AGNICO EAGLE

Meliadine Extension – Meliadine Mine

DFO Technical Comment Responses and Commitment Follow-up

Submitted to:

Fisheries and Oceans Canada

Submitted by:

Agnico Eagle Mines Limited – Meliadine Division

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1 INTRODUCTION

Agnico Eagle submitted the Meliadine Extension Final Environmental Impact Statement (FEIS) Addendum to the Nunavut Impact Review Board (NIRB) on July 26, 2022 and the NIRB subsequently provided its positive conformity determination on August 5, 2022. Following the conformity approval, Information Requests were submitted by Parties (including Fisheries and Oceans [DFO]) and responses were submitted by Agnico Eagle on September 26, 2022. Parties then submitted Technical Comments where Agnico Eagle provided responses on November 8, 2022. Following the Technical Comment submission, a Technical Meeting was held in Rankin Inlet on November 23-24, 2022 to discuss unresolved technical concerns. During the Technical Meeting, Agnico Eagle made a number of commitments to DFO and other parties to be fulfilled by January 31, 2023. Agnico Eagle submitted a draft response to DFO on January 31, 2023. This document contains the contents of the draft document, as well as additional information to fulfill the comments from DFO.

The purpose of this document is to provide additional information to address DFO's outstanding Technical Comments and Commitments made during the Technical Meeting of November 23-24, 2022.

Agnico Eagle has been actively working to fulfil Commitments and had a three-day in-person workshop (January 17-19, 2023) with DFO and the Kivalliq Inuit Association (KivIA) in Yellowknife to come to an understanding to resolve technical comments.

Table 1-1 provides a concordance of Commitments made by Agnico Eagle during the NIRB process against DFO's Technical Comments during the NIRB process and where they are addressed throughout this report.

Table 1-1: Concordance to Agnico Eagle Commitments and DFO Technical Comments

Commitment No.	Commitment	Technical Comment	Location in Response Document	Status
12	Agnico Eagle will evaluate ponds in the X Watershed next year during field investigations, and will provide a list of the baseline monitoring to be collected before proceeding with new work on the site and the associated schedule.	DFO-TRC-08	Section 4.3	Agnico Eagle considers this commitment to be resolved.
17	Agnico Eagle commits to continue working with the DFO through the parallel regulatory process to obtain a Fisheries Act Authorization and provide details in Final Fish Habitat Offsetting Plan.	DFO-TRC-02	Sections 1, 2, and 3	Agnico Eagle considers this commitment to be resolved.
		DFO-TRC-03	Sections 1, 2, and 3	
		DFO-TRC-04	Sections 1, 2, and 3	
		DFO-TRC-05	Sections 1, 2, and 3	
18	Agnico Eagle commits to meeting DFO and KivIA in Yellowknife to resolve outstanding matters.	DFO-TRC-01	Sections 1, 2, and 3	Agnico Eagle considers this commitment to be resolved.
		DFO-TRC-02	Sections 1, 2, and 3	
		DFO-TRC-03	Sections 1, 2, and 3	
		DFO-TRC-04	Sections 1, 2, and 3	
		DFO-TRC-05	Sections 1, 2, and 3	
		DFO-TRC-06	Sections 1, 2, and 3	

Commitment No.	Commitment	Technical Comment	Location in Response Document	Status
		DFO-TRC-07	Sections 1, 2, and 3	
		DFO-TRC-08	Sections 1, 2, and 3	
44	Agnico Eagle will provide maps of which waterbodies are planned to being dewatered now as opposed to the proposal from 2014 and provide an explanation as to why they need to be dewatered now and not in 2014.	DFO-TRC-01	Appendix A and Appendix B	Agnico Eagle considers this commitment to be resolved.
45	Agnico Eagle will provide an approximation of the fish habitat proposed to be destroyed in 2014 and what is proposed today.	DFO-TRC-01	Section 2, Appendix A	Agnico Eagle considers this commitment to be resolved.
46	Agnico Eagle will provide an explanation as to how discovering char in 2020-2021 in lake A6 and the decision to completely dewater the lake as opposed to partially dewater as was planned in 2014 follows an adaptive management approach which gives priority to avoidance of impacts.	DFO-TRC-04	Section 3.1	Agnico Eagle considers this commitment to be resolved.
n/a	n/a	DFO-TRC-09	Section 4.1	
n/a	n/a	DFO-TRC-10	Section 4.2	

1.1 Meliadine Extension Base Case

At the January 2023 workshop, DFO requested information to understand how decisions were made to define the base case. This section provides a review of the various alternatives considered to determine the base case that was used in the Meliadine Extension Final Environmental Impact Statement (FEIS) Addendum and assessed by all Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs).

Agnico Eagle completed an alternative assessment for waste and water management for the proposed Meliadine Extension development (Tetra Tech 2019). The alternative assessment was conducted by performing a Multiple Accounts Analysis (MAA) according to the Guidelines for the Assessment of Alternatives for Mine Waste Disposal (Guidelines) provided by Environment Canada (2013).

Prior to the 2019 MAA, Agnico Eagle performed a scoping level study for waste and water management of the five deposits. The waste management plan developed in the scoping level study were included in the MAA as the "Base Case". The threshold criteria for identifying candidate alternatives considered: the mine waste production plan, mine site water management plan, infrastructure requirement, contingency capacity and flexibility, the extent of the approved Project Certificate, and the possible future permitting requirements. A total of 18 candidate alternatives (Table 1-2) were developed for the five deposits (Tiriganiaq, Wesmeg, Pump, F-Zone, and Discovery), these included:

- Four alternatives for the Tiriganiaq and Wesmeg deposits;
- Four alternatives for the Pump deposits;
- Four alternatives for the F Zone deposits; and
- Six alternatives for the Discovery deposits.

Table 1-2: Waste and Water Management Candidate Alternatives and Base Case

Deposit Grouping	Candidate Alternatives	Brief Summary
Tiriganiaq and Wesmeg	T1	Extending WRSF1, which is permitted in the Type A Water Licence into Lake B7 to store mine waste from the Wesmeg deposits. The current approved TSF will be extended northwest on land to store the excess volume of tailings from Meliadine Extension operation. Runoff from WRSFs and TSF will be collected in Lake B7, and then transferred to CP1 for treatment and discharge.
	T2	WRSF for storing mine waste from the Wesmeg deposits will be partially in Lakes B5 and B6. Tailings will be managed in the same way as T1. Runoff from WRSF will be collected locally and then transferred to Lake B7.
	T3	WRSF for storing mine waste from the Wesmeg will be north of the open pit and partially in Lake B5. Tailings will be managed in the same way as T1. Runoff from WRSF will be collected locally and then transferred to Lake B7.
	T4	Extending WRSF1, which is permitted in the Type A Water Licence into Lake B7 to store mine waste from the Wesmeg deposits. Tailings will be stored partially on land at the current permitted footprint and partially in Lake B7. Runoff from WRSFs and TSF will be collected in Lake B7, and then transferred to CP1 for treatment and discharge.
Pump	P1 (Base Case)	Two separate WRSFs to store the mine waste from the Pump deposits, outside the WRSF footprint assessed in FEIS, close to the open pits. Contact water will be collected in local collection pond (CP9), and then transferred to Lake A8.
	P2	WRSF is on land and within the footprint assessed in FEIS, close to the open pits. Water diversion berm and channel are required to divert the contact water from the WRSF to CP9.
	P3	Two separate WRSFs located on the east and west sides of Lake B4, within the footprint assessed in FEIS, far from the open pits. Several diversion berms and channels are required to manage the contact water. Long haul distance, a bridge or culvert is required to access the WRSFs on the west side of Lake B4.
	P4	WRSF is on land and outside the footprint assessed in FEIS, close to the open pits. Contact water will naturally flow to CP9.
F Zone	F1 (Base Case)	Two separate WRSFs within the footprint assessed in FEIS, close to the open pits. Excess water in Lake A6 will be managed by a channel from Lakes A6 to A5. Contact water will be collected in the local collection pond (CP10) and then transferred to Lake A8.
	F2	One WRSF within the original footprint assessed in FEIS, close to the pit. Excess water in Lake A6 will be managed by pumping to Lake A5. Contact water management strategy is the same as F1.
	F3	One WRSF within the original footprint assessed in FEIS, close to the pit. Excess water in Lake A6 will be managed by diverting to Lake C1 via various diversion channels. Contact water management strategy is the same as F1.
	F4	Waste will be stored on land WRSF and backfilling into the mined-out open pit. Excess water in Lake A6 will be managed by pumping to Lake A5. Contact water management strategy is the same as F1.
Discovery	D1 (Base Case)	Two separate WRSFs outside the footprint assessed in FEIS, close to the open pit. Contact water will be collected in the local collection pond (CP11).
	D2	One WRSF outside the footprint assessment in FEIS, close to the open pit. Contact water management strategy is the same as D1.
	D3	One WRSF within the footprint assessed in FEIS, far from the open pit. Contact water management strategy is the same as Alternative D1. Diversion berm is required to divert contact water to CP11.

Deposit Grouping	Candidate Alternatives	Brief Summary
	D4	One WRSF within Lake CH6, outside the original footprint assessed in FEIS, far from the open pit. Dike in Lake CH6 is required to manage the contact water.
	D5	Placing waste into Lake CH6 and close as a wet cover.
	D6	Haul waste back to the main mine site.

Source: Tetra Tech (2019).

Six options for site-wide waste and water management (i.e., Options A to F) were then developed for the 2019 MAA based on best judgment, experience gained, and lessons learned from the operation of Meliadine Mine. For the first four options, part of Lake B7 would be used to store waste from the Wesmeg deposits. The final two options were developed to evaluate the options that store the waste from the Wesmeg deposits on land instead of in Lake B7. After further consideration, the fourth option (i.e., Option D) was removed from further assessment due to the potential high risk of depositing dry stack tailings into Lake B7 during operation and the long-term performance after closure. The options are summarized as follows:

- Option A: Within FEIS Footprint (Base Case)
- Option B: Generally outside FEIS Footprint and full dewatering Lakes A6 and A5
- Option C: Generally within FEIS Footprint and contact water at Discovery discharge to Lake CH6
- Option D: Mainly within FEIS Footprint and tailings in Lake B7
- Option E: Mainly within FEIS footprint, fully dewatering Lake B5, and contact water at Discovery discharge to Lake CH6
- Option F: Mainly within FEIS footprint, fully dewatering Lake B5, and contact water at Discovery discharge to CP10 at F Zone

The 2019 MAA process involved developing the accounts, sub-accounts, and indicators and assigning score and weight to each of them. Ranking together with a sensitivity assessment were undertaken to identify the option with the highest overall score which would be carried further through a pre-feasibility study.

From the MAA, further studies were completed to support the FEIS Addendum including the Assessment of Alternatives for Mine Waste Disposal which is currently under review with Environment and Climate Change Canada (ECCC) for Schedule 2 Authorization.

1.2 Lakes B4 and B7

DFO has also requested further information on the use of B4 and B7 for contact and saline water management, respectively. A Water Balance and Water Quality Modelling (WBWQM) report (Appendix H-07 from the NIRB submission) includes details on capacity of pond (Table 2-3), treatment capacity (Section 2.2), and discharge to Meliadine Lake and Itivia Harbour (Section 5.1.4).

In addition, the WBWQM was updated for the NWB submission (Appendix E of the Water Management Plan [Appendix F-21 from the submission to the NWB) based on comments from the KivIA (e.g., move water from surface contact ponds CP3, CP4, and CP5) into the saline water balance.

2 WATERBODY AND WATERCOURSE INVENTORY

This section provides follow-up information to resolve Technical Comments DFO-TRC-01 and DFO-TRC-02. This section provides an inventory of waterbodies and watercourses (including area) and type of impact from the 2014 FEIS and the Meliadine Extension FEIS Addendum.

Potential effects to fish and fish habitat were assessed in Section 7.5 of the 2014 FEIS and in Section 7.5 of the Meliadine Extension FEIS Addendum. This assessment was conducted for the study areas as described in Section 7.1.3 of the Meliadine Extension FEIS Addendum. The study area boundaries for the Meliadine Extension were developed based on the same criteria as the 2014 FEIS (Agnico Eagle 2014).

A primary difference in the assessed impacts to the waterbodies / watercourses between the 2014 FEIS and the Meliadine Extension FEIS Addendum is that shallow pond features (< 2m depth) and seasonal / ephemeral watercourses (i.e., hydraulic connections between waterbodies) were generally considered to provide insignificant contributions to flow and fish communities in the 2014 FEIS. The 2014 FEIS managed the “loss of low-risk ponds (i.e., those used only by Ninespine stickleback) and streams (i.e., those with undefined channels and flow dispersed through terrestrial vegetation)” through application of relevant mitigation measures and best management practices.

The Meliadine Extension FEIS Addendum includes consideration for shallow pond and seasonal features as well as small-bodied fish (Table 2-1). A comparison of waterbodies and watercourses between the 2014 FEIS and the Meliadine Extension FEIS Addendum is attached as Appendix A and Appendix B. The comparison includes changes in proposed impacts to the waterbody features, whether these features are fish bearing, location coordinates, and the proposed impacted area for each feature.

Table 2-1: Comparison of Impacted Areas and Calculated Fish Habitat Units by Waterbody Feature between the 2014 FEIS and the Meliadine Extension FEIS Addendum

	Waterbodies		Watercourses	
Submission	**Area (ha)**	**Habitat Units**	**Area (ha)**	**Habitat Units**
2014 FEIS	318.75	90.77	*1978 m	556
Meliadine Extension FEIS Addendum	437.18	154	11.55	4.28

* Watercourse length was the unit of measure used for habitat unit calculations for the 2014 FEIS

Methods varied for determining which waterbodies were included in offsetting calculations between the 2014 FEIS (Supporting Document [SD] 7-4 from the 2014 FEIS) and the Meliadine Extension FEIS Addendum (Appendix D26). For example, the 2014 FEIS generally did not consider waterbodies under the Tailings Storage Facility footprint (most of Lake B7 and ponds B25 and B28) required an amendment of Schedule 2 of MMER. These waterbodies were not considered as part of the offsetting analysis due to differences in

definitions between Environment Canada's MMER (that require a Section 36 authorization) and DFO Section 35(2). The Meliadine Extension FEIS Addendum included the loss of waterbody features that require an amendment to Schedule 2 of the revised MDMER.

Additionally, determination of impacted waterbodies in the 2014 FEIS focused on impacts to waterbodies that supported large-bodied fish (i.e., Arctic char, Lake trout, and Arctic grayling). Seventy-nine percent of waterbodies (63 of 80) within the 2014 FEIS footprint were deemed not critical to the survival of Ninespine stickleback due to their prevalence within the region, maximum depth (< 2 m), absence of overwintering habitat, and isolation from adjacent waterbodies. Aside from 16 "stream like" corridors in the lower reaches of the A, B, and H watersheds (i.e., presence of a defined channel and coarse substrates), watercourses were generally considered low quality fish habitat and likely to have a low impact of large-bodied fish in the 2014 FEIS. The loss of these features was determined to likely have a negligible impact on the productivity of large-bodied fish and did not require offsetting. The Meliadine Extension FEIS Addendum considered the impacts of all fish bearing waterbodies and watercourses within the footprint and that fish bearing features would require offsetting.

Habitat Unit calculations (HU) in the 2014 FEIS were based on a modified Habitat Evaluation Procedure (HEP) while the HU calculations for the Meliadine Extension FEIS Addendum were based on an updated HEP used for the Whale Tail Pit - Fish Habitat Offsetting Plan (Agnico Eagle 2018). The HU calculations for waterbodies was generally the same between Whale Tail and Meliadine Extension. The HU calculations for the 2014 FEIS watercourses was based on the linear length of each feature and included habitat types 11 to 16. Calculations for watercourse HU for the Meliadine Extension FEIS Addendum was based on watercourse area.

Six habitat types were defined for watercourses in the 2014 FEIS that were stratified into shallow (<0.5 m) and deep (>0.5 m). Each strata was further classified by substrate (i.e., fines, gravel, course). Watercourse habitats for the Meliadine Extension FEIS Addendum were assigned habitat type 11 (fine substrate) or type 12 (course substrate). No depth component was included in the HU calculations for the Meliadine Extension FEIS Addendum.

The fish species weighting for the 2014 FEIS was derived as the mean of the fishery value and the relative abundance values for each species. Calculation of the fishery value for the 2014 FEIS included consideration of the importance of each fish species to commercial, recreational, and aboriginal fisheries. Generally, large-bodied fish valuable to the Inuit communities (i.e., Arctic char, Lake trout, Arctic grayling) were given high values, less important large-bodied fish (e.g., Round whitefish, Burbot) were given less value, and small bodied fish (e.g., Ninespine stickleback) had no value. The relative abundance of fish species was calculated using biomass. Relative biomass of each species was estimated as a proportion of the total biomass.

For the Meliadine Extension FEIS Addendum, all fish had value in the HU calculations, though large-bodied fish important to the Inuit communities were weighted at 2 times all other fish species.

3 FISH AND FISH HABITAT ANALYSIS SUMMARY BY SUB-WATERSHED

This section provides follow-up information to resolve Technical Comments DFO-TRC-03, DFO-TRC-04, DFO-TRC-05, DFO-TRC-06, DFO-TRC-07, and DFO-TRC-08. This section summarizes the information for the 2014 FEIS in comparison to the Meliadine Extension FEIS Addendum for area of the watershed with a direct mine infrastructure footprint, effects to flows, and effects to fish and fish habitat. More detail is provided for sub-watershed A and B as there will be larger mine footprints within these sub-watersheds. Table 3-1 summarizes the calculated total watershed area to be 7,231.4 ha. The NIRB approved footprint was anticipate to affect about 2,201 ha (30%) of the total watershed area; whereas the Meliadine Extension will be approximately 44.7 ha smaller. Figure 3-1 shows the Meliadine Extension footprint and the affected watersheds.

Table 3-1: Summary of the Total Watershed Area, Watershed Area Affected by the NIRB Footprint and the Watershed Area Affected by the Meliadine Extension

Watershed Name	Watershed Area (ha)	NIRB Footprint Area (ha)	NIRB Footprint Area % of Watershed	Meliadine Extension Footprint Area (ha)	Meliadine Extension Footprint Area % Watershed	Difference (ha) (increase or decrease from 2014)
Main Mine Site Area						
A	947.0	754.8	80	755.3	80	0.5
B	2,277.0	858.2	38	864.3	38	6.1
C	328.0	40.1	12	22.9	7	-17.1
D	771.0	10.5	1	46.7	6	36.1
E	358.0	44.1	12	15.2	4	-28.9
G	105.4	7.9	8	12.3	12	4.4
H	219.7	219.6	100	219.6	100	0.0
I	30.7	7.4	24	14.2	46	6.8
J	138.8	83.6	60	92.7	67	9.1
P	45.9	0.0	0	0.0	0	0.0
Discovery Mine Site Area						
CH	1,481.2	172.8	12	85.9	6	-87.0
X	528.8	2.0	0	27.3	5	25.3
Sum	**7,231.4**	**2,201.0**	**30**	**2,156.3**	**30**	**-44.7**

Note: AWAR and Rankin Inlet areas are excluded

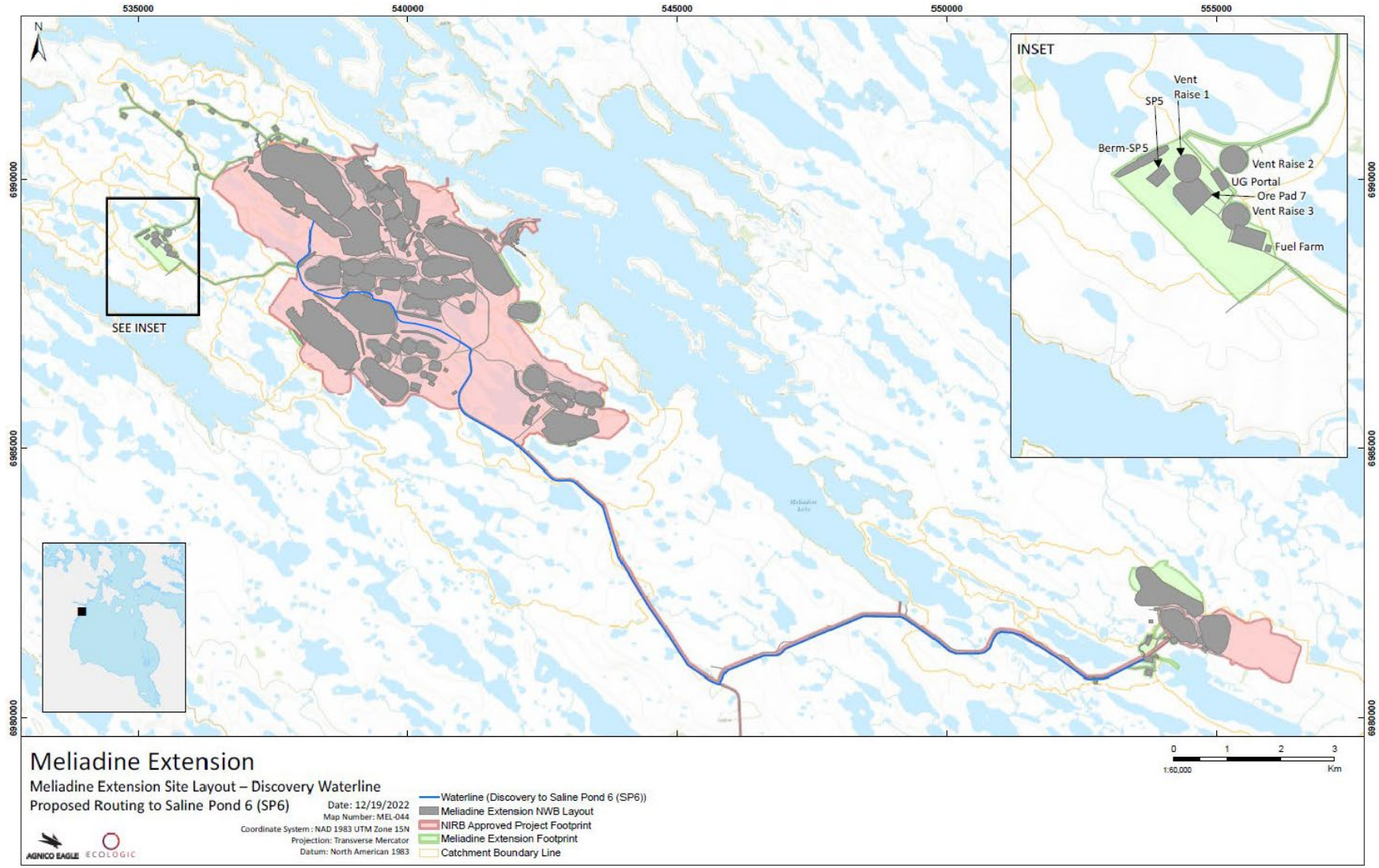


Figure 3-1: Meliadine Extension Footprint (green polygons) and Affected Watersheds

3.1 A Watershed

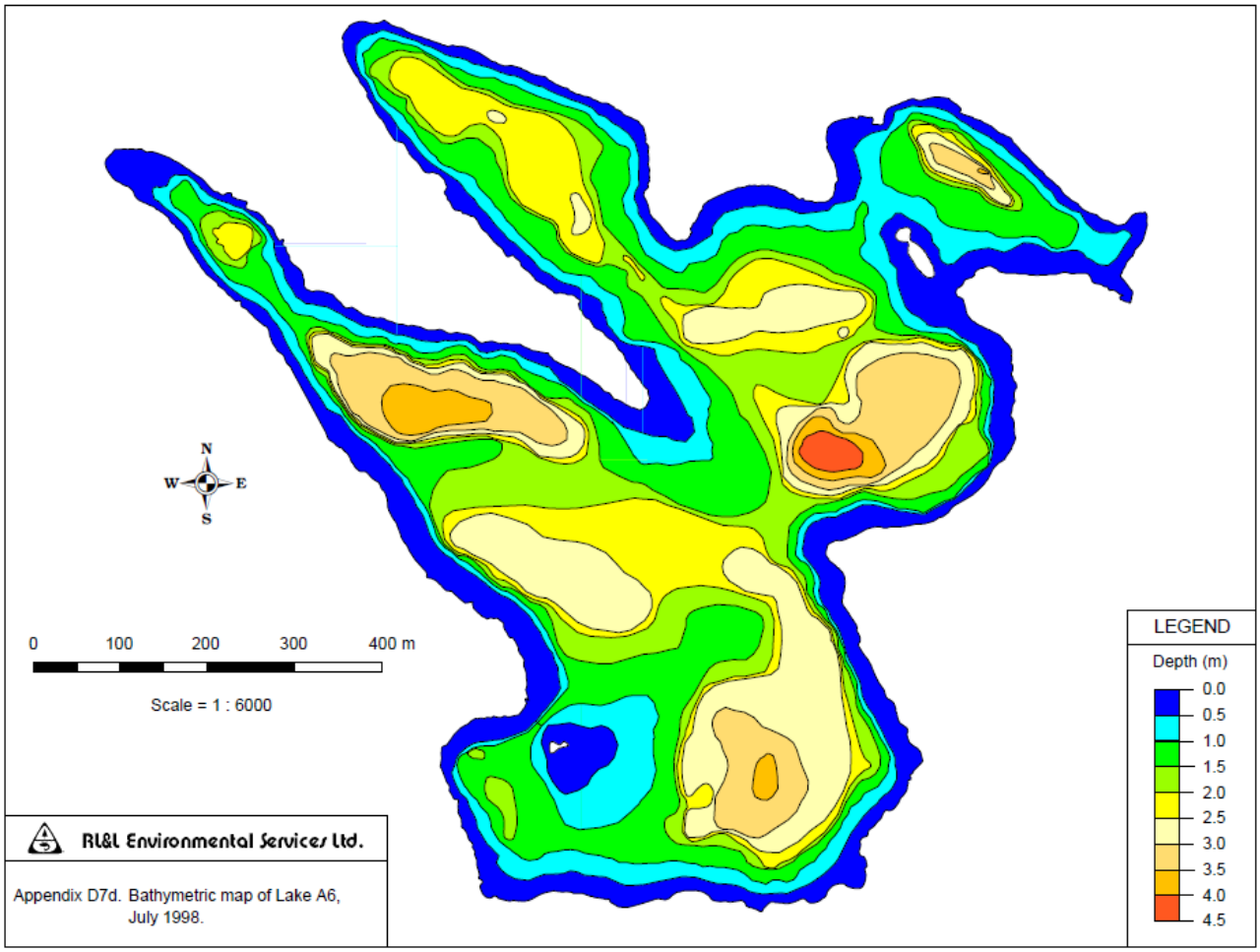
The A watershed is comprised of the A8, A6, A2, and A1 sub-watersheds, which flow southeastward from A8 to A6, to A2 and then to A1 where water eventually discharges to Meliadine Lake. Watershed A totals 947 ha in area. The NIRB approved footprint was anticipated to affect 754.8 ha of the total land surface area in A watershed. The Meliadine Extension FEIS Addendum is proposing a relatively minor increase (0.5 ha) to 755.3 ha.

Many of the waterbodies within the A watershed are small, shallow water features, including many small features that contribute to Lakes A8, A6, and A1. Most of these features will be removed during construction and overprinted by infrastructure (Tiriganiaq Pit 1, Wesmeg Pit 2, F-Zone Pits 1 to 3).

Effects of the dewatering and diversion of the A watershed lakes due to mining activities were assessed within the 2014 FEIS using a water balance model, primarily to assess effects to the outflows, water levels and channel stability. A difference between the 2014 FEIS and the Meliadine Extension FEIS Addendum is the water management around Lake A6. The 2014 FEIS considered initial lowering of the water level in Lake A6 by 1 to 1.5 m, and then annual pumping during the operations phase. Lowering and maintaining the water levels in Lake A6 by 1 to 1.5 m will result in small and shallow isolated pockets of available habitat during the ice off periods (Figure 3-2). During the winter, when ice depth can reach 2 m, all fish would be concentrated in a few small areas with a maximum available unfrozen water depth of 1-1.5 m. The short photoperiod and snow cover on the lake ice will limit the ability of waterborne phytoplankton to produce supplemental oxygen. This could consequently lead to hypoxic conditions, for which salmonids (e.g., Arctic char) are known to be sensitive and frequently lethal. The plan to dewater Lake A6 as outlined in the Meliadine Extension FEIS Addendum is a proactive measure to avoid the occurrence of adverse effects (death) of fish per the DFO “hierarchy of measures”.

Overall, water levels at the outlet of A1 are predicted to be reduced by no more than 4.7% during the summer months; the permanent reduction in annual water levels will result in a reduction to habitat quantity for Arctic char, Lake trout and Arctic grayling in Lake A1 by no more than 3% during construction and operation phases. During post-closure, outflows and water levels are anticipated to improve from levels observed during the mining and closure phases of the mine. Water levels at the outlet of Lake A1 are predicted to be reduced by less than 1% at post-closure.

Figure 3-2: Bathymetry of Lake A6 with 0.5 m Depth Contour Lines



Effects to fish habitat in these waterbodies was predicted to be reduced by less than 1% at post-closure. Minor effects during operations, if any, would be followed by a quick rebound to baseline during subsequent phases given the species adaptive life history strategies such as phenotypic plasticity (e.g., behavioral changes) or a tendency towards an r-selected reproductive strategy (Scott and Crossman 1973; Richardson et al. 2001; Evans et al. 2002; Reed et al. 2010). Furthermore, individuals in populations exposed to highly variable flows can display a range of adaptations that allow them to maintain positive fitness over the long term (e.g., Morrongiello et al. 2011). For example, telemetry studies suggest that some Arctic grayling complete their life cycle within a relatively small home range (lake specific fidelity) while others have larger home ranges that extend to rivers and larger connected lakes to complete their life cycle (Section 7.5.4.5, 2014 FEIS). Without these adaptations, local populations of valued fish species would have been extirpated long ago. At the population level, the valued ecosystem components are not only resilient because individuals are likely well adapted to variable environments, but also because

demographic rescue from neighboring populations or subpopulations is highly likely to occur in the event of an unforeseen disturbance.

The KivIA has identified the embayment at the outfall of Lake A1 as a historic spawning area for fish. The flow reductions from Lake A1 to the embayment will be reduced by 3-4.7% during the course of the Meliadine Extension operations. The loss of flows to Meliadine Lake are insignificant, however importance of those flows and thermal contribution to the spawning areas has not been investigated.

The difference in disturbed area in sub watershed A between the 2014 FEIS to the Meliadine Extension FEIS Addendum is approximately 0.5 ha (less than 0.1% difference) (Table 3-1). Considering the minimal difference in area (ha) between the 2014 FEIS and the Meliadine Extension FEIS Addendum, Agnico Eagle has assumed the impacts to flow will be the same and has used the flow predictions from the 2014 FEIS in support of the Meliadine Extension FEIS Addendum.

In the local study area, shallow habitats (<2 m in depth) contributed approximately 80% of the total lake and pond surface area (thus most of lake and pond volumes were confined to the upper 2 m layer of water). When the ice cover exceeds 2 m in depth, as is often the case during late winter (Hubert and Associates Ltd. 1996), the under-ice water volume is greatly reduced, and the lake may freeze to the bottom. This is likely a frequent occurrence in lakes where less than 20% of total volume is provided by zones deeper than 2 m (SD 7-2 from the 2014 FEIS, Appendix D2). Lakes with “higher proportion of deep-water habitats” (between 32 and 57%) appear to be sufficient to allow fish to overwinter.

The area of Lake A1 that is deeper than 1.5 m is 32.3% with a volume of 11.5% of the total. At depths greater than 2.0 m, the area is 13.9% and the volume is 1.8% of the total. There is no area or volume in Lake A1 at depths greater than 2.5 m (SD 7-2 from the 2014 FEIS, Appendix D2).

Lake A1 has a maximum depth of 2.5 m (Table 5.2-1, Golder 2014). Lake A1 does not have a “higher proportion of deep-water habitats” and is therefore unlikely to support fish overwintering.

Annual water yields suggest that the 2-year return period for Lake A1 may decrease between 28% to 80% of baseline values (Table 7.3-45 from the 2014 FEIS). Lake A1 is a relatively shallow lake that supports a diverse fish community. A reduction in the annual water yields by 80% will likely lower water levels and make the lake shallower, making it more likely to freeze to the bottom in winter. Since the affected area of the A watershed has been increased by less than 1% for the Meliadine Extension relative to the 2014 FEIS, it is anticipated that the effects on fish and fish habitat would be similar to those predicted in the 2014 FEIS and/or would be marginally increased. The Meliadine Extension will extend the duration of the impacts, but not the scale or the magnitude. Mean annual water yields are predicted to return to 20% of baseline conditions in the post-closure period.

Table 7.3-45: Summary of Median Annual Water Yields for Lake A1, Lake B2, Lake C6, Lake D1, and Lake E1, during all Project Snapshots (mm)

Snapshot	Lake A1	Lake B2	Lake C6	Lake D1	Lake E1
Baseline	168	166	184	160	159
Pre-production (Year -3)	262 (55%)	100 (-40%)	184 (0%)	310 (93%)	159 (0%)
Pre-production (Years -2 to -1)	121 (-28%)	114 (-31%)	184 (0%)	222 (38%)	159 (0%)
Mining Phase 1	141 (-17%)	114 (-31%)	184 (0%)	215 (34%)	159 (0%)
Mining Phase 2	43 (-75%)	107 (-35%)	162 (-12%)	160 (0%)	166 (5%)
Mining Phase 3	34 (-80%)	105 (-37%)	162 (-12%)	160 (0%)	138 (-13%)
Mining Phase 4	34 (-80%)	105 (-37%)	162 (-12%)	160 (0%)	138 (-13%)
Mining Phase 5	34 (-80%)	105 (-37%)	162 (-12%)	160 (0%)	138 (-13%)
Closure	34 (-80%)	105 (-37%)	162 (-12%)	160 (0%)	138 (-13%)
Post-Closure	135 (-20%)	134 (-19%)	184 (0%)	313 (95%)	163 (3%)

Note: percentage change from baseline conditions shown in brackets

The A sub watershed comprises 2% of the flow contribution to Meliadine Lake. From the 2014 FEIS, an 80% reduction in flow contribution would result in approximately 1.6% reduction in flows out of Meliadine Lake, potentially 0.8% in the Meliadine River and 0.8% in the Diane River. The difference in footprint from the 2014 FEIS to the Meliadine Extension is less than 0.1% and thus effects to changes in flow are the same for the Meliadine Extension.

In summary, the difference in disturbed area in sub watershed A between the 2014 FEIS to the Meliadine Extension Addendum is approximately 0.5ha (less than 0.1% difference) (Table 3-1). The Meliadine Extension will extend the duration of the impacts, but not the scale or the magnitude.

3.2 B Watershed

The total area of watershed B was calculated to be 2,277 ha. The NIRB approved footprint was projected to affect 858 ha of watershed B. The addition of WRSF6 within the Meliadine Extension will increase the affected watershed footprint by an additional 6.1 ha from the NIRB approved footprint for a total mine footprint area of 864 ha.

Effects to the B watershed lakes due to mine activities were assessed within the 2014 FEIS Section 7.3.3 (Golder, 2014) using a water balance model. The water balance model examined the potential watershed dewatering, diversions and infrastructure effects on flows, water levels, and outlet channel/bank stability during all phases of the Mine in all downstream waterbodies between Lake B45 and Lake B2 outlet channel. The diversion of Lake B45/44 to B2 showed a reduction in flows over the life of the mine with water levels increasing in lake B45/44 between 0.812 m to 0.861 m and water levels decreasing in lake B2 between 0.024 m to 0.037 m (Section 7.3.3, from the 2014 FEIS). The diversion of Lake B45/44 to the P watershed will create new shorelines at higher elevations than the existing shorelines and will create additional littoral zone which is likely to increase zooplankton and phytoplankton abundance and food

resources for fish and benthos. The warmer, shallower flooded areas along the shoreline would also support fish habitat (nursery, spawning and foraging) for small bodied species such as Ninespine stickleback as well as for Young of Year large-bodied fish (Arctic grayling, Lake trout). The fish habitat gains associated with Lake B44/45 were not previously considered or accounted for within the 2014 FEIS or within the conceptual fish offsetting plan.

At post-closure (in comparison to pre-mining), negligible effects to flows and water levels were predicted for most waterbodies, but, flows from Lake B45/44 were predicted to be lower in comparison to pre-mining.

During mining activities, flows between Meliadine Lake and the upper watershed will be re-routed, and hydrological connections will be maintained for fish passage (Section 7.5.5.2 from the 2014 FEIS). It is predicted that the creation of new flow paths through diversions will increase aquatic connectivity at the local scale and therefore, increase available habitat for species, such as Arctic char that currently use Lake B2 and have the potential to expand to upstream locations. In post-closure, B45-44, B44-P2, and P2-B2 diversions will provide a permanent connection for fish access to upper waterbodies in the B Basin from Lake B2 and Meliadine Lake. Residual effects to water quantity include reductions to water levels in Lake B2 and outlet, where the majority of changes were predicted to occur during construction and operations. The availability of Arctic char, Lake trout, and Arctic grayling will be affected (less than 3% decrease in area in Lake B2), but the majority effects should be reversible returning to the limits of baseline values for those systems at post-closure.

In summary, the permanent reduction in annual water yields will result in a measurable reduction in habitat quantity for Arctic char, Lake trout and Arctic grayling in Lake B2 by no more than 1.8% during construction and operations phases, and by 2.8% during post-closure. It is assumed that the estimated effect to habitat in Lake B2 will be similar to, or greater in magnitude than that for the outlet stream of Lake B2.

The difference in disturbed area in sub watershed B between the 2014 FEIS to the Meliadine Extension FEIS Addendum is approximately 6.1 ha (less than 1.0% difference). Considering the minimal difference in area (ha) between the 2014 FEIS and the Meliadine Extension FEIS Addendum, Agnico Eagle has assumed the impacts to flow will be the same and has used the flow predictions from the 2014 FEIS in support of the Meliadine Extension FEIS Addendum.

Annual water yields suggest that the 2-year return period for Lake B2 may decrease between 31% to 40% of baseline values (Table 7.3-45 of the 2014 FEIS). Lake B2 is a relatively shallow lake that supports a diverse fish community. A reduction in the annual water yields by 37% (in the later mining phase) is likely to lower water levels and make the lake shallower, making it more likely to freeze to the bottom in winter. Additionally, lower water levels will limit the ability of fish to access the habitat in Lake B2. Since the affected area of the B watershed has been increased by less than 1% for the Meliadine Extension relative to the 2014 FEIS, it is anticipated that the effects on fish and fish habitat would be similar to those

predicted in the 2014 FEIS and/or would be marginally increased. The Meliadine Extension will extend the duration of the impacts, but not the scale or the magnitude. Yields will return to 19% of baseline conditions in the post-closure period.

The B sub watershed comprises approximately 4.8% of the flow contribution to Meliadine Lake. A reduction in flow contribution exceeding 30% would result in approximately 1.44% reduction in flows out of Meliadine Lake, potentially 0.72% in the Meliadine River and 0.72% in the Diane River.

In summary, the difference in disturbed area in sub watershed B between the 2014 FEIS to the Meliadine Extension FEIS Addendum is approximately 6.1 ha (less than 0.1% difference) (Table 3-1). It is anticipated that the effects on fish and fish habitat would be similar to those predicted in the 2014 FEIS and/or would be marginally increased. The Meliadine Extension will extend the duration of the impacts, but not the scale or the magnitude.

3.3 C Watershed

The C-Basin is a relatively small basin covering a total watershed area of 328 ha. The NIRB approved footprint was calculated to be 40 ha and the Meliadine Extension would reduce the footprint by 17.1 ha for a total footprint in the C watershed of approximately 23 ha.

It is predicted that water yields for waterbodies in the C Basin and downstream will be slightly reduced from the diversion of runoff from the WRSF7 waste rock storage facility. During construction and operations, the reduction to water yields will be no greater than 12% for Lake C6 (Section 7.3.3 of the FEIS), and the effects will be smaller in magnitude during June when Arctic grayling are spawning versus late summer (Section 7.3.3 of the FEIS). Although Lake C6 is characterized by the highest annual peak daily discharge of all waterbodies in the C Basin (0.59 m^3/sec), it is anticipated that other locations in the C Basin downstream of the waste rock storage facility will show similar responses to the proposed mine development. It is also anticipated that hydrological changes to waterbody and stream habitats will be within the range of, or just slightly exceed baseline values for the C Basin. Effects to waterbodies, including Lake C6, will be of medium-term duration given that water yields will be similar to baseline at post-closure.

Most waterbodies in the C Basin are relatively shallow (i.e., < 2m) and thus, do not support overwintering habitat for valued fish species in the LSA, except for Lake C10 (Section 7.5 of the 2014 FEIS, Table 7.5-8). While Lake C10 has a maximum depth of about 2.9 m and may provide overwintering habitat during some years, baseline sampling did not record a valued fish species in waterbodies and streams in the C Basin (Section 7.5 of the 2014 FEIS; Appendix 7.5-D). Further, all waterbodies are relatively small in size (<16 ha) and therefore are unlikely to support rearing or adult Arctic grayling. For Arctic grayling, baseline data show that occupancy rate of LSA waterbodies is strongly influenced by waterbody size and that rates are high only in waterbodies greater than 25 ha (derived from data presented in Section 7.5.4 of the 2014 FEIS; Appendix 7.5-B; Appendix 7.5-D). Also, the C Basin waterbodies were positioned high enough above Meliadine Lake to preclude occupancy by Arctic char based on baseline observations in the LSA.

Specifically, the elevations of the 12 Arctic char waterbodies in the LSA are all less than 3.2 m above Meliadine Lake; whereas the lowest elevation waterbody in the C Basin (i.e., Lake C1) is positioned at 4.8 m above Meliadine Lake (derived from data presented in Section 7.5.4 of the 2014 FEIS; Appendix 7.5-B; Appendix 7.5-D).

Thus, given the lack of suitable habitat for Arctic char, Lake trout, and Arctic grayling in the C Basin, combined with the anticipated changes in waterbody and stream hydrology, it is predicted that there will be no detectable change from the mine activities to fish habitat or the abundance and distribution of fish species, and the continued opportunity for traditional and non-traditional users. This conclusion applies to all phases of the mine, including post-closure.

3.4 I Watershed

The I-Basin is the smallest basin of the LSA sub-basins, covering a total watershed area of 31 ha. The NIRB approved footprint was estimated to be 7 ha and the Meliadine Extension would add an additional 7 ha for an overall total mine footprint area of 14 ha in this watershed.

Water yields of Lake I1 and the outlet to Meliadine Lake were predicted in the 2014 FEIS to decrease slightly (by no more than 3.5%) due to the permanent infrastructure installed during operations through post-closure (Section 7.5.5.2 of the 2014 FEIS, Table 7.5-18). The Meliadine Extension includes development of Wesmeg Pit 05 over Lake I1 and thus reduction of most flows. However this activity is planned to occur late in mine life (year 2040 to 2043) and connections will be restored in closure.

Lake I1 is 7.5 ha in size and is characterized by a mean maximum depth of 1.8 m. Baseline studies show that the waterbody provides no habitat for fish species. For example, the shallow depths suggest that the waterbody has little to no potential to support overwintering habitat for any fish species (Section 7.5.4 of the 2014 FEIS). The small size of the waterbody suggests it is unlikely to support rearing or adult Arctic grayling. Baseline data show that Arctic grayling occupancy rate of LSA waterbodies is strongly influenced by waterbody size and that rates are high only in waterbodies greater than 25 ha (derived from data presented in Section 7.5.4 of the 2014 FEIS; Appendix 7.5-B; Appendix 7.5-D). The waterbody is also positioned at a relatively high elevation compared to Meliadine Lake (12 m higher), providing poor access for small-bodied fish and foraging movements of Arctic char based on the observation that the elevations (m) of the 12 Arctic char waterbodies in the LSA are all less than 3.2 m above Meliadine Lake. Given the lack of suitable habitat for Arctic char, Lake trout, and Arctic grayling in the I Basin, combined with the anticipated changes in lake and stream hydrology, it is predicted that there will be no detectable effect from the proposed Mine on fish habitat, the abundance and distribution of valued fish species, and the continued opportunity for traditional and non-traditional use of fish. This conclusion applies to all phases of the Mine, including post-closure.

3.5 J Watershed

The J Basin is a small basin, with an overall watershed area of about 139 ha. The NIRB approved footprint was calculated to be 84 ha and the Meliadine Extension would add an additional 9 ha to the mine footprint for an overall total mine footprint area of 93 ha.

It was predicted in the 2014 FIES that water yields of Lake J1 and outlet to Meliadine Lake would initially increase due to the dewatering of upstream waterbodies, and subsequently decrease following completion of dewatering of the upstream waterbodies until closure (Section 7.5 of the 2014 FEIS, Table 7.5-18). Water yields at post-closure were predicted to be similar to baseline conditions.

Lake J1 is a small-to-moderately sized waterbody (17.2 ha) characterized by a maximum depth of about 2.1 m, and therefore has the potential to support overwintering habitat for valued fish species during some years (Section 7.5.4 of the 2014 FEIS; Appendix 7.5-B). However, the small size of the waterbody suggests it is unlikely to support rearing or adult Arctic grayling. Baseline studies show that Lake J1 does not support habitat for Arctic char, nor does it appear to support habitat for Lake trout and Arctic grayling. Lake J1 is also positioned at a relatively high elevation compared to Meliadine Lake (5.1 m higher), and so the outlet likely provides poor access for foraging movements of Arctic char. This is based on the observation that the elevations of the 12 Arctic char lakes in the LSA are less than 3.2 m above Meliadine Lake (derived from data in Section 7.5.4 of the 2014 FEIS; Appendix 7.5-B; Appendix 7.5-D).

The 2014 FEIS predicted that there will be no detectable effect from the proposed mine on the abundance and distribution of fish species in the J basin. Although there may be measurable changes for hydrological variables for Lake J1 and outlet during operations through closure, these changes are expected to be of medium-term duration (baseline conditions will return at end of closure), occur mainly during peak flows, and likely have no implications for fish habitat units and the distribution and abundance of the valued fish species because of the low habitat potential of the J1 system.

3.6 Discovery (X, CH, and W Watersheds)

The Discovery mining area is in the CH and X watersheds. The CH Basin is the second largest basin in the LSA (after the B Basin), at an area of about 1,418 ha, and the X watershed has an area of about 529 ha. The NIRB approved footprint was calculated to be 175 ha across these two watersheds and the Meliadine Extension would remove approximately 62 ha to the mine footprint for an overall total mine footprint area of 113 ha.

The mining footprint will slightly reduce the drainage area and reduce basin annual water yields (Section 7.3.3 of the 2014 FEIS). For Lake CH1, annual water yields were predicted to be reduced in operations thru to post-closure. At post-closure, water yields were predicted to be similar to baseline values. It is assumed that waterbodies above Lake CH1 in the sub-basin, specifically Lake CH5, and CH6, will show similar responses to the mining activities (Section 7.3.3 of the 2014 FEIS).

Lake CH6, downstream of the Discovery mining area, is the largest waterbody in the CH Basin at about 135 ha. Downstream is Lake CH5 at 69.7 ha, followed by Lake CH1 at 124.9ha. All lakes are characterized by maximum water depths in the range of 9 to 11 m, and therefore, the lakes provide overwintering habitat for fish species (Section 7.5.4 of the 2014 FEIS; Table 7.5-8). Based on baseline sampling, Lake CH1, CH5, and CH6 have been determined to support Lake trout and Arctic grayling (Section 7.5.4 of the 2014 FIES; Appendix 7.5-D). It is unlikely that the lakes support Arctic char, in part, because Lake CH1 lacks a discernible outflow stream connection to Meliadine Lake.

Overall, the 2014 FEIS (Section 7.5) predicted that hydrological changes to lake habitats will be within the range of baseline for the CH Basin. Further, negative effects to waterbodies, including Lake CH1, will be over a short duration given that water yields were predicted to be similar to baseline at post-closure. Given existing available habitat for Lake trout and Arctic grayling in the CH Basin, combined with the anticipated changes in hydrology, it is predicted that mining activities may result in a detectable change for fish habitat for valued fish species in the sub-basin. However, the predicted change to the distribution and abundance of fish will be negligible, with most effects occurring during later operations thru to closure. It is anticipated that changes to water yields in the CH Basin will not noticeably affect the abundance and distribution of valued fish species in that basin.

Refinements in design for the Discovery WRSF have been done and the WRSF will not be within the W Watershed. No other mining infrastructure or operations are planned in the W watershed; therefore, the Meliadine Extension will have no impacts to the W watershed.

4 OTHER

This section provides follow-up information to resolve Technical Comments DFO-TRC-09 and DFO-TRC-10.

4.1 Borrow Pits

As outlined in the Meliadine Extension FEIS Addendum Project Description (Section 2.3.11), borrow pit locations were identified as potential locations and Agnico Eagle does not intend on using all the sites. The polygons in the FEIS Addendum are not set in stone; rather, were provided for overall assessment purposes of all VECs and VSECs. Agnico Eagle reiterates its responsibilities under Project Certificate No.006 Term and Condition 31 and Water Licence 2AM-MEL1631 Part D, Item 15 that for any borrow pit activities, work will remain at least 31 m away from the waterbodies.

The effects pathways in the assessment for fish and fish habitat (Table B-7 [Item 21] of Appendix B-2 of the Meliadine Extension FEIS Addendum) included construction and operation of haul roads. More specifically, how surface water drainage through quarries and transport of blasting residuals and metals directly into watercourses could affect surface water quality thereby could affect fish and fish habitat. This pathway was considered minor with the implementation of appropriate mitigation measures and environment design features presented in Table B-7. They are provided below for ease:

- Where possible, stockpiling of rock and fill from quarries and borrow sites will be placed such that surface water is not diverted through the piles with runoff to surface waterbodies.
- Drainage from quarries will not flow directly into any waterbodies or watercourses.
- Excavations will be at least 31 m away from any waterbodies.
- Quarries will be excavated and sloped for positive drainage. Quarries will be inspected on a regular basis to monitor water ponding, particularly at spring melt; when there is flow from a quarry that could enter a waterbody, a water quality sample will be collected and analyzed.

Similarly, the effects pathways in the assessment for permafrost (Table B-2 [Item 12] of Appendix B-2 of the Meliadine Extension FEIS Addendum) included permafrost degradation due to borrow source and quarry development; thereby developing closed taliks beneath quarry 'lakes' if quarries are improperly graded and drained. This pathway was considered minor with the implementation of appropriate mitigation measures and environment design features presented in Table B-2. They are provided below for ease:

- Minimize volume of quarried materials required.
- Quarries will be excavated and sloped for positive drainage.
- Maximum quarry depths of 3 m are currently planned.
- The proximity of excavations to watercourses will be to current regulatory standards.
- Drainage from quarries will not flow directly into any waterbodies or watercourses; drainage will be directed to swales before runoff can enter watercourses.

In addition, details on extraction methods and mitigation measures from the Borrow Pits and Quarries Management Plan (Appendix D-8 of the Meliadine Extension FEIS Addendum) are provided below that will be implemented for construction / operation of the potential borrow sources identified.

- Wherever possible, borrow pit material will be ripped using a dozer. This loosens the material and allows it to be picked up using a loader or an hydraulic shovel. Standard drill and blast procedures may be used in instances where ripping is not possible.
- Best management practices will employ the following general mitigation measures for the borrow pits:
    - minimize the surface area borrow pits where possible;
    - minimize borrow pit cuts where possible;
    - maintain the floor of the borrow pits slightly above the elevation of the surrounding area to promote drainage, to avoid creating quarry lakes, and to prevent permafrost degradation in borrow pits;
    - prevent erosion and sedimentation through appropriate control measures;
    - carry out ARD/ML testing and water quality monitoring in support of mitigation measures;
    - protect archeological resources;
    - maintain air, water, and sediment quality through dust control/suppression;

  - use progressive reclamation in closing quarries and borrow pits no longer needed; and
  - perform environmental inspections.
- A buffer of at least 31 m of undisturbed land will be maintained between borrow pits and waterbodies when practicable. Best management practices will prevent direct drainage of the quarry to watercourses. However, any significant seeps originating from the borrow pits or rock quarries likely to reach receiving waters will be sampled and analysed for a full suite of water quality parameters as per our Water Licence. Any problematic water will be directed away from waterbodies, or held if possible. If necessary, silt curtains and/or straw logs will be used to control suspended sediments in water seeping from the quarries/borrow pits.

Per the Meliadine Water Licence, water quality monitoring is required during construction and operation associated with any runoff and/or discharge from borrow pits and quarries, as presented below.

Nunavut Water Board | Water Licence No: 2AM-MEL1631

TABLE 2 – MONITORING PROGRAM

Station	Description	Phase	Monitoring Parameters	Frequency
MEL-SR-1 to TBD	Surface Runoff: runoff downstream of Construction areas at Meliadine Site and Itivia Site, Seeps in contact with the roads, earthworks and any Runoff and/or discharge from borrow pits and quarries	Construction and Operations	As per Part D, Item 18	Prior to Construction and Weekly during Construction
			Group 1	Monthly during open water or when water is present upon completion

Further, the Sediment and Erosion Management Plan (Appendix C of the Water Management Plan) would also be implemented for work on borrow pits. Mitigation measures that could be used include:

- Small sedimentation ponds could be constructed at sensitive locations to allow settlement of finer sediments.
- Installation of erosion control material such as turbidity barriers, silt curtains, check dams, or straw booms.
- Riparian areas will be maintained whenever possible to minimize erosion and impacts to fish habitat, with vegetation removal limited to the width of the workspace footprint.
- Disturbed areas along the streambanks will be stabilized and allowed to re-vegetate upon completion of work to minimize future erosion.
- Debris and excess materials resulting from construction will be removed from the work site to prevent them reaching waterbodies.

4.2 Roads

Table 4-1 provides watercourses that will be impacted due to access roads around Meliadine Mine. There are no changes proposed to the access roads to Discovery, Pump, F Zone, and Wesmeg deposits. The Minister approved these roads through the Type A Water Licence Amendment in 2020.

As part of Meliadine Extension, new access roads to the Tiriganiaq-Wolf mining area and to wind turbine locations will be constructed. The construction methods for Meliadine Extension access roads are not anticipated to change flow characteristics or the general hydrology of the area. A Request for Review will be submitted to DFO prior to construction of the Meliadine Extension access roads and will include crossing locations, description of proposed works, description of fish and fish habitat in the area of the crossings, and detailed designs of the engineered road and associated crossing structures (e.g., culverts). At this time, Agnico Eagle does not anticipate the installation of bridges will be required for crossings along access roads.

Culvert design considerations could include:

- Designing culverts with sufficient depth of flow and appropriate water velocities for fish passage.
- Sizing culverts based on the capacity to handle peak flows.
- The type of culvert will be selected and installed to minimize potential impacts on fish habitat, maintain fish passage, and sufficiently accommodate watercourse flows.
- A culvert will extend beyond the upstream and downstream toe of the fill (e.g., a minimum of 300 mm).
- Culverts will be aligned parallel to the existing natural channel and located on a straight stream section of uniform gradient. The culvert slope will generally follow the existing streambed slope where possible.

Mitigations for minimizing impacts to fish will be considered in the final design, including the following:

- Applying DFO recommended Measures to Protect Fish and Fish Habitat, including incorporating in-water timing restrictions, fish removal (if required), and implementing appropriate sediment and erosion control measures.
- Industry Best Management Practices and Standard Project Considerations.
- Culvert Installation, Maintenance or Removal specific Best Management Practices.

Table 4-1: Affected Steams due to Access Roads

A-Chain	D-Chain	E-Chain	CH-Chain
A52	D5-D6	E3-E12	CH5-CH6 (and associated features)
A30-A33	D6-D22	E3-E4	
A51-52 (included in A5-A6)	D4-D31		
A7-A8	D31-D33		
A8 (west-east)	D28-D29		

4.3 Field Investigations

Agnico Eagle made a commitment during the Meliadine Extension Technical Meeting (Commitment 12) to evaluate ponds in the X Watershed during field investigations in 2023, as well as provide a list of the baseline monitoring to be collected before proceeding with new work on the site and the associated schedule.

This commitment was discussed in broader terms at the January 17-19, 2023 workshop with DFO. Agnico Eagle is actively planning site visits to collect and validate conditions at Meliadine Mine, including watercourse crossings and X Watershed. At the January 17-19, 2023 workshop there was an agreement between Parties that field data and observations collected in 2023 would be used to support the water licensing and offsetting process and that these data are not required for the NIRB process.

Agnico Eagle plans to complete fish community and fish habitat surveys during the open-water season of 2023. This information will support the Water Licence Amendment process with the NWB and the Fisheries Act Authorization applications with DFO. Agnico Eagle will undertake a field program spanning from approximately June through September 2023 in support of the Meliadine Extension. Table 4-2 outlines the proposed work locations and general schedule for the Priority 1 sites (Table 4-2) which are the primary focus of the field studies. Other sites (Table 4-3) will be completed opportunistically, and when all other sites have been visited.

Data to be collected in 2023 is summarized as follows:

- Fish Community Assessment
    - Fish community surveys will be completed using sampling gear such as Fyke nets, hoop nets, minnow traps, beach seine, angling, electrofishing, driftnets, and gillnets.
    - Sampling will be conducted in tributaries, along the shore/bank of waterbodies, and in waterbodies with depths greater than 2 m.
    - All captured fish will be counted, identified to lowest taxonomic level (typically to species), weighed, measured for length, and checked for any deformities, eroded fins, lesions, tumors (DELTs). All fish sampling is anticipated to be non-lethal.
- Habitat Assessment
    - Waterbody habitat assessments will be conducted during the open water season.
    - Habitat parameters collected in watercourses would include length, bankfull width and bankfull depth; substrate composition (% by area of bedrock, boulders, cobble, gravel, and fines); residual pool depth, bank stability, and bank height.
    - Cross-sectional stream flows and more detailed fish habitat data may be collected via transect surveys in higher order streams.
- Fish Passage Assessment
    - The connectivity of some streams to other fish-bearing waterbodies will be assessed to determine whether the stream might provide seasonal habitat to fish.
    - Passage assessment may occur in the spring (during the freshet) and / or in the late summer (August), depending on the targeted fish species.

- Passage assessments will be completed via visual survey. Surveyors will walk the stream banks looking for clear passages for fish to move between waterbody features.

- Evaluate Potential Connection Between Watersheds
  - Field surveys will be conducted to validate watershed delineation and note where potential for watersheds to merge exists.

Table 4-2: Fisheries Field Investigation Priority Sites Summary for 2023

Aquatic Site	Proposed Method	Season
A1 (A-chain)	Flow, temperature in A-chain from upstream of Lake A1 to the bay in Meliadine Lake	Ice off season
A5-A6 (A50-A53)	Habitat data between features and confirm path / connection	Freshet and Summer
A5-A19	General fish community / habitat / passage assessment	Freshet and Summer
B1-B2/41(P2)	General fish community / habitat / passage assessment	Freshet and Summer
B2-B41(P2)	General fish community / habitat / passage assessment	Freshet and Summer
B2/B3-B4	General fish community / habitat / passage assessment	Freshet and Summer
B4	Detailed fish community assessment	Summer
B4-B45	Habitat data between features and confirm path / connection	Freshet and Summer
B5-B34	Habitat data between features and confirm path / connection	Freshet
B6-E5/E4	Evaluate potential connection between watersheds	Freshet
B44-B41 (P-chain)	General fish community / habitat / passage assessment	Freshet and Summer
B45-B41 (P-chain)	General fish community / habitat / passage assessment	Freshet and Summer
B59-B46	General fish community / habitat / passage assessment	Freshet and Summer
B7-E11 / E3	Evaluate potential connection between watersheds	Freshet
D4-D31	General fish community / habitat / passage assessment	Freshet and Summer
I1 (A29)	General fish habitat / passage assessment	Freshet
CH5-CH6	General fish community / habitat / passage assessment	Freshet
X Watershed ponds/watercourses	General fish habitat / passage assessment	Summer

Table 4-3: Fisheries Field Investigation Sites of Opportunity Summary for 2023

Aquatic Site	Proposed Method	Season
A8-A35	General fish community / habitat / passage assessment	Freshet
A19-A22	General fish community / habitat / passage assessment	Freshet and Summer
A20	General fish community / habitat / passage assessment	Ice off season
A32	Minnow Traps, e-fish	Freshet
A33 - A34	Minnow Traps, e-fish	Freshet
A44-A49	General fish community / habitat / passage assessment	Freshet
A52	General fish community / habitat / passage assessment	Freshet
B4-B19	General fish community / habitat / passage assessment	Freshet
B6-B7	General fish community / habitat / passage assessment	Freshet and Summer
B6-B30/32-B5	General fish community / habitat / passage assessment	Freshet and Summer
B8 and B28	Fish community (will need habitat data if fish confirmed at either site)	Summer
B14-B17, B17-B19	General fish community / habitat / passage assessment	Freshet and Summer
D7-E3	Evaluate potential connection between watersheds	Freshet
D5-D6	General fish community / habitat / passage assessment	Freshet
D6-D22	General fish community / habitat / passage assessment	Freshet
D31-D33	General fish community / habitat / passage assessment	Freshet and Summer

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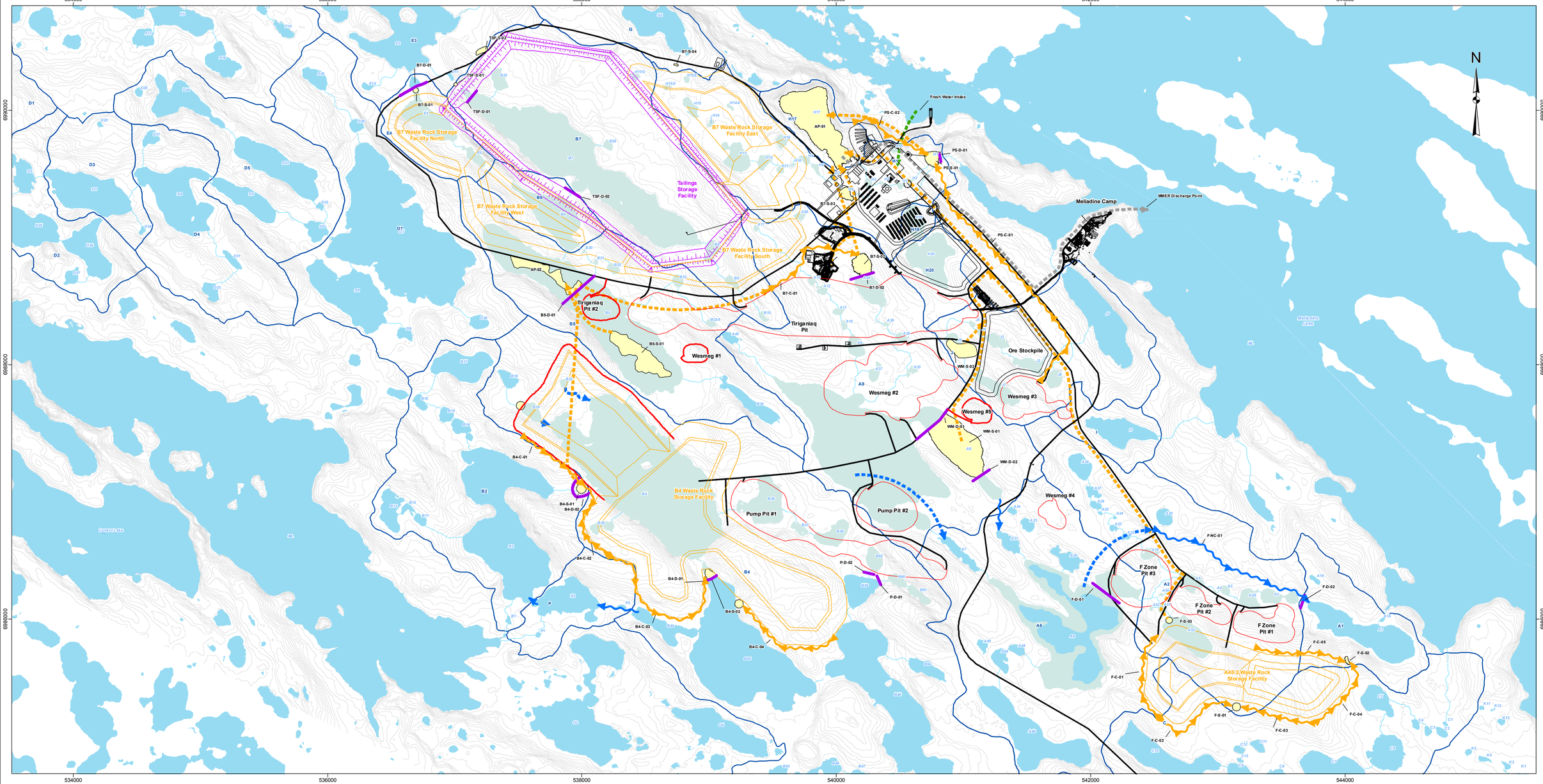
Appendix A: Comparison of Waterbodies and Watercourses between the 2014 FEIS and the Meliadine Extension FEIS Addendum

Waterbody / Watercourse ID	Type	2014 FEIS			Effect of Meliadine Extension			Reason for Difference 2014 FEIS vs Extension	Fish Present (Y/N)?	UTM Easting	UTM Northing	Meliadine Extension	2014 FEIS	% Difference
		Impact; source information	Deposition of Waste?	Dewatered Y/N	Impact	Deposition of Waste?	Dewatered Y/N					Footprint / Length (ha / m)	Footprint / Length (ha / m)	
A2	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Loss of upstream connectivity	No	Yes	Not dewatered in Meliadine Extension; Change to FA	Yes; small-bodied	543409	6986180	**2.36**	**2.36**	0%
A2a	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Loss of upstream connectivity	No	Yes	Not dewatered in Meliadine Extension; Change to FA	Yes; small-bodied	543437	6986188	**1.95**	**1.95**	0%
A3	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Loss of upstream connectivity	No	Yes	Not dewatered in Meliadine Extension; Change to FA	Yes; small-bodied	543055	6986225	**0.48**	**0.48**	0%
A4	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542972	6986211	**0.07**	**0.07**	0%
A5	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542790	6986288	**2.00**	**2.00**	0%
A6	Lake	Partially dewatered: Open pit within the footprint of the lake Water level lowered by 1.5 m; Section 3.2.1 and Table 8 in SD2-6	No	Partial	Open pit within the footprint of the lake. Due to open talik conditions and lakebed sediments, it is best to have the lake fully dewatered to minimize seepage through the dike and minimize groundwater inflows to the underground Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS	Yes; large and small-bodied	541797	6985731	**54.73**	**55.28**	-1%
A7	Pond	Dewatered and Receive pumped water; isolated from downstream lake; Table 19, Figure 7 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	540944	6986537	**2.38**	2.38	0%
A8	Lake	Dewatered; contact pond in east arm; Section 3.2.1, Table 8 and Figure 7 in SD2-6	Yes	Yes	Open pit within the footprint of the lake. Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste	Yes; large and small-bodied	540402	6987170	**91.45**	**90.54**	1%
A19	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542462	6986490	**1.01**	**1.01**	0%
A30	Pond	Not dewatered; isolated from downstream lake; Figure 7 in SD2-6	No	No	Dewatered for site management	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541837	6986464	**2.52**	**2.52**	0%
A31	Pond	Receive pumped water; isolated from downstream lake; Figure 7 in SD2-6	Yes	No	Dewatered for site management	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541361	6986600	**1.88**	1.88	0%
A32	Pond	Grouped as Pond A31	No	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	Same as Pond A31	Not sampled	541209	6986731	**0.09**	0.09	0%
A33	Pond	Isolated from DS lake; figure 7 SD2-6	No	No	Dewatered for site management	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541512	6986738	**0.91**	0.91	0%
A34	Pond	Isolated from DS lake; figure 7 SD2-6	No	No	Dewatered for site management; Table 2-5 in H-07	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Not sampled	541389	6986827	**0.31**	0.31	0%
A35	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	No; none captured	540597	6987955	**0.36**	0.36	0%
A37	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	540296	6987933	**0.92**	0.92	0%
A44	Pond	Isolated from DS lake; figure 7 SD2-6	No	No	Dewatered for site management; Table 2-5 in H-07	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541412	6985760	**0.82**	0.82	0%
A45	Pond	Isolated from DS lake; figure 7 SD2-6	No	No	Dewatered for site management; Table 2-5 in H-07	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541265	6985695	**1.70**	1.7	0%
A49	Pond	Isolated from DS lake; figure 7 SD2-6	No	No	Dewatered for site management; Table 2-5 in H-07	No	Yes	Dewater a pond to prevent isolation of waterbody from watershed; Change to FA	Yes; small-bodied	541142	6985796	**0.59**	0.59	0%
A50	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542558	6986190	**0.08**	0.08	0%
A51	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542561	6986081	**0.44**	0.44	0%
A52	Pond	Dewatered and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for Collection pond; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542766	6985866	**7.07**	7.07	0%
A53	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	542471	6986082	**0.06**	0.06	0%
B4	Lake	Dewatered and Overprinted by B4 WRSF; Section 3.2.1, Table 8, and Figure 7 in SD 2-6	Yes	Yes	Dewatered for Collection pond; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS	Yes; large and small-bodied	538772	6986895	**85.82**	**85.82**	0%
B5	Lake	Dewatered and Overprinted by pond; Section 3.2.1, Figure 7 and Table 8 in SD2-6	Yes	Yes	Open pit within the footprint of the lake. Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste	Yes; large and small-bodied	538007	6988529	**56.74**	**56.74**	0%
B6	Lake	Dewatered and Overprinted by TSF; Figure in SD2-6	Yes	Yes	Dewatered for site management (minimize UG flows and seepage from dikes into open pits); Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste	Yes; large and small-bodied	537779	6989168	**11.80**	**11.80**	0%
B7	Lake	Water levels lowered and then Overprinted by TSF; Section 3.2.1, Figure 7 and Table 8 in SD2-6	Yes	Yes	Dewatered for Saline pond; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS	Yes; large and small-bodied	537992	6989589	**58.46**	**0.30**	19387%
B19	Pond	Dewatered and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	Yes; small-bodied	537629	6987622	**1.57**	1.57	0%
B22	Pond	Dewatered and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	No; none captured	537861	6987857	**0.35**	0.35	0%
B25	Pond	Infilled and Overprinted by TSF; Table 8 in SD2-6	Yes	Yes	Dewatered for TSF development; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	537347	6990239	**1.58**	1.58	0%
B30	Pond	Infilled and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	Yes; small-bodied	538020	6988887	**0.09**	**0.09**	0%
B31	Pond	Infilled and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	Yes; small-bodied	538109	6988805	**0.13**	**0.13**	0%

Waterbody / Watercourse ID	Type	2014 FEIS			Effect of Meliadine Extension			Reason for Difference 2014 FEIS vs Extension	Fish Present (Y/N)?	UTM Easting	UTM Northing	Meliadine Extension	2014 FEIS	% Difference
		Impact; source information	Deposition of Waste?	Dewatered Y/N	Impact	Deposition of Waste?	Dewatered Y/N					Footprint / Length (ha / m)	Footprint / Length (ha / m)	
B32	Pond	Infilled and Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered and Overprinted by waste rock storage facility; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	538247	6988753	**0.60**	0.6	0%
B34	Lake	Received pumped water but Isolated from DS lake; Table 7 and figure 7 SD2-6	Yes	Partial	Dewatered and Overprinted by waste rock storage facility; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS (still location of waste deposition); Change to FA	Yes; small-bodied	539440	6987610	**4.37**	4.37	0%
B36	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	539438	6986913	**7.93**	7.93	0%
B37	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	539709	6986708	**0.85**	0.85	0%
B38	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	539968	6986670	**3.30**	3.3	0%
B39	Pond	Overprinted by WRSF; Table 8 in SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	No; none captured	538156	6986743	**1.18**	1.18	0%
B59	Lake	Downstream of dams	No	No	Dewatered for site management; Table 2-5 in H-07	No	Yes	Adjacent to 2014 FEIS footprint and part of the closure plan; footprint refined for Meliadine Extension	Yes; large-bodied	540168	6986236	**4.89**		**100%****
B60	Lake	Overprinted by pit; Figure 7 SD2-6	No	Yes	Dewatered for water management; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS	No; none captured	540479	6986300	**0.98**	0.98	0%
B61	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered and Overprinted by Salt Rock Pile; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	540605	6986220	**1.16**	1.16	0%
B62	Pond	Dewatered for pit development; Table 8 in SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	540297	6986468	**1.79**	1.79	0%
B63	Pond	Dewatered for pit development; Figure 7 in SD2-6	No	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	540420	6986380	**0.50**	0.5	0%
D31	Pond	Outside of footprint	No	No	Dewatered and Overprinted by Ore stockpile; Table 2-5 in H-07	Yes	Yes	Included in the Meliadine Extension due to refined footprint/ore body access	Yes; small-bodied	535248	6988821	**0.91**		**100%****
I1	Pond	Outside of footprint	No	No	Dewatered for pit development; Table 2-5 in H-07	No	Yes	Included in the Meliadine Extension due to refined footprint/ore body access	No; none captured	542227	6987476	**7.63**	7.63	0%
J2	Pond	Infilled and Overprinted by ore stockpile; Table 8 SD2-6	Yes	Yes	Dewatered and Overprinted by waste rock storage facility; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	541506	6988004	**1.89**	1.89	0%
J3	Pond	Infilled and Overprinted by ore stockpile; Table 8 SD2-6	Yes	Yes	Dewatered and Overprinted by waste rock storage facility; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	No; none captured	541263	6988187	**1.47**	1.47	0%
J4	Pond	Infilled and Overprinted by ore stockpile; Table 8 SD2-6	Yes	Yes	Dewatered for site management; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	Yes; small-bodied	541126	6988253	**0.22**	0.22	0%
J5	Pond	Infilled and Overprinted by ore stockpile; Table 8 SD2-6	Yes	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	No; none captured	541068	6988319	**0.18**	0.18	0%
J6	Pond	Overprinted by pond; Figure 7 in SD2-6	Yes	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS regarding dewatering; Change from deposition of wate to no deposition of waste; Change to FA	No; none captured	540933	6988163	**1.75**	1.75	0%
J7	Pond	Dewatered and Overprinted by pit; Figure 7 SD2-6	No	Yes	Dewatered for pit development; Table 2-5 in H-07	No	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	541263	6987807	**3.51**	3.51	0%
J8	Pond	Infilled and Overprinted by ore stockpile; Table 8 SD2-6	Yes	Yes	Dewatered and Overprinted by waste rock storage facility; Table 2-5 in H-07	Yes	Yes	No difference from 2014 FEIS; Change to FA	Yes; small-bodied	541714	6987891	**1.35**	1.35	0%
A01-A02	Stream	Not considered for 2014 FEIS	N/A	N/A	Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	543663	6986127	**78**	78	0%
A02A-A03	Stream	Not considered for 2014 FEIS	N/A	N/A	Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	543128	6986181	**83**	**83**	0%
A03-A04	Stream	Not considered for 2014 FEIS	N/A	N/A	Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	542999	6986218	**26**	**26**	0%
A04-A05	Stream	Not considered for 2014 FEIS	N/A	N/A	Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	542904	6986230	**112**	**112**	0%
A05-A06	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	542579	6986291	**406**	**406**	0%
A05-A19	Stream	Not considered for 2014 FEIS	N/A	N/A	Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	542652	6986333	**249**	**260**	-4%
A06-A07	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541182	6986356	**113**	**113**	0%
A06-A31	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity; Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	541454	6986501	**80**	80	0%
A06-A44	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541526	6985643	**164**	164	0%
A07-A08	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity; overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	540790	6986664	**137**	**145**	-6%
A19-A20	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	542524	6986635	**216**	178	21%
A50-A51	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	542559	6986157	**58**	56	4%
A51-A52	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by thermal berm	No	Yes	Not considered for 2014 FEIS	Yes	542611	6986047	**51**	51	0%
A5-A50	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	542601	6986210	**165**	177	-7%
A6-A50	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	542430	6986157	**141**	34	315%
A49-A45	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541202	6985744	**52**	52	0%
A31-A32	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541241	6986696	**30**	30	0%
A6-A30	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of downstream connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541781	6986382	**27**	27	0%
A44-A45	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541342	6985750	**16**	16	0%
A30-A33	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by haul road	No	Yes	Not considered for 2014 FEIS	Yes	541581	6986601	**257**	257	0%
A33-A34	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541435	6986806	**70**	70	0%
A8-A37	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	540224	6987818	**251**	102	146%
B03-B04	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity; Water quantity	No	Yes	Not considered for 2014 FEIS	Yes	538026	6987063	**158**		**100%****
B05-B31	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	538103	6988786	**108**	**108**	0%
B30-B31	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	538110	6988765	**122**	**102**	20%
B31-B32	Stream	Not considered for 2014 FEIS	N/A	N/A		No	Yes	Not considered for 2014 FEIS	Yes			**152**	122	25%

Waterbody / Watercourse ID	Type	2014 FEIS			Effect of Meliadine Extension			Reason for Difference 2014 FEIS vs Extension	Fish Present (Y/N)?	UTM Easting	UTM Northing	Meliadine Extension	2014 FEIS	% Difference
		Impact; source information	Deposition of Waste?	Dewatered Y/N	Impact	Deposition of Waste?	Dewatered Y/N					Footprint / Length (ha / m)	Footprint / Length (ha / m)	
B05-B33	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity due to pit	No	Yes	Not considered for 2014 FEIS	Yes	538722	6988623	**451**	451	0%
B06-B30	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	537976	6988930	**24**	**24**	0%
B36-B37	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	539591	6986766	**150**	150	0%
B37-B38	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by pit	No	Yes	Not considered for 2014 FEIS	Yes	539791	6986701	**119**	119	0%
B04-B05	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond, Berm	Yes	Yes	Not considered for 2014 FEIS	Yes	538264	6987776	**146**	**146**	0%
B04-B22	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond	Yes	Yes	Not considered for 2014 FEIS	Yes	537985	6987792	**225**	225	0%
B04-B36	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond and pit	Yes	Yes	Not considered for 2014 FEIS	Yes	539120	6986908	**163**	163	0%
B04-B39	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond	Yes	Yes	Not considered for 2014 FEIS	Yes	538289	6986811	**114**	119	-4%
B04-B45	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond	Yes	Yes	Not considered for 2014 FEIS	Yes	538289	6986811	**30**	30	0%
B05-B34	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity due to WRSF, vent raise	Yes	Yes	Not considered for 2014 FEIS	Yes	539068	6987902	**270**	270	0%
B06-B07	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond, dike	Yes	Yes	Not considered for 2014 FEIS	Yes	537928	6989387	**116**	**116**	0%
B07-B08	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond, WRSF	Yes	Yes	Not considered for 2014 FEIS	Yes	537925	6989363	**114**	38	200%
B07-B25	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, CP	Yes	Yes	Not considered for 2014 FEIS	Yes	537355	6990154	**40**	40	0%
B07-B28	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, Collection Pond	Yes	Yes	Not considered for 2014 FEIS	Yes	538142	6989759	**91**	91	0%
B59-B60	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, sumps	No	Yes	Not considered for 2014 FEIS	Yes	540367	6986296	**70**	70	0%
B59-B62	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by sump, vent raise	No	Yes	Not considered for 2014 FEIS	Yes	540228	6986368	**80**	80	0%
B60- B61	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity, sump	Yes	Yes	Not considered for 2014 FEIS	Yes	540562	6986250	**46**	40	15%
D04-D31	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by infrastructure	No	Yes	Not considered for 2014 FEIS	Yes	534831	6988916	**188**		**100%****
D33-D31	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by infrastructure	No	Yes	Not considered for 2014 FEIS	Yes	535225	6988681	**215**		**100%****
J7-J6	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by road	No	Yes	Not considered for 2014 FEIS	Yes	541016	6988006	**211**	227	-7%
J6-J4	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by road	No	Yes	Not considered for 2014 FEIS	Yes	541029	6988238	**149**	149	0%
J5-J4	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by road	No	Yes	Not considered for 2014 FEIS	Yes	541097	6988288	**48**	48	0%
J4-J3	Stream	Not considered for 2014 FEIS	N/A	N/A	Loss of connectivity	No	Yes	Not considered for 2014 FEIS	Yes	541168	6988263	**63**	63	0%
J3-J2	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by WRSF3	No	Yes	Not considered for 2014 FEIS	Yes	541394	6988110	**141**	140	1%
J2-J8	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by WRSF3 and road	Yes	Yes	Not considered for 2014 FEIS	Yes	541650	6987937	**60**	60	0%
J8-J1	Stream	Not considered for 2014 FEIS	N/A	N/A	Overprinted by WRSF 3, road and infrastructure	Yes	Yes	Not considered for 2014 FEIS	Yes	541851	6988097	**486**	340	43%

Appendix B: Comparison Maps of Dewatered of Waterbodies between the 2014 FEIS and the Meliadine Extension FEIS Addendum



LEGEND

- Contact Flow Path
- Non Contact Flow Path
- Dike
- New Infrastructure
- Watercourse
- Existing Infrastructure
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
- Tailings Facility
- Pumped Contact Water
- Pumped Dewatering
- Mine Water discharge to Environment
- Fresh Water Intake
- Topographic Contour (1.0 m Interval above sea level)
- Dewatered or Filled in Lake
- Lake
- Contact Water Pond
- Watershed Boundary

1000 0 1000
METRES

NOTE

Dewatering of lakes may require TSS control.
Pumped water from waste rock storage facilities, pits and the tailing storage facility to sumps not shown for clarity.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

Base data obtained from Agnico Eagle Mines Limited (AEM).
Datum: NAD 83 Projection: UTM Zone 15

PROJECT

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

MINING PHASE 5 - YEARS 10, 11, 12

Golder Associates

PROJECT NO.		10-1373-0076	FILE No.		
DESIGN	MP	08 Nov. 2012	SCALE AS SHOWN	REV.	0
GIS	DSC	09 Nov. 2012	FIGURE 7		
CHECK	DW	13 Jan. 2013			
REVIEW	DW	13 Jan. 2013			

N:\Burnaby\Graphics\Projects\2013\1429\13-1429-0007\GIS\Mapping\MXD\FIS\Volume_2\SD_2-6_6W_Mpnt_PlanFigure_7_Mining_Phase_5.mxd

548000 550000 552000 554000 556000 558000

6984000 6982000 6980000

N

Meliadine Lake
Chicken Head Lake
Ahuk Lake
Discovery Pit
Discovery Waste Rock Storage Facility
D-C-01
D-C-02
D-S-01
CH1 CH2 CH3 CH4 CH5 CH6

1000 0 1000
METRES

LEGEND

- Contact Flow Path
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
- Watercourse
- Topographic Contour
- Dewatered or Filled in Lake
- Contact Water Pond
- Watershed Boundary
- Lake

NOTE

Pumped water may require TSS control.
Pumped water from waste rock storage facility and pit to sumps not shown for clarity.
Water from D-S-01 will be used as dust control or trucked to site.
Contour data in certain areas are separated every 1m and 7-8m in others
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

Base data obtained from Agnico Eagle Mines Limited (AEM).
Datum: NAD 83 Projection: UTM Zone 15

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

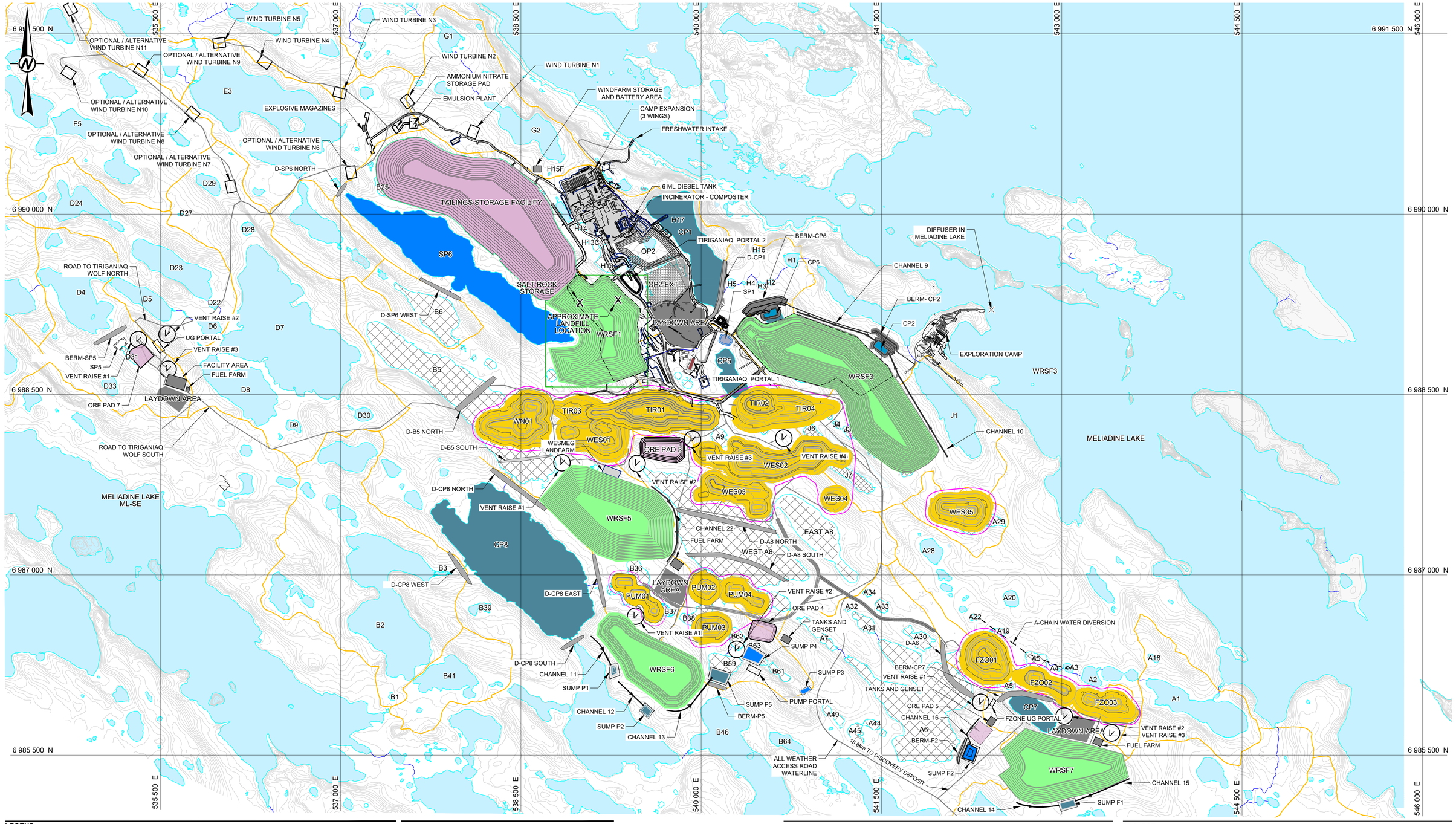
TITLE

DISCOVERY PIT

Golder Associates

PROJECT NO.		10-1373-0076	FILE No.	
DESIGN	MP	08 Nov. 2012	SCALE AS SHOWN	REV. 0
GIS	DSC	09 Nov. 2012	FIGURE 8	
CHECK	DW	13 Jan. 2013		
REVIEW	DW	13 Jan. 2013		

N:\Burnaby\Projects\2012\1428\13-1428-0007\GIS\Mapping\MXD\FIS\Volume_2\SD_2-8_SW_Mgmt_Plan\Figure_8_Discovery.mxd



LEGEND

- EXISTING GROUND
- ROAD
- CATCHMENT BOUNDARY LINE
- MINING AREA
- DIVERSION CHANNEL
- CONTACT WATER POND
- SALINE POND
- WATER
- DEWATERED
- OPEN PITS
- TAILINGS STORAGE FACILITY
- WASTE ROCK STORAGE FACILITY
- OPEN PIT START OF MINING

NOTE

1. ALL UNITS ARE IN METRES UNLESS OTHERWISE NOTED.

REFERENCE

1. REFERENCE BASE DRAWING FROM AGNICO EAGLE "14-2043 YEAR OVER SITE LAYOUT.DXF".

NOT FOR CONSTRUCTION

0 500 1,000
1:15,000 METRES

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

YYYY-MM-DD	2022-12-12
DESIGNED	CZ
PREPARED	HX
REVIEWED	JM
APPROVED	JM

PROJECT
MELIADINE MINE EXTENSION

TITLE
2043 YEAR SITE LAYOUT

PROJECT NO.	PHASE/TASK/DOC.	REV.	FIGURE
EARC03193	04	A	14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 25 mm

Path: Q:\Edmonton\Engineering\GE1411\Projects_MELIADINE\ENG.EARC03193-04 MEL WLA\MEL Extension WLA Site Layout | File Name: 14-2043 YEAR OVER SITE LAYOUT-EOM- Revised-R2.dwg | Last Edited By: cecilia.zafiris Date: 2022-12-12 Time:2:01:16 PM | Printed By: cecilia.zafiris Date: 2022-12-12 Time:2:01:40 PM

LEGEND

EXISTING GROUND	WATER
ROAD	DEWATERED
CATCHMENT BOUNDARY LINE	OPEN PITS
MINING AREA	TAILINGS STORAGE FACILITY
DIVERSION CHANNEL	WASTE ROCK STORAGE FACILITY
CONTACT WATER POND	OPEN PIT START OF MINING
SALINE POND	

NOTE

1. ALL UNITS ARE IN METRES UNLESS OTHERWISE NOTED.

NOT FOR CONSTRUCTION

0 250 500
1:7,500 METRES

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

YYYY-MM-DD	2022-10-25
DESIGNED	CZ
PREPARED	DBD
REVIEWED	JM
APPROVED	JM

PROJECT
MELIADINE MINE EXTENSION

TITLE
2043 YEAR SITE LAYOUT- DISCOVERY

PROJECT NO.	PHASE/TASK/DOC.	REV.	FIGURE
EARC03193-04	2022	0	15

25 mm
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D