

Appendix 8: 2021 Annual
Geotechnical Report Agnico Eagle
Responses and Action Table

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2021)		Priority Level (AEM 2022)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	
1.	Inspection and Monitoring	The GTCs and survey monitoring points should continue to be monitored following the schedule and procedures developed in the OMS manual.	High	Already Implemented	AEM will continue to monitor the dikes as per the schedule and procedures in the OMS manual.	Continue to monitor performance	Engineering	N/A
2.	Dike Repair/Maintenance	The upstream slope of Dike D-CP1 experienced erosion in 2020 during a period of high-water levels. Surveys indicate there is 2 m of Run-of-Mine protecting the Esker Sand and Gravel in the upstream shell of the dike. The performance of the upstream slope should continue to be monitored	Medium	Already Implemented	AEM will continue to monitor the dikes as per the schedule and procedures in the OMS manual.	Continue to monitor performance	Engineering	N/A
		Consideration could be given to repairing the armour around the seepage collection sump. It is anticipated that the cracking and armour slump may worsen as additional that subsidence occurs around the sump	Low	Already Implemented	A plan to repair the armour around the seepage collection sump was developed by AEM and presented to the Design Engineer. Repair works are ongoing.	Yes	Engineering/E&I	Open Water 2022
		Consideration could be given to placing rockfill on the former construction access road at the downstream toe of the dike. This would reduce thaw subsidence in the area and reduce the amount snow cover at the dike toe. This may result in less warming of the dike foundation	Medium	Already Implemented	A plan to place rockfill on the former construction access road at the downstream toe of the dike was developed by AEM and presented to the Design Engineer. Repair works are ongoing.	Yes	Engineering/E&I	Open Water 2022
		The erosion in Jetty 5 should be repaired and pumphouse footing founded on a solid base	High	Already Implemented	The required repairs to Jetty 5 and the pumphouse footings were performed by AEM.	No	N/A	N/A
		Consideration should be given to modifying the D-CP5 pumping arrangement to avoid a similar occurrence in the future	Low	Yes	AEM will evaluate options to modify the pumping and intake system to reduce the risk of erosion to Jetty 5 and implement the selected option.	Yes	Water Management	Pre-freshet 2022
		Erosion marks are observed on the southeast corner of the Jetty 1 slope due to wave erosion from historic high water levels. The erosion is similar than was observed in 2020. The fines are being washed out leaving the coarse material. The erosion is undercutting the fill up to 0.3 m in the southeast corner and may result in a slump of the surface fill in the area. The pump house is well back from the area; however, the heat tracing cables should be pulled back from the eroded area	Low	Yes	AEM will pull back the heat tracing cables from the area in question.	Yes	Engineering/Water Management	Pre-freshet 2022

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1.	Channel 1	No recommendations.	N/A	N/A	N/A	N/A	N/A	
2.	Channel 2	It is recommended that a small berm be constructed such that Channel 2 outflow is better directed to Culvert H13.	Medium	Yes	AEM will collect detailed topographic information of the area in question and evaluate if a potential flow path is present and develop a remedial plan if required.	Continue to monitor channel performance.	Engineering/Environment	Q3 2022
3.	Channel 3	The channel subgrade has thawed and settled over time resulting in low areas within the channel. There is also subsidence along the channels (0+230) where the channel riprap ties into the native subgrade. It is recommended that the subsided area near approximately be filled, and channel be reconstructed.	Medium	Yes	The channel around Station 0+230 will be re-established once better weather allows for the repair.	Repair channel at Station 0+230.	E&I/Engineering	Q3 2022
		The road adjacent to the channel has some cracking and slumping on the side slopes due to thaw subsidence under the toe of the road. The settlement on the road slope and in the native ground is attributed to the thawing of permafrost due to ground disturbance. It is recommended that the cracks be graded and filled.	Low	Yes	The cracks in the road adjacent to Channel 3 will be graded and filled.	Fill the cracks and grade the road adjacent to Channel 3.	E&I	Q3 2022
		Continue to monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels' performance.	Low	Yes	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor channel performance.	Engineering/Environment	Open Water 2022
4.	Channel 4	There are two areas where riprap has eroded, or slipped off the geotextile on the upstream side of the channel. The riprap should be regraded and replaced to reduce the risk of further damage and the area between the channel and WRSF1 should also be covered with riprap.	Low	Already Implemented	The riprap was replaced and the area in question was regraded.	N/A	N/A	N/A
		Continue to monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels' performance.	Low	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor channel performance.	Engineering/Environment	Open Water 2022
5.	Channel 5	No recommendations.	N/A	N/A	N/A	N/A	N/A	
6.	Channel 7	No recommendations.	N/A	N/A	N/A	N/A	N/A	
7.	Channel 8	No recommendations.	N/A	N/A	N/A	N/A	N/A	
8.	Berm 1	No recommendations.	N/A	N/A	N/A	N/A	N/A	
9.	Berm 2	Berm 2 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.	Low	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2022
10.	Berm 3	Berm 3 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.	Low	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2022
11.	Pond CP3/Berm CP3	It is recommended that an OMS manual be developed for the collection pond.	Medium	Yes	AEM Meliadine is currently developing an OMS for all water management infrastructure on site.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2022
		The minimum elevation of the pond is 54.0m, It is recommended that a minimum drawdown level be specified as 55.0 m.	Low	Yes	AEM will review the as-built storage curve and set appropriate operating limits when developing the OMS for the water management infrastructure.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2022
12.	Pond CP4/Berm CP4	It is recommended that an OMS manual be developed for the collection pond.	Medium	Yes	AEM Meliadine is currently developing an OMS for all water management infrastructure on site.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2022
		Thaw settlement has occurred in the original ground above the pond rockfill slope protection. The settlement and the impact on the pond should be monitored in future years to determine if remedial action is required.	Low	Already Implemented	The area in question will be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor pond performance.	Engineering/Environment	Open Water 2022
		It is recommended that the depression in the upstream till berm be filled or graded to avoid ponding and the area covered with a minimum of 1.5 m Run-of-Mine.	Medium	Yes	AEM will perform repairs to the area in question.	Perform repairs.	Engineering/E&I	Q3 2022
		The area between CP4 and the upstream till should also be graded and covered with a minimum of 1.5 m Run-of-Mine to reduce future thaw subsidence in the area.	Medium	Yes	AEM will perform repairs to the area in question.	Perform repairs.	Engineering/E&I	Q3 2022
13.	Pond CP6/Berm 6	The minimum elevation of the pond is 52 m, It is recommended that a minimum drawdown level be specified as 53.5 m.	Low	Yes	AEM will review the as-built storage curve and set appropriate operating limits when developing the OMS for the water management infrastructure.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2022
		It is recommended that an OMS manual be developed for the collection pond.	Medium	Yes	AEM will review the as-built storage curve and set appropriate operating limits when developing the OMS for the water management infrastructure.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2022
		Subsurface erosion could be reduced by covering the remaining portion of the former lakebed area with a granular filter layer with a minimum thickness of 0.5 m that redirects the flow away from the area of ongoing subsurface erosion. The granular filter should be covered with a minimum of 1.5m Run-of-Mine.	Low	Already Implemented	The area between WRSF3 and CP6 will continue to be monitored. If the performance of the area appears to be compromised, the addition of more rockfill to cover the area will be considered.	Continue to monitor area in question.	Engineering/Environment	Open Water 2022
		It is recommended that the small ponded area adjacent Berm CP6 and the access road be filled to avoid ponding in the area.	Low	Yes	The area in question will be filled.	N/A	Engineering/E&I	Q3 2022
		It is recommended that the localized settlement areas on the ramp between WRSF3 and CP6 be filled. The depression are a safety hazard in their current state. They are currently marked with traffic cones.	Low	Already Implemented	The areas in question have been filled	Continue to monitor area in question.	Engineering/E&I	Q3 2022
14.	Saline Pond 1	The slopes around the pond should continue to be monitored and remediated as required.	Low	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2022
15.	Saline Pond 3	The pond should continue to be monitored for signs of settlement.	Medium	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor pond performance.	Engineering/Environment	Open Water 2022
16.	Saline Pond 4	The settlement and cracking above the overburden slopes should be monitored.	Low	Already Implemented	The area in question will be continue to be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	Continue to monitor pond performance.	Engineering/Environment	Open Water 2022

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1.	Inspection and Monitoring	It is recommended that the tailings be tested to determine their unfrozen content curve below 0°C to determine how much of the tailings remain unfrozen.	Low	Yes	AEM continues to work with the Design Engineer to develop an adequate test program to determine the unfrozen content curve. The test program will be implemented during 2022.	Discuss sampling and testing plan with design engineer and potentially implement testing.	Engineering	Q4 2022
		The performance of dust mitigation measures should continue to be monitored.	Medium	Already Implemented	AEM continues to monitor the performance of implemented dust mitigation measures at the TSF.	Continue to monitor dust at TSF.	Engineering	Q4 2022
		There is sediment along the toe of the south and west berms of the facility. It is recommended that some investigation be done to characterize the sediment and the method of transport.	Low	Yes	AEM will work with the design engineer to develop an adequate program to investigate the sediment.	Continue to monitor sediment at toe of berm.	Engineering	Q4 2022
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1.	Inspection and Monitoring	The performance of the facility should continue to be monitored on an ongoing basis as outlined in the OMS manual	Medium	Already Implemented	WRSF1 and WRSF 3 will continue to be monitored as part of the site-wide geotechnical monitoring program	Continue to monitor performance	Engineering/Operations	N/A
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1.	Site Roads	Culvert 18 through the TSF road should be repaired.	Low	No	Culvert 18 will be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	No	N/A	N/A
2.	Borrow Sources (Wesmeg, Meliadine North, Meliadine, Tiriganiaq, SP2 Temporary)	The borrow areas should be monitored for future erosion and thaw settlement.	Low	Already Implemented	The areas in question will be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	No	Environment / Engineering	Open water season 2022
3.	Ore Stockpiles	The pile heights should be constructed such that they are less than 2 m above the reach height of the loader removing material from the pile. The dig face should be carried out in a manner such that the slope angles are flatter than the angle of repose of the material (1.3H:1V to 1.4H:1V)	Low	Already Implemented	AEM monitors to stockpile geometry by monthly drone survey.	No	Geology / Engineering	N/A
4.	Crusher Ramp	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
5.	Saline Water Treatment Plant (SWTP)	If the facility is operated again it is recommended that an assessment of the geotechnical and structural condition be carried out.	Low	No	There is no plans at this time to restart the SWTP.	Assessment of the geotechnical and structural condition to be carried out if the facility is to be operated again	N/A	N/A
6.	Operation Landfill	It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris.	Medium	Yes	The landfill management plan will be reviewed and include a plan to progressively cover the landfill.	No	E&I / Engineering	Q2 2022
7.	Emulsion Plant Pad	It is recommended that the pad settlement and erosion should continue to be monitored.	Low	Already Implemented	The area in question will be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	No	Environment / Engineering	Open water season 2022
8.	Landfarm	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
9.	Cyanide Storage Pad(s)	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
10.	Emulsion Plant Storage	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
11.	Industrial Fuel Storage	The condition of the industrial fuel storage tanks should continue to be monitored	Low	Already Implemented	The areas in question will be monitored during open water season 2022 as part of the site-wide geotechnical monitoring program.	No	N/A	Open water season 2022
12.	Incinerator Pad	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
13.	Mine Site Fuel Farm	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
14.	Paste Plant Ramp	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
15.	Portal 1/Portal 2	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
16.	Industrial Pad	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
17.	Exploration Camp/Road	Diesel generators located at the east end of exploration camp are in a lined secondary containment area. There are numerous tears in the crest of the liner and top of the containment slope. It is recommended the liner be further evaluated if the area is to be use in the future	Low	No	There is no plan at this time to use the generators at exploration camp. E&I has been made aware of the recommendation.	No	E&I	N/A
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1.	Culverts	Repair Culvert damage (km 7.4)	Low	No	Culvert will continue to be monitored to assess need for repairs	No	NA	NA
		Install culverts and/or raise road (km 8.8)	Low	Already Implemented	Rockfill was added to raise elevation of road in the area of km 8.8	No	NA	NA
		Clear culvert inlet of road fill material. Consider extending culvert to prevent road fill from entering culvert (km 25.8)	Low	Yes	When feasible, inlet of this culvert will be cleared of road fill material. Water level and erosion during freshet will be monitored to assess need for extending the culvert	Clear culvert inlet	E&I	Open water 2022
		Inlet of the lower culvert should be cleared and possibly extended (km 26.8)	Low	Yes	When feasible, inlet of this culvert will be cleared. Water level and erosion during freshet will be monitored to assess need for extending the culvert	Clear culvert inlet	E&I	Open water 2022
		A culvert could be installed to reduce the risk of overflow (km 28.7)	Low	No	This area will continue to be monitored over 2022 freshet and need for additional culvert will be assessed.	No	NA	NA
2.	Bridge	Replace or repair damaged gabion. Place additional riprap on exposed geotextile (M-5 Bridge)	Low	Yes	Gabion was not replaced in 2021. M-5 bridge was inspected as part of annual geotechnical inspection in 2021 and will continue to be monitored for settlement and/or erosion in 2022. A structural assessment of the bridge is planned for summer 2022	Continue to monitor performance of gabion at M-5 bridge in 2022. Perform a structural assessment of the bridge to determine if repairs or replacement of the gabion is required	Engineering	Open water 2022
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1.	Itivia Fuel Farm	No recommendations.	N/A	N/A	N/A	N/A	N/A	N/A
2.	Culverts	The culverts should be cleared of snow and ice prior to freshet. Additional culverts could be installed in low road area to the northwest; alternatively, the low area in the road could be raised, but would result in a large flooded area.	Medium	Yes	The culverts are cleared of snow and ice as part of the freshet management plan. The performance of culverts will be assessed throughout 2022 to determine need to install more culverts/raise road.	Monitor culvert performance	E&I/Water Management	Pre-freshet 2022