Appendix 3

NWB 2022 Annual Report Commitments

Authority	Topic	Reference to comments	Regulator's Comment	Regulator's Recommendation	Agnico Eagle's Response to Comments	2023 Annual Report Section
CIRNAC	IVR Pit Geochemical Characterization	Meadowbank Complex 2022 Annual Report: Section 5.1.2; Table 5-3; NIRB Project Certificate No. 008, Terms and Conditions 7 and 8	Table 5-3 of the 2022 Annual Report summarizes the geochemical Acid Rock Drainage (ARD) determination for the Whale Tail Project from 2018 to 2022. The table indicates that, for the IVR Pit, the proportion of Potentially Acid Generating (PAG) rock increased from 2% in 2021 to 82% in 2022. Based on a review of prior project documentation, it is unclear to CIRNAC whether the increase is consistent with design expectations at the time the Whale Tail Mine Expansion was approved.	CIRNAC recommends that AEM: 1. Indicate whether the 2022 PAG ratio for the IVR pit (i.e., 82%) is consistent with design expectations at the time the Whale Tail Mine Expansion was approved. 2. Indicated how the higher (i.e., if higher than the original prediction) PAG ratio for IVR will influence environmental performance and waste rock management practices during operations and WRSF closure strategies. 3.Indicate how the higher (i.e., if higher than the original prediction) PAG ratio for IVR has been incorporated into post-closure water quality predictions for the site.	1. Table 5-3 of 2022 Annual report contains an error. The classification for IVR pit NPAG and PAG are mixed and should be opposite of what was presented. Refer to the table below for the corrected version. The 82 % of NPAG in IVR pit is more consistent with previous year and with design expectation although a large percentage of this NPAG waste material remains unusable for construction & cover (closure) activity due to arsenic content. 2.As described in response above, the PAG ratio presented in the Table 5-3 of the 2022 annual report contains an error. The corrected NPAG and PAG percentage for IVR pit are consistent with the design expectations from the approval of the Whale Tail Mine Expansion. 3. As described in response above, the PAG ratio presented in the Table 5-3 of the 2022 annual report contains an error. The corrected NPAG and PAG percentage for IVR pit are consistent with the design expectations from the approval of the Whale Tail Mine Expansion.	N/A
CIRNAC	Whale Tail Project Pit Sump Water Quality/Quantity	Meadowbank Complex 2022 Annual Report: Sections 8.5.3.2.4 and 8.5.3.2.5; Appendix 6-H to the Whale Tail Project Expansion Environmental Assessment (Figure 6); NIRB Project Certificate No. 008, Term and Conditions 8,15, and 16	The quality and quantity of water reporting to the Whale Tail Project pit sumps during operations is relevant to the post-closure water quality of the pit lakes that will form during closure. This is particularly important for arsenic, which is considered to be a contaminant of potential concern in flooded pit lakes. It is, therefore, critical that the quality and quantity of water reporting to the pit sumps is consistent with Environmental Assessment predictions. In the case of the IVR pit, the Whale Tail Project Expansion Environmental Assessment predicted that the maximum concentration of arsenic in the IVR Pit sump in 2022 would be approximately 1.5 mg/L. The 2022 Annual Report indicates that arsenic concentrations in the IVR pit sump are roughly three times greater, at 4.5 mg/L. Further, the volume of water reporting to the pit sump is greater than originally predicted. The combined increase of arsenic concentrations and volumes will result in total arsenic loadings to the IVR pit that are well above Environmental Assessment predictions. Increases have also been noted for the Whale Tail Pit sump. It is unclear to CIRNAC what influence the increased arsenic loadings to the pit sumps will have on post-closure water quality in the flooded pit. CIRNAC was also unable to identify what factors resulted in the higher than anticipated arsenic loadings and whether any adjustments to the closure strategy would be necessary.	CIRNAC recommends that AEM: 1. Confirm if arsenic loadings to the Whale Tail and IVR pits, as indicated by sump monitoring, are greater than the conservative predictions presented in the FEIS documents for the project. 2. Describe the factors contributing to the pit sumps having arsenic loadings that are higher than predicted in the FEIS (e.g., pit wall seepage). 3. Indicate any modifications that will need to be made to the Whale Tail and IVR Pit closure strategy to ensure that water quality in the pit lakes will serve as viable aquatic habitats.	1. The following graphs present the water quality forecast based on the FEIS assessment against the measured values in Whale Tail and IVR Pits. The concentration of total arsenic measured in the pits in 2022 are generally higher than the FEIS forecast. Predictions for the FEIS were developed using a model (Golder 2018) and included various assumptions. For example: •Geochemical testing results were used in the model. At the time of model development, static test results were available but kinetic test results were not available. •Mass loads (or water volume and concentrations) to model nodes (e.g., pits, sumps) accounted for chemical loadings from natural areas and developed areas (e.g., waste rock runoff and seepage). •Predictions were developed for various nodes (e.g., WRSF pond, pits) that were estimated based on predicted flows and chemistries and assumed exposed lithologies. The actual exposed lithology in a given mine year, or the lithology most influenced by runoff may differ than assumptions used in the model. The higher arsenic load reporting to the pit sumps could be due to a higher release of arsenic being leached from the pit walls upon contact with seepage water and runoff water, or a change in water management (IVR Pit is quite dry because of permafrost conditions and water is not pumped out as often as Whale Tail Pit), and different lithology encountered than anticipated. There are no fixed coordinates to the IVR Pit/sump sampling location. As noted in the annual report (Section 8.5.3.2) samples are collected from IVR and Whale Tail pit/sump when conditions are safe, and when water is present. References: Golder. 2018. Addendum Mine Site and Downstream Receiving Water Quality Predictions. Appendix 6-H to Whale Tail Pit – Expansion Project Final Environmental Impact Statement. December 2018. 2.See response above. 3. For the 2023 Annual Report Water Quality Forecast Agnico Eagle will evaluate and if necessary re-calibrate the model using recent geochemical data (e.g., static and kinetic tests), and recent monitoring data (e.g., pits, sumps). Improving the modelling of arsenic loading in the water quality forecasts will help provide a more accurate forecast to support adaptive measures and determine if modifications need to be made to the Whale Tail and IVR Pit closure strategy. Note that for IVR Pit, per the Interim Closure and Reclamation Plan (ICRP), the current mitigation plan is that exposed pit walls that are prone to leach arsenic shall be sloped back and covered with overburden and rip rap. Note that the need and feasibility of such mitigation on the exposed pit walls prone to arsenic leaching will be evaluated and updated in the final closure plan. For Whale Tail Pit no pit wall mitigation is currently planned. It should be noted that as per the ICRP, following completion of flooding of the open pits, the flooded pit lake will meet water quality objectives and demonstrate steady state conditions to confirm the pit lake can be reconnected to the downstream receiving environment. Routine pit lake water quality monitoring will be undertaken during closure and collected data will be used to calibrate and update the water quality model. In-situ treatment or treatment with the operational WTP could be done if required. As per the Water License 2AM-WTP1830, Part E, condition 9: "The Licensee shall not breach dikes until the water quality in the re-flooded area meets CCME Water Quality Guidelines for the Protection of Aquatic Life, baseline concentrations, or appropriate site-specific water quality objectives, such as the predictions in Final Environmental Impact Statement (FEIS) (…). If water quality parameters are above CCME Guidelines and/or FEIS predictions, unless otherwise approved by the Board, a site-specific risk assessment must be conducted to identify Site Specific Water Quality Objectives for the site that are protective of the aquatic environment. Where they are required, Site Specific Water Quality Objectives shall be incorporated in the approved Final Reclamation and Closure Plan."	Section 4 of the 2023 WT Water Management Plan presented in Appendix 14 of the Meadowbank Complex Annual Report
CIRNAC	Whale Tail Project Pit Sump and Attenuation Pond Water Quality Variability	Meadowbank Complex 2022 Annual Report: Section 8.5.3.2; NIRB Project Certificate No. 008, Term and Conditions 8,15, and 16	Section 8.5.3.2 of the 2022 Annual Report presents summaries of water quality monitoring data for the Whale Tail and IVR pit sumps and attenuation ponds. CIRNAC notes that there is a high degree of temporal variability between sampling events. To illustrate, the following arsenic concentrations were measured in the Whale Tail Pit sump (see Table 8-44): •May 29, 2022 = 0.676 mg/L •June 10, 2022 = 4.29 mg/L •June 19, 2022 = 0.645 mg/L Based on this example, arsenic concentrations spiked approximately six times on June 10 (to levels above impact predictions) and then returned to baseline levels, all within several weeks. Similar concentration swings are observed for other parameters and sampling locations in pits and attenuation ponds without any explanation being provided (e.g., aluminum and nutrients). It is unclear to CIRNAC what factors are causing the observed temporal variability in water quality in pit sumps and attenuation ponds. Similarly, the potential implications for environmental management are unclear. For example, it is not clear if the elevated arsenic concentrations in attenuation ponds were a factor in AEM's non-compliant discharges to Whale Tail South Lake in April 2022.	CIRNAC recommends that AEM: 1. Clarify if the elevated arsenic concentrations in attenuation ponds were a factor in AEM's non-compliant discharges to Whale Tail South in April 2022. 2.Explain the substantive temporal variability in the water quality of Whale Tail pit sumps and attenuation ponds. 3.Discuss any potential implications of the temporal variability on the site's environmental performance during operations and the post-closure phase. 4.Provide an assessment correlating any instances of in-pit filling of contact/saline water and the dates of the sampling conducted in the pit.	1 Following the internal investigation, the unexpected elevated source of arsenic is believed to have originated from a new pit sump in Whale Tail Pit. Water reporting into this sump is ultimately transferred into the IVR Attenuation Pond for storage prior to treatment in the water treatment plan, for final discharge in Whale Tail South Lake through the permanent diffusor. Refer to the Spill Follow up sent on May 27, 2022 for more details. 2.See response to CIRNAC 3.2. 3. The temporal variability of concentrations in the pits is controlled during operations by pumping water collected in the pit sumps to the attenuation ponds then sending it by the operations water treatment plant (O-WTP) for water quality treatment, prior to discharge to the receiving environment. The O-WTP is designed to treat Total Arsenic and total suspended solids (TSS). See response to CIRNAC 3.2-3 for the approach to update the water quality forecast model and for closure and post-closure preparation. 4. In 2022, there was no in-pit filing of contact water / saline water. Therefore, there is no correlation between water quality sample and in-pit filing of contact water. Samples in Whale Tail pit are taken, as per the Water License requirements, when water is available in the pit sumps. Water in the pit sumps come from groundwater (pit wall seep) and natural inflow such as precipitation, runoff and snowmelt. Additional sampling frequency is performed in order to characterize the in-pit water quality.	N/A
CIRNAC	Meadowbank Landfill Burning	Meadowbank Complex 2022 Annual Report: Section 6.1.1.2; NIRB Project Certificate No. 004, Amendment 003: Term and Condition 24	Section 6.1.1.2 of the 2022 Annual Report states: "In December 2021, the Meadowbank landfill burned from an undetermined cause". CIRNAC was unable to identify any information in the Annual Report or supporting documents indicating the causes, environmental impacts and mitigations associated with the event.	CIRNAC recommends that AEM provide a detailed description of the causes, environmental impacts and mitigations associated with the burning of the Meadowbank landfill.	The cause of the landfill fire cannot be proven to an acceptable level of certainty as there are no eyewitness to assist in defining an area of origin or to assist in determining which ignition source caused the fire. The most likely cause could be from improper waste segregation during the transfer from the roll off bin to the landfill. During the investigation, preventative measures were established to minimize the potential of a fire within the landfill or other areas on site in the future. Environmental awareness toolboxes were completed with all departments to review and communicate the expectations regarding the hazmat/waste process on site. A procedure was created to establish a fire watch after pushing new material at the landfill and an inspection process for roll off operators when dumping at the landfill. Additional signage was installed on general waste roll off bins to present acceptable material to be disposed of in the bins. Lastly, no environmental impacts associated with the landfill burn were measured through the various environmental monitoring program around site, including: the Core Receiving Environmental Monitoring Program, which includes the monitoring of water quality in the surrounding lakes and the air quality monitoring program, which monitors air quality (including air particulate matter) around the project.	N/A
CIRNAC	Spill Management Action Plan	Meadowbank Complex 2022 Annual Report: Section 7.1; NIRB Project Certificate No. 004, Amendment 003: Term and Condition 26	The 2022 Annual Report (Section 7.1) states that to address rising significant environmental incidents, AEM developed a new action plan to identify and address the root causes of spills and raise environmental awareness across the site. As part of the action plan, AEM stated they reviewed spills which occurred in 2021 and the first half of 2022 to identify common causes. The maintenance department also launched an equipment spill root cause analysis, which included a failure mode & effect analysis (FMEA) on the equipment models with the highest spill frequency. AEM also stated that the identification of causes and rectifying actions will be completed in 2023. Furthermore, to identify and better address incident root causes, an investigation process was designed and launched in 2022. Corrective measures are reportedly tracked for completeness. Based on the description provided in the 2022 Annual Report, the above-noted initiatives represent improvements in AEM's spill management approach. The 2022 Annual Report does not include detailed findings and recommendations related to these initiatives. For example, it does not describe the new spill action plan, the spill FMEA and the corrective measures that are being put in place.	CIRNAC recommends that AEM provide the details, findings and recommendations of all new spill management initiatives in future Annual Reports. This should include, but not be limited to: the new spill action plan, the spill FMEA and any new corrective measures.	Agnico Eagle acknowledge CIRNAC'S comment and will provide more information in the 2023 Meadowbank Complex Annual Report.	Section 7 of the 2023 Meadowbank Complex Annual Report
CIRNAC	Annual Closure Planning Update	Meadowbank Complex 2022 Annual Report: Section 9; NIRB Project Certificate No. 004, Amendment 003: Term and Conditions 78,79, and 80; NIRB Project Certificate No. 008, Amendment 001: Term and Conditions 7 and 13	Section 9 of the 2022 Annual Report provides high-level discussions of the closure planning and implementation process. For example, the section describes the state of the closure planning process, ongoing studies, information gaps and progressive reclamation. While CIRNAC appreciates receiving these descriptions, the Department has a wide range of questions and comments regarding the closure planning process for the Meadowbank and Whale Tail sites. As summarized in Appendix A, many of these questions and comments have been submitted in prior annual report reviews conducted by CIRNAC. While these questions and comments could be deferred until the submission of formal closure planning documents (e.g., periodic updated ICRPs and security estimates), CIRNAC is of the view that a more active dialogue on closure planning is justified. This is particularly important for the Meadowbank and Whale Tail Projects, given that they are currently scheduled to begin active closure within three years (i.e., by 2026). Taking into consideration the relatively limited time remaining before the implementation of closure, additional and regular dialogue between AEM, regulators, and interested parties would be beneficial. This would help to facilitate reaching technically sound closure and reclamation decisions, approval and implementation of an appropriate site closure strategy in a timely manner.	CIRNAC recommends that AEM convene an annual workshop with regulators and interested parties within the next 120 days to discuss the closure planning status for the Meadowbank and Whale Tail Mines. The overall goal of the workshop is to a) ensure that all organizations (including AEM) are fully informed of closure requirements, b) assess the adequacy of any progressive reclamation activities undertaken by AEM, and 3) proactively identify key issues that need to be resolved on a priority basis.	Agnico Eagle acknowledges that active dialogue on closure planning is justified between the involved organizations and regulators. Agnico intends to continue providing updates on progressive closure work, closure planning and closure engineering concepts, for both Meadowbank and Whale Tail sites, through the Annual Report and the next version of the Interim Closure and Reclamation Plan. The submission of the next version of the Interim Closure and Reclamation Plan for Meadowbank and Whale tail is planned for 2024. In the next version of the plan, a preliminary schedule of workshop with regulators and interested parties will be presented, for the remaining part of operation until the submission of the Final Closure and Reclamation Plans. As per the Water Licenses (2AM-MEA1530 and 2AM-WTP1830), the Licensee shall submit the Final Closure and Reclamation Plan to the Board for approval at least twelve (12) months prior to the expected end of planned mining.	Section 9 of 2023 Meadowbank Complex Annual Report
CIRNAC	Whale Tail Revised Water Quality Predictions	Meadowbank Complex 2022 Annual Report: Appendix 13, Appendix D; Meadowbank Complex 2021 Annual Report: Appendix 13, Appendix D; Final Environmental Impact Statement Addendum for the Whale Tail Pit Expansion Project (2018)	Appendix 13 (Appendix D) of the 2022 Annual Report presents updated water quality predictions for the Whale Tail site. The predictions for some parameters are substantively different from the predictions presented in the FEIS Addendum for the Whale Tail Pit Expansion Project. Notably, the following parameters are now predicted to exceed the FEIS values in Mammoth Lake during the post-closure phase: cadmium, chromium, copper, iron, manganese, nickel, selenium, zinc, phosphorous, nitrate and chloride. In addition to exceeding FEIS predictions, some parameters are also predicted to be above the predictions presented in the 2021 Annual Report and, in some instances, above the applicable environmental quality criteria (e.g., CCME criteria for the protection of freshwater aquatic life). This situation is demonstrated in the following two plots for total phosphorous and total cadmium. In both cases, revised predictions are well above a) the FEIS predictions; b) the 2021 predictions; and, most importantly, c) the applicable CCME criteria during the post-closure phase. In addition to the increases noted above, arsenic concentrations in Mammoth Lake (as shown in the following figure) are now predicted to be well above the FEIS Addendum predictions. They are also predicted to be approaching the applicable CCME effluent quality criterion (0.025 mg/L) at the time of closure (i.e., three years from now, in 2026). Appendix 13 of the 2022 Annual Report acknowledges increases relative to FEIS predictions with the following statement: "The WQF model forecasted concentrations that are generally higher than the FEIS forecasted values." Despite this acknowledgement, the 2022 Annual Report presents limited information regarding the factors that are contributing to the predicted increases. For example, it is unclear whether the increases are attributable to revised modelling assumptions or unexpected site conditions (e.g., elevated seepage loading rates). Furthermore, with regard to predictions that exceed the CCME criteria during post-closure (e.g., cadmium and phosphorous), the 2022 Annual Report presents limited information regarding the potential implications of the closure strategies for the site. On the contrary, the Annual Report states: "At closure, no water treatment is forecasted to be required.". This conclusion appears to be inconsistent with predicted water quality exceedances during the post-closure phase.	CIRNAC recommends that AEM: 1. Provide a detailed table describing the factors that contributed to 2022 water quality predictions being higher than one or more of the following: a) FEIS predictions, b) predictions from 2021, and c) predictions that exceed environmental quality criteria. 2. Describe why there is a high degree of variability between the 2021 and 2022 predictions. 3. Describe the approaches that will be taken to ensure significant adverse impacts do not occur for any parameters that are predicted to exceed 75% of the environmental quality criteria during post-closure. 4. Describe the studies that AEM will undertake between now and the finalization of the closure plan to verify the accuracy of water quality predictions. 5. Describe if and how the higher than originally anticipated water quality predictions will affect closure strategies for the site.	1. The model platform used for the 2022 annual forecast was changed from the platform used in the 2021 annual forecast and the FEIS. In addition, assumptions and inputs were changed for the 2022 annual forecasts. Examples include: • Arsenic mitigation applied to Whale Tail and IVR pits (ICRP assumes mitigation only applied to IVR pit); • higher runoff coefficient • The water quality for the different input streams to the model is based on the yearly average measured values and are assumed to be constant over a given year. • The model was not re-calibrated with the most recent monitoring data. Changes in the model platform and model assumptions can produce variable results. However, monitoring data (example arsenic figure included by CIRNAC) do not show an increasing trend over time. In addition, results from the CREMP (see Appendix 33 from the 2022 Annual Report) concluded: Of the parameters with trigger exceedances, FEIS predictions were exceeded for total phosphorus at WTS and total alkalinity, TDS, total lithium, and several ionic compounds at WTS and MAM in one or more sampling events. Importantly, the absolute concentrations of these parameters remain low. Total phosphorus and arsenic at WTS and MAM are within the normal operating ranges and Level 0 water management strategy is in effect in 2023 as per the Adaptive Management Plan. Routine water quality monitoring will continue in 2023 to track emerging spatial and temporal trends. During operation, the main parameter that influences the water quality forecast in Mammoth Lake and Whale Tail South Lake is the water treatment % removal efficiency applied to the model. The % removal was calculated based on the average yearly concentration measured in the Attenuation Pond and in the treated effluent. For example, for arsenic, a constant % removal efficiency of 88% was used for the model based on the average removal of 2021 and 2022. In 2021, the average was estimated at 90% while in 2022, the average was estimated at 86% based on the analytical results take at site. By using a higher % removal efficiency over 93%, the water quality forecast could trend similar to the FEIS forecast. The next water quality forecast models will provide a discussion on the factors contributing to the water quality predictions being higher than the previous predictions (FEIS and previous years model predictions) and predictions that exceed environmental quality criteria. 2. See response to CIRNAC 3.7-1. The 2022 model is based on the site water/mass balance model and assumes completely mixed ponds. It uses as input all of the water volumes transferred on the site in 2022 and the water volumes forecasted based on an average year. The 2022 model is more conservative than the 2021 model, especially when compared to the measured arsenic values. For the 2023 Annual Report the water quality forecast model will be adjusted based on recent field measured values. 3. To ensure adverse impacts do not occur for parameters that are predicted to exceed 75% of the environmental quality criteria during post-closure, Agnico Eagle will first examine the WTP to ensure that it is performing at its maximum % removal. In addition, as described above, the water quality forecast will be updated with available geochemistry and on-site water quality data. These additional data will contribute to improve the models, inform on adaptive management measures, and provide better predictions of water quality for closure and post-closure. It is important to note that CCME guidelines have been used for the water quality forecasting, as the final closure site-specific water quality criteria for certain parameters are not yet established. Further discussion on site-specific criteria will be presented in the next Interim Closure and Reclamation Plan and in the Final Closure and Reclamation Plan. 4. The water quality forecast will be updated as additional geochemistry data and on-site water quality data becomes available, which will contribute to improve the models, inform on adaptive management measures, and provide better predictions of water quality for closure and post-closure. Site-specific criteria will be developed and presented in the next Interim Closure and Reclamation Plan and in the Final Closure and Reclamation Plan. 5. Currently the closure strategies for the site remain unchanged. As per the ICRP, following completion of flooding of the open pits, the flooded pit lake will meet water quality objectives and demonstrate steady state conditions to confirm the pit lake can be reconnected to the downstream receiving environment. Routine pit lake water quality monitoring will be undertaken during closure and collected data will be used to calibrate and update the water quality model. In-situ treatment or treatment with the operational WTP could be done if required. As per the water license condition, the dikes will not be breached until the water quality in the re-flooded area meets CCME Water Quality Guidelines for the Protection of Aquatic Life, baseline concentrations, or appropriate site-specific water quality objectives, such as the predictions in the Final Environmental Impact Statement (FEIS).	Section 4 of the 2023 Meadowbank Water Management Plann presented in Appenix 13 and Section 4 of the 2023 WT Water Management Plan presented in Appendix 14 of the Meadowbank Complex Annual Report

Authority	Topic	Reference to comments	Regulator's Comment	Regulator's Recommendation	Agnico Eagle's Response to Comments	2023 Annual Report Section
CIRNAC	Water Quality Prediction Models	Meadowbank Complex 2022 Annual Report: Section 12; Meadowbank Complex 2022 Annual Report: Section 13; CIRNAC Technical Review Comments on the 2021 Annual Report to NWB (TRC #1); CIRNAC Technical Review Comments on the Whale Tail Pit Project Expansion Environmental Assessment (TRC #3)	Updated water quality predictions for the Meadowbank and Whale Tail sites are presented in appendices 12 and 13 of the 2022 Annual Report. In both instances, the reports describe the general modelling approaches. Key aspects of these approaches include the following statements, which have been extracted directly from Appendix D of Appendix 13 (similar statements are also provided in Appendix 12): 1. Table 3-1: "Water quality for the different input streams to the model is based on the yearly average measured values and are assumed to be constant over a given year." In the opinion of CIRNAC, the use of annual average input streams represents a potential underestimation of loadings at some points in time. For instance, loadings before, during and after freshet often vary significantly. There is a potential that the approach is missing intra-year peak events that are environmentally significant. 2. Section 3.3: "In order to simplify the model, the mass balance model assumes that the ponds, pits and lakes are completely mixed systems. Consequently, the results from this model provide an indication of the concentrations in these areas and should not be considered as an absolute value at this time." (emphasis added) CIRNAC agrees that this approach provides only an indication of concentrations and should not be relied on as a definitive indicator of potential environmental impacts. On multiple occasions, CIRNAC has expressed a concern that the "fully mixed" modelling assumption fails to provide sufficient spatial resolution to identify localized areas with elevated concentrations (e.g., in the vicinity of effluent discharges). Recently (in a letter to NWB dated May 29th, 2023), AEM stated that the modelling presented in the 2022 Annual Report had been modified to address this concern. The 2022 Annual Report and supporting documentation (e.g., Appendices 12 and 13) continue to use the fully mixed assumption in all modelling. 4. Section 3.3: "It should be noted at this point that the model should be used to evaluate at a high level the impact of operation and closure activities at the Whale Tail Mine site on the future water quality in the WT Pit / WTN Basin, the IVR Pit, Mammoth Lake and WTS Lake. The forecasted concentration should be considered as an order of magnitude estimate only considering that the model uses monthly volumes that are transferred around the site and assumes a fixed water quality concentration for each input stream over time." (emphasis added) CIRNAC agrees with AEM that the modelling approach is suitable for making highlevel screening decisions similar to those that were reached for the FEIS. The "order of magnitude" approach is not sufficient for an operating mine that is approaching closure, particularly in instances where parameters are predicted to approach and exceed applicable environmental quality criteria. To illustrate, the following figure indicates that arsenic is predicted to approach the CCME effluent quality criterion (0.025 mg/L). Given that predictions are only accurate to within an order of magnitude, actual arsenic concentrations could reach levels that are ten times the CCME criterion. Therefore, the proximity of the current predictions to the criterion represents a potential concern that warrants more detailed modelling. CIRNAC has cited this concern on multiple occasions, most recently in its submission of the 2021 Annual Report to the NWB (TRC #1). In response to that comment, AEM indicated (in a May 29, 2023 letter to NWB) that appropriate modifications would be made to the 2022 Annual Report. Based on our review of the 2022 Annual Reports submitted to NIRB and NWB, CIRNAC was unable to identify any evidence to demonstrate that the recommended changes had been made. 5. Section 3.3: "The present mass balance model cannot simulate the treated effluent plume discharged in Mammoth Lake or Whale Tail South Lake. A hydrodynamic model is required to simulate the discharge of treated effluent in these lakes, which is beyond the scope of this study." CIRNAC agrees with AEM that their "fully mixed" approach is insufficient to predict the localized effects of contaminant loadings from sources such as treated effluent plumes, seepage from WRSFs, seepage from pit walls, etc. Consequently, the modelling cannot evaluate localized concentrations, some of which will be greater than those predicted under AEM's fully mixed modelling approach. This is particularly important given the fact that some parameters are near or above applicable environmental quality criteria (see the arsenic figure presented above under the third point). CIRNAC, therefore fully supports AEM's conclusion that a hydrodynamic model is required to simulate the discharge of treated effluent and predict potential project impacts. It is unclear to CIRNAC whether AEM is planning to perform hydrodynamic modelling in the future. 5. From Recommendations in S.2: "To better understand the loading of potential COCs from the exposed pit wall during Operation and following Closure, determine if it is possible to sample the pit wall runoff safely. Consider advancing the hydrogeological model and understanding of the pit wall lithology to assess the potential loading of COCs during Operation and Closure." The above recommendation is from SNC Lavalin (AEM's technical advisor). On multiple occasions (e.g., CIRNAC TRC #3 during the FEIS for the Expansion Project), CIRNAC indicated that additional sampling and modelling of pit wall seepage would be beneficial. Therefore, we fully support SNC's advisor's recommendation, which would help refine post-closure water quality predictions in the pit lakes. It is unclear how AEM intends to act on the recommendation. As noted in TRC #2, contaminant concentrations (e.g., arsenic) in the Whale Tail and IVR pit sumps are significantly higher than originally predicted. This justifies additional efforts to characterize the loadings associated with pit walls, including seepage. Collectively, the points noted above demonstrate that there are multiple simplifying assumptions and approaches being used by AEM to predict water quality that warrants reconsideration. While CIRNAC supported using simplifying assumptions and approaches during project approval and the initial years of operation, the project is now at a stage that justifies the development of more refined and accurate water quality predictions. While the above-noted observations are related to the Whale Tail project, they also generally apply to the Meadowbank Mine.	CIRNAC recommends that AEM revisit the water quality modelling assumptions and approaches used for both Meadowbank and Whale Tail within the next 120 days to ensure all future project decisions (particularly closure) are informed by sufficiently accurate predictions. At a minimum, factors to consider when revisiting the assumptions and approaches include the following: 1. using monthly (or smaller) time steps for all model inputs instead of the current one-year time step; 2. performing hydrodynamic modelling of receivers instead of assuming fully mixed conditions; 3. performing sensitivity analyses to accurately capture the range of uncertainty associated with water quality predictions; 4. expanding efforts to characterize loadings from pit walls.	1. The water quality forecast model uses a monthly time-step for water movement. In theory, it may be possible to integrate to the model a monthly time step with regard to water quality and assess if it is possible to vary the input stream water quality over time. This will be investigated further for both the Meadowbank and Whale Tail water quality forecast model. Note that this would add another level of complexity to the model and this is not something AEM can guarantee is possible for the next iteration of the model. 2. Hydrodynamic modelling is another type of tool used to predict possible future conditions but models that assume fully mixed conditions are appropriately conservative and can be used to support operations and adaptive management. Agnico Eagle will consider a hydrodynamic model but cannot guarantee this is possible for the next iteration of the model, or even if it could be completed on an annual basis. 3. Sensitivity analysis will be performed for next year's water quality forecast model for a few key parameters. For example: runoff volumes to manage for a dry and wet year, increase in arsenic loading from pit walls, etc. Results will be included in the next Water Quality Forecast Reports. 4.Further geochemistry analysis and additional pit sumps water quality data will be integrated when available to the yearly updated water quality forecast model. Strategies are being developed to obtain additional in situ water quality data from the pits.	Section 3 and 4 of the 2023 Meadowbank Water Management Plann presented in Appenix 13 and Section 3 and 4 of the 2023 WT Water Management Plan presented in Appendix 14 of the Meadowbank Complex Annual Report
CIRNAC	Mine Waste Management, Tailings Studies		In CIRNAC's opinion, Section 5 of the 2022 Annual Report should be titled "Waste Rock Management Activities," given that this section also discusses ore stockpile(s) and tailings storage in addition to waste rock. Section 5.3.2 of the 2022 Annual Report states that "as in-pit deposition continues, updates of the hydrogeological model will be performed at the closure period using site data such as ground temperature, hydraulic heads, in-pit tailings pore water quality, etc. Breakthrough curves will be reviewed at this time to adapt the Groundwater Monitoring Plan." CIRNAC understands the above statements to represent specific commitments to undertake future studies. In contrast, the following statements describe actions that AEM might complete in the future: "As Goose Pit, Portage Pit A and Portage Pit E are mined out, faults mapping and (location, azimuth, dip, aperture) could be carried out in each of the current final pit shells. Other former and new structural information can be revisited such as existing televiewer surveys performed in a few geotechnical boreholes, specifically in IPD boreholes and in the Central Dike area. Other available investigation results such the pit wall stability analysis or any rock core logging database could be also reviewed to identify main fracture zones or lithology contacts. Relevant information will be integrated to the revised 3D model, at closure period." Based on the wording in the above paragraph, it is unclear to CIRNAC what AEM has committed to do with respect to the actions that could/can be carried out and what relevant information will be integrated into the revised 3D model.	CIRNAC recommends that AEM: a) Revise Section 5 title to reflect that the section contains information on more than waste rock b) provide a timeline for future studies that AEM has committed to be carried out, ensuring that they will be done ahead of closure, not at closure. c) clarify whether AEM intends to carry out the studies identified above that have been discussed as "could be carried out".	1. Section 5 of the Annual Report will be titled "Waste Rock and Tailings Management Activities" as this section includes details on waste rock and tailings management on site. 2. As mentioned in the Interim Closure and Reclamation Plan (Update 2019, March 2020), the hydrogeological model will be updated at the end of in-pit deposition operations, unless significant change in thermal regime is observed by existing instrumentation. The thermal and hydrogeological modelling during operation will be used as a predictive tool, along with field observations, to adapt the closure and post-closure groundwater monitoring program. The details of the thermal and hydrogeological modelling, as well as the closure and post-closure groundwater monitoring program, will be presented in the Final Closure and Reclamation Plan, to be submitted twelve (12) months prior to the expected end of planned mining (Water Licence No: 2AM-MEA1530, Part J, condition 1). It should be noted that hydrogeology and groundwater are monitored on site during operation as per the Groundwater Monitoring Plan (Version 11, March 2020), and that in-pit tailings pore water is also monitored as per the Pore Water Monitoring Plan (Version 2, March 2020). Data collected during operation will support the in-pit hydrogeological modelling post-deposition and the groundwater monitoring program for closure and post-closure. 3. Geotechnical and geomechanical data for the Portage and Goose pits have been collected during the mining period, prior to in-pit tailings deposition. Relevant data from rock mechanics inspections, pit wall stability analysis, geotechnical drilling for instrumentation or groundwater wells, as well as the geology rock core database gathered prior to in-pit deposition will be integrated to the revised hydrogeological modelling, to be presented in the Final Closure and Reclamation Plan.	Section 5 of the 2023 Meadowbank Complex Annual Report
CIRNAC	Water Level Monitoring Data	Section 4.2 of the 2022 Annual Report	Section 4.2 of the 2022 Annual Report notes that: • No water was discharged to Third Portage Lake in 2022. The lake level monitoring results presented in Table 4-3 and Figure 7 show that the average water level is within the natural variation of the lake. • Water from the East Dike Seepage was discharged into Second Portage Lake in 2022. The lake level monitoring results presented in Table 4-3 and Figure 7 show that the lake level remained within the range of naturally occurring levels. • No water was discharged from the Vault Attenuation Pond in 2022. Section 4.2.1 of the 2022 Annual Report states that results are presented in Table 4-3 and Figure 7 for both the Vault Attenuation Pond and Turn Lake. This is not the case as Table 4-3 does not include the Vault Attenuation Pond, and Figure 7 only shows water levels for Third Portage and Second Portage Lake.	CIRNAC recommends that AEM update Table 4-3 and Figure 7 to include both the Vault Attenuation Pond and Turn Lake water level.	Section 4.2.1 mentioned that no water was discharged from the Vault Attenuation Pond in 2022 and the elevation measurement of Wally Lake was ongoing in 2022 and provided in Table 4-3 and Figure 7. For Turn Lake, the annual report mentioned that lake level monitoring results are presented in Table 4-3 and Figure 7. Agnico Eagle acknowledges CIRNAC's comment and recognize an error in the text as both Wally Lake and Turn Lake water level are presented in Table 4-3 but not included in Figure 7. Agnico Eagle will make sure to include Wally Lake and Turn Lake elevation in the figure in future annual report. Elevation of the internal structure Vault Attenuation Pond is not intended to be provided, per previous years.	Section 4.2 of the 2023 Meadowbank Complex Annual Report
KivIA	Pit Lake Conductivity Profiles	Appendix 12	In the Meadowbank Water Forecasting Update, Agnico Eagle contemplates measuring depth profiles of conductivity in the pits to determine the presence of stratification in the pit lakes. Discussions surrounding the creation of end pit lakes with suitable fish habitat reference the presence of a chemical gradient, with higher concentrations of dissolved solids near the bottom of the end pit lakes. Further information on the presence and stability of stratification in the pits would assist in evaluating the suitability of these lakes for providing fish habitat.	Agnico Eagle should commit to measuring depth profiles of conductivity in the reflooded pits.	Measurement of pH, temperature, dissolved oxygen, and conductivity at different depths in Goose pit have been completed in 2022. Additional profiles will be completed in 2023. These results will provide information on the stratification of the Goose pit and will be discussed in the pits water quality forecast model. Based on the results, additional profiles may be completed during the operation period before closure. The program for water quality sampling in the pits for closure and post-closure, including the reflooding period, will be based on the pit water quality model predictions and will be presented in the Final Closure and Reclamation Plan.	Section 4 of the 2023 Meadowbank Water Management Plann presented in Appenix 13 of the Meadowbank Complex Annual Report
KivIA	Document Control	Appendix 37	A large number of documents are submitted for review annually. Use of the documents control tables to outline changes in subsequent document versions enable reviewers to efficiently focus their efforts.	Agnico Eagle should ensure the pages and sections modified in subsequent document versions is reflected in the document control table.	Agnico Eagle acknowledges KivIA's comments and will continue effort to ensure pages and section modified in subsequent document update are adequately outline in the document control section.	Document Control in Management Plan update submitted as part of the 2023 Meadowbank Complex Annual Report
KivIA	November 28, 2022 - 29,000 Litre Fuel Spill at Km 87 on the AWAR	Meadowbank Complex, 2022 Annual Report, Table -2; Appendix 6 -Agnico Eagle's Training Management System and Learning Management System Reports; Appendix 28 - Meadowbank 2022 GN Spills Reports.	Did the investigation into this significant fuel spill include a review of the training records and maintenance records of mobile equipment for the Inuit Contractors used for hauling fuel? When will AEM determine if this is an insurable event for the Inuit Contractor involved in the spill?	The KivIA would like to see the requested information at AEM's earliest convenience	Agnico Eagle completed a full investigation of the incident at KM87 including training, maintenance records and operating procedures. A follow-up spill report outlining the details of the spills, corrective, and remediation actions was submitted under the Nunavut Water Board License 2AM-MEA1530 Part H, Item 8c on December 28, 2022. The incident has been deemed an insurable event for the Inuit contractor involved.	N/A
ECCC	Weather Data	Appendix 50 Meadowbank and Whale Tail 2022 Air Quality and Dust Monitoring Reports, Section 2.4 Weather Data and Appendix A	Section 2.4 Weather Data mentions the availability in Appendix A of daily averages for wind speed, wind direction and temperature from the Meadowbank and Whale Tail permanent climate station. This section also refers to a wind sensor installed at the DF-7 monitoring site to measure hourly average wind speed and direction. ECCC agrees that wind monitoring can be used to help identify sources of pollutants as needed, based on wind direction. Accurate wind measurements may also assist with diagnosis of fugitive dust events. However, there are multiple issues with the climate station data as presented in Appendix A. For example, the temperature sensor appears to be locked at or near -49.5C for several days in early April, and average temperatures mostly exceed +50C from June 21st through July 2nd. The wind sensor malfunctioned from April 28th through May 5th.	ECCC requests that AEM perform a first order quality control of the weather data from the climate station, with an emphasis on wind speed and direction; the primary comparison of wind data would be with the sensor at DF-7 with the Baker Lake NAVCAN Station as a secondary station. Erroneous data should be subsequently flagged.	Following this recommendation from ECCC, Agnico Eagle has initiated a review of internal procedures for quality control and reporting of the onsite weather data, including instrument maintenance and calibration records. In the meantime, Agnico has reviewed the Meadowbank weather station wind data (daily average speed and direction) in comparison with the wind data collected at the Whale Tail weather station. This is considered to be the most appropriate comparison, given the proximity and similarity of the installations. In this evaluation, any deviations from the normal range of expected wind speed values were identified, along with trends suggestive of instrument drift or malfunction. From this evaluation, the following time points are considered erroneous, and have been flagged for further investigation as part of the review described above: April 28 – May 8 (zero values recorded), June 21 – July 2 (values identical between the two stations). Results of this investigation will be provided in the next reporting cycle.	N/A
DFO	Fish Passage at Road Crossings	Appendix 46: Whale Tail Haul Road Management Plan Version 4 – Section 7.1.2	Culverts crossing fish bearing waters along the AWAR and WTHR requiring repair maintenance. Annual report does not identify issues with culverts affecting fish passage. Annual report does not provide a plan for repair/replacement.	Proponent to provide a plan for repair and/or replacement of damaged and obstructed culverts prioritizing repairs to culverts with potential to affect fish passage and those affecting fish and fish habitat along Whale Tail Haul Road and AWAR.	Agnico Eagle acknowledges DFO's comment. Annually, a complete geotechnical inspection is performed by a third party along the AWAR and WTHR. The report is submitted as an appendix of the Annual Report along with the implementation plan. Agnico Eagle will include in future annual report a list of culverts crossing fish bearing along with proposed plan for the repair and or replacement, if needed.	Section 3.3 of the 2023 Meadowbank Complex Annual Report
NWB	2AM-MEA1530, 2AM-WTP1830	2022 Annual Report	The Licensee provides a redundant information pertaining to requirements of other government bodies (wildlife, socio-economic, etc.).	Please limit the documentation package to the required.	Agnico Eagle acknowledges the NWB's comment and will improve presentation of the 2023 Meadowbank Complex Annual Report to better identified information and appendices that pertain to NWB's mandate.	Section itentifed by § in the 2023 Meadowbank Complex Annual Report
NWB	2AM-MEA1530, 2AM-WTP1830	2022 Annual Report	The geotechnical inspection resulted in a number of recommendations pertaining to: • East Dike • Bay-Goose Dike • Stormwater Dike • Central Dike • AWAR • Whale Tail Mine Road • Quarries • Issues with geomembranes andfor Baker Lake Tank Farm • Whale Tail Mine Tank Farm • Contaminated Soil Storage and Bioremedial Landfarm Facility	Please address the recommendations	Agnico Eagle acknowledges the NWB's comment and will provide an update in the 2023 Meadowbank Complex Annual Report.	Meadowbank and Whale Tail 2023 Annual Geotechnical Recommendation Implementation Plan as presented in Appendix 10 of the Meadowbank Complex Annual Report
NWB	2AM-MEA1530, 2AM-WTP1830	2022 Annual Report	The open pit geomechanical inspection resulted in recommendations pertaining to: • Goose Open Pit North Wall • Pit A B Dump - Lower Dump Platform • Pit A B dump Upper Dump Platform	Please address the recommendations.	Agnico Eagle acknowledges the NWB's comment and will provide an update in the 2023 Meadowbank Complex Annual Report.	Meadowbank and Whale Tail 2023 Annual Geomechanical Recommendation Implementation Plan as presented in Appendix 11 and 12 the Meadowbank Complex Annual Report