{10}) concentrations were consistently larger than total suspended particulates (TSP) concentrations at two monitoring sites. EC further noted that this is not possible in actuality as PM_{10} is a subset of TSP. EC requested that AEM confirm that the monitoring results for these two parameters might have accidently been switched, and also suggested that it follow other provincial standards for PM_{10} considering that the GN does not have a PM_{10} ambient air quality standard.

It was noted by AEM within its 2012 Annual Report that greenhouse gases measured on site had increased by 23% from 2011 to 2012 due to a 28% increase in mine throughput and production. In its submission to the Board, EC requested that AEM clarify whether any other measured emissions had also increased during this time period, and further, requested that AEM include estimates of annual emission rates of all pollutants plus the annual consumption rate of fuel used on site.

Groundwater monitoring

In its submission to the NIRB, EC recommended that AEM develop other approaches to sampling and analysis that would allow AEM to obtain groundwater chemistry and flow data in order to inform the operational water management and provide information for closure.

2.3.2.3. Fisheries and Oceans Canada (DFO)

DFO suggested that AEM continue to adhere to its Guidelines for the Use of Explosives in or Near Canadian Waters (1998) though it acknowledged that the paper by Faulkner *et al.* (2006) listed the following exceptions:

- Measurements could only be obtained for 25% of the blasts;
- All the Lake Trout eggs utilized in this study were either not viable, or contained embryos that were already past the developmental stage most sensitive to physical shock; and
- There is a large margin of error associated with physical handling of the eggs prior to/during placement in the various sites.

2.3.2.4. Agnico Eagle Mines Ltd.'s Response to Comments

AEM provided a response to the comments received from authorizing agencies on July 19, 2013. Of note, AEM confirmed that the values obtained for PM_{10} and TSP were not accidently switched as proposed by EC but was correctly reported. AEM further indicated that it has initiated a full review of the particulate sampling procedures to determine the source of the error.

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 2012 Annual Report provided an evaluation and comparison of its results from 2012 monitoring programs to the impacts as predicted in the FEIS. The 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. However, the discussion and analyses as presented does not provide a full discussion and summary on the PEAMP for the Project as required by Appendix D. Specifically, the NIRB would expect these analyses to include a reference to baseline data and monitoring results used to support impact predictions and the conclusions of effects analyses, with a discussion of the methodologies employed for both data collection and analysis. Further, the discussion was lacking a determination as to whether or not the project had any environmental and socio-economic impacts during the reporting year in comparison to baseline data, the previous years' monitoring data, and the predictions made in the FEIS. A comparison to predictions and effects conclusions from FEIS and discussion of any exceeded thresholds, adaptive mitigation strategies employed and their effectiveness and an evaluation of any mitigation measures undertaken as well as updates to predictions made also were not included. The NIRB notes that AEM's 2012 Annual Report did provide a detailed discussion on the usage of the access road and the potential impacts to wildlife (caribou harvested) given the increase access along the access road.

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

AEM proposed in its 2012 Annual Report that, based on the water quality monitoring results collected during 2012 and in previous years along the harmful alteration, disruption or destruction (HADD) crossings, it would not conduct any surface water chemistry sampling in 2013 unless turbidity were observed at these crossings. The NIRB notes that any changes to monitoring programs related to authorizations would require approval from the relevant authorizing body and possible consideration by the Board.

2.3.3.3. Permafrost

In its 2012 Annual Report, AEM indicated that no monitoring of permafrost aggradation was completed in taliks for Second Portage Lake, Portage Pit and Bay Goose Pit during 2012 in order to verify the predictions made within the FEIS as no instruments were in place to collect data. The NIRB notes that ongoing monitoring of the aggradation of permafrost and stabilization of the active layer is important to determine whether the project is having an effect on permafrost and also, to determine whether a loss of permafrost has occurred.

2.4. OTHER ACTIONABLE ITEMS

The amendment application to the NWB (see Section 2.2.4.1) included a reference to Phaser Lake within AEM's updated Water Management Plan 2012 (AEM, 2013c). Within this plan, AEM makes reference to the extension of Vault Pit into Phaser Lake; noting that this would require a fish out and then dewatering of Phaser Lake, in approximately 2016. Further information regarding the proposed dewatering of Phaser Lake as described within the plan was not provided.

2.5. SITE VISIT

As an integrated part of the NIRB's continuous monitoring program of the Project, the NIRB's Monitoring Officer visited the Meadowbank site on September 13, 2013. The site visit included the Meadowbank site facility (the waste rock facility, landfarm, landfill/pilot remediation site, tailings storage facility, Vault Pit, active mine areas including Portage pits and Bay-Goose basin, the waste and hazardous materials storage area, the incinerator, fuel storage area, air monitoring station and dust monitoring station), the access road and the Baker Lake fuel tank farm and marshalling facilities. The following outlines findings as they relate to the NIRB's 2013 site visit:

> Based on the observations made during this site visit, all facilities which were in operation and/or under construction appeared to be well managed and maintained with adequate environmental protection measures and procedures in place.
>
> As with years past, the Proponent appeared to be in compliance with a majority of the terms and conditions contained within the Meadowbank Project Certificate as applicable to the NIRB's 2013 Site Visit. 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 pilot remediation program undertaken during the 2012-2013 reporting period appeared to have worked well; the Monitoring Officer was informed that the rate of biodegradation of the contaminated soil containing nutrients (sewage sludge) was faster as compared to contaminated soils with no nutrients added. AEM noted that it would continue to use this method next year for treatment of all of its contaminated soils.

The Monitoring Officer also noted that the silt curtains put in place downstream of the diversion ditch flowing into Third Portage Lake did not appear to be functioning properly as sedimentation was evident around the shoreline and flowing into the lake.

Regarding Condition 8, only one groundwater well appeared to have been operational during the 2013 site visit. The Monitoring Officer acknowledged AEM's indication that further re-evaluation of the groundwater well monitoring program would be conducted and that consideration would be given to potential of using production wells instead of groundwater wells to assess the existing conditions at the mine site.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site. AEM noted that wildlife had been observed at site including caribou, muskox and foxes, with a few fox dens having been noted in and around the site.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. The Monitoring Officer was informed during the 2013 site visit that the clean-up of the spill at kilometre 22 was complete, but that the site would continue to be monitored as part of AEM's ongoing aquatics effects monitoring program. Furthermore, some instances of wind-blown debris scattered around the site were noted.

Condition 27 requires that the Proponent use safe, environmentally protective methods for areas used to store fuel or hazardous materials. The Monitoring Officer noted that the fuel storage facilities appeared to be well contained and properly set up for the re-fuelling of vehicles.

During the site visit it appeared that the Proponent had not fully met the requirements of Condition 74, as dust suppression techniques had not been applied to the access road, though dust suppression techniques were being applied at the Meadowbank site. AEM indicated that it has plans in place to determine the effects of dust on vegetation along the access road from studies conducted in the summer of 2013 and to determine the best options to deal with dust created along the access road.

For a comprehensive review of the NIRB's 2013 site visit and observations, please refer to the NIRB's *2013 Meadowbank Site Visit Report* (Appendix I).

3.0 SUMMARY

The Meadowbank Gold mine began commercial production in March 2010 and is now in its fourth year of production. The Proponent appears to be in compliance with the majority of the terms and conditions contained within the Meadowbank Project Certificate [004], 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.

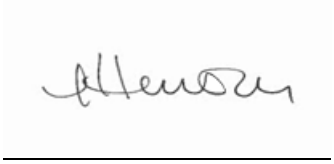
Pursuant to NLCA Sections 12.7.2 and 12.7.3, the NIRB will continue to work with AEM and other agencies in order to provide the required evaluation of monitoring efforts, results and compliance as outlined within the Board's project-specific monitoring program and in accordance with the requirements set out in the NIRB Project Certificate [No. 004].

Prepared by: Sophia Granchinho, M.Sc., EP
Title: Senior Technical Advisor/Monitoring Officer
Date: November 1, 2013

Signature:

Reviewed by: Amanda Hanson
Title: Director, Technical Services

Date: October 30, 2013

Signature: 

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Appendix I:
The NIRB's 2013 Meadowbank Site Visit Report

2013 Site Visit Report

for the NIRB's Monitoring of Agnico-Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
November 2013

Full Report Title:	2013 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. PO Box 540 Baker Lake, NU X0C 0A0
Proponent Contact:	Kevin Buck, Environment Superintendent
Telephone:	(819) 759-3555, ext. 6838
Visit conducted by:	Sophia Granchinho, M.Sc., EP Senior Technical Advisor/Monitoring Officer
Telephone:	(866) 233-3033
Site visit dates:	September 13, 2013
Last site visit:	September 12-13, 2012
Photos by:	Sophia Granchinho
Cover photos:	1) View of Meadowbank Mine Site 2) View of Baker Lake Docking 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 13, 2013 as part of the NIRB's monitoring program.

1.1 Objectives & Purpose of Site Visit

In December 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 [No. 004] to include an amendment to Condition 32 pursuant to NLCA 12.8.2 and an approval to change the name of the holder of the Project Certificate [No. 004] 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 [004] (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 (Section 12.7.2(a), provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals (Section 12.7.2(c)), and will further be used to assess the accuracy of the predictions contained in the project impact statements (Section 12.7.2(d)).

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. The current Project owner, Agnico Eagle Mines Limited (AEM or Proponent), indicated in its December 2011 Reserves and Resources report that Meadowbank had at the time, proven and probable gold reserves of 2.2 million ounces; lower than the initial value predicted (AEM, 2011). In February 2012, AEM announced that its Meadowbank ore reserves had been reduced as a result of it being unable to economically mine the lower grade ore which subsequently, reduced the expected life of the mine by approximately 3 years (AEM, 2012). AEM provided a revised mine plan to the Kivalliq Inuit Association which predicted that its Meadowbank operations are now scheduled to be completed by 2017 instead of 2020 (AEM, 2012).

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 (access road) 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 access road.

1.3 Preparations for the Site Visit

The Monitoring Officer reviewed the following items to prepare for the site visit: Meadowbank Project Certificate [No. 004], 2012 Site Visit Report, AEM's 2012 Annual Report and associated appendices, and follow-up correspondence from the NIRB's 2012 site visit.

2 SITE VISIT

The 2013 site visit was conducted by Sophia Granchinho, NIRB Monitoring Officer. On September 13, 2013 the Monitoring Officer was driven to the Meadowbank mine site from the AEM office in Baker Lake with other AEM staff. Once at the site, the Monitoring Officer was met by Kevin Buck, AEM's Environment Superintendent. Mr. Buck and the Monitoring Officer discussed issues which were related to the 2012 site visit. In the afternoon, Mr. Buck and Martin Therialut led a tour of the site, which included the waste rock facility, landfarm, landfill/pilot remediation site, tailings storage facility, Vault Pit, active mine areas including Portage pits and Bay-Goose basin, the waste and hazardous materials storage area, the incinerator, fuel storage area, air monitoring station and dust monitoring station. At the conclusion of the tour of the mine site, the Monitoring Officer met with Mr. Buck to discuss the site visit and further issues related to environmental compliance. Afterwards, Mr. Tom Thomson drove the Monitoring Officer along with a Golder consultant, Yves Boulianne, to the hamlet of Baker Lake via the access road. Prior to being dropped off at the AEM office, Mr. Tom Thomson and Mr. Yves Boulianne accompanied the Monitoring Officer to the following Baker Lake facilities: diversion channel at Third Portage Lake, quarry 22, quarry 5, bridge at kilometre 22/23, culvert at kilometre 1 and the Baker Lake bulk fuel storage facility/marshalling area.

The site visit provided the Monitoring Officer with a tour of all major project components and further, provided an opportunity for the Monitoring Officer and AEM staff to discuss relevant issues 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. While travelling along the access road to and from the Meadowbank site and the hamlet of Baker Lake, the Monitoring Officer observed very little wildlife. The only observable wildlife included two caribou, Snow geese (and blue geese) and a Peregrine falcon along the access road. No wildlife was observed at site; however, it was noted by staff that a muskox had been lingering around the Vault Pit area.

b. Mr. Buck mentioned that the pilot remediation program undertaken this year at the Meadowbank site using on-site nutrients (sewage sludge) to initiate biodegradation of

contaminated hydrocarbon soil worked very well and that AEM was planning on using the same technique next year for all hydrocarbon contaminated soils (see Photo 1). This method would be used instead of general landfarming techniques (see Landfarm Plan for further information [AEM, 2013]).

Photo 1: Contaminated soil storage/pilot remediation site

c. AEM indicated that additional grid samples would be taken at both Quarry 5 and Quarry 22 (both sites previously used for storage of contaminated hydrocarbon soil) and confirmed that if samples indicate that no hydrocarbons are present, remediation of both quarries would commence. Photo 2 through Photo 4 show the condition of Quarry 5 from the storage of contaminated soils in 2011 to clean-up in 2013, while Photo 5 and Photo 6 show the condition of Quarry 22 in 2012 and 2013.

Photo 2: Quarry 5 in 2011 containing contaminated soil from fuel spill at kilometre 22 along the access road

Photo 3: Quarry 5 in 2012

Photo 4: Quarry 5 in 2013

Photo 5: Quarry 22 in 2012, serving as a storage area for contaminated soil

Photo 6: Quarry 22 in 2013

d. The Monitoring Officer noted that the environmental emergency sea-cans containing booms, shovels, absorbent pads, and other miscellaneous spill response equipment were located at most bridge crossing (one was not observed at the km 22/23 bridge). Further, two additional environmental emergency sea-cans, one containing spill response equipment and another containing a boat with motor were located at the Baker Lake laydown facility.

e. Active blasting and drilling were ongoing at the North, Central and South Portage pits, with daily geotechnical inspections being undertaken to ensure the safety of all employees and contractors working in the active mine area (see Photo 7).

Photo 7: Portage Pit

f. Development of the Bay-Goose Dike and causeway was completed in 2010 with the instrumentation on the Bay-Goose Dike and the jet grouting program completed in 2011. Mining of the Bay-Goose basin started in May 2012 (Photo 8).

Photo 8: Bay-Goose basin

g. Construction of the Vault Road was completed by the end of 2012 and AEM commenced stripping, quarrying and related construction activities in 2013 (Photo 9). During the site visit, it was noted that dewatering of Vault Lake would commence in late September, once the fish-out program had been completed (see Photo 10). Mining of Vault Pit is planned for 2014.

Photo 9: Vault Lake Quarry site

Photo 10: Site of future Cell B, Vault Lake Pit

h. Inspection of the tailings storage facility did not reveal any apparent rips to the liners that were exposed within Saddle Dam #1 and Saddle Dam #2 (Photo 11).

Photo 11: Tailings storage facility

i. Mr. Buck indicated that the extension of the airstrip was completed in April 2013. This extension was previously screened and approved pursuant to NIRB File No. 10XN039.

j. The Monitoring Officer noted that the water within the diversion ditch constructed around the tailings facility and flowing into Third Portage Lake appeared to be turbid, likely due to the high volume of rainfall over the previous few days (see Photo 12). Further, the silt curtains installed in Third Portage Lake did not appear to be functioning properly as there was evidence of turbid water/sediment along the shoreline of Third Portage Lake and flowing into the lake. The diversion ditch was built to control freshet water from entering the tailings facility (see Photo 13).

Photo 12: Diversion ditch around tailings facility

Photo 13: Turbid water entering Third Portage Lake

k. While travelling along the access road from Meadowbank back to Baker Lake, the Monitoring Officer noted that the culvert crossing at kilometre 1 was damaged and that there was evidence of sediment deposit at the outflow of the culvert into Airport Lake. AEM indicated that it would assist the hamlet of Baker Lake in any work(s) required to upgrade/repair the culvert. AEM indicated that this particular section of the access road is owned by the hamlet and is not leased by AEM (see Photo 14).

Photo 14: Culvert crossing at kilometre 1

2.2 Observations based on NIRB's Project Certificate [004]

Sections 2.2.1 through 2.2.6 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 one groundwater monitoring well appeared to be operational. AEM noted that the last operational groundwater monitoring well of those installed in 2003 became damaged from frost action in 2010. Three of the four defective wells were replaced in 2006 but were again damage by frost action. Two of the wells were again replaced in 2008 with a more robust design. In 2011, two monitoring wells were installed, one on Goose Island to replace one of the 2003 wells and one at the tailings storage facility to replace one of the 2007 wells. Only one of the wells replaced in 2008 was sampled in 2011 as the second well showed blockage and no samples could be taken. Mr. Buck indicated that although groundwater sampling did occur at the operational wells for the 2013 sampling program, well number MW11-02 could not be sampled due to blockage from the previous year. AEM is planning on using

production wells instead of groundwater wells to evaluate the groundwater quality but for the 2013 year, AEM staff indicated that as there was limited water flowing at the selected production wells, no sampling had been conducted for this year.

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."*

As per previous site visits, the Monitoring Officer noted in 2013 that AEM continued to segregate and store all domestic, hazardous, and combustible wastes in marked sea-cans prior to these materials being incinerated or shipped to appropriate and approved off-site disposal facilities (Photo 15). AEM indicated that sea-cans filled with waste are backhauled via truck haul to Baker Lake and are then moved via the annual sea lift to southern Canada (Photo 16). AEM has also initiated other recycling programs to reduce the amount of wastes going to the landfill; *e.g*., puncturing aerosol cans which could then be recycled as metal (Photo 17 and Photo 18).

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

Photo 16: Sea-cans waiting to be backhauled

Photo 17: Landfill at Meadowbank mine site

Photo 18: Waste rock facility

The Meadowbank site dual chamber forced air incinerator remains in service for the combustion of all non-hazardous, combustible materials at the site (Photo 19). AEM staff noted that approximately 1.7 tonnes of domestic garbage is incinerated per day; however, Mr. Buck indicated AEM has plans in place to continually improve waste management by reducing the amount of domestic garbage produced at site. Some examples include completely replacing paper coffee cups with plastic coffee cups, using plastic lunch boxes and trays instead of paper bags, recycling wood products by finding second uses for these at site or by backhauling it to Baker Lake where it may be claimed and used by community members.

Photo 19: Dual chamber forced air incinerator at the Meadowbank site

Mr. Buck indicated that there have not been any issues with wildlife around site and that staff are encouraged to leave wildlife alone. Mr. Buck indicated that caribou and muskox have been around the Vault Lake site and that a few fox dens with pups have also been observed around site. In addition, Mr. Buck indicated that active falcon nests had also been observed within

various quarry sites along the access road with most adult pairs having fledged at least one chick successfully.

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 2012 visit to the Meadowbank site, the Monitoring Officer noted that all areas were kept in an impressively clean state, with no obvious spills. There were a few instances of wind-blown material observed around the Meadowbank site.

Mr. Buck indicated that clean-up of the spill that occurred near kilometre 22 of the access road in October 2010 was complete and the booms previously deployed in the watercourse had been removed in July 2013 (Photo 20). Mr. Buck confirmed that the site would continue to be monitored as part of AEM's aquatic effects monitoring program.

Photo 20: Bridge near kilometre 22

Condition 27

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

During the 2013 site visit, the Monitoring Officer observed that all of AEM's fuel and hazardous materials associated with the Meadowbank project appeared to be stored in a safe and environmentally protective manner (i.e. secondary containment at fuel storage areas and secure containment of hazardous materials; see Photo 21 and Photo 22).

Photo 21: Meadowbank on-site fuel tank farm

Photo 22: Baker Lake bulk fuel storage facility

The fuel transfer stations on site (Photo 23) and at the Baker Lake bulk fuel storage facility (Photo 24) appeared to be well contained and properly set up for the re-fuelling of vehicles. No hydrocarbon odours were noted at either the Meadowbank fuel tank farm or the Baker Lake bulk fuel storage facility. No sheen was observed on the water within the Meadowbank fuel tank farm or the Baker Lake bulk fuel storage facility.

The Monitoring Officer noted that a Jet-A pad had been installed near the Baker Lake bulk fuel storage facility and that it had 20 fuel tanks in place (Photo 25).

Photo 23: Meadowbank on-site fuel transfer station

Photo 24: Baker Lake fuel transfer station (taken in 2012)

Photo 25: Jet-A pad at Baker Lake storage facility

2.2.2 All-Weather Private Access Road (AWPAR)

Amended **Condition 32**

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

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

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

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

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

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

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

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

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

AEM maintains one gatehouse at kilometre 5 of the access road, and another gatehouse close to the entrance to the mine site and camp at Meadowbank. Both gatehouses are manned by guards who monitor the safety and security of all personnel using the road. All traffic is required to check in (via radio or in person) with the employee at the gatehouse prior to proceeding past either gatehouse along the road (see Photo 26). The AEM employee manning the kilometre 5 gatehouse maintains a daily logbook of all persons travelling the access road for non-mine use. Members of the public travelling along the road are required to sign-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.

Photo 26: Gatehouse at kilometre 5, near Baker Lake

As per Condition 32(b), AEM submitted a copy of its updated Transportation Management Plan to the NIRB on May 13, 2010. One of the features of the access road as described within the plan is the placement of refuge stations every 10 kilometres. The Monitoring Officer noted that these refuge stations (emergency sea-cans) were not located on the road and was informed by Mr. Buck in 2012 that the sea-cans were removed because items within the stations were being stolen and that the refuge stations were not serving the original and intended purpose. The signs as required per Condition 32(c) were posted in both English and Inuktitut at the gatehouse (Photo 27), at each major bridge crossing (on the side of the environmental emergency sea-cans) and at every at 10 kilometre intervals along the road.

Photo 27: Signs posted at gatehouse at kilometre 5

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 noted that the updated maps 2012 which outline caribou migration corridors were posted in high traffic areas such as the bulletin board outside the check-in office. AEM indicated that all employees must report to the check-in office upon arrival to site at the commencement of their two-week shift and again upon departure from site and would be able to review the updated caribou migration corridor maps.

As indicated earlier in the report, no wildlife were observed around site during the 2013 site visit except along the access road to the mine site.

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 indicated that five locations were monitored for noise during the 2013 summer period. AEM staff noted that monitoring indicated that the dominant mine noise sources included activities such as helicopter and other air traffic, the use of construction and operation heavy equipment and blasting. Monitoring stations were removed prior to the site visit due to windy conditions.

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."

The air monitoring stations were installed by the end of October 2011 and monitoring started in November 2011 (see Photo 28). The partisol sampling stations required heated shelter and electricity in order to operate properly, and these were installed in 2012. During the 2013 site visit, Mr. Buck noted that an air monitoring station installed in 2012 near the Vault Lake road had been relocated. The road alignment to Vault Lake was modified from the original design plan which in turn required that the air monitoring station be moved to a location further away from the road.

Photo 28: Air monitoring station

Condition 74

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

AEM staff 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. AEM staff also noted that it would be using calcium chloride flakes for 2014 as it is lighter to transport and easier to use. AEM noted that it is currently waiting for the results of studies conducted along the access road in 2013 to determine whether or not the dust from the access road is impacting the vegetation around the area. During the site visit, AEM confirmed that no dust suppressants are currently in use along the access road.

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 at the shore with AEM employees on site. The Monitoring Officer did note that these areas were kept impressively clean with sea-cans well organized during the 2013 site visit (see Photo 29).

Photo 29: Bake Lake dock and laydown facility

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 appear to be well managed and maintained with adequate environmental protection measures and procedures in place.

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 as applicable to the NIRB's 2013 Site Visit. 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 notes that the pilot remediation program undertaken this year at the Meadowbank mine site appeared to have worked well. The Monitoring Officer was informed that the rate of biodegradation of the contaminated soil containing nutrients (sewage sludge) was faster compared to contaminated soils with no nutrients added. AEM indicated that it plans to use this method again next year for the treatment of all of its contaminated soils.

The Monitoring Officer also noted that the silt curtains put in place downstream of the diversion ditch flowing into Third Portage Lake did not appear to be functioning properly as sedimentation was evident around the shoreline and flowing into the lake.

Regarding Condition 8, only one groundwater well appeared to have been operational during the 2013 site visit. AEM indicated that further re-evaluation of the groundwater well monitoring program would be conducted, including an evaluation of the potential use of production wells instead of groundwater wells to assess the existing groundwater conditions.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site. AEM noted that wildlife had been observed at the site including caribou, muskox and foxes, with a few fox dens around the site as well. .

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. The Monitoring Officer was informed during the 2013 site visit that the clean-up of the spill at kilometre 22 was complete, but that the site would continue to be monitored as part of AEM's ongoing aquatics effects monitoring program. Some instances of wind-blown debris scattered around the site were noted during the 2013 site visit.

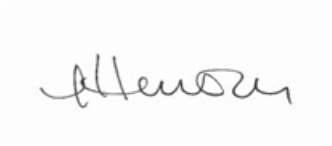
Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer noted that the fuel storage facilities appeared to be well contained and properly set up for the re-fuelling of vehicles.

The Proponent did not appear to have fully met the requirements of Condition 74, as dust suppression techniques had been applied at the Meadowbank site but were not in use along the access road from Baker Lake to site. AEM did indicate that plans were in place to determine the effects of dust on vegetation along the access road and to determine the best options to deal with the dust created.

Prepared by: Sophia Granchinho
Title: Senior Technical Advisor/Monitoring Officer
Date: November 1, 2013

Signature:

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 29, 2013

Signature: 

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

November 27, 2013

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: <u>The Nunavut Impact Review Board's *2012 – 2013 Annual Monitoring Report for the Meadowbank Gold Project* and Board Recommendations</u>

Dear Kevin Buck:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2012 – 2013 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project* (Monitoring Report). The enclosed Monitoring Report is based on the NIRB's monitoring activities as set out within the Meadowbank Project Certificate [No. 004] and pursuant to Sections 12.7.1 and 12.7.2 of the Nunavut Land Claims Agreement. This report provides findings that resulted from the monitoring of this Project that took place from October 2012 to September 2013.

During its regular meeting in Cambridge Bay (November 6-8, 2013), the Board issued the following recommendations to assist Agnico Eagle Mines Ltd. (AEM) in achieving compliance with the Meadowbank Project Certificate [No. 004] and other project-related commitments based upon the its review of the monitoring report and other materials related to the Meadowbank Project.

<u>Meadowbank Airstrip Expansion Screening Decision Report (File No. 10XN039)</u>

As you are aware, the Board's Screening Decision Report for the Meadowbank airstrip expansion (NIRB File No. 10XN039) required that AEM undertake efforts to communicate its plans to expand the airstrip with the community of Baker Lake. It appears from a review of AEM's 2012 Annual Report that community meetings held by AEM did not include a discussion with the community members on plans for the airstrip expansion. The Board also requested that AEM submit a summary of the airstrip expansion activities after the work was completed with its annual report, however this was not provided to the NIRB within AEM's 2012 Annual Report.

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.

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

AEM's 2012 Annual Report provided an evaluation and comparison of the results from 2012 monitoring programs to the impacts predicted in the Final Environmental Impact Statement (FEIS), focusing on the valued ecosystemic components (VEC) that had been identified in the FEIS including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. However, the discussion and analyses presented did not provide a full discussion and summary on the post-environmental assessment monitoring program (PEAMP) for the Project as required by Appendix D to the Meadowbank Project Certificate [No. 004]. Specifically, as it was not provided in previous reports, the NIRB also requested in 2012 that discussions include information and analyses as required by Appendix D. Without these discussions and summaries, it is difficult for the NIRB to ascertain whether or not impacts and/or trends are being observed as a result of the Meadowbank Project.

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.

Compliance with licences and authorizations

The NIRB notes that AEM's 2012 Annual Report indicated that samples taken at the Baker Lake marshalling facility in the secondary containment areas of the bulk fuel storage tanks contained elevated levels of total oil and grease which exceeded the water quality limit of 5 milligrams per Litre (mg/L). No discussion was provided by AEM within its 2012 Annual Report to explain the elevated level or any steps that may have been taken to address this in the future and to ensure that total oil and grease levels will remain within limits.

Recommendation 3: The Board request that AEM provide a discussion an 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.

Water quality

In its 2012 Annual Report, AEM indicated that predictions in the FEIS did not adequately predict water quality in the pits. No discussion was provided regarding whether original predictions within the FEIS need to be updated to ensure the predictions would meet the current conditions at site as required by the PEAMP.

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.

Groundwater monitoring wells – Condition 8

The NIRB noted during its 2013 site visit that AEM had only one operational groundwater well. It has been previously recommended by the Board that defective wells be replaced in order to provide a more robust groundwater quality data and overall monitoring program. AEM indicated during the NIRB's 2013 site visit that it plans to re-evaluate the groundwater monitoring program to determine how best to improve effectiveness and the potential use of production wells to collect this data. Further, in response to the Board's 2012 recommendations AEM indicated that it would be submitting a Groundwater Plan by August/September 2013 that would discuss the different methodologies being considered. The Board has not received this plan to date.

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.

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. Further, 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 are sustained over time, additional mitigation measures may be recommended in the future.

AEM indicated in its 2012 Annual Report that since noise levels and terrestrial wildlife monitoring are being conducted in a manner that addresses the impacts predicted in the FEIS, these monitoring programs are judged to be effective and the effects of noise identified in the FEIS do not appear to be occurring as predicted. However, the NIRB notes that monitoring results from 2012 showed that several values exceeded the calculated PSL of 55 dBA for the site. 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.

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.

All weather private access road – Condition 32(e)

Condition 32(e) of the Meadowbank Project Certificate [No. 004] requires that AEM hold at least one community meeting in the hamlet of Baker Lake annually to explain that the road is private, and that non-mine use of the road is limited to approved, safe and controlled use by all-terrain-vehicles for the purpose of carrying out traditional Inuit activities. In its 2012 Annual Report, AEM indicated that no meetings were held with the community of Baker Lake for the 2012 year.

> **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.

Condition 40: Gathering of Traditional Knowledge information.

Condition 40 requires that AEM report annually to the Kivalliq Inuit Association (KivIA) and the NIRB on Traditional Knowledge gathered at Chesterfield Inlet. No information regarding Traditional Knowledge gathered from the residents of Chesterfield Inlet on marine mammals, cabins, hunting and other local activities in and around the Inlet in the 2012 year was provided in AEM's 2012 Annual Report. This was also noted to be outstanding in the Board's 2011-2012 Annual Monitoring Report, following a review of materials submitted by AEM during the 2011-2012 monitoring period.

> **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.

Monitoring of country foods – Condition 67

Meadowbank Project Certificate [No. 004] Condition 67 requires the Proponent to develop a program which monitors contaminant levels in country foods and to submit this plan to the NIRB. In 2012, the Board invited Health Canada to provide comments on the wildlife screening level risk assessment (WSLRA) and a 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, Health Canada indicated that it would require additional information to provide comments on the human health assessment that was completed by AEM. The request for additional information was forwarded to AEM and in turn AEM responded and provided the information requested by Health Canada. To date, the Board has not received any further response or comment from Health Canada in regards to this additional information that was requested from, and provided by, AEM.

Recommendation 9: The Board invites Health Canada[1] 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.

On-site incinerators – Condition 72

Meadowbank Project Certificate [No. 004] Condition 72 requires that the Proponent conduct annual stack testing of the on-site incinerators to demonstrate that they are operating in compliance with the required standards. Upon review of AEM's available 2012 Incinerator Daily Report Logbook, the NIRB notes 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 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.

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.

Suppression of surface dust – Condition 74

Meadowbank Project Certificate [No. 004] Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the site visit in 2013 it was noted that no dust suppressants were applied to the access road from Baker Lake to the Meadowbank site, however the Proponent was using calcium chloride and water as a dust suppressant at the Meadowbank site itself. AEM indicated that it intends to determine the best options to deal with the dust created along the access road and that studies had been completed in the summer of 2013 to determine the potential impacts of dust on vegetation along the access road.

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.

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

Meadowbank Project Certificate [No. 004] Condition 37 requires that the Proponent ensure shippers contracted are Transport Canada (TC) certified and further, that those shippers carry the most up-to-date emergency response equipment. Meadowbank Project Certificate [No. 004] Condition 82 requires the Proponent to monitor ship cargo and report any accidents or spills immediately.

[1] Note that the Board plans to invite Health Canada to comment via correspondence issued under separate cover, and that AEM is not responsible for a response to this recommendation. It has been included here for information only.

In August 2012 an accidental spill of approximately 200 litres of diesel fuel occurred in Baker Lake at AEM's marshalling facility. According to information provided by TC and AEM, the crew of the vessel immediately started the clean-up of the area with assistance from AEM employees. AEM used additional material from the Canadian Coast Guard sea-can located in Baker Lake in order to properly 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, TC and the GN Spill Line. The NIRB was informed of this spill by the GN-Department of Environment on August 9, 2012. AEM also informed community members of the spill via a community meeting.

The NIRB staff have been in contact with TC on several occasions requesting information on the spill and the conclusions of TC's investigation and/or any outcomes from the incident. Though contact has been made with TC on a number of occasions, no information regarding the conclusions from its investigation nor outcomes from the incident have been provided by TC to date.

> **Recommendation 12:** The Board requests that Transport Canada[2] 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.

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 NIRB notes that any changes to monitoring programs related to specific authorizations would require approval from relevant authorizing agencies and potentially the 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.

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.

> **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,

[2] Note that the Board plans to invite Transport Canada to comment via correspondence issued under separate cover, and that AEM is not responsible for a response to this recommendation. It has been included here for information only.

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.

NWB Water Licence Amendment

AEM's recent amendment application and Water Management Plan 2012 submitted to the NWB included a reference to potentially extending Vault Pit into Phaser Lake in 2016. Specifically, it was noted that this would require dewatering of Phaser Lake and that a fish-out program would be undertaken following the ice melt in 2016. Further information regarding the dewatering of Phaser Lake as described within the plan should be provided with detailed consideration given to the potential effects of this expansion and dewatering on wildlife, water quality, and closure methods.

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.

The Board respectfully requests that for items requiring follow-up action by AEM that a response be provided within the timeline as requested for each of the recommendations. Where no timeline has been stipulated for a response, the Board requests that AEM submit a plan of action for addressing these items prior to February 21, 2014.

If you have any questions or require further clarification regarding these recommendations in particular or relating to 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.
Meadowbank Distribution List

Enclosure: The Nunavut Impact Review Board's *2012–2013 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project*