Appendix 9

Meadowbank MDRB Meeting No 24 + Agnico responses

October 24th, 2018

Mr. Luc Chouinard General Manager Agnico–Eagle Mines, Meadowbank Division Baker Lake Office

Email: <u>luc.chouinard@agnico-eagle.com</u>

Dear Mr. Chouinard,

Report No 24A Meadowbank Mine Dike Review Board Meeting September 24-27, 2018

1.0 INTRODUCTION

The meeting of the Dike Review Board was held on site as planned from September 24th to 27th. The Board is comprised of three members, Mr. D. W. Hayley, Dr. N. R. Morgenstern and Mr. D. A. Rattue. All three members attended this meeting.

The objectives were to review the status of the design, construction and operation of water and tailings retention structures at Meadowbank and at Amaruq. This report covers the presentations, discussions and observations relating to the Meadowbank site only. A companion report addresses the issues relating to the Amaruq project.

The activities covered those outlined in the agenda which is included as Appendix A. The Board made a field visit, by vehicle and on foot, to observe conditions at Central Dike, the Saddle Dams, the Internal Structure in the North Cell of the Tailings Storage Facility (TSF), the Bay-Goose and East Dikes, and the push-back of Portage Pit.

The list of attendees at the meeting is given in Appendix B.

Paper copies of the various PowerPoint presentations were provided by Agnico-Eagle Mines (AEM), Golder Associates Limited (GAL) and SNC-Lavalin Inc (SLI) during the meeting. Digital versions were also supplied at the end of the meeting to facilitate archiving.

A selection of photographs taken during the visits is to be found in Appendix C.

In the report which follows, the subject matter is covered essentially in the same order as presented during the meetings. The recommendations are underlined in the text.

2.0 MANAGEMENT AND OPERATIONS UPDATE

AEM provided an update on the mine status for information.

The currently projected life of mine (LOM) for the Meadowbank Pit (E) is to the third quarter of 2019. Vault pit with the Phaser extensions will be mined until the second quarter of 2019. These operations permit an overlap with the start-up of the Amaruq project.

The Board has no comments on the information provided.

3.0 RESPONSE TO REPORT NO 22

A summary of the responses to the Board Report was presented during the meeting. The Board is content that all items have been or are being addressed and hence no significant items are outstanding.

4.0 DEWATERING DIKE PERFORMANCE

The Board is pleased with the comprehensive data gathering and on-going interpretations. The observations pertaining to the various component structures are as follows:

4.1 East Dike

An increase in the North Channel seepage has been noted, though there is a question of the calibration of the flow meter. The Board anticipates that a resolution to the instrument accuracy will be sought and that the outcome will be reported at the next meeting. Despite the fact that the pit downstream of the dike has been backfilled, the on-going operations in the adjacent Pit E justify continued vigilance.

4.2 Bay-Goose Dike

Satisfactory behaviour in terms of seepage is reported though increased piezometric levels in Channels 1 and 2 have been observed particularly during the winter period. It is suspected that an ice dam or other blockage within the rockfill shell of the dike impedes drainage. As commented last year, this phenomenon may also be due to seasonal freezing of the ground in the area downstream of the dike toe which inhibits seepage flow release.

In the North Channel (Stn. 30+378), a trend similar to that described above was observed last year. The 2018 readings show a rise in piezometric levels that is sustained. A jump of the order of 1 m was recorded in March, possibly due to disturbance of the ground by mining activities. The readings have remained steady since that time.

The inclinometers installed in this dike such as the instrument at Stn. 31+885 show a complex response in the upstream-downstream direction over the first few meters below the lake level. A similar response has been noted on other northern dikes such as at Diavik. The apparent movements continue despite otherwise stable dike conditions and are possibly related to freezing ingress and a difference in behaviour between the saturated upstream fill and the downstream un-saturated material. The movements are not considered to be consequential at this time. However, examination of the inside of the casing is warranted to ensure that the measurements are not affected by ice accumulation or compression of the telescopic joints.

5.0 STORMWATER DIKE PERFORMANCE

The site team noted the first signs of cracking on the crest of the Stormwater Dike in August 2016. This occurred at the highest part of the dike where pond water in the South cell first came into contact with the foundation of the Stormwater dike. The movements were, and still are, deemed to be the result of thaw settlement in the sediments and till foundation that was exposed to freezing conditions from the time of construction of the dike until South Cell pond raising.

As the South Cell pond level rose (131 m in September 2016, 137 m in September 2017 and 141 m in September 2018) inundating a greater length of the Stormwater Dike footprint additional thaw settlement manifested itself as expected. Essentially all of the dike toe is now submerged as can be appreciated from Photos #1 and #2. The Board was informed of the evolution of the cracking noted between Stns. 10+900 and 10+950 and the various means adopted to effect monitoring. One of the new crackmeters is shown in Photo #3. None of the cracks extend into the zone of support of the upstream liner. Moreover, as the upper part of the tailings profile adjacent to the dike is frozen, the cracking does not constitute a safety concern.

As there will always be an elevation difference between the North cell and the South cell, the Stormwater dike is now to be considered as a permanent structure with a requirement for a commensurate level of surveillance. The Board considers the monitoring to be well managed and sufficient for the purpose of tracking the crack evolution. <u>However, there is a need to record the South cell tailings deposition along the toe of the dike and ground temperatures to track the eventual freeze-back.</u>

6.0 CENTRAL DIKE PERFORMANCE

AEM reports acceptable behaviour of this structure and the Board agrees. The decline in seepage flow rates in line with the tailings deposition plan is encouraging. AEM has given priority to building up a blanket of tailings along the southern shore with the aim of reducing seepage and this has been effective. However, recent drone aerial survey has permitted the observation of linear settlement features in the tailings surface that merit study and explanation. From preconstruction data, a topographical model of the valley side may be developed and used to identify any features that could assist with the interpretation. Surveys should continue as long as conditions permit and be resumed in the spring to collect additional information with respect to potential sinkholes.

The array of piezometers installed beneath the Central dike provides valuable information but the seemingly anomalous differences between pressures recorded in adjacent instruments do not permit a satisfactory interpretation of the hydrogeological conditions. In case of defects and instrument failures, the Board recommends that the current level of instrumentation be maintained. That being said, any new instrumentation should be optimized with respect to location to facilitate the comprehension. Study of the instrument layout in relation to the geological model will be part of this optimization.

The spikes in the instrument readings are symptomatic of the dynamic condition of the foundation. Despite the aforementioned reduction in seepage rates, vigilance is required in the observation and interpretation of the piezometric levels. The piezometer SWD-02-16, at the toe of the Stormwater dike indicates a downward gradient that has steadily increased since the start of tailings deposition. The head difference between the supernatant pond and the pool downstream of Central dike has increased to a value of 26 m. The pressures in several piezometers beneath

Central dike have risen. This indicates generally increased hydraulic gradients and increased propensity for particle migration along the seepage pathways, be they through interstitial voids in the soil mass or within the network of rock discontinuities. <u>There is an ongoing need to validate the Trigger Action Response Plan (TARP) as it relates to the data gathering</u>. The frequency of data evaluation should be consistent with the ability to programme alert and alarm levels to ensure timely response to change.

The Board was advised of the temperature related re-appearance of orange coloured chemical/bacteriological deposits in the seepage collection pond at the Central Dike toe. These were visible at the time of the visit (Photo #4).

As a general comment relating to monitoring, the Board recommends that a "Best Practice Manual" be prepared for use on a corporate basis. This would include:

- Establishment of instrumentation needs with respect to Quantifiable Performance Indicators;
- Strategic location with respect to geology and geotechnics;
- <u>Selection of most reliable instrument types;</u>
- <u>Calibration and initial reading validation;</u>
- Installation procedures;
- Manual and automated reading;
- Data treatment, presentation and evaluation; and
- Information dissemination.

7.0 SADDLE DAM PERFORMANCE AND TSF INSTRUMENTS

The behaviour of the Saddle dams is monitored by several thermistor chains. Thermistor chains have also been installed in the North Cell tailings to monitor freezing of the tailings. AEM reports satisfactory temperature evolution and the Board has little comment other than to suggest that plots of temperature evolution vs time be prepared for select instruments in order to better illustrate the evolution from the beginning of TSF operations up to the latest readings.

8.0 CENTRAL DIKE AND SADDLE DAM CONSTRUCTION

Construction was carried out in 2018 to raise the crest elevations of Central Dike and Saddle Dam 3 from 143 m to 145 m. The work was performed by the usual contractors and sub-contractors. QC and QA activities also followed established practice. The Board has no comments on the dike raise.

9.0 NORTH CELL INTERNAL STRUCTURE

9.1 Design

A presentation was made by GAL on the design of this structure that is intended to augment the storage capacity of the North cell. Originally planned to accommodate the Amaruq tailings, the facility raise will also be used for Meadowbank tailings in line with overall planning priorities.

The structure, a low dike of 2-4 m height is situated partly on the existing rock capping of the North cell and partly directly on the frozen tailings surface. The design studies presented to the

Board include material characterization, and thermal/seepage/stability analyses. These were carried out to demonstrate the stability of the structure under a variety of conditions likely to occur over the life of the structure. A validation of some study results is required such as those for coupled seepage/thermal analyses for the period immediately after tailings deposition.

9.2 Construction

Some field adaptation of the layout and design was made with good collaboration between the AEM staff and the designer.

The Board is pleased with the Quality Control/Quality Assurance (QC/QA) structure used. There was a full-time presence of GAL personnel and consequently, the As-Built report will be prepared by GAL with contributions by AEM.

Recent incidents with water storage and mining dams have illustrated the need for detailed, carefully prepared As-Built reports including a good photographic record of the work progress, QC/QA data, and the documentation of all design changes made. Forensic work in the event of unsatisfactory performance is dependent on the availability of such data.

10.0 TAILINGS STORAGE FACILITY OPERATION

The tailings deposition is, as usual, well planned and executed.

The Board was provided with an update of the tailings deposition plan for the South Cell and information relating to the renewed deposition in the North Cell. Until such time as approval for In-Pit-Deposition is obtained, the South and North Cells continue to accommodate the full mine production.

The North cell is being used on a summer-only basis to facilitate re-grading of the North Cell surface while minimising the inclusion of ice.

The strategic disposal in the South Cell is intended to:

- Enhance the tailings cover on the south bank;
- Ensure beach protection of the Central Dike liner;
- Place material to the extent possible against the Stormwater dike toe;
- Establish the supernatant pond in the North-West corner to facilitate closure; and
- Ensure that, in the meantime, tailings do not compromise the functioning of the reclaim water pump intake (Photo # 5).

It is understood that AEM has performed a risk analysis on the tailings storage options until such time as the in-pit deposition is permitted and is operational.

11.0 PIT WALL STABILITY AND PUSH BACK OF PORTAGE PIT

The monitoring by AEM continues to be of good standard including the use of radar for early indication of any movement. Rock falls continue to occur particularly in the ultramafic formations in Portage Pit E but overall pit slope performance is judged to be good. (see photo #6) In addition to the Radar, in-place inclinometers and Time Domaine Reflectometer (TDR) cables monitor the pit wall movements. The accuracy of information provided by the in-place

inclinometers has not met expectations. Shape arrays will be preferred for future installations. The TDR cables have recorded no anomalous situation in the rock mass.

In addition to the existing Bay-Goose dike installations, piezometers were installed behind the pit wall to monitor water pressure and also temperature. Some piezometric values have risen while others have declined. This illustrates the combined effect of improved drainage caused by the overall removal of rock in the pit expansion and the dislocation caused by drill/blast operations.

Good pit wall stability is reported for the Vault and Phaser Pits.

The Board recommends that the experiences with the management of pit slope stability, and particularly the history of the radar predictions of rock falls, be documented as a technical guide for future regional mining activities in similar geologic domains.

12.0 IN-PIT TAILINGS DEPOSITION

The Board was given presentations by SLI on:

- The in-pit tailings characterization and consolidation processes; and
- Hydrogeological modelling to determine the potential for contaminant transport.

<u>The Board</u> is favourably impressed with this work, <u>but notes some concern with the inadequate</u> testing to determine the decrease of hydraulic conductivity of the tailings under high vertical confining pressure. In addition, more reliable finite strain consolidation modelling of the tailings being placed at high rates of deposition is needed to properly understand the fluxes from and through the deposit. This should use specific data for permeability and compressibility determined over the full range of effective stress that is anticipated to develop in the deposit.

The Board also sees a need to adequately address the potential safety issues of manipulating pipelines in proximity to the edge of the pit walls.

13.0 NEXT MEETINGS

No dates have been set for future discussions or for the next site meeting but early September is viewed as an appropriate time. The Board awaits instruction from AEM in this regard.

14.0 ACKNOWLEDGMENTS

The Board once again wishes to thank the personnel of AEM for the organization of logistics and for their participation in the meetings, and for the excellent documentation and presentations made by AEM, GAL and SLI which contributed to the efficiency and effectiveness of the proceedings.

Signed:

M.R. B.E

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Norbert R. Morgenstern, P. Eng. Don W. Hayley, P. Eng D. Anthony Rattue, P. Eng.

ATTACHMENT A

AGENDA FOR BOARD MEETING NO. 24A

September 24th to 27th, 2018



Agnico Eagle Mines - Meadowbank Division Meadowbank Dike Review Board Meeting # 24 - September 24 to 27, 2018 Meeting Location : Meadowbank Mine Site, Nunavut AGENDA

DAY 1 - Sentember 24	Responsible	Time allocated	Presenters	Start	End
Check in room assignments and site H&S orientation lunch	Responsible	1.00	1100011010	14.00	40.00
P1 Welcome Review of the Agenda and Mine and Management Lindate [AEM]		1:30		11:30	13:00
	FLB/AL	0:30	FLB	13:00	13:30
Review of Answers to MDRB Report #22, #23	FLB/AL	0:15	AL	13:30	13:45
Corporate update on Engineer of Record (EOR)	TL	0:15	IL	13:45	14:00
P2 - Overview of Dewatering Dike Performance [AEM]	PG/PEMD	1:00	PEMD	14:00	15:00
Break		0:15		15:00	15:15
P3 - Stormwater Dike Update - Instrumentation and dike performance review [AEM]	VD/PG/PEMD	0:45	PEMD	15:15	16:00
P4 - Central Dike Seepage Update - Instrumentation and dike performance review [AEM]	VD/FLB/AL	1:00	FLB	16:00	17:00
DAY 2 - September 25					
P5 - Design North Cell Internal Structure [GOLDER]	GAL	1:15	YB	7:30	8:45
P6 - Summary of TSF 2018 Construction Season (SD 3,CD, North Cell) [AEM]	GAL PG/PEMD	1:00	PEMD/YB	8:45	9:45
Break		0:15		9:45	10:00
P7 - Tailings Storage Facilities - Operation [AEM]	PP/EH	1:00	PP	10:00	11:00
P8 - Tailings Storage Facilities - Instrumentation Review [AEM]	VD/PP/EH	1:00	EH	11:00	12:00
Lunch		1:00		12:00	13:00
Mine Site Tour (TSF, Pit E5, Dewatering Dikes)		4:00		13:00	17:00
P9 - Overview of Pits Wall Stability and Geomechanics [AEM]	TD VD	0.30	AI	17.00	17:30
DAY 3 - September 26		0.00			11100
P10 - WTD Design (including South Whale Tail Channel) and Construction Update [SNC]	SNC	2:00	YJ	7:00	9:00
P11 - Mamooth, WRSF and NE Dike Design Review [SNC]	SNC	1:30	YJ	9:00	10:30
Break		0:15		10:30	10:45
P12 - In pit deposition - Detailled Engineering Update [SNC]	SNC	1:30	GC	10:45	12:15
Lunch		1:00		12:15	13:15
Amaruq Field Tour		4:00		13:15	17:15
DAY 4 - September 27					
Deliberation by the Board Members		2:00		7:30	9:30
Preliminary Report by the Board Members		1:30		9:30	11:00
Meeting Closure					
Lunch		0:30		11:00	11:30
Approximate Time of Departure				11:30	

ATTACHMENT B

ATTENDANCE AT SEPTEMBER 2018 MEETING Held at the Meadowbank Mine site, Nunavut

Attendance				
Fredérick L. Bolduc	AEM	Geotechnical Coordinator		
Alexandre Lavallée	AEM	Geotechnical Coordinator		
Pier-Eric McDonald	AEM	Geotechnical Engineer		
Éric Haley	AEM	Water & Tailings EIT		
Pascal Poirier	AEM	Water & Tailings Engineer		
Thomas Lepine	AEM	EoR – Technical Specialist, Env.		
		Management		
Yves Boulianne	GAL	Geotechnical Engineer		
Yohan Jalbert	SLI	Geotechnical Engineer		
Les MacPhie	SLI	Geotechnical Engineer		
Anh-Long Nguyen	SLI	Project Manager Water Resources		
Dr. Norbert Morgenstern		Dike Review Board		
Don Hayley		Dike Review Board		
Anthony Rattue		Dike Review Board		

ATTACHMENT C

PHOTOGRAPHS



Photo No. 1 South cell supernatant pond at toe of Stormwater dike. View to West.



Photo No. 2 South cell supernatant pond at toe of Stormwater dike. View to East.



Photo No. 3 Crackmeter on Stormwater dike



Photo No. 4 Pool downstream of Central Dike



Photo No. 5 Reclaim water pump. Saddle Dam 3 in foreground



Photo No. 6 Push back area of Portage Pit E. Radar movement detector at right.



To: Norbert R. Morgenstern, D. Anthony Rattue and Don W. Hayley From: Agnico Eagle Mines, Meadowbank, Nunavut Division Date: January 6, 2019

RESPONSE TO COMMENTS, MEADOWBANK DIKE REVIEW BOARD No.24 – MEADOWBANK REPORT

The twenty-fourth meeting between the Meadowbank Dike Review Board (the Board) and Agnico Eagle Mines Limited (AEM) was held between September 24 and 27 2018 at the Meadowbank mine site.

The objective of the meeting was to have independent senior technical reviews on the design, construction and operation of water management structures and of the tailings management system at Meadowbank and Amaruq for the reference period of September 2017 to September 2018.

AEM Meadowbank Complex asked the Board to prepare two reports (one for the Meadowbank site and one for the Amaruq site). On October 24 2018, the Board provided their reports (MDRB Meeting No.24 Meadowbank and MDRB Meeting 24 Amaruq) with their recommendations. This letter provides the response from AEM related to the Board recommendations for the Meadowbank report.

1.0 Dewatering Dike Performance

MDRB Comment

An increase in the North Channel seepage of East Dike has been noted, though there is a question of the calibration of the flow meter. The Board anticipates that a resolution to the instrument accuracy will be sought and that the outcome will be reported at the next meeting.

AEM Answer

The East Dike flowmeters situation is being investigated and maintenance has been requested for these instruments. Outcome of this investigation will be reported at the next MDRB meeting.

MDRB Comment

The inclinometers installed in the Bay-Goose Dike at Sta. 31+885 show a complex response in the upstream-downstream direction over the first few meters below the lake level. The movement are not considered to be consequential at this time. However, examination of the inside of the casing is warranted to ensure that the measurements are not affected by ice accumulation or compression of the telescopic joints.

AEM Answer

The elevation where the complex response has been observed in the inclinometer at Sta. 31+885 correspond to the interface of the freeze/thaw zone according to a nearby thermistor. This observation support the hypothesis that the response observed is caused by frost ingress.

All inclinometer casings are filled with glycol to avoid freezing so the possibility that ice accumulation inside the casing is affecting the measurement over the first few meters below the lake level is low. Additionally, the inclinometers installed at Meadowbank do not contain telescopic joints.

For the next reading of this instrument, special care will be taken by the technician when lowering the probe to detect any obstructions inside the casing and document any abnormalities.

2.0 Stormwater Dike Performance

MDRB Comment

The Board considers the monitoring of Stormwater Dike to be well managed and sufficient for the purpose of tracking the crack evolution. However, there is a need to record the South cell tailings deposition along the toe of the dike and ground temperatures to track the eventual freeze-back.

AEM Answer

The deposition of the tailings in the South Cell is monitored by LIDAR scanning (for aerial beaches) and by bathymetry (for sub-aqueous beaches) twice per year. This information is then used to update the tailings deposition plan, as well as review compliance to previous deposition plan.

The freeze back of Stormwater Dike is currently monitored by the two thermistance chains located on the structure (SWD-02-16 and SWD-03-16). AEM Meadowbank is evaluating the possibility of installing additional thermistance in the South Cell in the vicinity of Stormwater Dike to track the freeze-back at closure.

3.0 Central Dike Performance

MDRB Comment

Recent drone aerial survey has permitted the observation of linear settlement features in the tailings surface that merit study and explanation. From pre-construction data, a topographical model of the valley side may be developed and used to identify any features that could assist with the interpretation. Survey should continue as long as conditions permit and be resumed in the spring to collect additional information with respect to potential sinkholes.

AEM Answer

Drone aerial surveys will resume once the ice melt from the surface of the TSF. This data will be used to monitor the evolution of the depression at the surface of the tailings. AEM will assess the necessity of building a topographical model of the valley using pre-construction data in the summer of 2019 based on the evolution of the tailings depression and the status of the South Cell.

3

MDRB Comment

The array of piezometers installed beneath the Central Dike provides valuable information. In case of defects and instrument failures, the Board recommends that the current level of instrumentation be maintained. That being said, any new instrumentation should be optimized with respect to location to facilitate the comprehension. Study of the instrument layout in relation to the geological model will be part of this optimisation

AEM Answer

AEM Meadowbank will evaluate the possibility of maintaining the current level of instrumentation at Central Dike should additional instruments present further defects based on data criticality.

A record of the instruments with defects at Central Dike is being kept up to date.

MDRB Comment

The spikes in the instrument readings are symptomatic of the dynamic condition of the foundation. Despite the reduction in seepage rates, vigilance is required in the observation and interpretation of the piezometric levels. There is an ongoing need to validate the Trigger Action Response Plan (TARP) as it relates to the data gathering. The frequency of data evaluation should be consistent with the ability to program alert and alarm levels to ensure timely response to change.

AEM Answer

The Trigger Action Response Plan (TARP) of Central Dike has aspects related to data gathering and frequency of data evaluation at Central Dike is covered in the OMS manual for the Meadowbank tailings dike. AEM will ensure that these aspects are carefully reviewed and updated in the 2019 revision of the OMS manual, planned for Q1 2019.

MDRB Comment

As a general comment relating to monitoring, the Board recommends that a 'Best Practice Manual' be prepared for use on a corporate basis. This would include :

• Establishment of instrumentation needs with respect to Quantifiable Performance Indicators ;

- Strategic location with respect to geology and geotechnics ;
- Selection of most reliable instrument types ;
- Calibration and initial reading validation ;
- Installation procedures ;
- Manual and automated reading ;
- Data treatment, presentation and evaluation ; and
- Information dissemination

AEM Answer

AEM Meadowbank acknowledges this interesting recommendation and will discuss with corporate representatives to evaluate this possibility.

4.0 Saddle Dam Performance and TSF Instruments

MDRB Comment

The Board has little comment other than to suggest that plots of temperature evolution vs time be prepared for selected instruments in order to better illustrate the evolution from the beginning of TSF operations up to the latest readings.

AEM Answer

AEM Meadowbank acknowledges this comment and will work on improving the data presentation for the next MDRB meeting.

5.0 North Cell Internal Structure - Construction

MDRB Comment

The Board is pleased with the Quality Assurance / Quality Control (QA/QC) structure used. There was a full-time presence of GAL personnel and consequently, the As-Built report will be prepared by GAL with contributions by AEM.

Recent incidents with water storage and mining dams have illustrated the need for detailed, carefully prepared As-Built reports including a good photographic record of the work progress, QA/QC data, and the documentation of all design changes made. Forensic work in the event of unsatisfactory performance is dependent on the availability of such data

AEM Answer

AEM Meadowbank is pleased to hear that the Board is satisfied with the QA/QC control put in place during construction. AEM Meadowbank understands the importance of a carefully prepared As-Built reports and will continue to ensure that it contains all QA/QC data, a good photographic record and the documentation of all design changes made.

6.0 Pit Wall Stability and Push Back of Portage Pit

MDRB Comment

The Board recommends that the experiences with the management of pit slope stability, and particularly the history of the radar predictions of rock falls, be documented as a technical guide for future regional mining activities in similar geologic domains.

AEM Answer

The experience gained at Meadowbank will be used for the management of pit slope stability for the Amaruq project. While the recommendation of publishing a technical guide for future regional mining goes beyond the mission of the geotechnical department at Meadowbank, we will evaluate future information sharing opportunities.

7.0 In-Pit Tailings Deposition

MDRB Comment

The Board is favorably impressed with the work done on in-pit deposition, but notes some concern with inadequate testing to determine the decrease of hydraulic conductivity of the tailings under high vertical confining pressure. In addition, more reliable finite strain consolidation modelling of the tailings being placed at high rates of deposition is needed to properly understand the fluxes from and through the deposit. This should use specific data for permeability and compressibility determined over the full range of effective stress that is anticipated to develop in the deposit.

AEM Answer

AEM Meadowbank agrees that the in-pit deposition consolidation and hydrological modelling used conservative data. Due to the phenomena described above by the Board, the permeability of the tailings could well be an order or two of magnitude lower than what was modelled and the slope of the tailings will probably be flatter. These processes should result in increased tailings storage capacity and lower potential for contaminant transport.

It is planned to conduct additional studies to validate the model properties once in-pit deposition is initiated and to use these data to update the deposition model and the hydrological model.

MDRB Comment

The Board also sees a need to adequately address the potential safety issues of manipulating pipelines in proximity to the edge of the pit walls.

AEM Answer

AEM Meadowbank will ensure that all manipulations are done in a safe and responsible manner while conforming to all applicable Health and Safety Standard. The necessary control(s) to ensure the safety of all workers will be implemented.

Best Regards,

Frédérick L.Bolduc M.Sc.A, P.Eng. & Alexandre Lavallee, P. Eng. Geotechnical Coordinator Meadowbank, Nunavut Division Agnico Eagle Mines