Appendix 11

Meadowbank 2024 Geomechanical Inspection Implementation Plan

AGNICO EAGLE MINES LTD. - MEADOWBANK COMPLEX
MEADOWBANK SITE

2024 ANNUAL OPEN PIT GEOMECHANICAL INSPECTION
SUMMARY OF RECOMMENDATIONS

Observations, Comment and Recommendations						AEM Implementation Action Plan					
Category	**Original Recommendation**	**2023 Status and Comments**	**2023 Recommendations**	**2024 Status and Comments**	**2024 Recommendations**	**AEM Action Plan / Follow-up**	**Status**	**Due Date**	**Completion Date**	**AEM Comments / Update**	**Priority**
Geotechnical Inspections and Reporting, and Rockfall Log	As the pits transition into various states of closure or use for water management and tailings, the need for bi-weekly instrumentation monitoring and quarterly inspection summaries can be reduced or in some cases eliminated. In some other cases, the instrumentation has been re-purposed. Complete transition to formal monthly geotechnical inspections supported by regular informal day-to-day observations.	Monthly inspections of the open pits and in-pit waste rock dumps are completed by the Geotechnical Group. The inspections are documented in a report with photos and a hazard map. Inspections are often timed to occur shortly before Environmental Staff enter the open pits during the summer months for water sampling. The inspection reports have been updated to include the Goose Pit ramp, the seepage from the toe of the D Dump, the Portage Pit E ramp, and the Vault Ring Road. However, the Portage Pit A ramp and the Vault Pit ramp are not included in the reports.	The inspections of the ramps used to access the pit lakes at Portage Pit A and Vault Pit should be documented in the inspection report during the periods when the open pits are accessed.	The inspection reports have been updated to include the Portage Pit A ramp and the Vault Pit ramp.	Complete	-	Complete	-	-	-	Complete
	Continue to record and report (as appropriate) rockfall events that are within the pits used for tailing and water management and where there is the potential for worker access.	Rockfalls are documented in the monthly inspection reports. A single rockfall was reported over the last year (Pit E, June 2023) and reported to the WSCC.	Complete	Rockfalls are documented in the monthly inspection reports and reported to the WSCC if appropriate. However, rockfalls at the Meadowbank Site are not documented in the Rockfall Database. Documenting these rockfalls in the database would facilitate any future reviews of slope performance.	Consider documenting rockfalls at the Meadowbank Site in the Rockfall Database. A detailed entry is not required; it could be limited to date, location, tonnage, and failure type.	Should a rockfall occur, the database shall be implemented according to the Amaruq Rockfall Database.	Open	2025-07-01	-	-	**P4**
	The Ground Control Management Plan (GCMP) for the Meadowbank Site has not been updated since 2018. Review and update the GCMP. The GCMP could be consolidated with the one for the Amaruq Site.	The inspection and reporting requirements for the Meadowbank Site (Meadowbank Open Pit Surveillance Program) are now included as an appendix to the GCMP for the Amaruq Site. Key documents for the design and performance of the Meadowbank open pits are not listed in the GCMP. This information is valuable for closure of the open pits or the interpretation of any future instabilities, and there is a possibility that it may be lost or forgotten over time.	Reference key open pit design documents and open pit slope performance data for Meadowbank in the GCMP so that the information is not lost.	This recommendation remains outstanding	Reference key open pit design documents and open pit slope performance data for Meadowbank in the GCMP for the Amaruq Site so that the information is not lost.	The documentation will be updated within this calendar year, following the recommendation to incorporate the original pit design sectors.		-	-	-	**P4**
Intrumentation	Instruments relating to the open pits and hence tailings management facilities are located at Goose Pit, Pit E (south crest), and Vault Pit. There are additional in-field instrumentation between Goose Pit and Pit E, and additional instrumentation along the dikes. Some monitoring of instrumentation, such as TDR cables and inclinometers, can be suspended. Monitoring of piezometers and thermistors installed behind the South Wall of Pit E and the East Wall of Goose Pit should continue to build a record of ground thermal and piezometric response to the addition of tailings.	The TDR cables, inclinometers and many of the piezometers and thermistors used to monitor the open pits have been decommissioned. The piezometers and thermistors in the South Wall of Pit E continue to be monitored by the Geotechnical Group. The piezometers and thermistors in the East Wall of the Goose Pit are no longer monitored as tailings deposition has stopped	This recommendation is being closed as the instrumentation is no longer required to manage the performance of the open pit slopes. Consider periodically monitoring the piezometers and thermistors in the East Wall of the Goose Pit given the potential for future tailings deposition.	-	-	-	-	-	-	-	N/A
	There is an opportunity to use imagery from the site drone surveys to evaluate the subsidence of the Goose Pit Waste Rock Dump, B Dump, C Dump, D Dump and Vault Pit Waste Rock Dump using photogrammetry. Recommend completing an assessment on an annual basis to supplement the existing visual inspections.	Settlement continues to be observed at the Goose Pit Waste Rock Dump, B Dump and D Dump, all of which extend into open pit lakes that are periodically accessed. Extensometers and survey points have been installed to allow for point measurements of settlement at each of the dumps. However, spatial trends are not captured.	Complete an annual drone photogrammetry assessment of the B Dump, D Dump, and Goose Pit Waste Rock Dump to better understand spatial patterns in the displacement.	This recommendation remains outstanding. The large spatial extents of the settlement at the B Dump and D Dump, cannot be adequately monitored by the existing extensometers. A monitoring tool with greater spatial coverage is needed. The extensometers could be limited to the areas of greatest exposure / consequence (i.e., Ext04 on the D Dump above the pumps on the Pit E West Wall Ramp and Ext24 on the B Dump adjacent the All Weather Road).	Review the deformation monitoring for the Goose Pit Waste Rock Dump, B Dump, and D Dump. Implement drone photogrammetry on at least an annual basis to better understand the spatial distribution of the displacement. If more frequent drone photogrammetry (e.g., twice a year) is implemented, the monitoring of some the extensometers (i.e., EXT01, 03 and 04 on the D Dump) could be reduced in frequency or stopped.	- AEM is currently exploring the use of Interferometric Synthetic Aperture Radar (InSAR) for routine monitoring of the site. - Compare scan of Goose Pit Waste Rock Dump, B Dump, and D Dump. - Continue the drone survey program, ensuring visits are planned according to favorable weather conditions.	Ongoing	2025-09-01	-	A complete drone survey of the Meadowbank site was commissioned in Fall 2024 but was not completed due to adverse weather conditions.	**P3**
		The interpretation of the tension cracks at the Goose Pit Waste Rock Dump, B Dump and D Dump is based on the expectation that the cracks line up with the crest of the rock benches underlying the dumps. In 2022 it was recommended that the position of the cracks be surveyed to confirm this assessment. This has not been done.	Survey the approximate limits of the tension cracks on the B Dump and D Dump, and compare the position of the cracks to the position of the open pit benches. Consider doing the same for the Goose Pit Waste Rock Dump.	This recommendation remains outstanding. Note that a high-resolution geo-referenced drone photo could be as effective as a survey for identifying the general position of the tension cracks.	Compare the position of the tension cracks on the B Dump, D Dump, and Goose Pit Waste Rock Dump to the position of the open pit benches.	AEM will compare the positions of the tension cracks on the B Dump, D Dump, and Goose Pit Waste Rock Dump to the positions of the open pit benches with the last as-built.	Open	2025-07-01	-	The original pit shell and dump topography are available. They can be compared to the location of the cracks.	**P3**
		Extensometers are installed at the B Dump and D Dump, and survey pins installed at the Goose Pit Waste Rock Dump to monitor settlement. The extensometer data are graphed. Several of the graphs are plotting incorrect values, including the daily displacement rate and cumulative displacement. This directly impacts the interpretation of the data relative to the TARP. The survey pin data are graphed. For both data sets, the daily displacement rate is averaged over the lifespan of the instrument.	Review and revise the graphs plotting the extensometer and survey pin data. The daily deformation rate should be calculated over a shorter time interval, such as since the last reading, to capture sudden changes and allow for a better comparison with the TARP. The graphs should be reviewed for trends each time data are collected.	The graphs of the extensometer and survey pin data have been revised and updated. The graphs are presented in the monthly reports and comments on the data provided. The daily deformation rate is now calculated over the reading interval rather than the lifespan of the instrument.	Complete	-	Complete	-	-	-	Complete
	-	-	-	The July 27, 2024 readings for the survey pins installed in the Goose Pit Waste Rock Dump indicate a sudden increase in deformation of between 50 and 250 mm since the readings taken on July 21. Additional measurements made on August 14 confirmed the change in slope performance. The cause of this change has not been confirmed but is likely linked to a 5 m increase in the level of the pit lake over the last year. Personnel are accessing the pit lake at an increased frequency this summer due to Environmental monitoring and closure-related work. As a result, there is increased exposure of personnel to a failure of the dump.	Increase the frequency of visual monitoring and survey pin measurements for the Goose Pit Waste Rock Dump during periods when personnel are accessing the pit lake. The monitoring frequency should be linked to both the deformation rate/trend and the exposure of personnel. Based on the current conditions, weekly monitoring is recommended. Adjust the TARP to reflect the change in monitoring frequency as well as the need to trigger a review in the event of a sudden/unexpected change in the observed deformation.	- Monitor the Goose Pit Waste Rock Dump weekly during periods when personnel are accessing the pit lake. - Adjust the TARP to reflect this modification, ensuring that the increased monitoring frequency is documented and implemented. Review the trigger in case of sudden change.	Ongoing	2025-08-01	-	Increased monitoring was implemented during open water season in 2024 when personnel were working on the Goose Pit lake. Results were recorded in the spreadsheet MBK-RM INSTRUMENTATION MONITORING_REV04.xlsx.	**P2**
Portage Pit A	-	-	-	Access to the South Ramp was unrestricted at the time of the visit. The ramp passes below both the C Dump and B Dump, and no rockfall berms are present at the toe of the dumps.	Implement measures to restrict access to the ramp. This could consist of signage, candles, movable barriers, etc.	Barricades should be kept in place at all times.	Complete	-	2025-02-08	Completed by field team. During the 2025 Annual Open Pit Geomechanical Inspection, the consultant will be required to confirm that the AEM Implementation Action Plan and its measures fully satisfy the recommendations.	**P2**
Portage Pit B and B Dump	-	The possibility of the settlement of the B Dump progressing back to the Amaruq Road was discussed in 2022 and concluded to be unlikely as the settlement and tension cracks appear to be limited to within the footprint of the pit. SNC Lavalin was retained by AEM to complete a detailed assessment in order to confirm this conclusion.	Review the results of the SNC Lavalin assessment when they become available.	The assessment was recently completed. It is understood that the results of the assessment indicate that settlement or instability in the B Dump will not progress back to the Amaruq Road. However, the details of the work or a draft deliverable are not yet available. Note that the assessment was completed by WSP, not SNC Lavalin.	Review the results of the WSP assessment when they become available.	Results were reviewed by AEM.	Complete	-	2024-05-27	The WSP assessment was completed on May 27, 2024. No possible B Dump failure modes impacting the West Road were identified. During the 2025 Annual Open Pit Geomechanical Inspection, the consultant will be required to confirm that the AEM Implementation Action Plan and its measures fully satisfy the recommendations.	**P3**

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Portage Pit E and Tailings Management Facility	-	-	-	The berm preventing access to the top of the South Ramp has been partially removed and it is no longer an effective barricade.	Re-establish the berm preventing access to the top of the South Ramp.	The berm height shall be increased.	Open	2025-07-01	-	A small berm is established, however can be improved.	**P2**
	-	-	-	A vibrating wire piezometer has been installed at the base of the South Ramp. The cable for the piezometer runs along the ramp, within 5 m of the bench face. There vare numerous active rockfall hazards along this ramp and a rockfall berm has not been established.	Re-locate the cable for the vibrating wire piezometer away from the wall. Alternatively, establish a rockfall berm along the inside of the ramp.	-	Open	2025-07-01	-	The vibrating wire setup was spliced in September 2023, along with a relocation of the data logger further up the ramp. Since the relocation of the data logger, no personnel are required to access the areas in which the cable is placed.	**P3**
	-	-	-	The rockfall berm along the inside of the West Wall Ramp was re-established to allow the pump controls to be moved further up the ramp. There is a fault in the bench face directly above this area that represents a significant rockfall hazard. The new berm is too short to be an effective control for the rockfall.	Increase the height of the rockfall berm adjacent to the pump controls on the West Wall Ramp.	Pump controls will be moved Spring 2025 and rockfall berm heigh shall be maintained.	Ongoing	2025-07-01	-	Due to routine work on the pumps in the area, the berm is occasionally removed and then re-established once work is completed. The height of the berm was increased in September 2024. The pump controls shall be moved to a higher elevation along the ramp this Spring 2025, and the rockfall berm height shall be maintained in this new working area.	**P2**
Vault Pit and In-Pit Dumps	-	The stability of the Amaruq AWR embankment could be impacted if the water level in the Phaser Pit increases and water ponds behind the embankment. While this is checked during the visual inspections, the purpose for doing so is not set out in any of the existing documents or procedures.	Update the Meadowbank Project Open Pit Surveillance Program procedure (Appendix K of the GCMP) to note the need to monitor the water level in the Phaser Pit as part of the visual inspections and the potential for the stability of the AWR embankment to be impacted if water ponds behind the embankment.	This recommendation remains outstanding.	Update the Meadowbank Project Open Pit Surveillance Program procedure (Appendix K of the GCMP) to note the need to monitor the water level in the Phaser Pit as part of the visual inspections and the potential for the stability of the AWR embankment to be impacted if water ponds behind the embankment.	- Visual inspections of the WTHR shall continue as per recommended frequency. - Water level monitoring in Vault Pit shall continue.	Ongoing	-	-	The natural flow of water flows from BB Phaser, to Phaser, into Vault Pit. Water levels in BB Phaser and Phaser have visually been at equilibrium for several years. A piezometer was installed in Vault Pit on June 10, 2024 to monitor water levels. Currently, the water level is not reaching the toe of the WTHR. Visual inspections shall continue.	**P4**