



AGNICO EAGLE

MELIADINE GOLD PROJECT

Water Management Plan

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VERSION 2
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EXECUTIVE SUMMARY (ENGLISH)

Agnico Eagle Mines Limited (Agnico Eagle) is developing the Meliadine Gold Project (the Mine), located approximately 25 kilometres (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The Mine Plan proposes open pit and underground mining methods for the development of the Tiriganiaq gold deposit, with two open pits (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and one Underground Mine.

The water management objectives are to minimize potential impacts to the quantity and quality of surface water at the Mine. Water management structures (surface ponds, water retention dikes/berms, water diversion channels and culverts) will be constructed as needed to contain and manage the contact water from the areas affected by the Mine or mining activities. The major water management infrastructure include: water containment ponds, water retention dikes, berms, channels, a potable Water Treatment Plant (WTP), a Sewage Treatment Plant (STP), a Saline Water Treatment Plant (SWTP) and an Effluent Water Treatment Plant (EWTP).

During mine Construction and Operations, contact water originating from affected areas on surface will be intercepted, diverted and collected within the various containment ponds. The collected water at the Mine will be eventually pumped and stored in Containment Pond 1 (CP1), where the contact water will be treated by the EWTP for removal of Total Suspended Solids (TSS) prior to discharge to the outside environment or as make-up water by the Process Plant. Contact water from the Underground Mine will be collected in underground storage stopes and sumps. Some water from Underground will be reused for underground operations.

The long-term, post-closure water quality in the containment ponds and in the flooded open pit lakes will meet Metal Mining Effluent Regulations (MMER), Canadian Council of Ministers of the Environment Water Quality Guidelines (CCME-WQG) for the protection of aquatic life and/or the Site Specific Water Quality Objectives (SSWQO) developed for the Mine.

During mine closure, the water management infrastructure on site will remain in place until mine closure activities are completed and monitoring demonstrates that the water quality is acceptable for environmental discharge without treatment.

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ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
AWAR	All Weather Access Road
CCME-WQG	Canadian Council of Ministers of the Environment Water Quality Guidelines
CP	Containment Pond
EMPP	Environmental Management and Protection Plan
EWTP	Effluent Water Treatment Plant
GWMP	Groundwater Management Plan
IDF	Inflow Design Flood
Licence	Type A Water Licence 2AM-MEL1631
MMER	Metal Mining Effluent Regulations
NWB	Nunavut Water Board
Mine	Meliadine Gold Project
SD	Support Document
SSWQO	Site Specific Water Quality Objectives
STP	Sewage Treatment Plant
SWTP	Saline Water Treatment Plant
TDS	Total Dissolved Solids
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
WMP	Water Management Plan
WRSF	Waste Rock Storage Facility
WTP	Water Treatment plant

UNITS

%	percent
°C	degrees Celsius
°C/m	degrees Celsius per metre
mg/L	milligram per litre
km	kilometer(s)
km ²	kilo square meter(s)
m	metre
mm	millimetre
m ³	cubic metre(s)
m ³ /day	cubic metre per day
m ³ /s	cubic metre per second
m ³ /hour	cubic metre per hour
m ³ /year	cubic metre per year
Mm ³ /year	million cubic metre (s) per year
Mm ³	million cubic metre(s)
masl	metres above sea level
Mt	million tonne(s)

SECTION 1 • INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico Eagle) is developing the Meliadine Gold Project (the Mine) located approximately 25 kilometres (km) north of Rankin Inlet (Figure 1.1), Nunavut, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The Mine is subject to the terms and conditions of both the Project Certificate issued in accordance with the Nunavut Land Claims Agreement Article 12.5.12 on February 26, 2015 and Type A Water Licence No. 2AM-MEL1631 (the Licence), issued by the Nunavut Water Board (NWB) on April 1, 2016 (NWB, 2016).

This report presents an updated version of the Water Management Plan (WMP).

1.1 Water Management Objectives

The water management objectives are to minimize potential impacts to the quantity and quality of surface water at the Mine and surrounding waterbodies. The groundwater management plan (GWMP) developed in 2018 is included as Appendix A. The purpose of the WMP is to provide information for water management practices, proposed infrastructure, the water balance model, water quality predictions, and water quality monitoring plan for the Mine.

Water management structures (culverts, sumps, pipelines, water diversion channels and water retention dikes/berms) will be utilized to contain and manage contact water from areas affected by mining activities. Measures will be implemented for both the Mine Construction and Mine Operation phases.

1.2 Management and Execution of the Water Management Plan

Revisions of the WMP can be initiated by changes in the Mine Development Plan (Mine Plan), operational performance, personnel or organizational structure, regulatory or social considerations, and/ or design philosophy. The WMP will be reviewed annually by Agnico Eagle and updated as necessary.

SECTION 2 • BACKGROUND

2.1 Site Conditions

The Mine is located in an area of poorly drained lowlands near the northwest coast of Hudson Bay. The dominant terrain in the area consist of glacial landforms such as drumlins (glacial till), eskers (gravel and sand), and many small lakes. The topography is gently rolling with a mean elevation of 65 metres above sea level (masl) and a maximum relief of 20 meters.

The local overburden consists of a thin layer of topsoil overlying silty gravelly sandy glacial till. Cobbles and boulders are present throughout the region at various depths. Bedrock at the Mine site area consists of a stratigraphic sequence of clastic sediments, oxide iron formation, siltstones, graphitic argillite, and mafic volcanic flows (Snowden, 2008; Golder, 2009).

The climate is extreme in the area, with long cold winters and short cool summers, and mean air temperatures of 12°C in July and -31°C in January. The mean annual air temperature at the Mine site is approximately -10.4 °C (Golder, 2012a). Strong winds blow from the north and north-northwest direction more than 30 percent of the time.

The mean annual precipitation in the area is approximately 412 mm and is typically equally split between rainfall and snowfall.

2.1.1 Local Hydrology

The Mine is located within the Meliadine Lake watershed. Meliadine Lake has a water surface area of approximately 107 square kilometres (km²), a maximum length of 31 km, features a highly convoluted shoreline of 465 km, and has over 200 islands. Unlike most lakes, it has 2 outflows that drain into Hudson Bay through two separate river systems. It has a drainage area of 560 km² upstream of its two outflows. Most drainage occurs via the Meliadine River, which originates at the south west end of the lake. The Meliadine River flows for a total stream distance of 39 km. The Meliadine River flows through a series of waterbodies, until it reaches Little Meliadine Lake and then continues into Hudson Bay. A second, smaller outflow from the west basin of Meliadine Lake drains into Peter Lake, which discharges into Hudson Bay through the Diana River system (a stream distance of 70 km). At its mouth, the Diana River has a drainage area of 1,460 km².

Watersheds in the Mine area are comprised of an extensive network of waterbodies, and interconnecting streams. The hydrology of these watersheds is dominated by lake storage and evaporation.

2.1.2 Ice and Winter Flows

Late-winter ice thicknesses on freshwater lakes in the Mine area range between 1.0 to 2.3 m with an average thickness of 1.7 m. Ice covers usually appear by the end of October and are completely

formed in early November. The spring ice melt (freshet) typically begins in mid-June and is complete by early July (Golder, 2012b).

2.1.3 Spring Melt (freshet) and Freeze-up Conditions

With the exception of the main outlet of Meliadine Lake, which has been observed to flow continuously throughout the year, outlets of waterbodies near the Mine typically start flowing late May or early June, followed by freshet flows in mid-to-late-June. Flows steadily decrease in July and low flows are ongoing from August to the end of October, prior to winter freeze.

2.1.4 Permafrost

The Mine is located in an area of continuous permafrost. The depth of permafrost is estimated to be in the order of 360 to 495 m. The depth of the active layer ranges from about 1 m in areas with shallow overburden, up to 3 m adjacent to the lakes. The typical permafrost ground temperatures at the depths of zero annual amplitude (typically at the depth of below 15 m) are in the range of -5.0 to -7.5 °C in the areas away from lakes and streams. The geothermal gradient ranges from 0.012 to 0.02 °C/m (Golder, 2012b).

2.1.5 Local Hydrogeology

Groundwater characteristics at areas of continuous permafrost that are generally present in the Mine area include the following flow regimes:

- A shallow flow regime located in an active layer (seasonally thawed) near the ground surface and above permafrost; and,
- A deep groundwater flow regime beneath the base of the permafrost.

From late spring to early autumn, when temperatures are above 0 °C, the shallow active layer thaws. Within the active layer, the water table is projected to be a subdued replica of topography. Groundwater in the active layer flows to local depressions and ponds that drain to larger waterbodies. The talik beneath large waterbodies will be open. The open talik will connect to the deep groundwater flow regime beneath the permafrost.

Elongated waterbodies with terraces and a width of 340 to 460 m or greater are expected to have open taliks extending to the deep groundwater flow regime at the Mine. Meliadine Lake and Lake B7 are likely to have open taliks connected to the deep groundwater flow regime (Golder, 2012a). No impact is expected to Lake B7 by mine activities.

2.2 Mine Development Plan

The Mine Plan and key mine development activities, including mine waste management are currently used concurrently with the WMP.

The Mine Plan proposes one underground mine (Tiriganiaq Underground Mine) and two open pits (Tiriganiaq Open Pit 1 and Tiriganiaq Open Pit 2) for the development of the Tiriganiaq gold deposit.

The Mine is estimated to produce approximately 12.1 million tonnes (Mt) of ore, 31.8 Mt of waste rock, 7.4 Mt of overburden waste, and 12.1 Mt of tailings. The following phased approach is proposed for the development of the Tiriganiaq gold deposit;

- Phase 1: 4 years for Mine Construction. Construction began in 2015 and is estimated to be completed in 2019 (Q4 Year -5 to Year 1);
- Phase 2: 8 years for Mine Operations, beginning in 2018 (Year 1 to Year 8);
- Phase 3: 3 years Mine Closure (Year 9 to Year 11); and;
- Phase 4: Post-Closure (Year 11 forward).

Mining facilities on surface will include a plant site and accommodation buildings, three ore stockpiles, a temporary overburden stockpile, a tailings storage facility (TSF), three waste rock storage facilities (WRSFs), a water management system that includes containment ponds, water diversion channels, retention dikes/berms, and a series of water treatment plants. The general mine site layout plan is shown on Figure 1.2.

SECTION 3 • WATER MANAGEMENT CONTROLS AND STRUCTURES

A network of berms, dikes, containment ponds, channels, culverts and sumps will be constructed and maintained to facilitate water management. The following sections describe the water management design criteria for the infrastructure required at the Mine.

3.1 Water Management Systems

The water management systems, as shown in Figure 1.2, include the following components:

- Five water containment ponds (CP1, CP3, CP4, CP5, and CP6) and their associated dikes or thermal berms (D-CP1, D-CP3, D-CP4, D-CP5, and D-CP6)
- Three P-Area containment ponds (P1, P2, and P3) and four dikes (DP1-A, DP1-B, DP2-A, and DP3-A)
- A surface Saline Pond
- Three diversion berms (Berm 1, Berm 2, and Berm 3)
- Eight water diversion channels (Channel 1 to Channel 8)
- Fourteen water passage culverts to convey water (Culverts 1 to 4, 7, 8, 10 to 14, 16, 18 & 19)
- Three evaporators
- A reverse osmosis (RO) treatment plant
- An effluent water treatment plant (EWTP)
- A saline water treatment plant (SWTP)
- A sewage treatment plant (STP)
- A freshwater treatment plant (FWTP)
- A network of surface pumps and pipelines
- A freshwater intake causeway
- Two jetties and pumping infrastructure (CP1 and CP5)
- An effluent diffuser located in Meliadine Lake

During the Mine Construction and Mine Operation phases, surface contact water will be intercepted, diverted and contained within various containment ponds prior to evaporation or treatment. Water contained in CP5 will be treated by the RO treatment plant prior to discharging to CP1. The saline water collected in the Saline Pond and P-area will be temporarily stored and then actively evaporated or pumped to the SWTP prior to being pumped to CP1. At CP1, the water will be treated for total suspended solids (TSS) at the EWTP and either transferred to the process plant for use as make-up water or discharged through the diffuser located in Meliadine Lake.

Contact water from the Underground Mine will be collected in underground sumps and recirculated for use in various underground operations. Underground contact water that is not used for operations will be stored underground and any excess water that cannot be stored underground will

be pumped to the Saline Pond temporarily and then eventually transferred to P1 for active evaporation or for treatment at the SWTP and then to CP1.

During the mine closure, the water management infrastructure will remain in place until closure activities are completed and monitoring demonstrates that water quality is acceptable for discharge to the environment without treatment.

A list of the water management control structures are presented in Table 1 with the approximate Mine phase. Figure 1.2 shows the location of the respective structures at the different development stages (Year – 5 to Year 8) of the mine life. Final design details of these structures have been or will be provided to the Regulators for approval at least 30 days prior to construction, as per the Licence.

Table 1: Water Management Control Structures

Mine Phase	Infrastructure Name
Pre-Production Construction (Y-5 to Y 1)	Culvert 2
	Channel 2
	D-CP1
	CP1 Jetty
	D-CP5
	CP5 Jetty
	Permanent Freshwater Intake Causeway and Pumping Station
	Channel 1
	Berm 3
	Channel 5
	Berm 1
	Channel 6
	Channel 7
	Channel 8
	Culvert 3
	Culvert 4
	Submerged Diffuser
	WTP Intake Causeway
	Culvert 1
	CP3
	CP4
	Berm 2
	D-CP3
	D-CP4

	Channel 3
	Channel 4
Sustaining Construction during Mine Operation (Y1 to Y8)	D-CP6

3.2 Water Management Structures Design Criteria

The following sections describe various water management systems that will be designed to meet the criteria:

- Water quality guidelines that meet regulatory criteria (described in Section 8).
- Design capacity of the EWTP, D-CP1 and CP1 will be able to manage the surface contact water from the entire site for a 1:100 wet year spring freshet or a 1:2 mean year spring freshet, plus a 1:1000 return 24-hour extreme rainfall.
- With the design capacity of pumping from CP5 to CP1, D-CP5 and CP5 will be able to manage the water from its catchment area for 3/7 of a 1:100 wet year spring freshet or a 1:1000 return 24-hour extreme rainfall.
- Each of the other water management dikes (D-CP3, D-CP4, and D-CP6) and associated ponds (CP3, CP4, and CP6, respectively), with the design pumping capacity, will be able to manage the water from their respective catchment area for 3/7 of a 1:100 wet year spring freshet or a 1:1000 return 24-hour extreme rainfall.
- The daily pumping rate for each of the ponds (CP3 to CP6), Tiriganiaq Pit 1 sump, and Tiriganiaq Pit 2 sump will be designed to have sufficient pumping capacity to handle the runoff water, which would result from one day (24.4 mm) of a 1:100 return wet spring freshet plus a 1:2 return one-hour rainfall (9.8 mm).

Channel 2 to Channel 4 are designed to pass an extreme intensity flow under a 5-minute 1:100 return rainfall of 9.2 mm. Channel 1 and Channel 5 to Channel 8 are internal channels where any water overflowing the channels will remain within the catchment areas of various containment ponds. Hydraulic analyses indicated that very wide channels are required to pass an extreme intensity flow under a 5-minute 1:100 return rainfall of 9.2 mm. As a result, these channels were designed to have a reasonable bottom width to pass a flow with lesser intensity, but the water overflowing the channels can be safely managed by berms or temporarily stored in a lower basin nearby. For example, water overflowing Channel 5 can be contained by Berm 3. Water overflowing Channel 7 and Channel 8 can be stored in the lower basin in the drained Pond H13, and Berm 1 will protect Portal No.2 from flooding. Water overflowing Channel 1 will flow through the flat ground between Ore Pad 1 (OP1)/Ore Pad 2 (OP2) and WRSF2 into CP1.

Hydraulic analyses indicated that many more culverts or larger culverts would be required to pass an extreme intensity flow under a 5-minute 1:100 return rainfall of 9.2 mm for Culvert 1. As a result, Culvert 1 was designed to pass a flow with lesser intensity, but the excess water can be safely managed by berms or temporarily stored in a lower basin nearby. The excess water that cannot pass through Culvert 1 can be temporarily stored in the lower basin in the drained Pond H13, and Berm1 will protect Portal No.2 from flooding. Other culverts are less critical and the excess water that cannot pass through the culverts can be temporarily stored in a lower basin nearby, within the water containment pond catchment area.

Table 2 presents the design parameters for CP1, CP5 and CP6.

Table 2: Design Parameters for CP1, CP5 and CP6

Pond	CP1	CP5	CP6
Pond Volume for Water Elevation at Projected Maximum Pond Operating Water Elevation under Normal Operating Conditions and Mean Precipitation Years (m ³)	742,075	46,674	19,154
Estimated Maximum Operating Water Elevation (m)	66.2	66.0	63.9
Dike for Pond	D-CP1	D-CP5	D-CP6
Design Crest Elevation of Dike Containment Element (liner system) (m)	66.50	66.30	64.30
Pond Volume for Water Elevation at Design Crest Elevation of Dike Containment Element (m³)	778,502	66,231	49,627

CP3 and CP4 will be established through sub excavation of the original ground to increase the water storage capacity and eliminate or limit the requirement for berm construction. The key design parameters for CP3 and CP4 are provided in Table 3.

Table 3: Design Parameters for CP3 and CP4

Pond	CP3	CP4
Elevated Pond Bottom Elevation (m)	62.20	61.00
Excavated Pond Outlet Elevation (m)	64.15	63.46
Pond Volume for Water Elevation at Pond Outlet Elevation (m³)	25,454	30,911
Projected Maximum Pond Operating Water Elevation under Normal Operating Conditions and Mean Precipitation Years (m)	63.49	62.55
Pond Volume for Water Elevation at Projected Maximum Pond Operating Water Elevation under Normal Operating Conditions and Mean Precipitation Years (m³)	16,899	19,458
Estimated Maximum Water Elevation during IDF (m)	64.32	63.55

Pond	CP3	CP4
Pond Volume for Water Elevation at Estimated Maximum Water Elevation during IDF (m³)	28,056	32,304
Dike for Pond	D-CP3	D-CP4
Design Crest Elevation of Dike containment Element (liner system) (m)	65.10	64.40
Pond Volume for Water Elevation at Design Crest Elevation of Dike Containment Element (m³)	42,456	51,337

3.3 Water Containment ponds

Five water containment ponds (CP1, CP3, CP4, CP5, and CP6) will be constructed as part of the water management infrastructure. Table 4 presents the locations and the required operational period of the containment ponds. The locations of the five water containment ponds are shown on Figure 1.2. CP1, CP5, and CP6 have been or will be established within existing shallow ponds.

Table 4: Location of Containment Pond and Required Operation Periods

Containment Pond	Relative Location	Required Operation Period
CP1	Pond H17	Year 2017 to Mine closure
CP3	North of Lake B7 and southwest of TSF	Year 2019 to Mine closure
CP4	Southeast of Lake B7 and south of WRSF1	Year 2019 to Mine closure
CP5	North of Tiriganiaq Pit 2	Year 2017 to Mine closure
CP6	Pond H19 and north of WRSF3	Year 2023 to Mine closure

3.4 P-Area Containment Ponds

The P-area consists of three storage ponds, four water containment berms and three evaporators. This area contains surface runoff and is part of the surface water management system dedicated to saline water. The total storage capacity of the P-Area ponds is 46,041 m³. P1 is divided by a berm and P1-A (6,131.8 m³) is the southern section of P1 and P1-B (14,649 m³) is the northern section. P2 is adjacent and located south of P1-A. P3 was constructed east of the existing south access road, with the primary purpose of collecting seepage originating from the P2 confining berm and its abutments. A pumping station was installed to collect and pump any collected water from P3 to P1.

P1, P2 and P3 are contained by water containment berms DP1-A, DP1-B, DP2-A, and DP3-A, with three evaporators (on DP1-B). Table 5 summarizes the as-built capacities for the P-Area ponds and Figure 3.1 illustrates the P-Area plan view.

Table 5: As-Built Capacity for P-Area Ponds

Pond	P1	P2	P3
As-built Capacity (m³)	20,781	6,828	18,432
Maximum Design Water Elevation (m)	68.5	67.5	67.0
Total P-Area Capacity (m³)	46,041		

Increased water monitoring protocols for the P-Area, over and above that required by the Licence, were also implemented. The additional monitoring includes water quality and transfer data, such as locations and flow volumes for water pumped to and from the containment ponds are discussed further in Section 8.

3.5 Saline Pond

The Saline Pond was constructed in Q3-2016 to accommodate excess saline water from the Underground. The Saline Pond is located east of P3 and north of CP5 (Figure 1.2). Table 6 summarizes the Saline Pond capacity for storage and maximum designed operating water levels. The maximum saline water capacity, is the volume that can be stored in the Saline Pond prior to winter freeze. Approximately 9,000 m³ capacity should be available to accommodate precipitation that may accumulate throughout winter and at freshet.

Table 6: As-Built Storage Capacity for the Saline Pond

Item	Water Balance Under Mean Precipitation Conditions
Maximum Design Water Elevation (m)	62.9
Maximum Saline Water Capacity (m³)	23,686
Estimated Maximum Storage Capacity at Maximum Water Elevation (m³)	32,686 *

* Includes the capacity for saline water to be pumped into the Saline Pond from Underground, a combined capacity for net precipitation, and potential seepage water into the pond.

3.6 Water Diversion Channels, Dikes and Berms

3.6.1 Water Diversion Channels

Eight water diversion channels (Channel 1 to Channel 8) will be constructed as part of the water management infrastructure. The key information and design parameters for each channel are presented in Table 7.

Table 7: Design Parameters for Channels

Item	Channel
------	---------

	1	2	3	4	5	6	7	8
Approximate Total Length (m)	493	270	619	710	429	69	214	315
Bottom Width (m)	3	1	1 or 2*	1 or 2*	3	1	1	1
Side Slopes	3(H):1(V)	1.82(H):1(V)	3(H):1(V)	3(H):1(V)	3(H):1(V)	3(H):1(V)	3(H):1(V)	3(H):1(V)
Rip-rap Thickness (m)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Minimum Bottom Slope Gradient (%)	0.28	0.30	0.17	0.13	0.17	0.44	0.42	0.38

* 1 m bottom width for first 100 m upstream section, and 2 m bottom wide for the remaining channel section

3.6.2 Water Retention Dikes and Berms

In general terms, “dikes” will retain continuous water during normal operations and “berms” may retain short-term water during high level water events. At the end of Mine closure, when the water quality in the corresponding pond meets direct discharge criteria, each of the other dikes and berms on site (except for Berm 2) will be breached to restore the original natural drainage paths. Berm 2 will remain in place to prevent non-contact water from flowing into the TSF.

Permafrost is expected to exist beneath the footprint of each dike and berm at the Mine. Each of the water retention dikes (D-CP1, D-CP3, D-CP4, D-CP5, and D-CP6) has been designed as a zoned earth fill dam with a geomembrane liner keyed into the expected permafrost foundation to limit the seepage through the dike and its foundation. The characteristics of the dikes and berms required for the WMP are summarized in Table 8.

3.7 Evaporators

Three evaporators were installed on jetties constructed at DP1-B. The evaporator system is designed for vaporizing water contained at the P-Area. The evaporators were installed to accommodate the quantity of excess saline water before saline water treatment options and disposal plans have been implemented at the Mine. Based on data collected during 2016, the efficiency of one evaporator was estimated to be 22 m³/hr.

3.8 Freshwater Intake

Freshwater usage at the Mine includes potable uses, fire suppression, make-up water for the mill, and other operational requirements, such as drilling water, batch plant use and use at the washbay. The main freshwater intake is housed within a rockfill causeway located north east of the industrial pad in Meliadine Lake, as shown on Figure 1.2 and an additional freshwater intake pump is located at Lake A8. The intakes consist of vertical filtration wells fitted with vertical turbine pumps that supply water on demand. Both intake pipes will be fitted with a screen of an appropriate mesh size

to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen (NWB, 2016).

The Meliadine Lake freshwater intake is connected to the pump house with piping buried under the rockfill causeway.

3.9 Water Treatment

Contact water will be treated (if necessary) to meet Licence requirements prior to be discharged to the environment. TSS mitigation techniques (i.e., attenuation ponds, silt screens, etc), oil separation treatment, STP, SWTP, and an EWTP will be used at various locations at the Mine prior to water being transferred to containment ponds and/or as effluent discharge to Meliadine Lake. Water quality criteria are discussed in Section 8.

Table 8: Design Parameters for Water Retention Dike/Berm

Item	D-CP1	D-CP3	D-CP4	D-CP5	D-CP6	DP1-A	DP1-B	DP2-A	DP3-A	Berm1	Berm2	Berm3
Approximate Maximum Height (m)	5.6	2.0	2.0	3.3	1.8	3.7	3.4	4.0	3.4	1.6	2.5	2.76
Maximum Elevation (m)	67.5	66.1	65.4	67.3	65.3	70.5	70.7	69.5	69.0	68.5	varies	67.37
Maximum Head of Water Retained (m)	3.5	0.2	0.1	1.4	0.5	68.5	68.7	67.5	67.0	0	0	0

3.9.1 Freshwater Treatment Plant (WTP)

Freshwater from Meliadine Lake will be treated in the WTP before being directed to the camp areas for potable (domestic) water uses. The design flow rate for freshwater for the main camp and accommodations is 216 m³/day. In the WTP, freshwater will be pumped through cartridge filters, then pumped through ultraviolet units, and finally treated with sodium hypochloride (chlorine). The treated water will be stored within a potable water tank. Potable water will be monitored according to the Nunavut Health Regulations for total and residual chlorine and microbiological parameters. Operation and maintenance details for the WTP can be reviewed in the Process and Control Narrative (H2O Innovation, 2016).

3.9.2 Sewage Treatment Plant (STP)

Waste water from the accommodation complex and from satellite sewage tanks will be treated in the STP before being directed to CP1. Operation and maintenance details for the STP can be reviewed in the Operational & Maintenance Manual – Sewage Treatment Plant (Agnico Eagle, 2017c).

3.9.3 Saline Water Treatment Plant (SWTP)

Saline water generated from the Underground Mine is currently being stored underground and on surface at the P-Area and the Saline Pond. A SWTP will be installed at the Mine in 2018. The location for the SWTP will be near Portal 1.

3.9.4 Effluent Water Treatment Plant (EWTP)

The Effluent Water Treatment Plant (EWTP) will be required to treat and discharge 470,000 m³ of contact water at Year -4. The volume of water requiring treatment for TSS and discharge will increase to a maximum of 798,000 m³ at Year 3 and then decrease to 673,000 m³ during the final year of the life of mine (Year 8).

Based on the anticipated water quality (Section 8) and water quantity, the EWTP will be used to treat TSS at CP1. Based on the maximum flow rate required each year, it was determined that the EWTP (Actiflo® system model ACP-600R) will have a maximum capacity of 520 m³/h (nominal flow) at Year -4 and will be increased with a second ACP-600R to reach a maximum capacity of 1,040 m³/h at Year 3.

TSS mitigation is ongoing with runoff water and is described further in the Freshet Action Plan (Agnico Eagle, 2018b). Additional TSS removal options are being considered for underground water, prior to pumping to surface.

3.9.6 Oil Separator

In 2018, an oil separator will be installed at the Maintenance Shop to collect and separate oil from water used for washing mining equipment.

3.10 Discharge Diffuser

The discharge diffuser will be the final effluent discharge location for the Mine. The overall purpose of the diffuser is to discharge water from CP1 (at sampling station Mel_14) to Meliadine Lake while providing minimal environmental impacts to the Lake. The effluent mixing will be dependent on ambient currents in Meliadine Lake, driven by wind during the open water period. The diffuser modelling was initially conducted by Golder (Golder, 2015) and updated design progress was reported by Tetra Tech EBA (Tetra Tech, EBA 2016).

SECTION 4 • WATER MANAGEMENT STRATEGY

There are four major sources of inflow water considered in the Mine water management system; freshwater pumped from Meliadine Lake and Lake A8, natural run off from precipitation, natural groundwater inflow to the Underground Mine and open pits, and water produced during freshet.

A brief summary of the water management strategy for the Mine is presented as follows:

- Contact water from key mine infrastructure will be diverted and/or collected in the containment ponds (CP1, CP3, CP4, CP5, CP6, the Saline Pond and the P-Area).
- The collected water in CP3 to CP6 will be pumped to CP1. Water collected in CP1 will be reused by the process plant and the excess water will be treated by the EWTP prior to discharge to the outside environment via the diffuser into Meliadine Lake.
- Contact water from the Underground Mine will be contained in underground sumps and the water storage stope and reused for mining operations. Excess water volumes will be pumped to the Saline Pond or P-Area Ponds to be stored on surface, actively evaporated to reduce water quantities or treated before transferring to CP1.
- Runoff water in the open pits will be collected in sumps and then pumped to the designated water containment ponds.
- Natural flooding to the open pits at end of mining will be supplemented by using freshwater from Meliadine Lake.
- Upon the completion of underground mining, the Underground Mine workings will be allowed to naturally flood by groundwater seepage.

Appendix B presents the Freshet Action Plan and the Snow Management Plan for the Mine. Table 9 summarizes the overall contact water management plan for the key infrastructure and presents the initial water collection locations and final water destinations. The plans for water management at key areas are described in following sections.

Table 9: Overall Site Surface Contact Water Management Plan

Contact Water Source	Initial Contact Water Collection Location	Final Contact Water Collection Location
Industrial Site Pad Area (camp/process plant area)	CP1	CP1
WRSF1 Area	CP1, CP4 and CP5	
WRSF2 Area	CP1 and CP5	
WRSF3 Area	CP6	
Dry Stack TSF Area	CP1 and CP3	
Ore Stockpiles OP1 to OP3	CP1	
Landfill	CP1	
Landfarm (biopile)	Sump within Landfarm	To CP1 after oil separation
Tiriganiaq Pit 1 Tiriganiaq Pit 2	Open pit sumps	First to CP5 and then to CP1
Tiriganiaq underground	Sump in underground mine	Mainly within the Underground Mine with excess surface water to be pumped to the ground surface and stored at the P-Area or Saline Pond.

Various containment ponds will be dewatered and treated (as necessary), prior to freshet (open water season) or prior to discharging through the diffuser to Meliadine Lake. The following sections describe the strategy for water management at different areas for the Mine.

4.1 Key Water Management Activities

The activities required for the WMP are summarized in Table 10. Water management activities during closure are described in Section 6.

Table 10: Key Water Management Activities

Mine Year	Major Water Management Activities and Sequence
Q4 of Yr -5 (2015)	<ul style="list-style-type: none"> Start to re-use the underground water.
Yr -4 (2016)	<ul style="list-style-type: none"> Dewatering of H17 into Meliadine Lake. Dewater Pond A54 in Q3 of Year -4 and pump the water to CP1. Start to store the excess groundwater from the underground mine at surface. Implement and test evaporators at P-Area to reduce water volumes stored at

Mine Year	Major Water Management Activities and Sequence
	<p>surface.</p> <ul style="list-style-type: none"> Construct trenches down gradient from DP1-B and DP3-A to be able to pump collected water seep and pump back to the associated containment pond.
Yr -3 (2017)	<ul style="list-style-type: none"> Start to treat sewage water and pump the treated sewage water from the STP to CP1. Start to pump the contact water from CP5 to CP1 for treatment/dilution Start to pump water seepage collected in trenches, down gradient from D-CP1, D-CP5, DP1 and DP3 to the associated containment pond. Start to pump water from washbay to underground for storage until treatment for oil plant arrives at the site De-ice or divert water from Lakes H17A, H17B, and H17 C
Yr -2 (2018)	<ul style="list-style-type: none"> Start to pump the water from CP1 to EWTP for treatment prior to discharge to the outside environment via the diffuser in Meliadine Lake. Pump the underflow sludge water from the EWTP to CP1. To limit recirculation of the sludge within CP1, the discharge will be located away from the EWTP intake. Start to divert the contact water from industrial pad to CP1 via Channel 1. Start to pump the water from the Landfarm to CP1 after pre-treatment for oil. Start to treat CP5 water by RO for removal of TDS. Permeate will blend with CP1 water prior to environmental discharge.
Yr -1 (2019)	<ul style="list-style-type: none"> Start to pump the treated water from EWTP to the Process Plant as make-up water Start to pump the underflow sludge water from WTP to the mill During the open water season, the Process Plant will be supplemented as much as possible with water from the EWTP. For the balance of the year, freshwater will be used for ore processing
Yr 1 (2020)	<ul style="list-style-type: none"> Start to pump the contact water in CP3 to the partially drained Pond H13 where the water will flow through Channel 1 into CP1 Start to pump the contact water in CP4 to the partially drained Pond H13 where the water will flow through Channel 1 into CP1
Yr 2 (2021)	<ul style="list-style-type: none"> Start to pump the contact water collected in Tiriganiaq Pit 1 to CP5
Yr 3 (2022)	<ul style="list-style-type: none"> Dewater Ponds H19 and H20 in Q3 of Year 3 and pump the water to CP1
Yr 4 (2023)	<ul style="list-style-type: none"> Start to pump the contact water collected in Tiriganiaq Pit 2 to CP5 Start to pump the contact water in CP6 to CP1
Yr 5 (2024)	<ul style="list-style-type: none"> WMP similar to Year 4
Yr 6 (2025)	<ul style="list-style-type: none"> WMP similar to Year 4
Yr 7 (2026)	<ul style="list-style-type: none"> WMP similar to Year 4 Stop pumping water from open pits when the pits are mined-out at the end of year Stop pumping excess water from underground when underground mining is completed

Mine Year	Major Water Management Activities and Sequence
Yr 8 (2027)	<ul style="list-style-type: none"> Start to fill the mined-out Tiriganiaq Pit 1 and Tiriganiaq Pit 2 with active pumping water from Meliadine Lake Start natural flooding of Tiriganiaq Underground Mine with groundwater seepage Stop pumping water to process plant when the processing is completed

4.1.1 Pond Dewatering and Displacement

The initial dewatering at Lake H17 and Lake A54 was conducted in 2016 prior to constructing CP1 and CP5, respectively. The water from these ponds was pumped to Meliadine Lake through a temporarily installed diffuser. Dewatering of Ponds H19, and H20, is assumed that approximately half the volume of water in these ponds will be pumped to Meliadine Lake if it meets discharge criteria, and the remaining volume of water will be pumped to CP1 to be stored for treatment or dilution. Table 11 summarizes the dewatering plan and estimated volume of water to be dewatered for construction or prior to freshet.

Table 11: Pond Dewatering Plan

Pond	A54 (CP5)	H17 (CP1)	H20	H19
Maximum Pond Water Depth (m)	1.3	1.7	1.6	1.4
Existing Pond Surface Area (ha)	5.99	15.4	9.58	2.91
Dewatering Schedule	Sept. to Oct. of 2016	August to September of 2016	Sept. to Oct. of Year 3	Sept. to Oct. of Year 3
Estimated Total Volume of Water to be Dewatered (m ³)	34,545	82,400	90,307	16,431

The Meliadine Esker is located adjacent and north of CP1 and contains three shallow ponds (H17a, H17b, and H17c) (Figure 1.2). The three ponds will have ice removed or the water will be diverted directly to CP1 during the open water season. During the freshet, excess water at Ponds H15 and H15E will be diverted and pumped directly to CP1.

Ponds may also be displaced by the placement of fills. The water displaced by fill material will be diverted and collected in the adjacent water containment ponds. During winter season, the ice within the ponds will be removed and deposited at CP1 before site infrastructure construction. Channel 1 will drain Ponds H8, H9, H10, H11, H12, and H13. The water in these ponds will be contained and treated prior to discharge to CP1. If water quality meets requirements, these ponds will flow naturally to CP1 via Channel 1 without prior treatment.

Channel 5 will drain Ponds A12 and A13. The water in these ponds will flow into CP5 via Channel 5.

4.1.2 Underground Water Management

The Underground Mine will extend approximately 650 m below the ground surface and part of the underground workings will be operated below the base of continuous permafrost. The underground excavations will act as a sink for groundwater flow during mining, with water induced to flow through the bedrock to the Underground Mine workings once the Mine has advanced below the base of the permafrost. Table 12 presents the predicted groundwater inflow rates for passive groundwater inflow to the Underground Mine.

Table 12: Predicted Groundwater Inflow to the Underground Mine (2017 to 2032)

Period	Predicted Groundwater Inflow (m ³ /day)
2017	230
2018	300
2019	280
2020	300
2021	340
2022	340
2023-2024	420
2025-2026	380
2027-2028	390
2029-2030	380
2031-2032	360

Source: Updated Predictions of Groundwater Inflow to Tiriganiaq Underground Mine (Golder 2016).

Underground contact water will be contained within underground sumps and the Water Stope. A proportion of the underground water will be recirculated as make-up water for underground drilling. The drilling water will report to the underground sumps for recirculation; however, the need for up to 3% treated water make-up has been assumed to compensate for losses of drilling water due to evaporation or capture within the mined waste rock that is transferred to surface.

Excess underground water will be pumped to surface to be managed. The estimated volume of water to be managed is expected to range from a minimum of about 0.11 Mm³/year to a maximum of 0.18 Mm³/year depending on the production. Details of the underground dewatering system are provided in the Mine Plan (Agnico Eagle, 2017a).

Calcium chloride is added to the underground water to increase salinity and reduce water freezing during drilling. A heating system was installed in Q4-2017 and calcium chloride usage will be decreased underground. Excess water that is pumped to surface will be treated to meet regulatory criteria prior to any discharge to environment. Additional details are described in the GWMP in Appendix A.

4.1.3 Water Management for Haul Road

A network of haul roads will be used to provide access to infrastructure at the Mine. The majority of the roadways servicing the mining area will be located so that drainage will be directed towards the contact water management infrastructure. Detailed information about water management on roads is described in the Roads Management Plan (Agnico Eagle, 2014).

4.1.4 Water Management for Landfarm and Landfill

Water management for water collected at the Landfarm will be treated for oil and then pumped to CP1. Additional details for Landfarm water management is described in the Landfarm Management Plan (Agnico Eagle, 2015b).

Leachate from the Landfill is anticipated to be diluted due to the controls placed on materials acceptable for the landfill. Drainage from the Landfill is expected to freeze within the WRSF with minimal amounts of leachate reporting to the water collection infrastructure placed around the WRSF. Annual Landfill operations will involve clearing of snow prior to spring melt. However, in the event there is leachate from the Landfill due to periods of heavy rainfall or spring freshet, the runoff will be collected, controlled and treated, if necessary (Agnico Eagle, 2015a), and sent to CP1.

4.1.5 Water Management for Emulsion Plant Area

Freshwater will be trucked to the emulsion plant and used for manufacturing emulsion as well as for washing the explosive trucks. Water within the emulsion plant will be re-used when feasible, and excess water will be collected and disposed of with an appropriate method that is currently being evaluated by Agnico Eagle.

4.1.6 Water Management for the Batch Plant

Freshwater is pumped from Lake A8 to the Batch Plant and used for concrete production. Water used in the Batch Plant will be re-used when feasible and excess used water will be collected and disposed of in P1.

4.1.7 Water Management for the Wash Bay

Freshwater is pumped from Lake A8 to the Wash Bay and used to wash equipment at the Mine. Water used in the Wash Bay will be re-used when feasible and excess used water will be collected and disposed of appropriately. Water treatment will be commissioned in 2018 for excess Wash Bay water at the Maintenance Shop.

4.2 Freshwater and Sewage Water Management

Additional freshwater usage and sewage water management is described in the following sections.

4.2.1 Freshwater Management

Major freshwater usages on site include potable use, fire suppression, a portion of make-up water for the mill, and other operational needs, such as drilling. Freshwater will be sourced from Meliadine Lake through a freshwater intake and pump system. For dust suppression, water will be sourced from ponded water against the All Weather Access Road (AWAR), small ponds proximal to the road and/or from the Meliadine River.

Freshwater will be pumped through an overland pipeline to an insulated main storage tank located at the plant site. Approximately 62,000 m³/year of freshwater will be required during construction phase, and approximately 318,000 m³/year of freshwater will be required during operation phase. Additionally, approximately 4,000,000 m³ of freshwater will be required per year to fill the mined-out open pits during the mine closure. These quantities are inclusive of water needs for dust suppression.

The design flow rate for the potable water for the main camp and accommodations (kitchen, laundry) is 136 m³ per day (based on a 680-people camp capacity and a nominal consumption of 200 L/day/person). Treated potable water will be treated at the freshwater treatment plant (FWTP) and then piped to areas in the process plant, service complex, and other facilities requiring potable water.

4.2.2 Sewage Water Management

Sewage will be collected from the camp and change-room (dry) facilities and pumped to the STP. The objective of the STP is to treat sewage to an acceptable level for discharge to CP1 via a sewage water discharge pipeline. The STP is housed in a prefabricated (modular) structure, located at south-east of the service complex at the Industrial Pad, as shown in Figure 1.2. The sewage treatment system will be designed based on a flow rate of 200 L per day per worker for a peak load of 680 people, for an average daily flow rate of 136 m³ (5.67 m³/h).

The STP for the camp facilities will be designed to meet appropriate guidelines for wastewater discharge (Agnico Eagle, 2017).

4.2.3 Process Water Management

Process water will be required in the mill for ore processing. Both contact water from CP1 and sludge water from the EWTP will be used as process water. When possible, water from CP1 will be the main source of water for the ore process. Additional water needs will be supplied by freshwater from Meliadine Lake. Approximately 460 m³/day of process water will be required in Year 1 to Year 3 operations and approximately 770 m³/day of process water will be required in Year 4 to Year 8.

4.3 Discharge Diffuser Effluent Flow Rates

The effluent discharge pump responsible for sending effluent into Meliadine Lake via a diffuser has a design rate of 11,688 m³/day (a water treatment rate of 12,000 m³/day minus 312 m³/day of sludge returned back to CP1). The pump does not operate continuously. It was assumed that once the pump is activated, it would stay active, i.e., pumping, for at least three consecutive days. The amount of effluent flow released over each month and over each year was based on the overall water balance for the feasibility study (Tetra Tech EBA, 2016).

Table 13 shows the estimated total volume of effluent released per month per year.

Table 13: Estimated Effluent Flow Rates over Mine Operating Life

Year	Effluent Released Over the Course of the Month (m ³)				
	June	July	August	September	October
Year -3: 2017	175,320	233,760	70,128	70,128	23,376
Year -2: 2018	175,320	163,632	81,816	70,128	23,376
Year -1: 2019	175,320	151,944	93,504	58,440	23,376
Year 1: 2020	175,320	268,824	116,880	93,504	35,064
Year 2: 2021	175,320	303,888	105,192	93,504	35,064
Year 3: 2022	175,320	292,200	105,192	163,632	70,128
Year 4: 2023	175,320	350,640	128,568	105,192	35,064
Year 5: 2024	175,320	350,640	128,568	93,504	35,064
Year 6: 2025	175,320	350,640	128,568	93,504	35,064
Year 7: 2026	175,320	350,640	128,568	93,504	35,064
Year 8: 2027	175,320	280,512	105,192	81,816	35,064
Year 9: 2028	175,320	292,200	116,880	93,504	35,064
Year 10: 2029	175,320	292,200	116,880	93,504	35,064
Year 11: 2030	175,320	280,512	116,880	93,504	35,064

SECTION 5 • WATER BALANCE

5.1 Global Water Balance

A water balance model was developed to assist in the evaluation of the water management infrastructure and estimation of the pumping requirements over the life of the Mine and under closure conditions. The model includes a water balance conducted on both a monthly and yearly basis. The model focuses specifically on contact water management infrastructure and areas that have been affected by mining activities.

A monthly site-wide water balance was conducted for CP1, CP3, CP4, CP5 to CP6, Tiriganiaq Pit 1, Tiriganiaq Pit 2, water in the underground mine operation, make-up water for the mill, water for the WTPs, and freshwater during mine construction period to mine closure under mean precipitation years. The water balance will be updated in further iterations of the WMP, as stated in the Licence, prior to operations. The following sections present the parameters and assumptions adopted in the water balance model along with a summary of the water balance results.

5.2 Water Balance Framework

The water balance framework developed for the site-wide water balance model was presented in Version 1 of the WMP (Agnico Eagle, 2015a). To simulate a range of conditions, the model was run for the proposed mine life and closure conditions.

5.3 Water Balance Assumptions

The water balance was based on the following:

- snow accumulates throughout the months of November to May, and thaws in June during the annual spring freshet period;
- average precipitation year climate conditions;
- the open pits and water containment ponds (CP3 to CP6) are not to be used for long-term storage of water during operations;
- the water collection sumps and ponds are empty in the autumn prior to the spring freshet each year; and,
- other water management assumptions described in Section 4 of this WMP.

A general water management flow sheet illustration is presented in Appendix C.

5.4 Water Balance Results

The estimated maximum annual water input/output from each of the various water management facilities under mean precipitation conditions are summarized in Table 14. Results were also

provided for 1:100 year wet and dry conditions, with corresponding basis and assumptions, in a separate technical memorandum (Tetra Tech EBA, 2015).

Table 14: Estimated Maximum Annual Volumes from Mine Site Water Balance

Item	Maximum Annual Water Volume (Mm ³)
Contact Water from CP1	0.800
Contact Water from CP3	0.088
Contact Water from CP4	0.087
Contact Water from CP5	0.240
Contact Water from CP6	0.076
Water Pumped from CP1 to WTP for Treatment	0.798
Fresh Water Pumped from Meliadine Lake during Construction	0.062
Fresh Water Pumped from Meliadine Lake during Operation	0.318
Treated Water from WTP to be Discharged to Outside Environment	0.730
Underground Water Pumped to Underground TSS Removal Plant	0.696
Excess Water from Underground Mine to be Stored on Surface	0.155
Fresh Water Pumped from Meliadine Lake to Fill Mined-out Tiriganiaq Pit 1	3.068
Fresh Water Pumped from Meliadine Lake to Fill Mined-out Tiriganiaq Pit 2	0.749

5.5 Waterbody Inventory

Three watersheds (Watershed A, Watershed B and Watershed H) will be impacted by the Mine activities. Table 15 presents the waterbodies that are impacted by mining activities. Watersheds and waterbodies in proximity to the Mine location and waterbodies affected by Mine infrastructure are shown on Figure 5.1.

Table 15: Inventory of Waterbodies Impacted by Mining Activities

Watershed	Waterbody	Maximum Lake Water Depth, m	Total Area (ha)	Water Volume (m ³)	Notes
A	A9	N/A	0.18	-	Flow regimes impacted by the development of Tiriganiaq Pit 1
	A10	0.67	0.26	-	Ponds removed by development of Tiriganiaq Pit 1
	A11	0.45	0.40	-	
	A12	0.87	0.47	-	Pond drained due to construction of Channel 5
	A13	0.30	0.26	-	
	A17	0.30	0.16	-	Covered by WRSF 1
	A38	N/A	0.05	-	Flow regimes impacted by the development of Tiriganiaq Pit 2
	A39	0.48	0.12	-	Ponds removed by development of Tiriganiaq Pit 2
	A54	1.3	5.99	34,545	Dewatered for CP5
	A58	0.50	0.43	-	Covered by WRSF 2
B	B8	0.8	1.43	-	As part of CP4/D-CP4
	B9	1.40	0.64	-	Covered by WRSF1
	B10	0.8	0.33	-	Ponds removed by development of Tiriganiaq Pit 1
	B28	N/A	0.45	-	As part of CP3/D-CP3
H	H6	0.58	0.75	-	As part of CP1
	H7	0.67	0.11	-	
	H8	0.59	0.38	-	Partially covered by WRSF2 and haul road
	H9	0.40	0.42	-	Partially covered by WRSF2 and OP2
	H10	0.11	0.10	-	Partially covered by WRSF2 and OP2, drained due to construction of Channel1
	H11	0.27	0.28	-	
	H12	0.81	0.97	-	Drained due to construction of Channel1 and partially covered by OP1
	H13	1.04	3.49	-	Drained due to construction of Channel1 and partially covered by industrial pad
	H14A	0.37	0.15	-	Covered by industrial pad
	H15D	0.30	0.15	-	Partially covered by TSF
	H15G	0.40	0.38	-	
	H17	1.70	15.8	195,700	Dewatered for CP1
	H17A	1.50	0.13	1,365	Dewatered for Meliadine esker
	H17B	1.50	0.69	10,350	Dewatered for Meliadine esker
	H17C	1.50	0.23	3,450	Dewatered for Meliadine esker
	H18	0.67	0.74	-	Covered by OP2
	H19	1.40	2.91	16,431	Dewatered for CP6
	H20	1.60	9.58	90,307	Covered by WRSF3
“-” indicates that data not available or not applicable Ponds to be drained Ponds to be dewatered					

SECTION 6 • WATER MANAGEMENT DURING CLOSURE

The detailed Mine closure and reclamation activities are provided in the Preliminary Closure and Reclamation Plan (Agnico Eagle, 2015d).

Water management during closure and reclamation will involve flooding the open pits using precipitation and freshwater from Meliadine Lake, flooding the Underground Mine workings with groundwater inflows (groundwater seepage), and maintaining contact water management systems on site until monitoring results demonstrate that water quality are acceptable for discharge of all contact water to the environment without further treatment. Once water quality meets the discharge criteria, the water management systems will be decommissioned to allow the water to naturally flow to the environment.

The key water management activities during Mine closure are summarized in Table 16. Figures 6.1 and 6.2 illustrate the WMP during and after Mine closure, respectively. Additional details for the activities are described in the following sections.

Table 16: Key Water Management Activities during Mine Closure

Mine Year	Figure	Key Water Management Activities and Sequence
Yr 9 to 11	6.1	<ul style="list-style-type: none"> • Finish flooding the mined-out Tiriganiaq Pit 1 and Tiriganiaq Pit 2 by Q4 of Year 10 • Continue to collect and manage the contact water in CP1, CP3, CP4, CP5 and CP6 • Continue to pump the contact water in CP1 to EWTP, if required, for treatment before being discharged to the outside environment • Remove non-essential site infrastructure • Pump the underflow sludge water from EWTP to CP1 • Continue natural flooding of Tiriganiaq Underground Mine with groundwater seepage • Remove Meliadine Lake pumping system
Post-Closure	6.2	<ul style="list-style-type: none"> • Treat the contact water until water quality meet direct discharge criteria and then decommission the water management system • Continue natural flooding of Tiriganiaq Underground (progressive reclamation since Year 8) • Breach water retention dikes D-CP1, D-CP3, D-CP4, D-CP5, and D-CP6 once water quality monitoring results meet discharge criteria to allow water to naturally flow to outside environment • Remove culverts and breach remaining water retention dikes/berms in Year 18

6.1 Open Pits Flooding

When flooding the open pits for closure, the maximum pumping rate from Meliadine Lake shall not exceed 4,000,000 m³/year during closure of the Mine, as stated in Part E of the Licence. The planned pumping period will occur during the open water season from mid-June to end of September for each year. Table 17 summarizes the pit volume and expected water elevations at the completion of flooding activities. It will take approximately three years to fill the pits with an assumed pumping rate of 0.44 m³/s (38,300 m³/day). The assumed pumping rate of 0.44 m³/s from Meliadine Lake during closure will have negligible effect to Meliadine Lake when compared to the average outflow rate at the outlet of Meliadine Lake. The pumping rate will be evaluated further to validate that any possible negative effects to Meliadine Lake do not occur.

Table 17: Pit and Underground Flooding

Pit	Volume (Mm ³)	Final Water Elevation (masl)	Water Source
Tiriganiaq Pit 1	9.20	64.14	Freshwater from Meliadine Lake
Tiriganiaq Pit 2	2.25	64.38	Freshwater from Meliadine Lake
Tiriganiaq Underground	1.4	Groundwater level	Groundwater seepage

The water quality model results indicated that water quality in the flooded pits will meet the discharge criteria and post closure treatment will not be required. The water quality within the pits will be monitored during flooding to verify the prediction of the water quality model. The information will be used to develop a strategy to minimize contamination of the regional surface water system.

6.2 Underground Mine Flooding

Passive flooding of the Tiriganiaq Underground Mine will occur following the completion of mining. The estimated total flooding volume of the underground workings is 1,372,000 m³. Seepage water into the Underground Mine will be the main water source for flooding. At the predicted seepage rate it is estimated to take 6 years to flood the Underground Mine.

6.3 Containment Ponds, Dikes and Berms

The containment ponds, dikes and berms will remain in place to collect the surface runoff water and seepage from the Mine until the water quality meets discharge criteria. Once the water quality meets discharge criteria, dikes/berms will be breached to allow the water to naturally flow to the environment. Dikes/berms breaching will involve the removal of a portion of the dikes to a minimum depth of 1 m below average water level or back to original ground levels. Consideration

will be given to breach staging, with the above water portions of the dike/berm in the breach area removed during winter periods, when there will be little surface water flow, thereby minimizing the potential release of sediments to the neighbouring waterbodies. The remainder of the breach would be conducted during the open water season following freshet so as to allow for the deployment of turbidity controls to minimize potential sediment release to the environment.

6.3 Channels and Sumps

Once monitoring results have indicated that contact water conveyed in channels and sumps meets acceptable water quality, the infrastructure will be graded and/or surface treated according to site-specific conditions to minimize wind-blown dust and erosion from surface runoff, if required. This closure activity is intended to enhance site area development for re-colonization by native plants and wildlife habitat.

SECTION 7 • WATER QUALITY

Water quality predictions for the Mine were generated using the GoldSim database management and simulations code (Version 11.1.2) where Mine contact water flows derived from the Meliadine water balance are combined with chemistry data from materials exposed in mine infrastructure (tailings storage facility, waste rock piles, etc.), and site baseline information. Where site specific information is not available, data collected at other mine sites in the north are used to supplement the input data.

Water quality estimates were generated for the operational and post-closure periods, for each contact water containment ponds, for sumps in the two open pits and for the two fully flooded open pit lakes post-closure.

The sensitivity of water quality to an added TSS load was evaluated outside of the GoldSim mass balance model. Total parameter concentrations were evaluated at ponds that discharge to the receiving environment (i.e., CP1 during operations, and CP1, CP3, CP4, and CP6 post-closure) based on an addition of 15 milligrams per litre TSS, the maximum monthly mean of the Metal Mining Effluent Regulations (MMER) criteria. Given the uncertainties associated with the modelling exercise (i.e., the development stage of the Mine, laboratory-based input values, assumptions where data do not exist and consideration of an average climate year), the predicted concentrations are considered to be order-of-magnitude estimates. The estimates are sensitive to the assumptions and design elements considered. The water quality modelling predictions will be updated as stated in the Licence in future iterations of the WMP, prior to operations. A water balance and water quality model will be updated at a minimum of every two (2) years following commencement of Operations, as required by the License.

Table 18 shows the various constituent concentrations corresponding to the Licence and the predicted values. These concentrations correspond to end-of-pipe concentrations discharge from the diffuser to Meliadine Lake (Tetra Tech EBA, 2016).

7.1 Summary of Regulatory Guidelines

Water quality results are compared to MMER and Site Specific Water Quality Objectives (SSWQO) guidelines and will be compliant prior to discharging to Meliadine Lake or the environment. Post-closure discharge water quality will be compared to Canadian Council of Ministers of the Environment Water Quality Guidelines (CCME-WQG) guidelines or the Meliadine SSWQO developed for aluminum, fluoride, and iron (Golder 2013a, 2013b, 2014).

Table 18: Effluent Characteristics

	Water Licence "A"		Meliadine Lake Median Background Concentration [mg/L]	End-of-Pipe Prediction based on Tiriganiaq Monthly Average Concentrations	
	Maximum end-of-pipe Average Concentration [mg/L]	Maximum end- of-pipe Concentration of Any Grab Sample [mg/L]		Dissolved Contaminant Concentration [mg/L]	Total Used in the Model (Dissolved + 15 mg/L TSS) [mg/L]
Conventional Constituents					
Total Dissolved Solids	1400	1400	35.0	204	204
Total Suspended Solids	15	30	1.5		15
pH	6 to 9.5	6 to 9.5	7.4		
Major Ions					
Chloride			6.4	20	20
Fluoride			0.03	0.0002	0.0002
Sodium			3.2	5.3	5.6
Sulphate			2.9	35.9	35.9
Nutrients					
Total Ammonia as Nitrogen	14	18	0.025	4.6	4.6
Nitrate Ion	-	-	0.11	5.8	5.8
Phosphorus (total)	2	4	0.0055	0.4	0.4
Cyanides					
Total cyanide	0.5	1.0	0.00100	0.005	0.005
Free cyanide	-	-			
Metals					
Aluminum	2	3	0.0025	0.09	1.20
Antimony			0.0001	0.0029	0.0029
Arsenic	0.3	0.6	0.0003	0.101	0.191
Barium			0.0071	0.012	0.021
Cadmium			0.00003	0.000005	0.000012
Chromium			0.0002	0.00001	0.0030
Copper	0.2	0.4	0.00111	0.0011	0.0037
Iron			0.0235	0.01	1.70
Lead	0.2	0.4	0.00003	0.0011	0.0049
Manganese			0.00283	0.12	0.13

7.2 Operations

During operations, the water quality at the Mine (including CP1 water) is anticipated to meet regulatory monthly mean discharge criteria, with the possible exception of TSS at all ponds and arsenic, on occasion, at CP3 which receives water from the TSF. Although TSS content was not specifically modelled, experience at other northern mine sites suggests that TSS in site contact water is likely to require attenuation during operations to meet the MMER effluent criteria of 15 mg/L monthly average (Government of Canada, 2012). An EWTP that removes TSS is planned to be operational in Year -4 of the Mine.

CP3 arsenic concentration may exceed MMER on occasion if precipitation events generate drainage from the TSF (Golder, 2012c). The main source of arsenic in CP3 is predicted to be from residual process water that is assumed to be present in the filtered tailings. Arsenic transfer from process water to CP3 water will be minimized by effective dewatering of the tailings prior to placement into the TSF, and from freezing of the tailings in the TSF which will act to limit infiltration and seepage. Water from CP3 will be pumped to CP1 where it will mix with other site waters before discharge. Dissolved arsenic concentration in CP1 is predicted to meet the MMER monthly average maximum concentration. All other chemical parameters in CP3 and all chemical parameters in CP4, CP5, and CP6 are predicted to meet MMER limits for chemical constituents.

7.3 Post-Closure

The long-term, post-closure water quality in the containment ponds and in the flooded open pit lakes are anticipated to meet MMER limits and CCME-WQG for the protection of aquatic life or the SSWQO developed for the Mine for aluminum, fluoride, and iron. Arsenic concentrations in CP3 could slightly exceed the SSWQO post-closure, a criteria that is conservatively protective of the receiving aquatic environment (Golder, 2013a). Concentrations that exceed predictions are minor, much less than the mixing capacity in the receiving environment. These arsenic concentrations (Golder, 2013a) are within the tolerance levels that have been deemed non- deleterious by Environment Canada for the Mine (Environment Canada, 2014).

SECTION 8 • WATER QUALITY MONITORING PROGRAM

Water quality monitoring is an important part of the Mine WMP to verify the predicted water quality trends and conduct adaptive management should differing trends be observed. This section outlines the water quality monitoring plan, which will be further defined as the Mine advances.

Water quality monitoring has been initiated at the pre-development stage and will continue during construction, operations, closure, and post-closure. Monitoring will occur at three levels:

1. Regulated discharge monitoring that occurs at monitoring points specified in the Licence or regulations.
2. Verification monitoring that is undertaken for operational and water management purposes by Agnico Eagle. This monitoring data will not be reported to the Regulators in the Annual Water Licence Report, but can be provided upon request by the Regulators
3. General monitoring that is commonly included in the Licence, specifying what is to be monitored according to a schedule. This monitoring is subject to compliance assessment to confirm sampling was carried out using established protocols, included quality assurance/quality control provisions, and addressing identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licensee, subject to approval by the NWB.

All three types of monitoring will be used at the Mine. The following section presents the conceptual water quality monitoring plan during construction, operations and closure. More detailed information on monitoring programs is described in the Environmental Management and Protection Plan (EMPP) (Agnico Eagle, 2018a) and is based on the Licence.

8.1 Water Quality Monitoring

Table 19 presents the water quality monitoring stations during construction, operation, closure and post-closure phases. Figure 8.1 presents the water quality monitoring locations for all three Mine phases.

Table 19: Water Quality Regulated, General Aquatic and Verification Monitoring for the Meliadine Gold Mine during Construction, Operations, and Closure

Monitoring Type	Mine Development Phase	Monitoring Station Number	Station Description	Purpose of Station	Frequency
Regulated	Construction	MEL-D-1 to TBD	Dewatering: Water transferred from lakes to Meliadine Lake during dewatering of lakes		Prior to discharge and weekly during discharge Daily during periods of discharge
Regulated	Construction and Operations	MEL-SR-1-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		Prior to construction, weekly during construction Monthly during open water or when water is present upon completion
General Aquatic	Construction, Operation, and Closure	MEL_11 (MEL-04 suggested by Agnico Eagle in the Application)	Water intake from Meliadine Lake	Quality of intake water	Monthly during period of intake (Full Suite); Daily during periods of intake (Volume m ³)
Verification	Construction (prior to release), Operation, and Closure	MEL_12	Water treatment plant (pre-treatment) coming from H17 station will be off the pipe and not in the pond	Test quality of water before treatment (required to evaluate treatment efficiency)	Monthly during periods of discharge

Monitoring Type	Mine Development Phase	Monitoring Station Number	Station Description	Purpose of Station	Frequency
General Aquatic	Construction (prior to release), Operations, and Closure	MEL_13	Mixing zone in Meliadine Lake, station 1; and MMER exposure stations for final discharge point within mixing zone	Test mixing of effluent in the receiving environment; sample at varied distances and directions from pipe; MMER exposure for final discharge point	Monthly during periods of discharge
Regulated	Construction (upon effluent release), Operation, and Closure	MEL_14 ^a (MEL-01 suggested by Agnico Eagle in the Application)	Water treatment plant (post-treatment), end of pipe (before offsite release) in the plant before release.	Test quality of final effluent before release	Prior to discharge and weekly during discharge (Full Suite, Group 3); Daily during periods of discharge (Volume m ³); Once prior to discharge and monthly thereafter (Acute Lethality)
Verification	Operations, Closure	MEL_15	Local Lake, E3	Confirm no leakage/runoff from Emulsion Plant	Bi-annually during open water
Verification	Construction, Operations, Closure	MEL_16	Local Lake, G2	Possible seepage or dust loadings from site infrastructure	Bi-annually during open water
Verification	Construction, Operations, Closure	MEL_17	Pond, H1	Possible seepage or dust loadings from site infrastructure	Bi-annually during open water
Verification	Construction, Operations, Closure	MEL_18	Local Lake, B5	Possible seepage or dust loadings from site infrastructure	Bi-annually during open water

Monitoring Type	Mine Development Phase	Monitoring Station Number	Station Description	Purpose of Station	Frequency
Verification	Operations, Closure	MEL_20	CP3	Collection of drainage from dry stacked tailings	Monthly during open water or when water is present
Verification	Operations, Closure	MEL_21	CP4	Collection of drainage from WRSF1	Monthly during open water or when water is present
Verification	Construction, Operations, Closure	MEL_22	CP5	Collection of drainage from WRSF1 and WRSF2	Monthly during open water or when water is present
Verification	Operations, Closure	MEL_23	CP6	Collection of drainage from WRSF3	Monthly during open water or when water is present
Verification	Construction, Operations, Closure	MEL_24	Seepage from Landfill between the Landfill and H13	Located between the landfill and Pond H3 to monitor seepage from the landfill	Monthly during open water or when water is present
Regulated	Construction, Operations, Closure	Mel-25	Secondary containment area of the tankfarm at Itivia	Test quality before discharge to land	Prior to discharge or transfer of effluent

^(a) Sampling may not occur during break-up (June)

CP = contact pond; WRSF = waste rock storage facility;

During the closure period, parameters included in the CCME-WQG for freshwater aquatic life may also be included in the verification monitoring program.

8.2 Licence Water Monitoring

Regulatory guidelines are applied at the last point of control prior to discharge to the receiving environment as part of the Licence.

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Figure 5.1	Watersheds and Waterbodies in Proximity of Mine Site
Figure 6.1	Mine Site Layout for Water Management During Closure
Figure 6.2	Mine Site Layout After Closure
Figure 8.1	Water Quality Monitoring Locations

APPENDIX B • FRESHET ACTION PLAN AND SNOW MANAGEMENT PLAN



AGNICO EAGLE

MELIADINE GOLD PROJECT

FRESHET ACTION PLAN

**MARCH 2018
VERSION 3**

DOCUMENT CONTROL

Revision				Pages Revised	Remarks
#	Prepared by	Revised	Date		
01	AGNICO EAGLE	Internally	March 2016	All	
02	AGNICO EAGLE	Internally	March 2017	All	
03	AGNICO EAGLE	Internally	March 2018	All	

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1 INTRODUCTION

The purpose of this Freshet Action Plan (Plan) is to provide Agnico Eagle with specific management and mitigation measures to address and manage water associated with the freshet season (Freshet), a response plan and procedures to prevent and to minimize potential negative impacts to the surrounding environment at the Meliadine Site (Site).

The term freshet refers to spring thaw, which can result in inundation of floodplains. Freshet at Meliadine typically takes place between May 15 and July 30. In some years, Freshet can also happen in early fall, when freezing re-occurs (mid-October) and then thaws. There are areas at the Site that are vulnerable to excess water produced during Freshet; the objective of this document is to identify those areas, and to develop a plan with defined roles and responsibilities to manage excess water produced on site.

The following guiding principles are applicable to the Plan:

- To ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts;
- To ensure the health and safety of Agnico Eagle employees and contractors; and
- To ensure the Site is in compliance with the Nunavut Water Board (NWB) Type A Water Licence No.: 2AM-MEL1631 (Type A Licence).

The Plan identifies areas of risk during Freshet, risk management and the procedures necessary to address potential concerns.

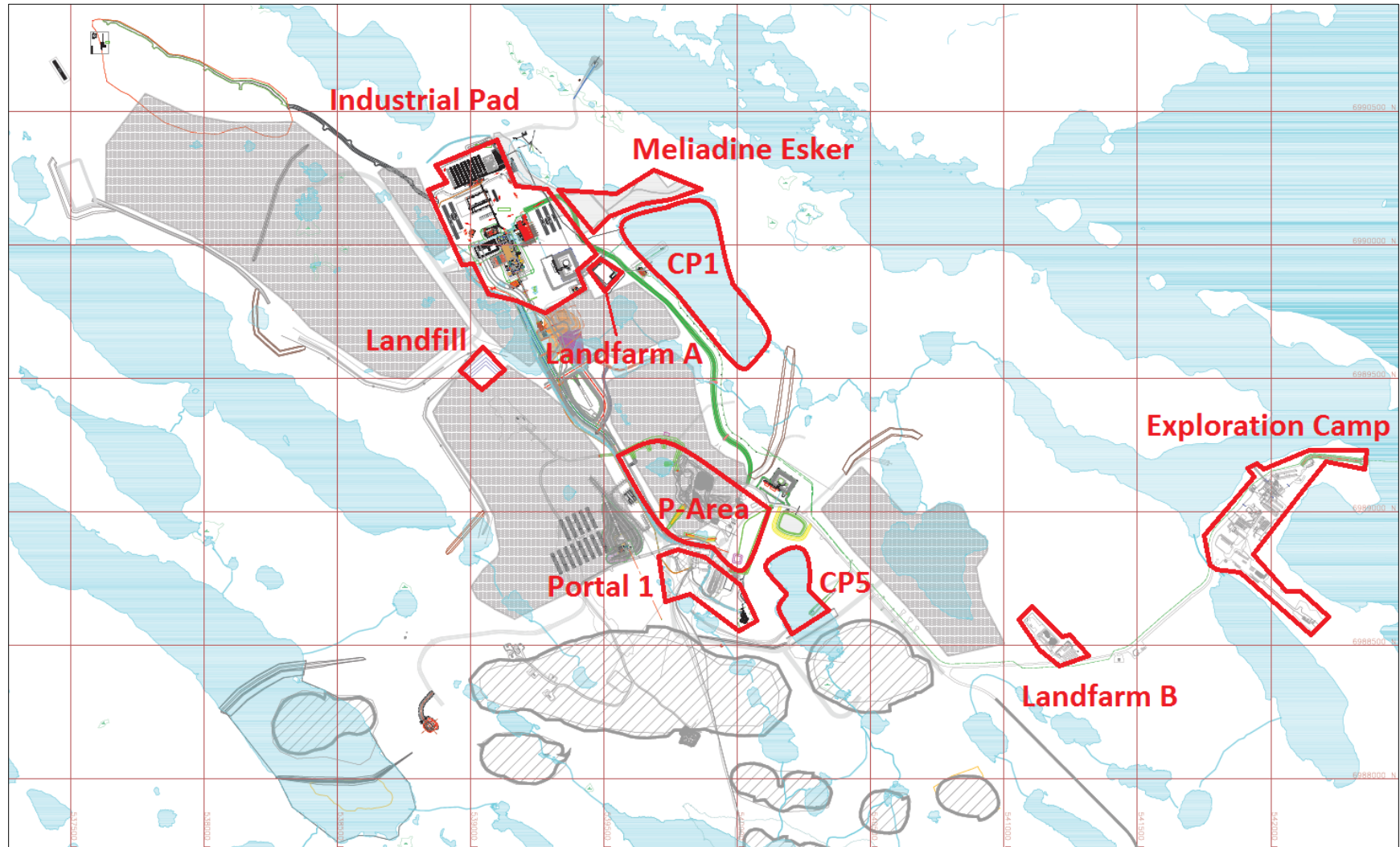
2 AREAS OF RISK DURING FRESHET

The key areas of risk during Freshet at the Site include the following:

- P-Area
- Sump 1 (Sump LV50)
- New (Type A) and old (Type B) Landfarms
- Landfill
- All Weather Access Road (AWAR) and Quarries along the road
- Infrastructure Areas; including the Exploration Camp area, Portal 1 and the Industrial Pad Areas
- Containment Pond 1 (CP1), Containment Pond 5 (CP5)
- Meliadine Esker Quarry
- Itivia laydown and fuel handling facility (Itivia)

Identified areas of risk at Site are shown in Figure 1, and are described in the following section.

Figure 1: Site Plan View with Areas of Risk at Site during Freshet



2.1 P-AREA

The P-Area is the initial containment area identified for precipitation events; snow melt or Freshet water that has come in contact with mine waste rock or surface works in the area of the Underground Portals (contact water).

The P-Area includes three containment areas (Figure 2); P1 Containment Area (P1), P2 Containment Area (P2), and P3 Containment Area (P3) and has a cumulative capacity of 46,041 m³. Periodic pumping to P1, from P2 and P3, is planned to manage water levels and to assist with active evaporation at P1.

2.1.2 P1

P1 is the largest containment of the three ponds that make up the P-Area (20,781 m³). Snow removed from the selected areas at the Site throughout winter months, will be directed to P1. Precipitation, water drainage from the adjacent waste rock pile, and any water pumped from P2 or P3 will also be contained within P1. Surface water that flows to Portal 2 is pumped to P1. Three evaporators are installed at P1 to assist with active evaporation of water contained at P1 during the open water season at Site.

2.1.3 P2

P2 is directly adjacent and down-gradient to P1. P2 allows for additional contact water, precipitation and waste rock drainage water management with a capacity of 6,828 m³. Additionally, P2 is the main containment area for water pumped to surface from underground Sump 1 (LV50). LV50 is the receptor of surface water that flows from the surface to Portal 1. Water from P2 is pumped to P1 to be actively evaporated.

2.1.3 P3

P3 is down-gradient to P1 and P2. P3 contains surface runoff from the surrounding portal entrance surface area, precipitation, and inflow water from waste rock and ore piles to the north-northwest of P3. Water from P3 is pumped to P1 to be actively evaporated.

LEGEND

- CATCHMENT BOUNDARY (ORIGINAL GROUND)
- CATCHMENT BOUNDARY (EXISTING GROUND)
- WATERBODY
- SURFACE WATER FLOW DIRECTION
- STREAM
- PUMP AND PIPELINE FOR WATER MANAGEMENT
- POTENTIAL SEEPAGE ROUTES THAT MAY REQUIRE DOWNSTREAM WATER MANAGEMENT

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AGNICO EAGLE MELADINE GOLD PROJECT
CONCEPTUAL LAYOUT PLAN OF P1 WATER MANAGEMENT INFRASTRUCTURE FOR FRESHET 2016

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2.3 SUMP 1 (LV50 SUMP)

LV50 is located 50 meters below grade (mbg) and is the first sump, closest to the entrance of Portal 1. Snow melt and surface run-off that flows to the portal entrance (the lowest elevation at the Site), down the underground haulage ramp to sump LV50, is pumped from LV50 to the P-Area. The overall capacity for LV50 is 29 m³. Water pumped from LV50 to P2 is measured with a volumetric flow meter and recorded daily.

2.4 LANDFARM

The Type A Licence Landfarm will be located adjacent and east of the Industrial Site Pad and is designed to receive soils, rock, snow, and ice contaminated with petroleum hydrocarbons. This will include light hydrocarbons such as diesel and gasoline (Agnico Eagle 2016). It was assumed that an annual volume of 500 m³ of contaminated ice and snow would require management and the landfarm has been designed to account for this volume.

The Landfarm has geotextile liners and are filled with soil. Water that pools, collects or flows from the Landfarm needs to be collected for monitoring (as per the Licence requirements) and treated before it is discharged to CP1, nearby.

2.5 ALL WEATHER ACCESS ROAD (AWAR)

The All-Weather Access Road (AWAR) was built in 2013 to connect the Site to the hamlet of Rankin Inlet. The road is approximately 23.8 km long with twenty-two water crossings; three bridge crossings and nineteen culverts installed (Figure 3).

2.6 INFRASTRUCTURE AREAS

Infrastructure Areas represent buildings, pads and towers installed at the Site and include the Industrial Pad, Exploration Camp, ANFO Plant and Emulsion Plant (Figure 1).

2.7 CP1 AND CP5

Engineered water containment dikes constructed in 2017 at lakes A54 and H17 were developed as CP5 and CP1, respectively. The dikes are designed to contain contact water within the footprint of the Site and prevent pollution provisions of the *Fisheries Act*. Both CP1 and CP5 will be used for Site contact water and snow and ice collection prior to Freshet. CP1 and CP5 are illustrated in Figure 1 and discussed in Section 4 of this report.

2.8 ITIVIA

Itivia is located in Rankin Inlet and is accessed by Site from the AWAR. Itivia is intended to support the Site with a bypass road to divert site-related traffic around the community of Rankin Inlet, for fuel storage and containment facility, and as a laydown area for barge shipments. The location of Itivia is shown on Figure 3 and the plan view of the Itivia Site is presented as Figure 4. A culvert is installed to allow runoff at the Itivia laydown area.

Figure 3: AWAR Map Showing Water Crossing Location

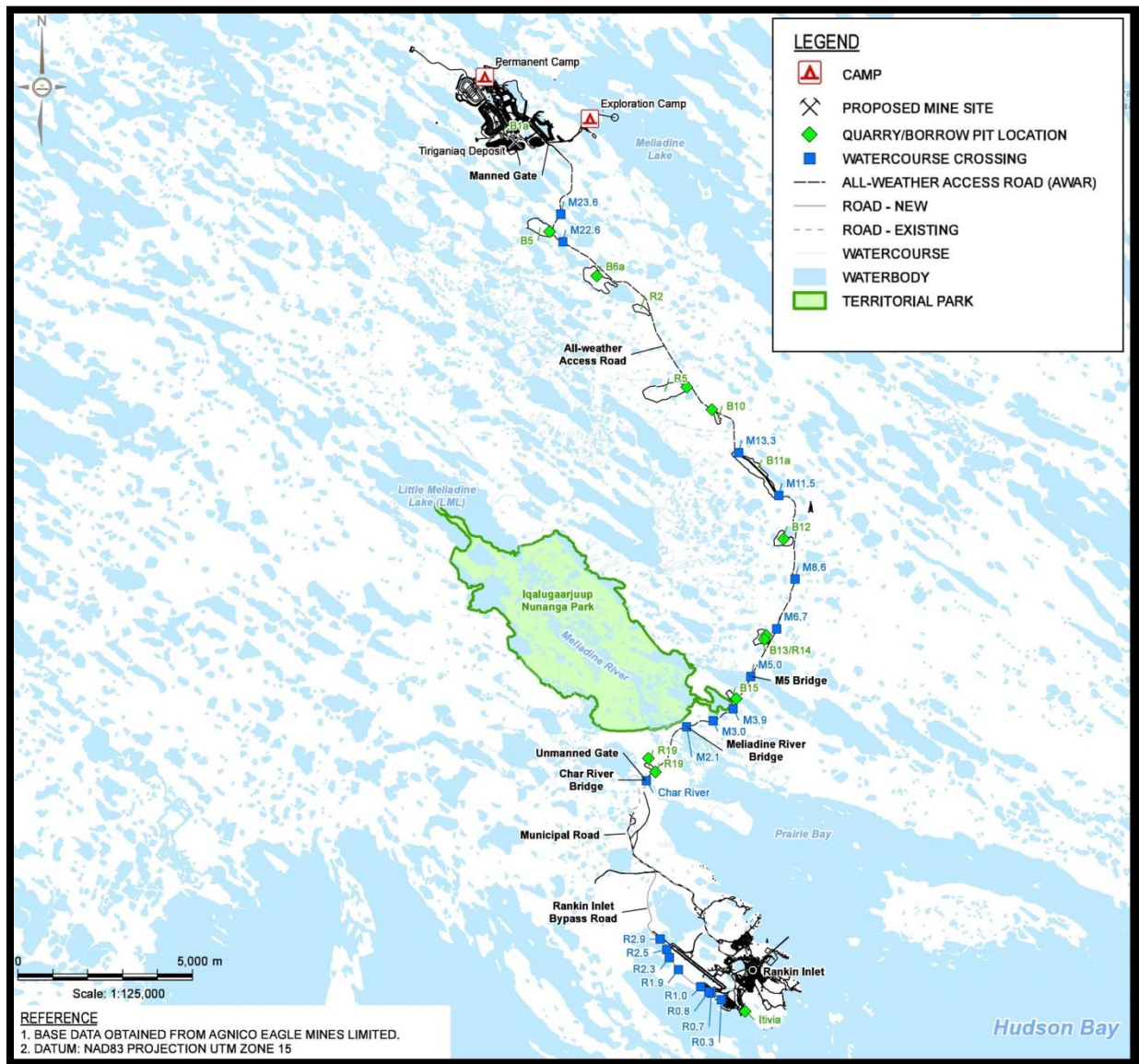
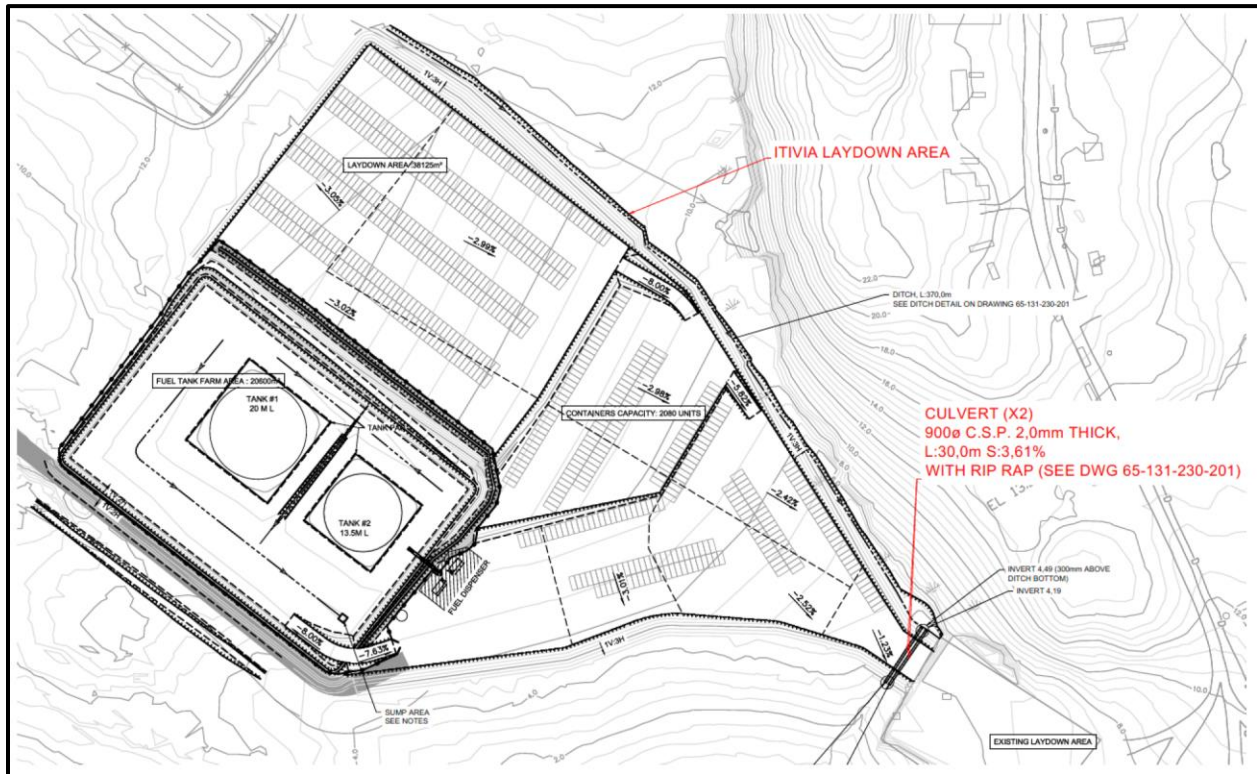


Figure 4: Itivia Laydown Area and Culvert Location



3 FRESHET RISK MANAGEMENT

Managing the risks prior to Freshet is a primary objective at Site. Planning and preparing before Freshet alleviates some of the risk from excess water that may suddenly occur, and ensures compliance with applicable regulations. This is managed by removing water (pumping) at containment pond areas prior to winter freeze (fall) to allow for increased capacity from precipitation, snow and ice removal on roads, road water crossings, culverts, ditches, and select containment ponds after winter freeze and before Freshet (winter and spring).

Water treatment options (equipment and technology) are currently being planned by Agnico Eagle. A saltwater treatment system is estimated to be operational on the Site before the end of 2018. Water contained at the P-Area, CP1, CP5, the Saline Pond, the underground sumps and water stope will be contained and then treated to meet the Mining Metal Effluent Regulations (MMER) and/or Type A Licence requirements prior to effluent discharge to the environment.

Risk management for the Site areas during Freshet are described below and Appendix A presents the Freshet Action Plan Procedure for preparation prior to, during and after Freshet. Section 4 describes snow management at Site and Appendix B presents the Snow Management procedure.

3.1 P-AREA RISK MANAGEMENT

The following management practices are maintained at the P-Area during Freshet and are described in more detail in Appendix A:

- Water levels will be monitored. The water level will not exceed the maximum design elevation in any of the three containment ponds (P1, P2 or P3).
- Environment will conduct visual inspections of the P-Area. This will include visually monitoring the base of the downstream side of dikes DP1-B and DP3-A (see Figure 2) for seepage, sedimentation deposition, and erosion. If seepage or water with increased total suspended solids (TSS) is noted during inspections, water will be sampled, contained, and pumped back to the P-Area.
- Engineering will undertake structural inspections of the dikes and note observed seepage.
- Active evaporation from use of the evaporators will contribute to managing the quantity of water contained at P-Area.

If an emergency occurs, such as the dikes indicating compromised integrity, Agnico Eagle will discharge the water to CP5. The definition and associated design criteria for managing the integrity of the dikes is defined by Golder and Associates during an annual geotechnical inspection.

If CP5 does not have the capacity for water from the P-Area, water will be diverted to the Saline Pond or to the Underground Water Stope for storage until a system for suitable water treatment to meet the Type A Licence and/or MMER discharge criteria.

3.2 LV50 RISK MANAGEMENT

If the P-Area becomes filled to capacity and LV50 sump needs to be pumped, the water from LV50 will flow down gradient to the Underground Water Stope.

3.3 LANDFARM RISK MANAGEMENT

During Freshet, if there is any excess water collected at the Landfarm, the Environmental Department will request that the Energy & Infrastructure (E&I) Department pump the excess water. Water samples will be collected in accordance with the Type A Water Licence to ensure compliance prior to its release to the environment. Based on the Landfarm Management Plan and the Type A Water Licence requirements; notice will be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the E&I Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to CP1 or the tundra / ground (water will be discharged in a manner that will eliminate soil erosion or transport of TSS).

In the event that the water sample results do not meet discharge criteria, the water will be stored until suitable treatment system can be put in place to remove contaminants. Suitable treatment methods potentially used are as follows:

- Oil/water Separator
- CI Agent E-VAC Waste Water Filter System
- Carbon Filter System

If a suitable treatment system cannot be obtained the water will be pumped to bladders or totes and will be shipped south for disposal in a certified disposal facility.

3.4 AWAR RISK MANAGEMENT

The following management practices are maintained to ensure the integrity of the AWAR before and during the Freshet and are described in further detail in Appendix A:

- Snow and ice will be removed from ditches and culverts (water crossings). Proper technique will be used to ensure that no ground disturbance occurs during snow and ice removal.
- Large culverts will be heated / steamed to allow the free flow of Freshet.
- Prior to Freshet, water crossings will have snow removed from ice surface on the up and downstream side of the crossing to allow free flow of water.
- Daily visual inspections will be undertaken as to the structural integrity of the abutments and road integrity by the E&I Supervisor.
- Weekly throughout freshet and daily during peak flows a written inspection will be completed by the Environment Department in conjunction with the E&I Department.
- As per the Type A Water Licence, monthly water samples are collected at the following locations (Figure 3) and possibly during Freshet:
 - Mel-River (M2.1)
 - M3.0
 - M5.0
 - M11.5
 - M23.6
 - Any significant water seeps or ponding on the road will be sampled

If soil erosion or ground surface scouring are observed, the E&I Department will be notified for repairs. Turbidity barriers, silt fences, straw logs or other sediment control methods will be implemented as required.

3.5 INFRASTRUCTURE AREAS

Risk management practices for the main Infrastructure Areas at the Site during Freshet are described in the following sections.

3.5.2 CAMP PADS AND SURROUNDINGS

Risk management practices are maintained at the Exploration Camp, Main Camp and surrounding camp areas by monitoring observed water pooling. If water pooling is observed, a water sample will be collected and monitored for turbidity. Turbidity will also be monitored at the culvert beside the garage that flows straight to Meliadine Lake. This area will be monitored for TSS and preventative measures (install straw wattles and/or booms) will be installed to prevent deleterious substances from entering Meliadine Lake.

3.5.3 INDUSTRIAL PAD AND ACCESS ROAD

The following management practices are maintained to ensure the integrity of the industrial pad and access road:

- The culvert between Lake H12 and H13 will be heated/steamed prior to freshet and will be monitored closely for turbidity.
- This area will be monitored for turbidity and preventative measures (install straw wattles and/or booms) will be implemented to prevent deleterious substances from entering Meliadine Lake.

3.6 CP1, CP5 AND QUARRIES

Risk management practices for CP1, CP5, the Meliadine Esker and Quarries include discharging/pumping the water prior to winter freeze to be treated and/or discharged as per the Type A Water Licence and Water Management Plan for the Site. If water is observed to be flowing or ponding, it will be sampled to ensure deleterious substances and TSS is not released to surrounding water bodies (Part I, Item 11 of the Type A Water Licence).

3.7 ITIVIA

The following management practices are maintained to ensure the integrity of Itivia and the Itivia access road:

- The culvert installed between the Itivia laydown and the existing laydown areas (Figure 4) will be cleared of snow and ice prior to freshet and will be monitored closely for turbidity.
- Rip rap installed around the culvert to control erosion.
- The upstream and downstream of the culvert area will be monitored for turbidity and preventative measures (install straw wattles and/or booms) will be implemented to prevent deleterious substances from entering Hudson's Bay.

4 SNOW MANAGEMENT

Proper snow management during the winter contributes to risk mitigation from excess water during Freshet and prevents possible environmental impacts. *The Snow Management Procedure* (Procedure Number MEL-ENV-0017) (Appendix B) presents the plan to efficiently manage snow at the Site.

Snow that is collected and moved from the fuel farm, landfarm, ANFO plant, the area surrounding the portal entrance, waste rock pile and surrounding P-Area will be moved and collected at P1. Snow and ice from the other areas at the Site are removed from roadways with a snow blower or plow and /or collected and transported to the CP1 or CP5. Figure 5 illustrates the locations for snow collection during the winter and prior to Freshet. Figure 6 illustrates the snow management and storage areas for Itivia.

Figure 5: Snow Management Plan

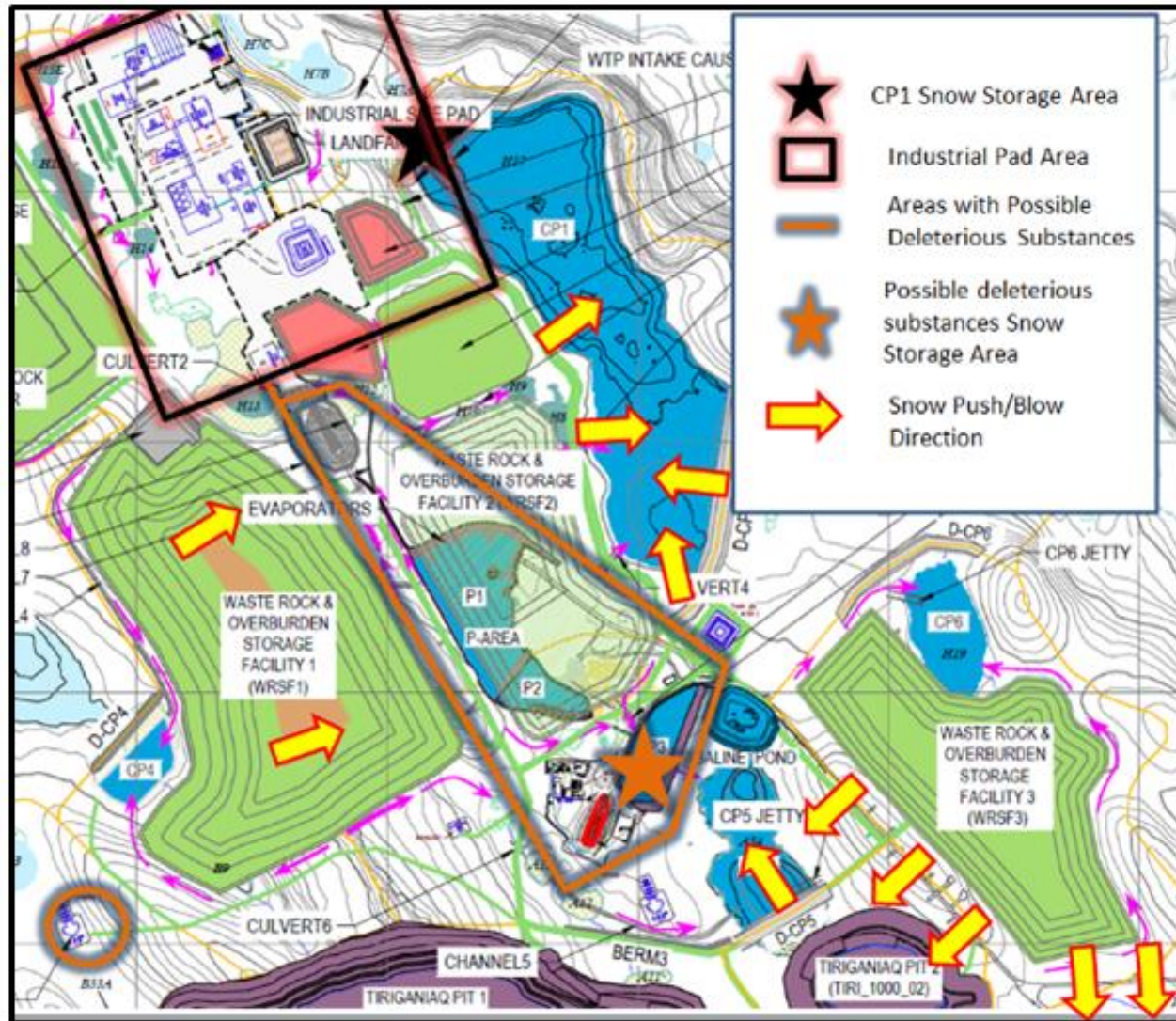
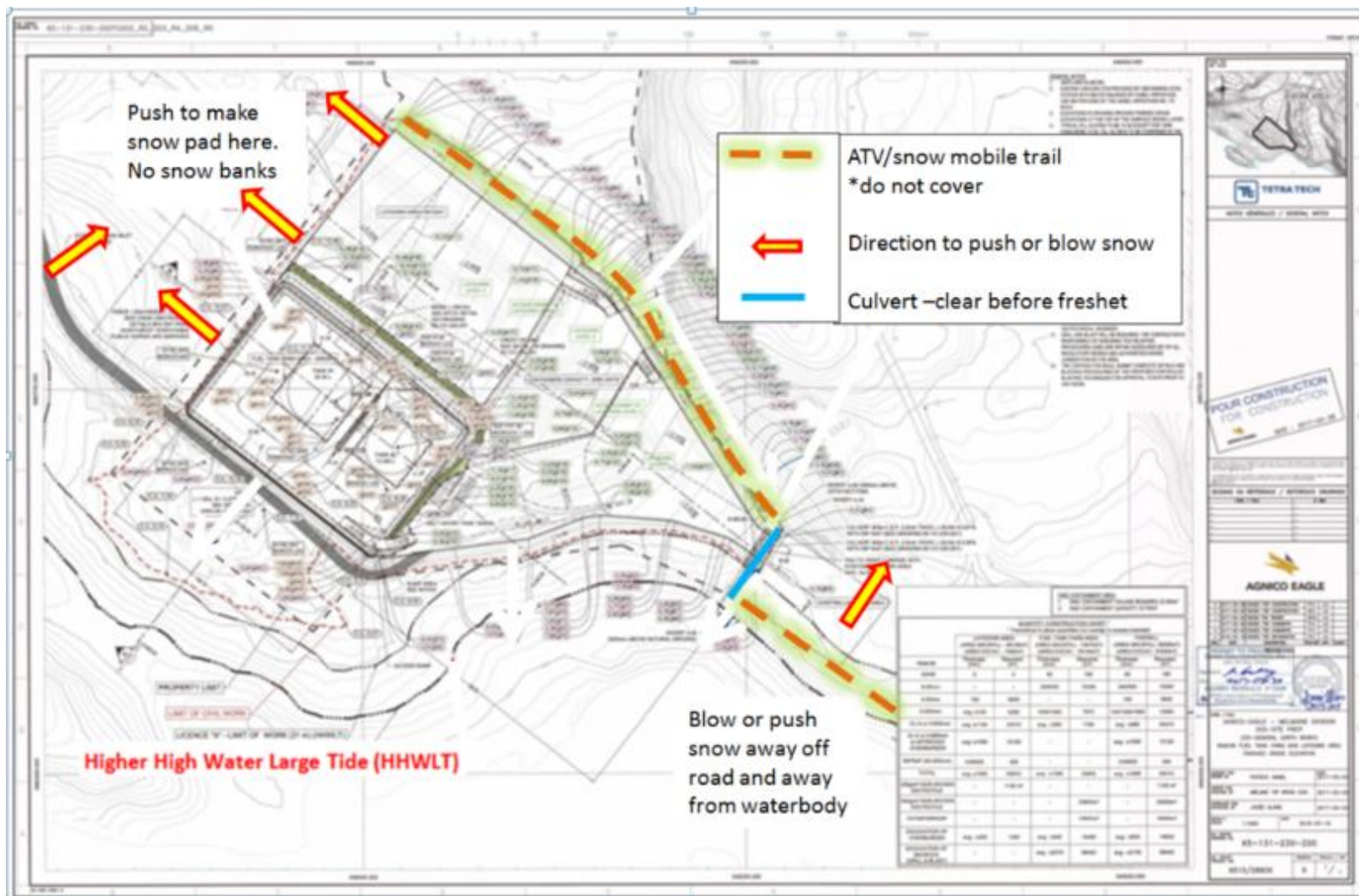


Figure 6: Itivia Snow Management Areas



5 REFERENCES

Agnico Eagle. 2015. Meliadine Gold Project: Landfarm Management Plan. Version 1. April 2015. 6513-MPS-15.

Agnico Eagle. 2016. Meliadine Gold Project: Water Management Plan. Version 2. March 2017.

Nunavut Water Board (NWB). 2015. Type A Water Licence No: 2AM-MEL1631.

APPENDIX A: FRESHET ACTION PLAN PROCEDURE

Freshet Management Procedure

PROCEDURE NUMBER:

MEL-ENV-024

People concerned	All Departments	Prepared by	Jennifer Brown, Water Engineer
		Reviewed by	Jeff Pratt, Sr. Environmental Coordinator Guillaume Gemme, Energy & Infrastructure General Foreman Jack Dutil, Construction Manager
Effective Date:	January 26, 2017	<i>“Safety First, Safety Last ... Safety Always!”</i> <i>“No Repeats” – Our Stepping Stone to ZERO HARM</i>	
Revision Date:			
<i>This procedure corresponds to the required minimum safety and environmental standards. All employees must comply with the rules and regulations of the Nunavut Government in terms of health, safety, and environment at work.</i>			

Objective:

To provide a plan to prevent potential environmental incidents at the Meliadine Site (Site) caused by the freshet season (Freshet) by recognizing specific areas for risk at the Site, possible actions to be undertaken and the departmental responsibilities to address the required actions.

Concerned Departments:

Environment, Energy & Infrastructure, Construction, Engineering and Departmental Supervisors



Note: It is the responsibility of all Meliadine Site employees to report any observed environmental concerns or incidents to their supervisor and/or the Environmental Department to ensure that any required mitigation or corrective procedures will be implemented in a timely manner.

Risks/ Impacts Legend



Health & Safety



Process/quality



Costs







Environment

Freshet Management Procedure



Procedure

Procedure				
Winter and Spring – Preparation Prior to Freshet ¹				Risks/ Impacts
Area for Risk		Action	Responsible Department	Approximate Dates
P-Area	P1, P2 & P3	<ul style="list-style-type: none">Snow must not be stockpiled to be greater than the containment capacity	Environment to coordinate with Energy & Infrastructure, Engineering and Construction	March - May
AWAR	Culverts	<ul style="list-style-type: none">Weekly Inspections	Environment	March - May
		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairs (mark culvert locations, add armouring at downstream around culverts and bridges, replace pipe as needed, and document maintenance and repairsMonitor signs of erosion (especially downstream at culverts 14.9 and 16 Km)	Energy & Infrastructure	Winter Freeze to May (start of thaw)
	Major Crossings	<ul style="list-style-type: none">Notify the Environmental Department about any areas for concern^{2,3}		
	Overall Road			
Industrial Pad	Culverts	<ul style="list-style-type: none">Weekly Inspections	Environment	
		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairsNotify the Environmental Department about any areas for concern^{2,3}	Construction	
	Channels and ditches			
	Access Road			
Quarries		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRe-grade disturbed areas to provide appropriate drainage	Construction Environment (for Sampling)	Winter Freeze to May (start of thaw)



Note:





¹ See the *Snow Management Procedure* (Procedure No.: MEL-ENV-0017) for additional information for snow removal at the Site.

² The Environmental Department will assess the area of concern and action will be undertaken to comply with the Nunavut Water Board (NWB) Water Licence No.: 2AM-MEL1631 (Licence)(i.e. collect field parameters or water samples for analysis of total suspended solids, turbidity, or any deleterious substance).

³ Areas of concern are defined as high water areas on roads, near the up gradient opening of a culvert, flowing water with sediment, spills, wildlife, etc.

Freshet Management Procedure



Spring and Summer – During Freshet or During Heavy Rainfall				Risks/ Impacts
Area for Risk	Action	Responsible Department	Approximate Dates	
P-Area				
P1, P2, and P3	<ul style="list-style-type: none">Daily visual inspectionDaily monitor and record water levelsWeekly written inspectionWater sampling	Environment	May - October	   
	<ul style="list-style-type: none">If water levels or structural integrity of berms are observed to be compromised, immediate action is required. Notify Supervisor	Engineering		
	<ul style="list-style-type: none">P2 and P3 water volume should be kept as minimal as possible. Pumping of this water should occur regularly (daily)Measure and record pumping volumes daily and report to Environment weekly	Energy & Infrastructure		
Evaporators	<ul style="list-style-type: none">Commission after sub-zero temperatures no longer occurOperate as efficient as possible	Energy & Infrastructure		
DP1 and DP3 Trenches /Seep	<ul style="list-style-type: none">Install pump and flow meter at trench to collect seepPump water to respective containment area (P1 or P3)Measure and record pumping volumes daily and report to Environment weekly	Energy & Infrastructure		
All Weather Access Road (AWAR)				
AWAR Culverts	<ul style="list-style-type: none">Inspections for free flow water through culverts and major crossings, pooling water on road, and integrity of road and abutments (2x per Week or after heavy rainfall between May and October and daily during peak flow)	Environment	May - October	
	AWAR Major Crossings	<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairs and erosion/sediment control implementationNotify the Environmental Department about any areas for concern^{2,3}		
AWAR (Overall)				
Quarries	<ul style="list-style-type: none">Repairs and erosion/sediment control implementationRe-grade disturbed areas to provide appropriate drainageNotify the Environmental Department about any areas for concern^{2,3}	Construction Environment (for Sampling)		

Freshet Management Procedure



Spring and Summer – During Freshet or During Heavy Rainfall			
New Camp Pad/Industrial Pad			
Culverts	<ul style="list-style-type: none"> Daily inspections for free flow water through culverts and major crossings, pooling water on road, and integrity of road and abutments 	Construction Environment (for Sampling)	May - October
Channels and Ditches	<ul style="list-style-type: none"> Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossings Repairs and erosion/sediment control implementation Notify the Environmental Department about any areas for concern ^{2, 3} 	Construction Environment (for Sampling)	May - October
Access Road			
Infrastructure Pads			
Exploration Camp	<ul style="list-style-type: none"> Daily visual inspections Water sampling as required 	Environment	May - June
Landfarm Structure	<ul style="list-style-type: none"> Daily inspection of the landfarm retaining wall Daily visual inspection for seepage Collect a seepage water sample for hydrocarbon analysis. If seepage is present it should be immediately sampled and the seep be controlled. Whether by creating a sump and pumping back the water or by other methods. 	Environment	
Landfarm	<ul style="list-style-type: none"> Visually monitor excess water in containment area Monitor seep (weekly) and collect water sample Sample water according to the Licence 	Environment	Mid-June and September
	<ul style="list-style-type: none"> Provide notice of pumping (include estimated volume) to be pumped to NWB 		10 days prior to pumping
	<ul style="list-style-type: none"> Once approval has been received, and if water meets the Licence criteria, water can be pumped to tundra at a low flow to avoid erosion Measure and record pumped volume 	Energy & Infrastructure	Mid-June and September
Garage (Agnico Eagle)	<ul style="list-style-type: none"> Install sump to contain excess water Install straw wattles for sediment control on the other side of the road 	Energy & Infrastructure	May
	<ul style="list-style-type: none"> Daily monitoring of TSS and turbidity and possible contaminant runoff 	Environment	May - June
Core Box Cemetery and Culvert	<ul style="list-style-type: none"> Install straw wattles for sediment control on the other side of the road 	Energy & Infrastructure	May
	<ul style="list-style-type: none"> Daily monitoring of TSS and turbidity and possible contaminant runoff 	Environment	May - June
ANFO Pad	<ul style="list-style-type: none"> Weekly Inspections Water sampling as required for ammonia, nitrates, turbidity and TSS 	Environment	May - June
	<ul style="list-style-type: none"> Daily visual inspection for pooling water and water run off form ANFO pad, if noticed immediately contact environment department 	Dyno Nobel	

Note:





¹ See the *Snow Management Procedure* (Procedure No.: MEL-ENV-0017) for additional information for snow removal at the Site.

² The Environmental Department will assess the area of concern and action will be undertaken to comply with the Nunavut Water Board (NWB) Water Licence No.: 2AM-MEL1631 (Licence)(i.e. collect field parameters or water samples for analysis of total suspended solids, turbidity, or any deleterious substance).

³ Areas of concern are defined as high water areas on roads, near the up gradient opening of a culvert, flowing water with sediment, spills, wildlife, etc.

Freshet Management Procedure



Fall – Preparation Prior to Winter Freeze				Risks/ Impacts
Area for Risk	Action	Responsible Department	Approximate Dates	
LV50	<ul style="list-style-type: none"> Survey water level and calculate water volume and provide to Environment, and/or Measure and record flow meter volume prior to pumping and after pumping and provide to Environment Remove pumps and prepare equipment for maintenance and winter storage 	Mining	Prior to pumping to P2 (Late September)	   
	<ul style="list-style-type: none"> Pump to P2 		Late September/Early October	
Lv75/Water Stope	<ul style="list-style-type: none"> Pump to Saline Pond 		June - September	
P-Area	P2 and P3	Energy & Infrastructure	June - September	
	P1, P2 & P3		At beginning of winter freeze	
	Evaporators		Prior to any sub-zero temperatures	
A8	<ul style="list-style-type: none"> Move pump house/pump closer to Site 		Late September	
CP1	<ul style="list-style-type: none"> Written inspection Water sampling Discharge approval 	Environment	June - September	
	<ul style="list-style-type: none"> Pump water to discharge at Meliadine Lake Remove pumps and prepare equipment for maintenance and winter storage 	Process Plant	Late September/Early October	
Downstream D-CP1	<ul style="list-style-type: none"> Pump water to CP1 Remove pumps and prepare equipment for maintenance and winter storage 	Energy & Infrastructure	June - September	
CP5	<ul style="list-style-type: none"> Pump water to CP1/Saline Water Treatment Plant 		Late September/Early October	
Downstream D-CP	<ul style="list-style-type: none"> Pump water to CP5 Remove pumps and prepare equipment for maintenance and winter storage 		Late September	
			June - September	
			Late September/Early October	
Saline Pond	<ul style="list-style-type: none"> Remove pumps and prepare equipment for maintenance and winter storage 		First week of October	



APPENDIX B: SNOW MANAGEMENT PROCEDURE

Freshet Management Procedure

PROCEDURE NUMBER:

MEL-ENV-024

People concerned	All Departments	Prepared by	Jennifer Brown, Water Engineer
		Reviewed by	Jeff Pratt, Sr. Environmental Coordinator Guillaume Gemme, Energy & Infrastructure General Foreman Jack Dutil, Construction Manager
Effective Date:	January 26, 2017	<i>“Safety First, Safety Last ... Safety Always!”</i> <i>“No Repeats” – Our Stepping Stone to ZERO HARM</i>	
Revision Date:			
<i>This procedure corresponds to the required minimum safety and environmental standards. All employees must comply with the rules and regulations of the Nunavut Government in terms of health, safety, and environment at work.</i>			

Objective:

To provide a plan to prevent potential environmental incidents at the Meliadine Site (Site) caused by the freshet season (Freshet) by recognizing specific areas for risk at the Site, possible actions to be undertaken and the departmental responsibilities to address the required actions.

Concerned Departments:

Environment, Energy & Infrastructure, Construction, Engineering and Departmental Supervisors



Note: It is the responsibility of all Meliadine Site employees to report any observed environmental concerns or incidents to their supervisor and/or the Environmental Department to ensure that any required mitigation or corrective procedures will be implemented in a timely manner.

Risks/ Impacts Legend



Health & Safety



Process/quality



Costs







Environment

Freshet Management Procedure



Procedure

Procedure				
Winter and Spring – Preparation Prior to Freshet ¹				Risks/ Impacts
Area for Risk		Action	Responsible Department	Approximate Dates
P-Area	P1, P2 & P3	<ul style="list-style-type: none">Snow must not be stockpiled to be greater than the containment capacity	Environment to coordinate with Energy & Infrastructure, Engineering and Construction	March - May
AWAR	Culverts	<ul style="list-style-type: none">Weekly Inspections	Environment	March - May
		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairs (mark culvert locations, add armouring at downstream around culverts and bridges, replace pipe as needed, and document maintenance and repairsMonitor signs of erosion (especially downstream at culverts 14.9 and 16 Km)	Energy & Infrastructure	Winter Freeze to May (start of thaw)
	Major Crossings	<ul style="list-style-type: none">Notify the Environmental Department about any areas for concern^{2, 3}		
	Overall Road			
Industrial Pad	Culverts	<ul style="list-style-type: none">Weekly Inspections	Environment	
		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairsNotify the Environmental Department about any areas for concern^{2, 3}	Construction	
	Channels and ditches			
	Access Road			
Quarries		<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRe-grade disturbed areas to provide appropriate drainage	Construction Environment (for Sampling)	Winter Freeze to May (start of thaw)



Note:





¹ See the *Snow Management Procedure* (Procedure No.: MEL-ENV-0017) for additional information for snow removal at the Site.

² The Environmental Department will assess the area of concern and action will be undertaken to comply with the Nunavut Water Board (NWB) Water Licence No.: 2AM-MEL1631 (Licence)(i.e. collect field parameters or water samples for analysis of total suspended solids, turbidity, or any deleterious substance).

³ Areas of concern are defined as high water areas on roads, near the up gradient opening of a culvert, flowing water with sediment, spills, wildlife, etc.

Freshet Management Procedure



Spring and Summer – During Freshet or During Heavy Rainfall				Risks/ Impacts
Area for Risk	Action	Responsible Department	Approximate Dates	
P-Area				
P1, P2, and P3	<ul style="list-style-type: none">Daily visual inspectionDaily monitor and record water levelsWeekly written inspectionWater sampling	Environment	May - October	   
	<ul style="list-style-type: none">If water levels or structural integrity of berms are observed to be compromised, immediate action is required. Notify Supervisor	Engineering		
	<ul style="list-style-type: none">P2 and P3 water volume should be kept as minimal as possible. Pumping of this water should occur regularly (daily)Measure and record pumping volumes daily and report to Environment weekly	Energy & Infrastructure		
Evaporators	<ul style="list-style-type: none">Commission after sub-zero temperatures no longer occurOperate as efficient as possible	Energy & Infrastructure		
DP1 and DP3 Trenches /Seep	<ul style="list-style-type: none">Install pump and flow meter at trench to collect seepPump water to respective containment area (P1 or P3)Measure and record pumping volumes daily and report to Environment weekly	Energy & Infrastructure		
All Weather Access Road (AWAR)				
AWAR Culverts	<ul style="list-style-type: none">Inspections for free flow water through culverts and major crossings, pooling water on road, and integrity of road and abutments (2x per Week or after heavy rainfall between May and October and daily during peak flow)	Environment	May - October	
	AWAR Major Crossings	<ul style="list-style-type: none">Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossingsRepairs and erosion/sediment control implementationNotify the Environmental Department about any areas for concern^{2,3}		
AWAR (Overall)				
Quarries	<ul style="list-style-type: none">Repairs and erosion/sediment control implementationRe-grade disturbed areas to provide appropriate drainageNotify the Environmental Department about any areas for concern^{2,3}	Construction Environment (for Sampling)		

Freshet Management Procedure



Spring and Summer – During Freshet or During Heavy Rainfall			
New Camp Pad/Industrial Pad			
Culverts	<ul style="list-style-type: none"> Daily inspections for free flow water through culverts and major crossings, pooling water on road, and integrity of road and abutments 	Construction Environment (for Sampling)	May - October
Channels and Ditches	<ul style="list-style-type: none"> Snow and ice clearing¹, including ice and snow that may impede free water flow through culverts and at major water crossings Repairs and erosion/sediment control implementation Notify the Environmental Department about any areas for concern ^{2, 3} 	Construction Environment (for Sampling)	May - October
Access Road			
Infrastructure Pads			
Exploration Camp	<ul style="list-style-type: none"> Daily visual inspections Water sampling as required 	Environment	May - June
Landfarm Structure	<ul style="list-style-type: none"> Daily inspection of the landfarm retaining wall Daily visual inspection for seepage Collect a seepage water sample for hydrocarbon analysis. If seepage is present it should be immediately sampled and the seep be controlled. Whether by creating a sump and pumping back the water or by other methods. 	Environment	
Landfarm	<ul style="list-style-type: none"> Visually monitor excess water in containment area Monitor seep (weekly) and collect water sample Sample water according to the Licence 	Environment	Mid-June and September
	<ul style="list-style-type: none"> Provide notice of pumping (include estimated volume) to be pumped to NWB 		10 days prior to pumping
	<ul style="list-style-type: none"> Once approval has been received, and if water meets the Licence criteria, water can be pumped to tundra at a low flow to avoid erosion Measure and record pumped volume 	Energy & Infrastructure	Mid-June and September
Garage (Agnico Eagle)	<ul style="list-style-type: none"> Install sump to contain excess water Install straw wattles for sediment control on the other side of the road 	Energy & Infrastructure	May
	<ul style="list-style-type: none"> Daily monitoring of TSS and turbidity and possible contaminant runoff 	Environment	May - June
Core Box Cemetery and Culvert	<ul style="list-style-type: none"> Install straw wattles for sediment control on the other side of the road 	Energy & Infrastructure	May
	<ul style="list-style-type: none"> Daily monitoring of TSS and turbidity and possible contaminant runoff 	Environment	May - June
ANFO Pad	<ul style="list-style-type: none"> Weekly Inspections Water sampling as required for ammonia, nitrates, turbidity and TSS 	Environment	May - June
	<ul style="list-style-type: none"> Daily visual inspection for pooling water and water run off from ANFO pad, if noticed immediately contact environment department 	Dyno Nobel	

Note:





¹ See the *Snow Management Procedure* (Procedure No.: MEL-ENV-0017) for additional information for snow removal at the Site.

² The Environmental Department will assess the area of concern and action will be undertaken to comply with the Nunavut Water Board (NWB) Water Licence No.: 2AM-MEL1631 (Licence)(i.e. collect field parameters or water samples for analysis of total suspended solids, turbidity, or any deleterious substance).

³ Areas of concern are defined as high water areas on roads, near the up gradient opening of a culvert, flowing water with sediment, spills, wildlife, etc.

Freshet Management Procedure



Fall – Preparation Prior to Winter Freeze				Risks/ Impacts
Area for Risk	Action	Responsible Department	Approximate Dates	
LV50	<ul style="list-style-type: none"> Survey water level and calculate water volume and provide to Environment, and/or Measure and record flow meter volume prior to pumping and after pumping and provide to Environment Remove pumps and prepare equipment for maintenance and winter storage 	Mining	Prior to pumping to P2 (Late September)	   
	<ul style="list-style-type: none"> Pump to P2 		Late September/Early October	
Lv75/Water Stope	<ul style="list-style-type: none"> Pump to Saline Pond 		June - September	
P-Area	P2 and P3	Energy & Infrastructure	June - September	
	P1, P2 & P3		At beginning of winter freeze	
	Evaporators		Prior to any sub-zero temperatures	
A8	<ul style="list-style-type: none"> Move pump house/pump closer to Site 		Late September	
CP1	<ul style="list-style-type: none"> Written inspection Water sampling Discharge approval 	Environment	June - September	
	<ul style="list-style-type: none"> Pump water to discharge at Meliadine Lake Remove pumps and prepare equipment for maintenance and winter storage 	Process Plant	Late September/Early October	
Downstream D-CP1	<ul style="list-style-type: none"> Pump water to CP1 Remove pumps and prepare equipment for maintenance and winter storage 	Energy & Infrastructure	June - September	
CP5	<ul style="list-style-type: none"> Pump water to CP1/Saline Water Treatment Plant 		Late September/Early October	
Downstream D-CP	<ul style="list-style-type: none"> Pump water to CP5 Remove pumps and prepare equipment for maintenance and winter storage 		Late September	
			June - September	
			Late September/Early October	
Saline Pond	<ul style="list-style-type: none"> Remove pumps and prepare equipment for maintenance and winter storage 		First week of October	



APPENDIX C • WATER MANAGEMENT SCHEMATIC FLOW SHEET
