APPENDIX 6-H

Mine Site and Receiving Environment Water Quality Predictions

June 2016
Report No. 1541520

AGNICO EAGLE

Golder Associates

June 2016

REPORT ON

Mine Site and Downstream Receiving Water Quality Predictions Whale Tail Deposit Project, Meadowbank Division

Submitted to:
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REPORT

Report Number: 1520817

Distribution:
1 e-copy: Agnico Eagle
Associates

Golder Associates

Executive Summary

Agnico Eagle Mines Limited Meadowbank Division (Agnico Eagle) is proposing to develop the Whale Tail Pit (the Project) in continuation of mine operations and milling of the Meadowbank Mine. Whale Tail is a satellite deposit located on the Amaruq exploration property, which is a 408-square kilometre (km^2) site located on Inuit Owned Land approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Mine, in the Kivalliq region of Nunavut. The property was acquired by Agnico Eagle in April 2013 subject to a mineral exploration agreement with Nunavut Tungavik Incorporated.

Water quality predictions for the Project were generated using the GoldSim database management and simulations code combined with baseline data collected from the mine site. A mass balance model was constructed in the GoldSim platform using the operations and post-closure water balance for the site. The model and results are a representation of the mine water and mine waste management plans for the Project.

This report provides a summary of the main mine components relevant to the water quality predictions, including; the Whale Tail Pit, the Whale Tail Waste Rock Storage Facility (WRSF), the Attenuation Pond, and temporary stockpiles of construction material and ore. Post-closure water quality is also estimated, and includes water quality predictions for the flooded Whale Tail Pit, the re-flooded Whale Tail Lake, and downstream lakes. The parameters and assumptions adopted in the mass balance model, and a summary of the results are also presented.

Water quality model results are included for the Whale Tail Pit sump, the Whale Tail WRSF pond, and the Attenuation Pond during operations. Results are provided for dissolved parameter concentrations. Given the uncertainties associated with the modelling exercise and the use of a maximum footprint year for operations and an average climate year in the water balance, the predicted concentrations are considered to be order-of-magnitude estimates for the last year of operations, in closure (for downstream receiving Lakes) and in post-closure.

Total suspended solids (TSS) are not considered in the mass load model but a sensitivity analysis was completed to evaluate the effect of suspended solids of an assumed composition on the total parameter concentrations in mine discharges during operations closure (for downstream receiving Lakes only) and post-closure. Total concentrations are higher than dissolved concentrations for aluminum, iron, chromium and arsenic. Without treatment, aluminum and iron could exceed effluent criteria but no new exceedances are predicted as a result of the Project for chromium and arsenic. The concentration of TSS in effluents is regulated. It is anticipated that suspended solids will require monitoring and proper management based on experience at other arctic mine sites.

During operations, Whale Tail Pit sump water quality is predicted to meet all Meadowbank Type A Water Licence Portage effluent limits, with the exception of total dissolved solids (TDS) and arsenic. Elevated concentrations of these parameters in the summer months are related to loading from increased pit wall runoff. Flooded pit water quality is predicted to exceed Canadian Environmental Quality Guidelines for Aquatic Life (CEQG-AL) for arsenic only; as per NWB Type A Water Licence Part E Item 8 requirements, end pit water quality modelling will be conducted to update these predictions.

The Attenuation Pond predictions for arsenic reflect dilution of inflows from the Whale Tail WRSF pond and Whale Tail Pit sump pond when combined with various runoff contributions having lower arsenic concentrations.

The quality of Whale Tail WRSF drainage during operations, if any is generated, is treated for arsenic to meet Portage effluent. In post-closure, the Whale Tail WRSF pond shows exceedances of the CEQG-AL including cadmium, and fluoride, and more sporadically for chromium, copper, molybdenum, nickel, silver, lead, mercury, selenium, and uranium and shows an exceedance of the Site-specific Water Quality Objective (SSWQO) for arsenic in post-closure.

In closure, there are no discharges from the mine to the downstream Lakes; site waters are being used to flood the open pit, thus, water quality in downstream Lakes is conservatively predicted to be similar than during operations.

In post-closure, Whale Tail WRSF contact water quality is conservatively predicted to meet most CEQG-AL parameter concentrations except for arsenic, cadmium, and fluoride. The water qualities in the fully flooded Whale Tail Pit and Whale Tail Lake (North Basin) are predicted to be relatively constant throughout the year. Arsenic concentrations are below the SSWQO in Whale Tail Lake (North Basin) and are suitable for overflow to Mammoth Lake, assuming that diffusion from the pit wall rock will not occur, nor any exchanges between the Whale Tail Pit and above lake water. As per NWB Type A Water Licence Part E Item 6 and 8 requirements, a site wide water balance will be updated as part of the annual water management plan and end pit water quality modelling will be conducted to update these predictions. As per Part E Item 6, dikes shall not be breached until the water quality in the flooded area meets CEQG-AL, baseline concentrations, or appropriate SSWQOs.

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TABLES

FIGURES

ATTACHMENTS

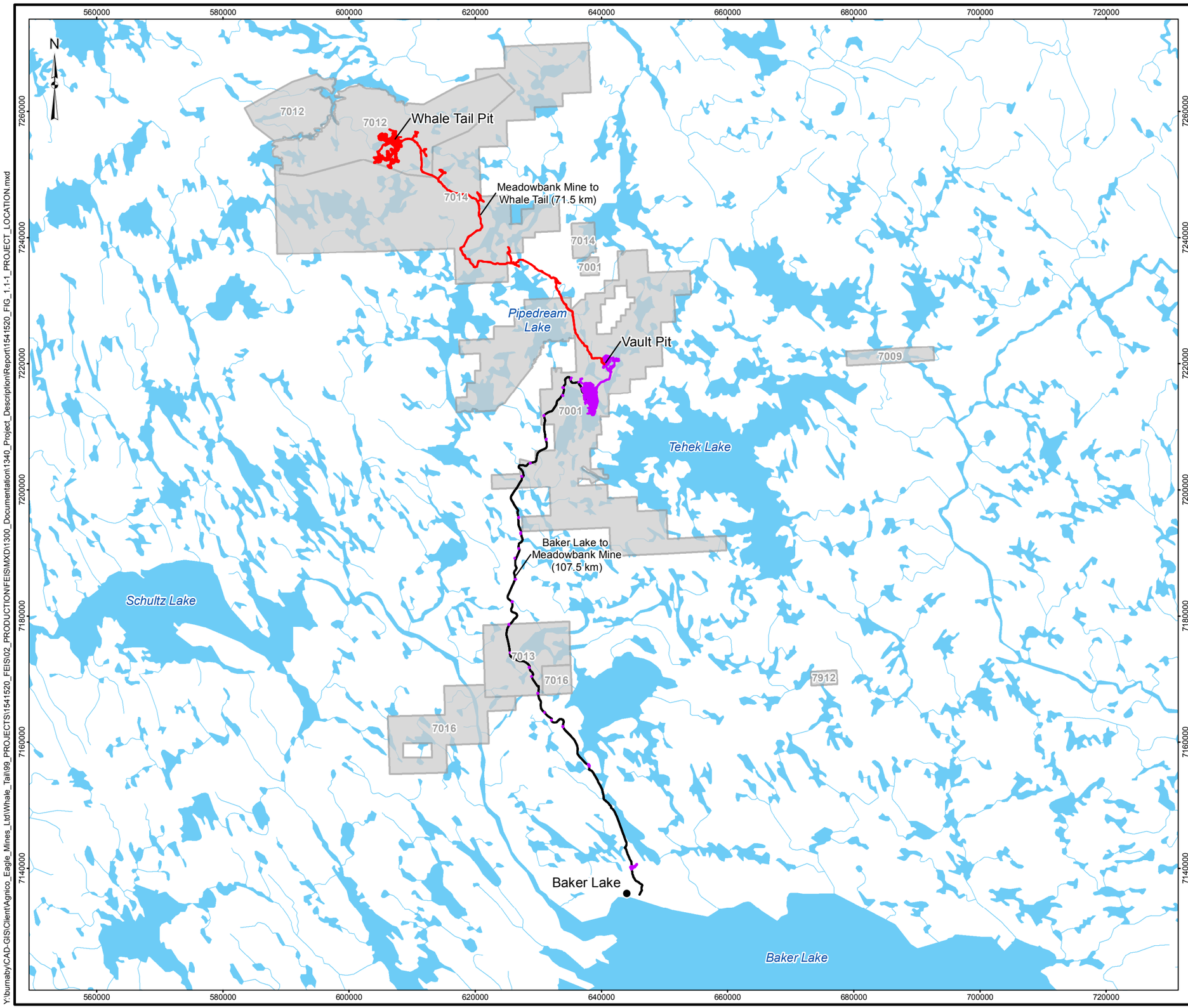
1.0 INTRODUCTION

Agnico Eagle Mines Limited Meadowbank Division (Agnico Eagle) is proposing to develop the Whale Tail Pit in continuation of mine operations and milling of the Meadowbank Mine. Whale Tail is a satellite deposit located on the Amaruq exploration property, which is a 408-square kilometre (km^2) site located on Inuit Owned Land approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Mine, in the Kivalliq region of Nunavut (Figure 1). The property was acquired by Agnico Eagle in April 2013 subject to a mineral exploration agreement with Nunavut Tungavik Incorporated.

The Meadowbank Mine is an approved mining operation and Agnico Eagle is looking to extend the life of the mine by constructing and operating Whale Tail Pit (referred to in this document as 'the Project'). As an amendment to the existing operations at the Meadowbank Mine, the Project is subject to an Environmental Review established by Article 12, Part 5 of the Nunavut Land Claims Agreement (NLCA).

The current mining plan indicates that approximately 8.3 Mt of ore will be mined over a mine life of approximately 4 years. The deposit will be mined using conventional open pit mining methods. Approximately 51.7 Mt of waste rock and overburden will be generated and stored in a rock storage facility (Whale Tail Waste Rock Storage Facility [WRSF]) adjacent to the Whale Tail Pit (Figure 2). The ore will be processed at the existing mill in the Portage area of the Meadowbank Mine, and tailings will be deposited in the existing Meadowbank Mine tailings storage facility.

Golder Associated Ltd. (Golder) was retained to forecast the probable quality of mine contact water to support Agnico Eagle in the design of water management plans for the Project. This report describes the mine site components and mine operation procedures relevant to the water quality predictions (Section 2.0); provides a description of the input values and geochemical controls specified in the model (Section 3.0); and summarizes all assumptions made in the modelling process (Section 4.0). A summary of the predicted mine contact water quality for select mine components during operations and post-closure, and at downstream locations is included in Section 5.0.



LEGEND

- COMMUNITY
- PROPOSED HAUL ROAD
- ALL WEATHER ROAD
- WHALE TAIL PIT
- MEADOWBANK OPERATION AND INFRASTRUCTURE
- CLAIM BOUNDARY
- WATERCOURSE
- WATERBODY

REFERENCE

1. HAUL ROAD OBTAINED FROM AGNICO EAGLE MINES LIMITED. 2015-10-14 FROM 6103-117-230-200_R0.dwg
2. CLAIM BOUNDARIES OBTAINED FROM AGNICO EAGLE MINES LIMITED.
3. WATERCOURSE AND WATERBODY DATA OBTAINED FROM CANVEC © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
4. INSET MAP DATA OBTAINED FROM ESRI.

DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

12 0 12
KILOMETRES

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE

PROJECT LOCATION AND CLAIM BOUNDARIES

Golder Associates

PROJECT		1541520	FILE No.	
DESIGN	JR	24 Mar. 2016	SCALE AS SHOWN	REV. 0
GIS	CDB	24 Mar. 2016		
CHECK	JR	09 May 2016		
REVIEW	LY	09 May 2016		

FIGURE 1

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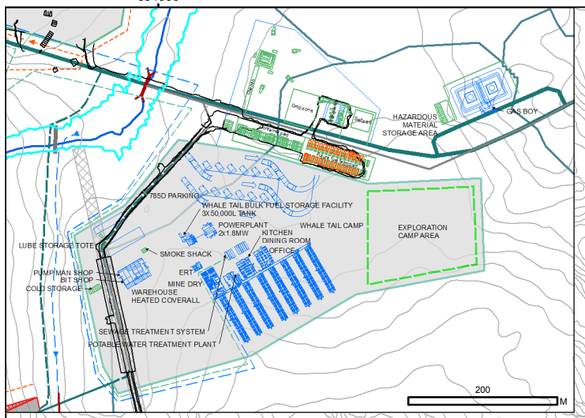
604000
606000
608000
7256000
7254000



NEMO FRESHWATER INTAKE
NEMO LAKE
C38
ROAD AROUND WRSF
SADDLE / COFFER DAM #1
WHALE TAIL WASTE ROCK STORAGE FACILITY
WHALE TAIL LANDFILL
WRSF POND
WRSF DIKE
NORTH CHANNEL
MAMMOTH CHANNEL CULVERT
MAMMOTH DIKE
MAMMOTH CHANNEL CULVERT
MAMMOTH LAKE DIFFUSER
MAMMOTH LAKE
A16
NORTHEAST POND
NORTHEAST LAKE
STORM WATER STORAGE POND
WASTE ROCK EXPLORATION PAD
BERM
EXPLORATION RAMP PORTAL
EXPLORATION LAYDOWN AREA
COMMUNICATION TOWER
CRUSHING AREA (2X CRUSHER)
ORE STOCKPILE 1
ORE STOCKPILE 2
6508-WHL-001-001
EXPLORATION RAMP VENT RAISE
WHALE TAIL ATTENUATION POND
WATER TREATMENT PLANT
SADDLE / COFFER DAM
ORE STOCKPILE 3
OVERBURDEN STORAGE
WHALE TAIL DIKE
WHALE TAIL EAST CHANNEL
WHALE TAIL CAMP
WHALE TAIL BULK FUEL STORAGE FACILITY
HAUL ROAD
EXPLOSIVE MAGAZINE 35,000kg
CAP MAGAZINE
CAP MAGAZINE
EXPLOSIVE MAGAZINE 35,000kg
EXPLOSIVE MAGAZINE 35,000kg
EXPLOSIVE MAGAZINE 35,000kg
WHALE TAIL DIVERSION CHANNEL
WHALE TAIL LAKE (SOUTH BASIN)
A17
ELEVATION ZONE EL. 156m
ARCHAEOLOGICAL SITE 2015-14
A18
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LEGEND

- FINAL WHALE TAIL WASTE ROCK STORAGE FACILITY
- WHALE TAIL LAKE (SOUTH BASIN) FLOODED LIMIT (WATER LEVEL 156.0m)
- NATURAL WATERSHED
- DIKE
- POND/SUMP
- ARCHAEOLOGICAL SITE
- ROAD
- TEMPORARY ROAD
- DIVERSION CHANNEL
- COLLECTION CHANNEL
- CULVERT
- INTAKE WATER PIPE
- CONTACT WATER PIPE
- FRESHWATER PIPE
- WATERCOURSE
- WATERBODY

REFERENCE

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED FROM 6108-600-210-002_R2(2019)s.dwg.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM PHOTOSAT
DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

400 0 400
METRES

PROJECT
AGNICO EAGLE

AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE

SITE LAYOUT

Golder Associates

PROJECT		1541520	FILE No.	
DESIGN	JR	24 Mar. 2016	SCALE AS SHOWN	REV. 0
GIS	CDB	05 May 2016		
CHECK	JR	09 May 2016		
REVIEW	LY	09 May 2016		

FIGURE 2

Y:\burnaby\CAD-GIS\Client\Agnico_Eagle_Mines_Ltd\Whale_Tail\99_PROJECTS\1541520_FEIS\02_PRODUCTION\FEIS\MXD\1300_Documentation\1340_Project_Description\Report\1541520_FIG_1-2-1_SITE_LAYOUT.mxd

2.0 MINE COMPONENTS RELEVANT TO WATER QUALITY PREDICTIONS

This section provides an overview of the mine water management plan, focusing on those aspects relevant to the mine site water quality predictions.

For operations, the following infrastructure components are considered in the prediction of mine site water quality:

- Whale Tail Pit;
- Whale Tail WRSF, where waste rock and overburden stripped from the Whale Tail Pit will be permanently stored;
- temporary stockpiles of ore and construction materials (esker material);
- operations pads, including the camp area and roads;
- mine water Attenuation Pond (the final collection point for all mine contact waters); and
- water treatment plant to treat water prior to discharge to Mammoth Lake.

For closure and post-closure, the following infrastructure components and receiving environments are considered:

- the flooded Whale Tail Pit;
- Whale Tail Lake (North Basin) (i.e., Lake A17 North or the portion of Whale Tail Lake located north of the dike). This portion of Whale Tail Lake pertains to the water volume above the flooded Whale Tail Pit and the Attenuation Pond post-closure;
- Whale Tail Lake (South Basin) (i.e., Lake A17 South or the portion of Whale Tail Lake located south of the dike);
- Mammoth Lake (Lake A16);
- Lake A15;
- Lake A12; and
- two downstream locations immediately before discharge to Lake DS1, which will be the final monitoring point for downstream water quality.

A discussion on key components of the mine site is included in Sections 3.0 and 4.0. A discussion on flows and water management plans during operations and post-closure is presented in the Water Management Plan (Volume 8, Appendix 8-B.2).

2.1 Water Balance Elements

The operational mine site water balance for the Project was completed. It provides monthly average flow volumes from each infrastructure component using average precipitation year climate data for the maximum mine footprint (the last year of operation). Post-closure flows were provided by Agnico Eagle using the same assumptions and hydrology input data as for the operational water balance, but based on a mine footprint that represents post-

closure conditions. Water quality predictions for closure are not provided since there is no water treatment plan effluent discharge to the receiving environment at that time.

Table 1 summarizes the assumptions made in model development that are related to the water balance. The water balance that was used to create the water quality model for the purposes of the FEIS outlines these modifications.

Table 1: General Water Balance Assumptions

Property	Assumption	Operations	Closure	Post-Closure
On-Site Assumptions:				
Whale Tail WRSF pond discharge	Pumped to the Attenuation Pond.	x		
	Pumped to Whale Tail Lake (North Basin) to accelerate filling once pit is full.		x	
	Naturally overflows to Mammoth Lake once Whale Tail Lake (North Basin) is full.			x
Pit watershed runoff	Reports directly to Attenuation Pond, does not contact the Whale Tail Pit.	x		
Pit Lake groundwater inflows	Assumed no groundwater inflow or outflow from the fully flooded pit lake.			x
Pit geometry	Pit flooding (and fully flooded pit) is modelled assuming the pit geometry is cylindrical with a base area of 43.5 ha (Water Management Plan [Volume 8, Appendix 8-B.2]). The annual flooded surface area is used in mass loading estimates. The pit is considered fully flooded once water reaches an elevation of 138.2 m: the bottom of Whale Tail Lake.		x	x
Fully flooded Whale Tail Lake (North Basin)	This represents the water at an elevation above the flooded pit lake (between 138.2 m and 152.5 m). It covers the area of Whale Tail Lake (North Basin).			x
Attenuation Pond	Precipitation over the Attenuation Pond watershed area (80 ha): 60% of the area is the pond and is assigned a lake evaporation water loss; 40% of the area is land and is assigned an evapotranspiration water loss.	x	x	
Attenuation Pond discharge	Pumping rate is higher than calculated in water balance by approximately 1.5 to account for flows not considered in the water balance (groundwater flows and freshwater uses).	x		
Grey water	Biodisk outflow is pumped to the Attenuation Pond until Whale Tail Lake (North Basin) has filled, after which the camp is closed and grey water is no longer produced nor discharged.	x	x	
Off-Site / Downstream Assumptions:				
Volume of downstream lakes	Where lake bathymetry and volumes were not available, an average depth of 3 m multiplied by the lake area was used to calculate each lake volume.	x	x	x
Climate Inputs	Water Management Plan (Volume 8, Appendix 8-B.2).	x	x	x
Storage and Sublimation Losses	Storage was accounted for and sublimation losses were based on snowpack accumulation (Water Management Plan [Volume 8, Appendix 8-B.2]).	x	x	x
Drainage areas	Based on the Hydrology Baseline Report (Volume 6, Appendix 6-C).	x	x	x
Attenuation Pond discharge	Discharges in summer only to treated water concentrations (Agnico Eagle, pers. comm. email dated March 21, 2016).	x	x	

Table 1: General Water Balance Assumptions

Property	Assumption	Operations	Closure	Post-Closure
Whale Tail Lake (South Basin) outflow	Overflows to Mammoth Lake.	x		
	Overflow used to fill Whale Tail Lake (North Basin), minor flow to Mammoth Lake.		x	
	Flows to Whale Tail Lake (North Basin) after the Whale Tail Dike is breached; volumes derived from the water balance for Whale Tail Lake (South Basin) flowing to Mammoth Lake.			x
Mammoth Lake effective mixing zone (EMZ)[a]	The Lake area within a 100-m radius from the effluent discharge point (Golder calculation based on lake bathymetry).	x		x
Mammoth Lake	Receives inflow from Mammoth Lake EMZ and assumed to be fully mixed instantly.	x		x

[a] The effective mixing zone is the area of Mammoth Lake where the discharge is planned. This model assumes an effective mixing zone with a radius of 100 m and variable depth (maximum depth 4.43 m; average depth 2.07 m), which equates to approximately 1.2% of the total volume of Mammoth Lake (Lake A16).

WRSF = waste rock storage facility; ha = hectares; m = metres; % = percent.

2.2 On-Site Facilities

2.2.1 Mine Operation Period

Table 2 describes the flows to the Whale Tail Pit sump pond, the Attenuation Pond, and the Whale Tail WRSF pond during operations.

Waste rock generated by mining and stripped overburden will be stored in one Whale Tail WRSF adjacent to the pit. During operations, the Whale Tail WRSF pond receives runoff from the waste rock pile (includes waste rock and overburden), natural runoff from the surrounding area (runoff that contacts natural ground only), and direct precipitation.

During operations, the Whale Tail WRSF pond is assumed to be kept at a low operating capacity (77 m^3) and acts as a flow through point rather than a reservoir that could offer any substantial residence time. Water from the Whale Tail WRSF pond is pumped to the Attenuation Pond.

The Whale Tail Pit will receive direct precipitation on the pit walls (accounted for as pit wall runoff) and on the pit sump pond itself, as well as groundwater inflow and drilling water year-round. The pit wall runoff contacts rock on the pit walls and in a portion of the pit bottom that is not submerged by the Whale Tail Pit sump pond. The water collected in the Whale Tail Pit sump will be pumped to the Attenuation Pond. Overland non-contact water flows (natural runoff) will be diverted away from the Whale Tail Pit and report directly to the Attenuation Pond.

Ore will be stockpiled within the catchment area of the Attenuation Pond prior to hauling and processing at the Meadowbank Mine plant. The tailings resulting from processing will be discharged to the existing Meadowbank Mine tailings storage facility, and are not considered in this model. A stockpile of clean esker material for construction use will also be present within the catchment area of the Attenuation Pond. All stockpiles and pads are assumed to produce contact water runoff in freshet and the summer months only.

Table 2: On-Site Modeled Flows during Operations

Location	Description of Inflows
Whale Tail WRSF pond	• Whale Tail WRSF contact runoff • Natural runoff • Direct precipitation
Whale Tail Pit sump pond	• Pit wall runoff • Groundwater inflow to pit[a] • Drilling water
Attenuation Pond	• Pumped water from the Whale Tail WRSF pond • Pumped water from the Whale Tail Pit sump pond • Runoff from natural ground • Runoff from developed ground (main sector, industrial sector) • Runoff from stockpiles (clean materials and ore) • Pumped water from the exploration ramp development • Pumped water from treatment plant (recirculated) • Pumped water from the campsite treatment plant (including grey water and oil trap water from the truck shop) • Direct precipitation on the Pond

[a] from Volume 6, Appendix 6-B.
WRSF = waste rock storage facility

2.2.2 Closure and Post-Closure

Mining is expected to cease at the end of 2021 and closure activities will commence as detailed in the Water Management Plan (Volume 8, Appendix 8-B.2). Closure activities will occur over 6.5 years and will include decommissioning of site facilities (with the exception of the water treatment plant and part of the camp infrastructure), removal of temporary stockpiles (ore and construction materials), completion of the Whale Tail WRSF cover (initiated during operations), and water diversion to flood the Whale Tail Pit and Whale Tail Lake (North Basin).

The following outlines water management aspects that pertain to the closure and post-closure periods:

- The Whale Tail Pit will flood over 3.5 years using a combination of pumped water from the Northeast Pond, treated Attenuation Pond water, pumped water from Whale Tail Lake (South Basin), Whale Tail Pit groundwater, direct precipitation, and natural runoff from the pit watershed.
- After the Whale Tail Pit is fully flooded, the larger surface area of Whale Tail Lake (North Basin) will start to be flooded. This is estimated to take three years using water from the following sources:
  - pumped water from Whale Tail Lake (South Basin);
  - pumped and treated water from the Whale Tail WRSF;
  - direct precipitation on the lake surface; and
  - natural runoff from the northeast sector, east sector, and north sector of the North Whale Tail watershed.

- Treatment of Attenuation Pond water is assumed to stop when the Whale Tail Lake (North Basin) area starts flooding, but treatment of the Whale Tail WRSF pond water will continue during the closure period when it is pumped to Whale Tail Lake (North Basin) to contribute to filling, and during post-closure when Whale Tail WRSF contact water flows to Mammoth Lake (Section 3.2.2.2). That is to say that Agnico Eagle commits to a maximum concentration in the Whale Tail WRSF pond water through either source control or passive treatment; the need for which will be evaluated during operations.
- Once the Whale Tail Lake (North Basin) has flooded to pre-mining levels, the Mammoth Lake Dike and the Whale Tail Dike will be breached, and natural flows from Whale Tail Lake (South Basin) and into Mammoth Lake will be re-established.

The flooded Whale Tail Pit and Whale Tail Lake (North Basin) were modelled as two separate entities that do not mix vertically (Section 4.0). It is assumed that the fully flooded Whale Tail Lake (after the dike breach, when Whale Tail Lake (South Basin) and Whale Tail Lake (North Basin) are hydrologically connected) will overflow naturally to Mammoth Lake. Rock storage facility pond water will also flow directly to Mammoth Lake post-closure.

Table 3 describes the flows included in the model post-closure.

Table 3: On-Site Modeled Flows in Post-Closure

Location	Description of Inflows	Discharge / Outflow
Whale Tail WRSF pond	• Whale Tail WRSF Cover Runoff • Natural runoff • Direct precipitation	Discharge to Mammoth Lake
Flooded Whale Tail Pit	• No inflows, no exchanges with overlying Whale Tail Pit Lake • Fully mixed conditions within pit	No outflows, no exchanges with overlying Whale Tail Pit Lake
Whale Tail Lake (North Basin) (Attenuation Pond Catchment Area)	• Runoff from natural ground • Runoff from developed ground (main sector, industrial sector) • Inflow from watersheds to north, northeast, east of pit, and Whale Tail Lake (North Basin) • Exposed high wall runoff • Whale Tail Lake (South Basin) water (after dike breach) • Direct precipitation	Discharge to Mammoth Lake through dike breach

WRSF = waste rock storage facility.

2.3 Off-Site / Downstream

Table 4 describes the flows into the receiving environment downstream of the mine lease during operations and post-closure. The water balance was extended downstream of the Project area using input parameters and assumptions from the baseline water balance model described in the Hydrology Baseline Report (Volume 6, Appendix 6-C). Lake locations are shown on Figure 3.

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597500 600000 602500 605000 607500

7260000 7257500 7255000 7252500

N

Downstream Node 2

Downstream Node 1

A5 A6 A8 A9 A10 A11 A12 A15 A16 Mammoth Lake A17 Whale Tail Lake (South Basin) A69 A76

Downstream Path 1

Downstream Path 2

A B C

NEMO FRESHWATER INTAKE

NORTHEAST POND

ORE STOCKPILE 1

ORE STOCKPILE 2

WATER TREATMENT PLANT

WHALE TAIL WASTE ROCK STORAGE FACILITY

WHALE TAIL ATTENUATION POND

WRSF POND

NORTH CHANNEL

WHALE TAIL PIT

ORE STOCKPILE 3

MAMMOTH DIKE

WHALE TAIL DIKE

WHALE TAIL DIVERSION CHANNEL

ELEVATION ZONE EL. 156m

LEGEND

- MINE SITE PREDICTION LOCATION
- RECEIVING ENVIRONMENT PREDICTION LOCATION
- FLOW PATH
- WATERCOURSE
- WATERSHED
- WATERBODY

REFERENCE

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED FROM 6108-600-210-002_R2(2019)s.dwg
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.

DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

750 0 750

METRES

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE

WATER QUALITY PREDICTION LOCATIONS

Golder Associates

PROJECT		1541520	FILE No.	
DESIGN	CP	28 Apr. 2016	SCALE AS SHOWN	REV. 0
GIS	CD/GI	02 Jun. 2016		
CHECK	JR	06 Jun. 2016		
REVIEW	LY	06 Jun. 2016		

FIGURE 3

Table 4: Off-Site Water Quality Model Flows during Post-Closure

Location	Description of Inflows (in addition to direct precipitation and watershed runoff)	Discharge / Outflow
Mammoth Lake (Lake A16) Effective Mixing Zone[a]	• Pumped (treated) flow from Attenuation Pond in operations • Natural flow from Whale Tail Lake (North Basin) in post-closure • Whale Tail WRSF contact water drainage in post-closure	Mammoth Lake (Lake A16)
Mammoth Lake (Lake A16)[b]	• Mammoth Lake Effective Mixing Zone • Diverted flow from Whale Tail Lake (South Basin) during operations • Lake A43	Lake A15
Lake A15	• Mammoth Lake (Lake A16)	Lake A12
Lake A12	• Lake A15	Lake A11 and Lake 76
Lake A11	• Lake A12	Lake A10
Lake A10	• Lake A11 • Lake A76	Lake A9
Lake A9	• Lake A10	Lake A8
Lake A8	• Lake A9	Lake A6
Lake A6	• Lake A8 • Lake A32	Lake A5
Lake A5	• Lake A6	Downstream Node 2[c]
Downstream Node 2	• Lake A5 • Lake A24	Lake DS1
Lake A76	• Lake A12	Lake A75 and Lake A10
Lake A75	• Lake A76	Lake A69
Lake A69	• Lake A75 • Lake A81 • Lake A106	Downstream Node 1[c]
Downstream Node 1	• Lake A69 • Lake B1 • Lake B5 • Lake B7	Lake DS1

[a] The effective mixing zone is the area of Mammoth Lake where the discharge is planned. This model assumes an effective mixing zone with a radius of 100 m and variable depth (maximum depth 4.43 m; average depth 2.07 m), which equates to approximately 1.2% of the total volume of Mammoth Lake (Lake A16).

[b] Volume is that of Mammoth Lake (Lake A16) as a whole, minus the effective mixing zone.

[c] Downstream Nodes represent selected monitoring points immediately upstream of Lake DS1. Downstream Node 1 and 2 are downstream of Lake A69 and A5, respectively.

WRSF = waste rock storage facility.

Following Lake A12, the downstream water flow splits into two pathways, where downstream path 1 flows to Downstream Node 1 and downstream path 2 flows to Downstream Node 2 (Figure 3).

3.0 MODEL INPUT PARAMETERS

3.1 Mine Plan and Waste Rock Management

The composition and lithological proportions of waste rock in the Whale Tail WRSF and exposed in the pit walls are expected to change as mining progresses. However, only the total tonnages of each rock type mined over the life of mine and their representative area exposed in the final pit shell were provided at the time of modelling, as shown in Table 5. Thus, for the operational period, these maximum footprint tonnages and area proportions were applied.

Table 5: Total Tonnage in the Rock Storage Facility and Exposed in Final Pit Walls by Lithology

Lithology / Material Type	Total Tonnage Reporting to Rock Storage Facility[a]		Exposed Pit Wall Rock Area[a]	
	Tonnes	Approximate Proportion	Area (m^2)	Approximate Proportion
Greywacke (S3S) – south	9,707,441	21%	91,915	14.7%
Greywacke (S3C) – centre	3,167,882	6.9%	51,006	8.2%
Chert (S10e)	9,069,203	19.7%	65,152	10.4%
Ultramafic (0a)	7,839,953	17%	157,539	25.2%
Ultramafic (0b)	6,292,816	13.6%	50,161	8.0%
Iron Formation (0a-alt)	7,080,011	15.4%	74,331	11.9%
Mafic Volcanic (1b)	2,324,150	5.0%	20,769	3.3%
Intermediate Intrusive (8b)	622,937	1.4%	24,208	3.9%
Overburden	5,618,358	- [b]	88,940[b]	14.3%[b]
Total:	**51,722,752**	**100%**	**535,081**	**100%**

[a] Values from *6108_PJS-002_R3.xlsx (*dated February 22, 2016, Agnico Eagle pers. comm.).

[b] The overburden is stored in a separate area of the Whale Tail WRSF and is not mixed with waste rock. In the pit wall, the overburden is pushed back from the pit wall and does not contribute chemical load to the runoff flowing into the Whale Tail Pit.

3.2 Model Water Quality Inputs

3.2.1 Loading Rates and Concentrations

Table 6 summarizes the water quality related input parameters used in the water quality model. Loading rates are calculated for waste rock (based on large column leaching tests[1]), ore (based on humidity cell tests [HCT] leach), and overburden (based on shake flask extraction [SFE] leach test results). Concentrations were input for lake sediments (average SFE) and ramp water (average HCT results for intermediate intrusive). All leach tests (large columns, HCTs, SFE) are described in Volume 5, Appendix 5-E. Loading rates and concentrations used as inputs in the water quality model are tabulated in Attachment A, including the unique sample identifiers used to develop each input value.

[1] With the exception of the intermediate intrusive unit, which is based on humidity cell test results

Table 6: Water Quality and Chemical Loading Rate Input Parameters

Modelled Flow	Type	Source	Reference	Operations	Closure	Post-Closure
Non-Contact Runoff	Concentration	Average water quality of Watershed A tributaries upstream of Mammoth Lake	Volume 6, Appendix 6-G	x	x	x
Developed Ground Runoff	Loading Rate	Weighted average load of greywacke (S3S) and intermediate intrusive (8b) mixed based on total proportion (Table 5).	Volume 5, Appendix 5-E; Table 5; and Agnico Eagle mine plan[a] (Attachment A)	x	x	x
Whale Tail WRSF Cover						x
Pit Wall Runoff	Loading Rate	Weighted average load from exposed rock types based on their expected proportion in pit walls (Table 5) over entire surface area of the Whale Tail Pit in operations, and over high wall in post-closure		x	x	
High Wall Runoff					x	x
Waste Rock Runoff at Whale Tail WRSF	Loading Rate	Weighted average load from rock types based on the total tonnage to be mined over mine life (Table 5) applied to the waste rock area of the Whale Tail WRSF		x		
Overburden Runoff at Whale Tail WRSF	Loading Rate	Average load of SFE for overburden samples; applied to the overburden area of the Whale Tail WRSF		x		
Construction Overburden Stockpile Runoff	Loading Rate	Average load from SFE leach results for esker samples; applied to the full quantity of esker material stockpile. Being a rolling stockpile, it is assumed to not freeze at the core.	Golder 2014	x	Non-Contact Runoff applied	Submerged (no contribution)
Ore Stockpile Runoff	Loading Rate	Average load from composite humidity cell test sample of ore.	Volume 5, Appendix 5-E	x		
Lake Sediments contact water quality	Concentration	Average SFE leach results for lake sediments samples	Volume 5, Appendix 5-E	x		

Table 6: Water Quality and Chemical Loading Rate Input Parameters

Modelled Flow	Type	Source	Reference	Operations	Closure	Post-Closure
Groundwater quality inflow to Whale Tail Pit	Concentration	75th percentile of Meadowbank groundwater quality (as calculated by Knight Piésold Consulting)	Knight Piésold Consulting 2015	x	x	
Ramp dewatering	Concentration	Average of humidity cell test data for intermediate intrusive (8b) which is the predominant rock type in ramp	Volume 5, Appendix 5-E	x		
Drilling Fluid	Concentration	Average of Whale Tail South water quality, where drilling water will be sourced. No drilling additives (i.e., salt) assumed.	Volume 6, Appendix 6-G	x		
Grey Water	Concentrations of phosphorus and nitrate as nitrogen	Expected concentrations of nutrients (phosphorus, total nitrogen, nitrite/nitrate as nitrogen) based on information provided by Biotest for the Meadowbank Mine	Agnico Eagle (email comm. 26 and 30 July, 2012)	x	x	
Residual explosives in Whale Tail WRSF pond and Whale Tail Pit sump pond	Concentrations of ammonia and nitrate	Whale Tail Pit and Whale Tail WRSF: Average of monitoring values observed in operating open pits at the Meadowbank Mine	Meadowbank Mine water quality monitoring data from Agnico Eagle (email comm. 25 February 2016)	x		x
Direct precipitation	Concentration	Assumed pristine water (0 mg/L for all parameters)		x	x	x

[a-]Values from 6108_PJS-002_R3.xlsx (dated February22, 2016, Agnico Eagle pers. comm.).

WRSF = waste rock storage facility; SFE = shake flask extraction; mg/L = milligrams per litre.

The weekly analytical results (for the full duration of testing available at the time of this report) were used to calculate an average weekly leaching rate per unit mass for each parameter and each leaching cell or column as reported in Volume 5, Appendix 5-E. These leaching rates were applied as a monthly loading rate in the model in consideration of the drier climate at site where much less precipitation falls on a unit surface area than in the laboratory leaching column. One weekly leaching cycle in the laboratory represents the volume of water that is received in 2 to 3 months of exposure in the pile for the same unit surface area[1]. The laboratory leaching rate is repeated 4 times in one month; therefore, time in the laboratory test does not correspond to mine waste exposure time in the field. Based on the liquid to solid ratio of one cycle relative to the monthly average precipitation, the chemical load associated with one cycle of leaching was conservatively assumed to represent the load released from one month of precipitation in the field. Loading rates were calculated from the large column data as follows:

$$Loading\ Rate\left(\frac{\frac{mg}{kg}}{week}\right) = average\ of\ weekly\ rate, as: \left\{\frac{\left(concentration\left(\frac{mg}{L}\right) \times\ leachate\ volume\ (L)\right)}{(mass\ of\ charge\ material\ (kg))}\right\}$$

Diffusion rates were calculated from a submerged column test conducted for the ultramafic and iron formation units (Volume 5, Appendix 5-E) and applied to the area of exposed ultramafic rock in the submerged pit wall, which is equivalent to 45.1% of the final pit wall area (Table 5). The remaining submerged pit wall (54.9%) is assumed to not contribute to diffusion. Diffusion rates were calculated as follows:

$$Diffusion\ Rate\ Flux\left(\frac{\frac{mg}{m^2}}{year}\right) = \ average\ of\ rate\ at\ each\ timestep, as: \left\{\left(\frac{D^oJ}{F}\right) \times\ (n\ \times \frac{dc}{dz})\right\}$$

Where:

- D^oJ = temperature dependent diffusion coefficient for each parameter (from Li and Gregory 1974);
- F = formation factor (or tortuosity), assumed to be 1 for crushed waste rock;
- n= porosity, assumed to be 0.5 for crushed waste rock accumulated on the pit wall; and
- dc/dz = concentration gradient across the sediment-water interface or change in concentration (dc) over gradient distance at the sediment-water interface (dz); from the submerged leaching test.

3.2.2 Geochemical Controls on Water Quality

3.2.2.1 Solubility Limits

Evaporation and recirculation of water increase concentrations of some parameters to beyond their solubility limits. Geochemical modelling was carried out on the modelled quality of Whale Tail WRSF pond water, Attenuation Pond water, and Whale Tail Pit sump water to define the likely upper concentration limit for parameters controlled by solubility. The USGS mass transfer and speciation modelling code PhreeqC (Version 2.15.0) (Parkhurst and Appelo 1999) was used for this purpose. PhreeqC calculates aqueous speciation and solubility indices of solutions using the thermodynamic equations of mineral phases, assuming equilibrium conditions between mineral and soluble phases. The user specifies credible mineral phases that are allowed to precipitate. PhreeqC returns

[1] Based on an average climate year, total precipitations (rain and snow) for frost-free months of June to September when Whale Tail WRSF contact water may be released. This applies to the surface area of all mine wastes: Whale Tail WRSF, pads, and stockpiles.

concentrations remaining after precipitation of the specified mineral phases and solubility indices for all mineral phases in the PhreeqC database. This code is widely used and accepted by the scientific and regulatory community.

GoldSim water quality results consisting of the water quality output from distinct time-steps for each of the stated ponds were used as input to PhreeqC. Pond waters were assumed to have a pH of 7 based on observed pH ranges in kinetic testing (Volume 5, Appendix 5-E), and to be fully oxidizing.

The PhreeqC results identified iron (Fe) and aluminum (Al) as being supersaturated in predicted water quality, and subject to solubility control through the precipitation of diaspore [AlO(OH)], hematite (Fe_2O_3), ferrihydrite and/or goethite [FeO(OH)] in the expected neutral pH and oxidizing conditions in the ponds. The precipitates formed were assumed to be permanently removed from the mass balance and the remaining aqueous concentration of iron and aluminum were considered to represent maximum concentrations in these ponds at any time. These solubility limits were applied to aluminum and iron as summarized in Table 7, and were hardwired into the GoldSim model as upper concentration limits for these parameters in water. The GoldSim model was then re-run with these fixed upper concentration limits.

Table 7: Solubility Limits Applied in the Water Quality Model

Parameter	Unit	Waste Rock Storage Facility Pond	Whale Tail Pit Sump Pond	Attenuation Pond
Aluminum	mg/L	0.0003	0.0002	0.0001
Iron	mg/L	0.06	0.7	0.3

mg/L = milligrams per litre

3.2.2.2 Water Treatment Levels

Agnico Eagle is applying to the NWB to treat effluent discharges to the receiving environment to levels stipulated in Meadowbank Water Licence Type A 2AM MEA1525 (NWB 2015) Part F, Item 3 for Portage Effluent (Table 8). In the model, concentration limits were imposed on parameters that exceeded the Portage Effluent limits. To ensure Part F, Item 3 limits are met at the final discharge point, for modelling purposes, treated water concentration maxima were fixed at half the maximum monthly mean limit according to typical water treatment plant performance observed at other mine sites (Mario Drapeau, Agnico Eagle pers. comm).

Agnico Eagle also is applying to the NWB to consider Whale Tail WRSF drainage quality meeting the Portage Effluent Limits either through modified water or waste management, or through water treatment. In the model, the same treated water concentration maxima were imposed on closure and post-closure discharges from the Whale Tail WRSF. This affected the concentration of predicted arsenic concentrations only. As per NWB Type A Water Licence Part E Item 6 and 8 requirements, a site wide water balance will be updated as part of the annual water management plan and end pit water quality modelling will be conducted to update these predictions.

Table 8: Portage Effluent Limits and Treatment Concentrations Applied to Effluent and Site Discharge

Parameter	Units	Portage Effluent Limits (Maximum Monthly Average Concentration)	Assumed Treatment Concentration[a]
Arsenic (As)	mg/L	0.3	0.15

[a] This is an assigned treatment concentration that is calculated as half of the Portage Effluent Limit, as per Water Licence 2AM MEA1525 (NWB 2015). The level of treatment may depend on empirical monitoring data during operations.

[b] Limit for dissolved aluminum used, all other effluent limits are for total.

mg/L = milligrams per litre

4.0 MODEL ASSUMPTIONS

Table 9 summarizes the water quality assumptions applied in the model.

Table 9: Water Quality Assumptions

Property	Assumption	Rationale	Operations	Closure	Post-Closure
On-Site Assumptions:					
Temperature Control	Loading rates are multiplied by: 0.5 for July and August 0.25 for June and September 0 for October to June	Loading rates are halved for every 10˚C decrease in temperature from 25˚C[a], based on monthly average temperatures[b]. Factor is 0 in winter months as average monthly temperatures are below 0°C	x	x	x
	Pit lake diffusion and submerged load are multiplied by 0.25 year round	Assumes temperature of water at depth in contact with pit walls is 5˚C all year (does not freeze but is not affected by warming surface temperatures)		x	x
Rock Density	2 tonnes/m^3 applied to all stockpiled rock material and pit walls	"Loose Density" of Whale Tail WRSF per the design criteria[c]	x	x	
Grain size/ channelization factor	Channelling factor of 0.3[d] applied to loading rate of construction material, ore, waste rock including the cover	Represents the percentage of rock with grain size small enough that its surface contributes to the mass load and movement or flow of mass through the Whale Tail WRSF	x	x	x
	Channeling factor of 1 applied for overburden (assumed 100% contact with grains, no channelization)		x		
Active Layer Depth	2 m for waste rock stockpiles including cover and developed areas	Within the active thaw depth range for flat surfaces at Meadowbank Mine	x	x	x
	0.15 m for overburden stockpile	Assumes contact of runoff with compacted overburden. Thickness of layer through which runoff will flow and contact soil particles.	x		
	1 m for pit wall rock[e]	Represents the depth of penetration of blasting-induced fractures. This was assumed to have the porosity of waste rock in consideration of the rubble that will remain on pit wall benches.	x	x	x
Ore Stockpile	1.14 Mt ore tonnage used to determine loading rate	Mass contribution to chemical load was derived from the mine plan[f] and conservatively assumes the maximum expected tonnage to be stockpiled in any given quarter-year for the three years of mine life. It is assumed that the ore stockpile will not freeze during the winter months	x		

Table 9: Water Quality Assumptions

Property	Assumption	Rationale	Operations	Closure	Post-Closure
		as its contents are expected to be continually refreshed.			
Clean Material Stockpile	100,000 m^3 clean construction material (esker) tonnage used to determine loading rate	Mass contribution to chemical load was based on an anticipated tonnage provided by Agnico Eagle (pers. com., January, 2016).	x		
Whale Tail WRSF cover	2 - 4 m of cover over the Whale Tail WRSF	Assumed greater thickness than the active layer depth		x	x
Water Treatment	Assumes Portage effluent levels for arsenic are met at the point of discharge.	Applied to Attenuation Pond water discharged to the downstream receiving environment	x		x
		Applied to Whale Tail WRSF pond water in closure when it is pumped back to Whale Tail Lake (North Basin) to contribute to filling, and in post-closure when it overflows to Mammoth Lake, assuming the Whale Tail WRSF contact water quality will be managed to meet effluent discharge criteria at that time.		x	x
	Discharge Velocity	Assumed to not be discharged through diffusion.			
Pit Wall	Loading rate applied to area of exposed pit wall rock by rock type (Section 3.1)	Assumed to stop once the pit walls are submerged due to flooding	x	x	
	5 m height of perpetually exposed high wall around the pit	High wall assumed to be the average height of ground above 152.5 masl (the maximum flooded lake surface elevation). Average height was applied around entire circumference of Whale Tail Pit footprint.	x	x	x
	Loading rate for submerged pit walls during pit filling	One time mass “flushed” from the pit walls upon submersion as the pit and Whale Tail Lake (North Basin) fill. The submerged pit wall is assumed to no longer contribute load after flooding, except in sensitivity analysis on diffusion from submerged pit wall.			
	Sensitivity analysis on diffusive mass loading from submerged pit walls	Mass addition through diffusion from exposed ultramafic rock in the submerged pit walls that continues in perpetuity in the model.			

Table 9: Water Quality Assumptions

Property	Assumption	Rationale	Operations	Closure	Post-Closure
Ore and construction material stockpile areas	Developed area runoff water quality	Ore stockpile and clean material pile are removed from pad. Pad remains in place.		x	
	Natural runoff water quality	Stockpile pads are removed			x
Lakebed sediments	Sediment loading rate	Lakebed sediments provide load until attenuation pond is full, and then provide natural runoff water quality thereafter (i.e. baseline water quality).		x	
	Natural runoff water quality	Assumes water quality returns to baseline conditions when pit is full.		x	x
Industrial Sector / Main Camp Sector	Natural runoff water quality	Assumes water quality returns to baseline conditions when pit is full.		x	x
Off-Site / Downstream Assumptions:					
Downstream watersheds	Watershed runoff water quality	Applying average "Watershed A" water quality to all runoff and initial lake concentrations in downstream model. Average water quality developed from tributary samples taken within watershed A in 2015 (Volume 6, Appendix 6-G)	x	x	x
Mammoth Lake	Water quality of diverted flow from Whale Tail Lake (South Basin)	Diverted flow from Whale Tail Lake (South Basin) to Mammoth Lake is assigned an average Whale Tail Lake (South Basin) water quality, developed from samples taken in Whale Tail Lake (South Basin) in 2015 (Volume 6, Appendix 6-G).	x		
		Receives treated effluent and natural outflows from Whale Tail Lake (North Basin).			x
Whale Tail Lake (North Basin)	Water quality of flow from Whale Tail Lake (South Basin) following breach of Whale Tail dike	Assigned an average Whale Tail Lake (South Basin) water quality, developed from samples taken in Whale Tail Lake (South Basin) in 2015. (Volume 6, Appendix 6-G)			x

[a] Diavik (1998); Davé and Clulow (1996); Davé and Blanchette (1999).
[b] Water Management Plan (Volume 8, Appendix 8-B.2).
[c] Volume 2, Appendix 2-J.
[d] Kempton (2012); and Beddoes et al. (2013).
[e] Siskind and Fumanti (1974).
[f] Values from *6108_PJS-002_R3.xlsx (*dated February22, 2016, Agnico Eagle pers. comm.).
[g] Per Water Licence 2AM MEA1525 (NWB 2015).

5.0 WATER QUALITY PREDICTIONS

Water quality model results for on-site facilities and downstream lakes during operations and post-closure are presented in Attachment B as tables containing all model output results. Time series figures are included for the parameters of interest in water quality as identified in the mine waste geochemistry study (Volume 5, Appendix 5-E) and the downstream water quality impact assessment. These include arsenic, nitrate and sulphate, and aluminum and phosphorus, respectfully.

Model predictions represent dissolved parameter concentrations. Those that are predicted to exceed the applicable criteria are highlighted in Attachment B. On-site water quality predictions are compared to the Portage effluent limits (Table 8; NWB 2015) in operations and post-closure, while the downstream predictions are compared to the CCME Canadian Environmental Quality Guidelines for the Protection of Aquatic Life (CCME 2002; CEQG-AL) for applicable parameters, and to the Site-specific Water Quality Objective (SSWQO) for Arsenic (Volume 6, Appendix 6-N).

Predicted concentrations are monthly mean values during operations, and open water (summer time) mean values in post-closure. Individual grab sample concentrations may vary from the monthly or summer averages predicted. Given the uncertainties associated with the modeling exercise, and use of an average climate year on the maximum mine operation footprint in the water balance, the predicted concentrations are considered to be order-of-magnitude estimates. As such, concentrations that are predicted to meet water quality criteria may exceed them on occasion within a given month.

The pH of most contact water streams is expected to be circum-neutral given the low sulphide content and ample carbonate mineral buffering capacity of mine wastes. The rock types that have been identified as potentially acid generating (PAG) demonstrate slow reaction rates in kinetic testing (Volume 5, Appendix 5-E). In the model it has been assumed that PAG rock is managed to prevent the development of ARD in the long term, as is done at the Meadowbank Mine. This includes segregating and covering the Whale Tail WRSF with a non-PAG waste rock cover between 2 and 4 m in thickness (Table 9) that encompasses the full depth of the anticipated active thaw layer (assumed 2 m; Table 9) allowing the centre of the pile to freeze.

The concentration of explosives by-products (ammonia and nitrate) in site contact water is sensitive to the management of blasting agents during their use. Given the proximity and similarity both in setting and operation of the Project to the Meadowbank Mine, it was assumed that similar nitrogen contents would occur in the waste rock and open pit drainages. Average concentrations of ammonia and nitrate observed at Meadowbank Mine pit sump monitoring locations were used as input chemistry in the model, and constant concentrations were maintained in the pit sump and Whale Tail WRSF pond. However, the predicted concentrations of these parameters could differ from those recorded at the Meadowbank Mine if the explosives management practices implemented at the Project differ from those at Meadowbank Mine.

Total suspended solids (TSS) were not considered in the mass load model, but TSS concentration is regulated in effluents. Based on experience at other mine sites, it is anticipated that suspended solids will require monitoring and management or attenuation before discharge. TSS can contribute to chemical loading of water (i.e., can increase the total concentration of chemicals). The effect of 15 mg/L TSS on effluent water quality was assessed as a sensitivity analysis on the effluent water quality (Section 5.3.3); results of the sensitivity analysis are presented in together with dissolved parameters concentrations in Table B.3 of Attachment B.

Water quality predictions for on-site mine contact waters and downstream receiving lakes for the operations phase and post-closure are discussed in the next sections.

5.1 Operations Phase

The water qualities of the Whale Tail WRSF pond, Whale Tail Pit sump pond, and the Attenuation Pond are all expected to meet the Portage effluent limits for all parameters except arsenic and total dissolved solids (TDS). Predicted average arsenic concentrations are above the Portage effluent limit at all locations at some point in the year. Exceedances are discussed further below.

In the Whale Tail WRSF, TDS, which is primarily composed of sulphate, shows marginal exceedances of the Portage effluent limit in July and August when pond volumes are low and the evaporation rate is high.

The water quality model suggests that mercury concentrations are above the Portage effluent limit for the Whale Tail WRSF but this is an artefact of the approach taken on non-detected analytical results. Mercury was often identified in laboratory leachates as being below the analytical detection limit. Where this was the case however, the full method detection limit value was assumed. Predicted concentrations are below the Portage effluent limit when the half method detection limit value is used; however, the full method detection limit concentration was kept for consistency with other parameters. Therefore, mercury is not expected to be present at concentrations above the Portage effluent limit in site waters.

Average and maxima TDS and arsenic concentrations are summarized in Table 10 for the Whale Tail WRSF pond, Whale Tail Pit sump, and Attenuation Pond. Figure 4 illustrates the predicted arsenic concentrations with time in the mine contact water ponds and in untreated effluent.

Table 10: Summary of Predicted Concentrations from Point Sources During Operations for Parameters of Interest

Location	Units	TDS[a]		Arsenic	
		Average	Maximum	Average	Maximum
Whale Tail WRSF Pond	mg/L	665	2814	4.9	21
Whale Tail Pit Sump	mg/L	465	962	1.9	7.5
Attenuation Pond	mg/L	384	751	1.5	3.2

[a] TDS calculated from model results

[b] Per Water Licence 2AM MEA1525 (NWB 2015).

mg/L = milligrams per litre

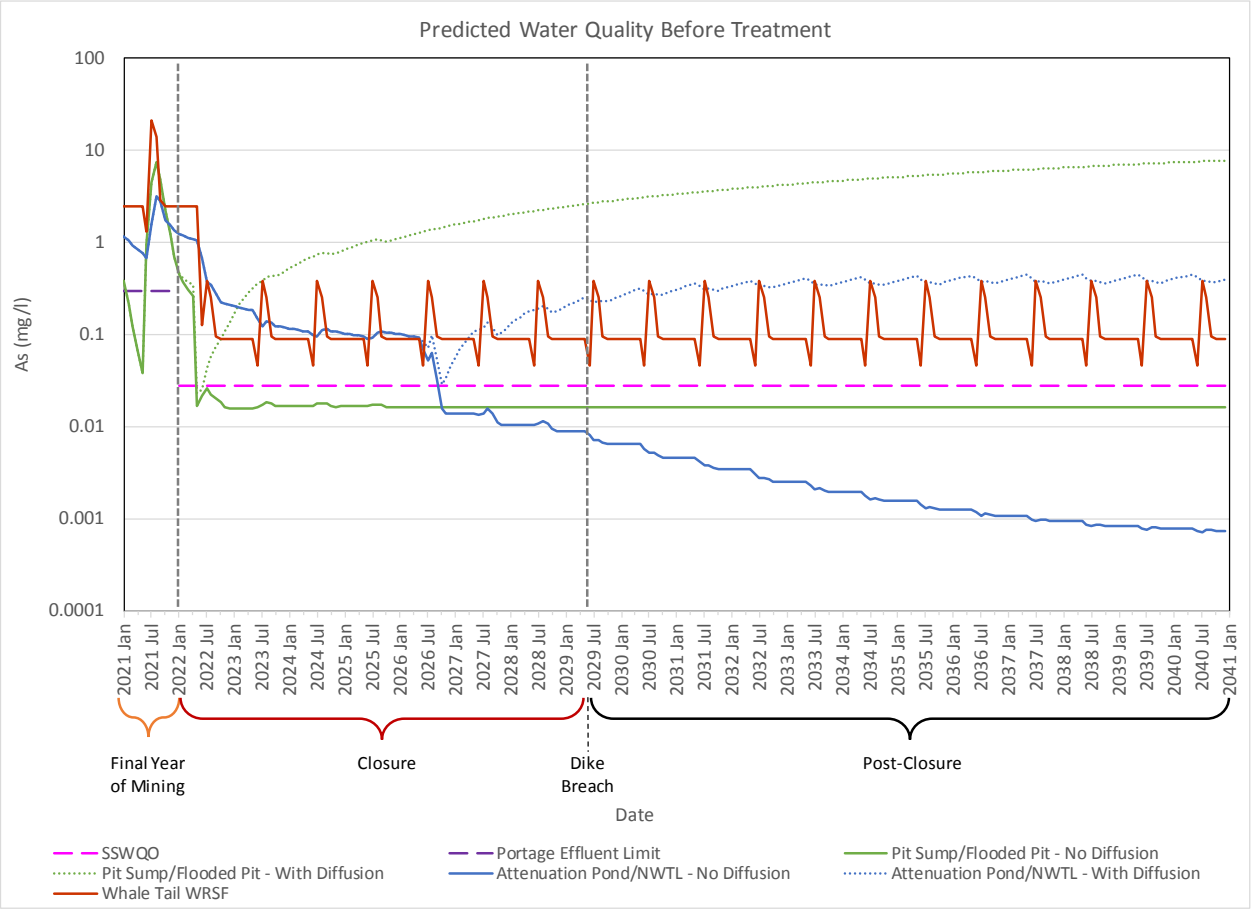

Figure 4: Predicted Dissolved Arsenic Concentrations in Mine Site Ponds

Note that results presenting diffusion should be considered conservative and representative of a worst-case scenario of the "maximum, fully mixed concentration" in the flooded Whale Tail Pit and Whale Tail Lake (North Basin). A Site-specific Water Quality Objective of 0.028 mg/L was developed for the Project (Volume 6, Appendix 6-N).

In the Whale Tail WRSF pond, predicted arsenic concentrations are lowest during the spring freshet due to dilution by melt water and non-contact flows. Concentrations are higher in the summer months when there is a lower contact water runoff volume. Maximum concentrations are reached in July and August, when rainfall is the lowest and there is less runoff from the pile. This is consistent with the observed increase in chemical load with lower water volume contact in kinetic leaching tests on Whale Tail waste rock under laboratory conditions, where the liquid to solid ratio was purposefully varied to assess this potential (Volume 5, Appendix 5-E). However, the extrapolation and scaling of this trend to site conditions carries uncertainty, and will need to be verified during operations.

In the Whale Tail Pit sump pond, predicted arsenic concentrations are lowest during the spring freshet and increase through the summer months, reaching a peak in August before decreasing from September through the winter months. Elevated concentrations in the summer months are related to loading from increased pit wall runoff. Arsenic concentrations are lower (and below Portage effluent limits) from February to May, when there is no pit

wall runoff and proportionally more contribution of arsenic-poor groundwater and drilling water to the Whale Tail Pit sump pond.

The Attenuation Pond predictions for arsenic reflect dilution of inflows from the Whale Tail WRSF pond and Whale Tail Pit sump pond when combined with various runoff contributions having lower arsenic loads. Arsenic concentrations increase from July through August, and decrease again from September through the winter months. During operations, this water is expected to require treatment for arsenic before discharge to the receiving environment.

5.2 Post-Closure

5.2.1 On-Site Predicted Water Quality

Post-closure results provide a preliminary estimate of water quality after the end of mine life, and reflect assumed steady state conditions ten years after closure has been completed.

At the Whale Tail WRSF pond, some parameters exhibit average predicted concentrations that are above the CEQG-AL, including: cadmium, copper, fluoride, lead, mercury, selenium, and uranium. Arsenic concentrations (Table 11) are above the SSWQO. All average concentrations are within the same order of magnitude as the CEQG-AL guidelines, with the exception of fluoride and cadmium.

Table 11: Predicted Concentrations for Parameters Exceeding CEQG-AL Post-Closure

Location	Units	Arsenic	
		Average	Maximum
SSWQO	mg/L	***0.028***[a]	
Whale Tail WRSF pond	mg/L	**0.12**	**0.38**
Pit Lake (below Whale Tail Lake (North Basin))	mg/L	0.016	0.016
Whale Tail Lake (North Basin)	mg/L	0.00082	0.00084

Note: **Bolded** values are above SSWQO

a Site-specific Water Quality Objective of 0.028 mg/L developed for the Project (Volume 6, Appendix 6-N).

mg/L = milligrams per litre

In the fully flooded pit lake below the base of Whale Tail Lake (North Basin), as well as in Whale Tail Lake (North Basin) above the Whale Tail Pit, there are no exceedances of the CEQG-AL criteria or the SSWQO for arsenic. As per NWB Type A Water Licence Part E Item 6, Agnico Eagle will continue to evaluate the actual interaction between the two water bodies (water within the pit and water above it forming Whale Tail Lake) as well as possible chemical stratification of the flooded pit lake (which would result in improved water quality in the shallow pit lake). As per Part E Item 6, the dikes shall not be breached until the water quality in the flooded area meets CEQG-AL criteria, baseline concentrations or appropriate SSWQOs.

The water qualities in the fully flooded Whale Tail Pit and Whale Tail Lake (North Basin) are predicted to be relatively constant throughout the year. Arsenic concentrations are below the SSWQO in Whale Tail Lake (North Basin) and are suitable for overflow to Mammoth Lake, assuming that diffusion from the pit wall rock will not occur, nor any exchanges between the Whale Tail Pit and above lake water in a fully mixed pit Lake scenario (which is a conservative assumption. In reality, stratification is expected which is likely to improve water quality in the upper contact zone with Whale Tail Lake (North Basin) water). The results of the sensitivity analysis on diffusion from pit walls are discussed in Section 5.3.2.and shown in Figure 4.

Whale Tail WRSF pond drainage average water quality is predicted to meet CEQG-AL concentrations for most parameters, except cadmium and fluoride. Arsenic exceeds the SSWQO. Sporadic concentrations above CEQG-AL are predicted for other parameters (e.g., chromium, copper, molybdenum, nickel, silver, lead, mercury, selenium, and uranium), based on the maximum predicted concentrations.

As stated earlier, for the purpose of modeling downstream water quality, it is assumed that concentrations in the treated water (from the Whale Tail WRSF pond and the Attenuation pond) will be equal to half the Portage effluent limit when concentrations are predicted to exceed the effluent limit for regulated parameters (Section 5.2.2).

5.2.2 Off-Site and Downstream Predicted Water Quality

During operations and post-closure, treated mine effluent is discharged in Mammoth Lake (Lake A16). Initially it mixes in the Effluent Mixing Zone (EMZ) of Mammoth Lake, the zone in the vicinity of the discharge point, then mixes with the rest of Mammoth Lake and further downstream lakes until the final modelling nodes located at inlets to Lake DS1. Results are presented for lakes shown in Figure 3.

As indicated in Table 9, treated Whale Tail WRSF water in post-closure was assumed to meet half the Portage effluent limit for arsenic, where the predicted concentrations were above the Portage effluent limit. Other inflows were input as modelled. As required in the Type A Water Licence, Agnico Eagle will control site contact water, (including the Whale Tail WRSF pond) during operations and post-closure through either source control or passive treatment; the need for which will be evaluated during operations.

When the mine is at its maximum footprint, the predicted concentrations at downstream locations are below CEQG-AL for all applicable parameters and below the SSWQO for arsenic. This is an estimate of water quality under fully mixed conditions where the effluent and downstream lake overflows are being mixed instantaneously in the downstream receiving water body. In reality, mixing will occur over time and could result in sporadic elevated or reduced concentrations at various locations at any given time. Post-closure, all applicable dissolved parameters concentrations are predicted to meet CEQG-AL, and arsenic is predicted to meet the SSWQO.

Predicted dissolved arsenic concentrations in downstream Lakes are summarized in Table 12 and shown schematically (not to horizontal scale) in Figure 5.

Table 12: Predicted Dissolved Arsenic Concentrations in Downstream Lakes

Location	Units	Operations		Closure		Post-Closure	
		Average	Maximum	Average	Maximum	Average	Maximum
SSWQO[a]	mg/L	***0.028***					
Mammoth Lake	mg/L	0.016	0.018	0.0096	0.018	0.0029	0.0030
Lake A15	mg/L	0.015	0.016	0.0088	0.016	0.0027	0.0028
Lake A12	mg/L	0.014	0.015	0.0085	0.015	0.0026	0.0026
Downstream Node 1	mg/L	0.00096	0.0012	0.00063	0.0010	0.00040	0.00044
Downstream Node 2	mg/L	0.0048	0.0063	0.0030	0.0058	0.0013	0.0015

Note: **Bolded** values are above SSWQO.
a Site-specific Water Quality Objective of 0.028 mg/L developed for the Project (Volume 6, Appendix 6-N).
mg/L = milligrams per litre

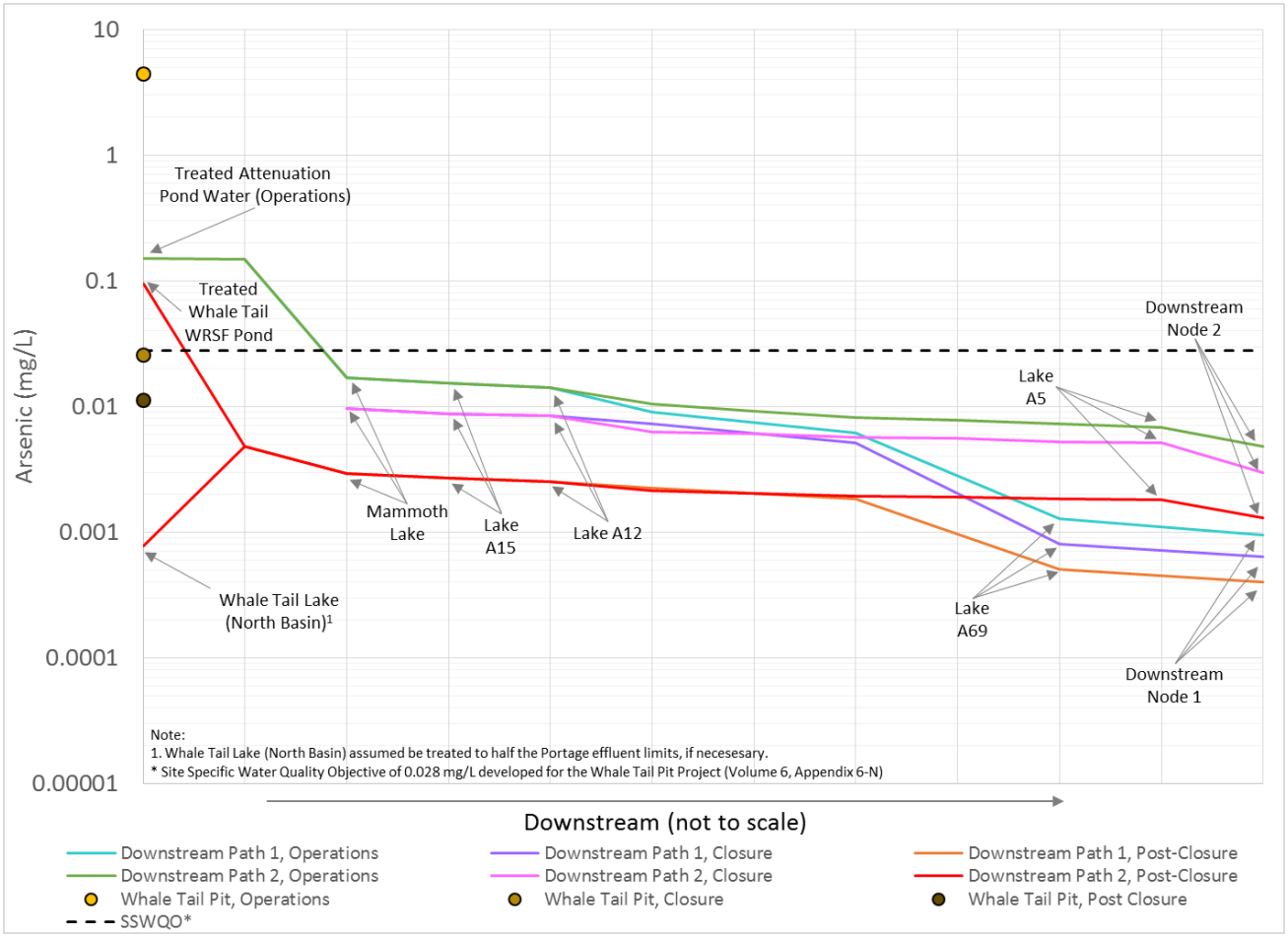

Figure 5: Operations Period: Predicted Arsenic Concentration in Downstream Lakes From Effluent Discharges During Operations

5.3 Sensitivity of Model to Assumptions

5.3.1 Overburden Contact Water Quality – Operations

The use of SFE leach test results in the modelling exercise yielded relatively high loading rates per unit weight of overburden compared with what would be anticipated from kinetic testing, the latter more representative of leaching under ambient site conditions. This is an artefact of the nature of the SFE leaching test (i.e. intimate contact and vigorous agitation of water with soil particles). Overburden contact water quality is highly sensitive to degree of compaction, which affects the soil to water contact. This is a source of uncertainty in the model.

5.3.2 Diffusion from Submerged Pit Walls – Closure and Post-Closure

Arsenic was observed to leach under stagnant water conditions in a submerged column leaching test conducted on a composite of ultramafic and iron formation rock (Volume 5, Appendix 5-E). The ultramafic and iron formation rocks comprise approximately 45% of the Whale Tail Pit walls; therefore, calculated diffusion rates were applied in the model to 45% of the submerged pit wall during pit filling and under fully mixed conditions.

The diffusive transfer of arsenic (and other chemicals) from the submerged pit walls to the Whale Tail Pit Lake and Whale Tail Lake (North Basin) could result in elevated arsenic concentrations in the pit lake under some conditions, as shown by the dotted line on Figure 4. The direct extrapolation and scaling of laboratory results to field conditions are, however, uncertain, and would require field verification. Similarly uncertain are the hydrogeological and hydrodynamic conditions that will be established in the pit lake: these may mitigate arsenic concentrations relative to those observed in the column test and used in this modelling exercise.

Post-closure hydrodynamic conditions in the fully flooded pit lake and Whale Tail Lake should be evaluated once field data is available in order to better understand whether diffusion would occur under anticipated conditions. Diffusion rates are particularly sensitive to the flooded Whale Tail Pit being a groundwater recharge or discharge zone, as well as whether chemical and/or temperature stratification occurs in the lake. This should be further evaluated.

The water quality predictions presented herein do not account for diffusion from the pit wall rock in the post-closure pit and Whale Tail Lake (North Basin) because it is assumed that the pit and Whale Tail Lake (North Basin) are not recharged with groundwater, but rather, groundwater recharge points at the north end where ultramafic and iron formation rock are exposed, based on a comparative evaluation of surrounding Lake levels (Table 3; Volume 6, Appendix 6-B). However, a model simulation was completed using conservative assumptions for diffusion and these results are included on Figure 4. Due to the assumptions and uncertainty surrounding the influence of diffusion on water quality in the flooded pit and Whale Tail Lake (North Basin), results presenting diffusion should be considered conservative and representative of a scenario where the pit and Whale Tail Lake (North Basin) are groundwater discharge points and where there is vertical exchange of water between the flooded pit lake and overlying Whale Tail Lake water.

5.3.3 Effect of Total Suspended Solids on Total Parameter Concentrations

Total metal concentrations for Project discharges were estimated by adding a calculated particulate fraction to the dissolved concentration results from the model. Particulate fractions for the relevant parameters were based on solid phase geochemistry of each rock type, the proportion of each rock type in the final waste rock mass, and an assumed TSS concentration of 15 mg/L in the Project discharge, the maximum monthly average limit in Type A Water Licence Part F Item 3 Portage effluent (NWB, 2015).

During operations, the addition of the particulate fraction did not produce any substantial change from the dissolved concentrations for most parameters except Al and Fe which showed a substantial increase in total concentration. Chromium also showed an increase, but to a lesser extent. This is expected for Al and Fe as they are estimated to make up the bulk of TSS while aqueous concentrations are low. Thus any presence of total Al or Fe in effluent would be attributed to particulates rather than the dissolved phase given the anticipated neutral pH and oxidative environment. Calcium and magnesium also comprise an important part of the suspended solids chemical composition, but their concentration is predicted to be elevated such that the additional contribution from TSS is not significant.

In post-closure, modelled aluminum, chromium, and iron indicate higher total concentrations than dissolved concentrations, and exceed CEQG criteria in both the Whale Tail WRSF Pond and Whale Tail Lake (North Basin). In the Whale Tail WRSF Pond, the total arsenic concentrations do not differ much from dissolved concentrations which are already predicted to exceed the SSWQO (their concentration may need to be controlled at the source in the long-term). Total arsenic concentrations could be lower than predicted if TSS in Project discharge is lower

than 15 mg/L, but there is also the potential for the concentrations to be higher if the main contributor to TSS contains more arsenic than estimated (if TSS is derived principally from ultramafic rock). Table 13 summarizes the results for total concentrations of aluminum, arsenic, chromium, and iron for operations, while the total concentrations for post-closure are presented in Table 14.

Table 13: Predicted Discharge Water Quality during Operations – Effect (Sensitivity) of TSS on Predicted Total Concentrations

Location	Units	Aluminum		Arsenic		Chromium		Iron	
		Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum
Portage Effluent Limit[a]	mg/L	***1.5***		***0.3***		**-**		**-**	
Attenuation Pond discharge after treatment (dissolved)	mg/L	0.0001	0.0001	0.15	0.15	0.0071	0.016	0.3	0.3
Attenuation Pond discharge (total)	mg/L	0.32	0.32	0.16	0.16	0.016	0.025	1.1	1.1

Note: **Bolded** values are above Portage effluent limits.

[a] Maximum average concentration, Meadowbank Water Licence 2AM MEA1525 (NWB 2015).

mg/L= milligrams per litre

Table 14: Project Discharges Post-Closure – Effect (sensitivity) of TSS on Predicted Total Concentrations

Location	Units	Aluminum		Arsenic		Chromium		Iron	
		Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum
CEQG-AL	mg/L	***0.1***		***0.028***[a]		***0.001***		***0.3***	
Whale Tail Lake (North Basin) - dissolved	mg/L	0.0001	0.0001	0.00079	0.000081	0.000073	0.000073	0.020	0.020
Whale Tail Lake (North Basin) - total	mg/L	**0.32**	**0.32**	0.0059	0.0059	**0.0091**	**0.0091**	**0.77**	**0.77**
Whale Tail WRSF Pond - dissolved	mg/L	0.0003	0.0003	**0.095**	**0.15**	0.00046	**0.0014**	0.058	0.060
Whale Tail WRSF Pond - total	mg/L	**0.32**	**0.32**	**0.10**	**0.16**	**0.0094**	**0.010**	**0.81**	**0.81**

Note: **Bolded** values are above CEQG-AL

[a] Site-specific Water Quality Objective of 0.028 mg/L developed for the Project (Volume 6, Appendix 6-N).

mg/L= milligrams per litre

5.4 Limitations of Predicted Results

Given the complex interplay of climate, the geochemical nature of the rock materials, and the physical characteristics of the mine facilities, several simplifying and conservative assumptions were included in the modelling process. The water quality predictions presented in this report are a reflection of these assumptions.

While it is believed that the modelling approach and resulting water quality predictions presented herein are consistent with industry practices and appropriate for evaluating potential impacts associated with the Project, actual contact water quality during construction, operations, closure, and post-closure may differ from the predictions presented.

Actual water quality will largely depend on the mine plan and management practices followed during mining, and on site conditions related to water movement and chemical loading. In that respect, the extent to which actual dissolution of rock particles in waste rock piles and the subsequent release of chemical constituents into drainage water will affect water quality will depend on the volume of water infiltrating into the rock pile, the contact surface between water and rock, the dissolution kinetics under site conditions, and the internal characteristics of the piles themselves (e.g., temperature, degree of saturation, presence of ice). This, in turn, will depend largely on climate, particularly the amount of precipitation and evaporation, and the ambient air temperature. In wet years, for example, larger volumes of water may enter waste rock piles and result in the mobilization of greater volumes of mineral dissolution products than in drier years. Likewise, the presence of permafrost and/or ice within the rock voids may inhibit water movement and the mobilization of dissolution products in drainage reporting from the facility, or the use of drilling brines or underground development and saline groundwater production could require different handling procedures. This has not been accounted for in the model.

Given the above, the mine site contact water flow volumes and quality will need to be monitored throughout the mine life, and the management of contact water will need to be adaptive.

6.0 CONCLUSIONS AND WATER MANAGEMENT CONSIDERATIONS

This report presents the results of predictive water quality modelling for future mine site water collection ponds and lakes that receive mine contact water downstream of the effluent discharge point for the Project. The model was built using the GoldSim simulation code for the mine site and uses a downstream water balance onto which were superimposed mass load components from Whale Tail baseline water quality investigations and mine waste geochemistry studies (Volume 5, Appendix 5-E).

The water balance provided monthly average flow volumes from each infrastructure component using average precipitation year climate data. Flows were provided for the maximum mine footprint during operations (i.e., year 4 of operations). Post-closure flows were provided by Agnico Eagle using the same assumptions and hydrology input data as for the operations water balance, but on a mine footprint that represents post-closure conditions.

The water quality model provides a forecast of the predicted quality of mine site contact water in the last year of operations and at steady-state conditions post-closure, when flows have returned to normal, pre-mining conditions. The mine construction and early operations periods were not modelled, nor is the mine closure period.

6.1 Results Summary

The Whale Tail area covers a small watershed area with limited dilution potential. Mine wastes are shown to have a relatively benign composition. Arsenic is an element of interest in most Whale Tail waste rock types. Laboratory testing has demonstrated that it can be released at relatively high concentrations from ultramafic and iron formation rock (Volume 5, Appendix 5-E). A few other elements are also released at concentrations that exceed the applicable water quality criteria, but at a smaller scale and less pervasively than arsenic.

Results from laboratory leaching tests are not guarantors of the site contact water quality because of their limited ability to reproduce field conditions. Differences in climate and scale of mine facilities at Whale Tail influence the hydrological processes that dictate water to rock and soil contact, which in turn affect the release and transport of chemicals in contact waters. No field trials are available at this time to validate and accurately scale laboratory results to the anticipated cold and dry field conditions at Whale Tail. Long-term exposure data to accurately estimate operational and post-closure chemical loading rates are also not currently available. Consequently, a conservative number of assumptions were made in the modelling exercise based on literature, good practice, and comparisons between laboratory results and actual water quality data from the Meadowbank Mine and the Meliadine project (Bertrand et al. 2012), both of which have similar rock types that leach arsenic. These assumptions, together with those on site hydrology and proposed mine waste management practices, introduce uncertainty in the model and will need to be verified through operational monitoring.

The results are considered accurate within one order of magnitude for the conditions and site configuration that were modelled. The prediction of monthly average results implies that actual concentrations can be higher or lower at any given time during the month.

The following is a summary of key considerations in the interpretation of the water quality predictions presented herein:

- Modelling results are sensitive to the mine plan, mine layer and waste management plans. Any changes in these conditions will affect the accuracy of predictions.

- During operation, arsenic in the Attenuation Pond is predicted to require treatment before discharge to meet the Portage effluent limits. A significant proportion of the arsenic comes from leaching of the ultramafic and iron formation rock exposed in a large section of the Whale Tail Pit wall and stored in the Whale Tail WRSF. Experience at the Meadowbank Mine and Meliadine project (Bertrand et al. 2012) suggests that field conditions are likely to show much lower concentrations in contact water than predicted. The assumptions used in the model may be overly conservative and results may represent worst case water quality, should there be any water at all seeping out of the Whale Tail WRSF and the Whale Tail Pit walls. Experience at Meadowbank Mine suggest there is likely to be very little water reporting to the base of the Whale Tail WRSF during operations.
- It is expected, and was assumed in the model, that ARD will not develop during mining and that PAG waste rock will be managed effectively, as it is at the Meadowbank Mine. The cover of waste rock is assumed to effectively host the active thaw depth in perpetuity over the entire Whale Tail WRSF. The rock type used for the cover is predicted to release arsenic at concentrations that may exceed the Portage effluent limit. Fluoride concentrations are relatively elevated but are predicted to meet CEQG-AL in the receiving environment.
- Arsenic release from submerged Whale Tail Pit walls is a source of uncertainty in the prediction of the long-term water quality of the flooded pit lake and Whale Tail Lake (North Basin). The source of the uncertainty lies in the occurrence of arsenic in waste rock and its leachability, which is currently being investigated (Volume 5, Appendix 5-E). There is also uncertainty in the hydrogeochemical and hydrological conditions that will occur in the waste stockpiles and pit walls, and in the hydrological conditions in the Pit Lake and Whale Tail Lake, neither of which have been studied in detail. The base-case scenario results presented herein assume that arsenic diffusion is not significant post-flooding because the Whale Tail Pit is assumed to act as a groundwater recharge zone. This assumption is based on an overview of area lake water elevations, but disregards the possible effects of differing pit and groundwater densities.
- As per NWB Type A Water Licence Part E Item 6 and 8 requirements, Agnico Eagle will continue to conduct a site wide water balance will be updated as part of the annual water management plan and end pit water quality modelling will be conducted to update these predictions. As per Part E Item 6, the shall not breach dikes until the water quality in the flooded area meets CCME Water Quality Guidelines, baseline concentrations or appropriate SSWQOs.
- Nitrate, ammonia and phosphorous in mine site contact waters are sourced mostly from explosives residues and grey water treated effluent. The model input for these sources is from Meadowbank Mine operational data. The concentration of nitrate, ammonia and phosphorous in the Attenuation Pond is predicted to meet the Portage effluent water quality limits such that additional treatment is not predicted to be necessary. The model results may not apply if explosives or grey water management practices at the Project differ from those of the Meadowbank Mine.
- Underground mining has not been accounted for in this model. Should underground development occur, saline waters may be generated from drilling fluids, saline groundwater, or a combination thereof and may require additional management prior to discharge off-site.
- The volume of Mammoth Lake is low compared to the volume of effluent discharged during operations. Modelling indicates that water quality in Mammoth Lake will be sensitive to the quality of the effluent

discharged from the Project during operations, and overflow from Whale Tail Lake (North Basin) in post-closure.

- Water quality monitoring should be carried out as described in the Water Management Plan during construction, operations, closure and post-closure. As per NWB Type A Water Licence requirements, this information will be collected to verify the mass load inputs to the model and calibrate forecasted water qualities.

7.0 CLOSURE

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ATTACHMENT A

Water Quality Input Parameters

Appendix A
Water Quality Model Inputs
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

GOLDSIM INPUT:	ORE	GREYWACKE (S3S)	GREYWACKE (S3C)	CHERT (S10e)	ULTRAMAFIC (0a)	IRON FORMATION (0a-alt)	ULTRAMAFIC (0b)	MAFIC VOLCANIC (1b)	INTERMEDIATE INTRUSIVE (8b)	OVERBURDEN	LAKE SEDIMENT	CONSTRUCTION MATERIAL FOR PADS	"OVBN PILE" CONSTRUCTION MATERIAL	RAMP (Intermediate Intrusive - 8b)	ULTRAMAFIC SUBMERGED PIT WALL DIFFUSION
DATA SOURCE:	HCT (AMQ-ENV15-089 076 Composite)	Column #4 Grewake (Outside ore)	Column #3 Greywake (Inside Ore)	Column #6 Chert (S10e)	Column #1 Ultramafic (Oa)	Column #2 Ultramafic (Oa alt)	Column #5 Ultramafic (Ob)	Column #7 Mafic Volcanic (1b)	HCT (AMQ-ENV-114)	SFE average (pit overburden)	SFE average (lake sediment)	GW S3S (Column #3) and 8B (HCT AMQ-ENV-114)	SFE Average (eskers)	HCT (AMQ-ENV-114)	Submerged Column
UNITS:	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/kg/wk	mg/L	mg/kg/wk	mg/kg/wk	mg/L	$mg/cm^2/sec$
Alkalinity	6.9	4.2	5.3	7.1	3.8	4.3	4.9	3.7	3.6	185	64	4.1	112	3.7	0.000017
Aluminum	0.021	0.0052	0.0043	0.0019	0.00078	0.0012	0.0024	0.0012	0.051	3.0	0.63	0.0080	3.4	0.052	5.0E-09
Antimony	0.0019	0.00045	0.00068	0.00096	0.010	0.018	0.0012	0.00036	0.00047	0.014	0.0019	0.00045	0.0031	0	1.3E-08
Arsenic	0.079	0.0021	0.0050	0.0079	1.1	1.1	0.13	0.021	0.0062	1.2	0.17	0.0023	0.0090	0.0065	0.00000077
Barium	0.0062	0.0034	0.0021	0.0030	0.0032	0.0015	0.0046	0.0060	0.0025	0.046	0.12	0.0034	0.029	0.0026	2.6E-09
Beryllium	0.0000073	0.00000066	0.0000007	0.00000067	0.00000068	0.00000067	0.00000063	0.00000054	0.0000068	0.000034	0.000036	0.0000010	0.000074	0.0000070	0
Bismuth	0.000020	0.00000077	0.00000084	0.00000082	0.0000014	0.0000022	0.00000087	0.00000058	0.0000068	0.000031	0.000034	0.0000011	0.000030	0.0000070	0
Boron	0.015	0.0038	0.0069	0.0099	0.0075	0.0074	0.0035	0.0026	0.0015	0.10	0.56	0.0036	1.5	0.0016	0
Cadmium	0.0000064	0.0000024	0.0000023	0.0000034	0.0000007	0.00000038	0.00000081	0.0000014	0.0000030	0.000012	0.00013	0.0000025	0.000043	0.0000031	0
Calcium	9.5	2.8	8.2	14	1.2	1.6	2.3	4.6	1.2	18	8.7	2.7	2.8	1.3	0.0000023
Chloride	7.6	0.48	0.65	1.1	0.76	1.5	0.74	0.54	0.97	25	3.8	0.51	0	1.0	0
Chromium	0.000052	0.0000071	0.0000032	0.0000030	0.000032	0.000022	0.000014	0.000011	0.000029	0.0017	0.0047	0.0000084	0.015	0.000030	0
Cobalt	0.00032	0.000044	0.000069	0.00025	0.00016	0.00016	0.00013	0.00013	0.00016	0.00038	0.010	0.000050	0.0040	0.00016	1.1E-10
Copper	0.00034	0.000094	0.000056	0.000027	0.00010	0.000029	0.000046	0.00017	0.00025	0.0012	0.012	0.00010	0.011	0.00026	1.1E-10
Fluoride	0.085	0.029	0.043	0.057	0.010	0.010	0.019	0.024	0.058	0.71	0.40	0.031	0	0.060	0
Iron	0.018	0.0011	0.0018	0.00076	0.0011	0.0011	0.00089	0.00054	0.0076	0.45	1.6	0.0015	2.5	0.0079	0
Lead	0.000096	0.000034	0.0000071	0.0000060	0.0000079	0.0000033	0.000010	0.000049	0.000020	0.00054	0.0034	0.000033	0.0039	0.000021	0
Lithium	0.0017	0.00069	0.00088	0.00079	0.00031	0.00038	0.00097	0.0013	0.00078	0.0043	0.0047	0.00070	0.0030	0.00080	1.4E-08
Magnesium	2.2	0.81	1.0	1.8	0.76	0.84	1.3	1.3	0.16	3.0	1.8	0.77	1.6	0.17	0.0000011
Manganese	0.080	0.0034	0.015	0.032	0.0011	0.0020	0.0036	0.0029	0.0029	0.0084	3.0	0.0033	0.15	0.0030	-1.6E-09
Mercury	0.0000097	0.0000010	0.00000097	0.00000089	0.0000011	0.00000093	0.0000009	0.00000077	0.0000097	0.00014	0.000010	0.0000016	0.000040	0.000010	0
Molybdenum	0.0035	0.00100	0.0011	0.00083	0.00020	0.00037	0.0012	0.0011	0.0020	0.0075	0.00036	0.0011	0.0026	0.0021	1.7E-09
Nickel	0.0080	0.00031	0.00044	0.0026	0.0033	0.0058	0.0018	0.0012	0.00037	0.0016	0.12	0.00032	0.0092	0.00039	1.5E-09
Nitrate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phosphorus	0.0029	0.00097	0.00056	0.00036	0.00063	0.00090	0.00035	0.00100	0.0029	0.091	0.19	0.0011	0	0.0030	0
Potassium	6.0	2.6	8.4	9.8	2.8	3.5	4.0	3.1	1.3	46	2.1	2.5	5.4	1.3	0.000015
Selenium	0.00040	0.00018	0.00038	0.00031	0.00014	0.00010	0.00025	0.0017	0.000085	0.00029	0.0012	0.00017	0.0040	0.000089	2.3E-10
Silver	0.000034	0.00000071	0.0000006	0.00000073	0.00000073	0.0000074	0.0000015	0.00000041	0.0000019	0.000015	0.000061	0.00000079	0.00015	0.0000020	0
Sodium	0.38	0.57	2.9	8.1	0.52	1.1	0.58	0.49	0.15	40	37	0.54	39	0.16	0.0000024
Strontium	0.036	0.017	0.021	0.033	0.020	0.014	0.022	0.037	0.0037	0.16	0.044	0.016	0.0067	0.0038	0
Sulphate	23	8.3	29	54	3.7	6.2	8.4	17	1.9	4.7	42	7.9	8.0	1.9	0.0000092
Thallium	0.00011	0.0000042	0.0000017	0.0000019	0.0000050	0.0000015	0.0000077	0.0000054	0.0000053	0.000028	0.000018	0.0000042	0.000046	0.0000054	0
Tin	0.000095	0.000024	0.00030	0.000046	0.0000045	0.0000054	0.000034	0.000062	0.00015	0.000067	0.00025	0.000032	0.00017	0.00016	0
Uranium	0.000086	0.0010	0.0017	0.00090	0.000012	0.000052	0.00063	0.00072	0.00051	0.0015	0.00069	0.00098	0.00050	0.00052	1.4E-10
Vanadium	0.00032	0.00026	0.000039	0.000026	0.0017	0.0012	0.00097	0.0010	0.00071	0.040	0.00098	0.00029	0.0054	0.00074	0
Zinc	0.0019	0.00018	0.00018	0.00022	0.00019	0.00019	0.00018	0.00015	0.0019	0.0080	0.0068	0.00029	0.011	0.0020	0

Appendix A
Water Quality Model Inputs
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

GOLDSIM INPUT:	Whale Tail Lake (South Basin) sourced water[1]	Natural Runoff to Site	Initial Mammoth Lake Water Quality; Natural Runoff to Mammoth Lake	Initial Downstream Lakes Water Quality; Natural Runoff to all other downstream lakes	Natural Groundwater
DATA SOURCE:	Average of monitoring data, 2015	Average of monitoring data, 2015	Average of monitoring data, 2015	Average of monitoring data, 2015	75th Percentile of Meadowbank Groundwater Monitoring Results (Knight Piésold Consulting, 2015)
UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Alkalinity	4.2	4.9	4.9	5.6	102
Aluminum	0.0068	0.019	0.0039	0.0037	0.04
Antimony	0.00005	0.00005	0.00005	0.00005	0.00028
Arsenic	0.00014	0.00019	0.00033	0.00016	0.003
Barium	0.0033	0.0048	0.0044	0.0055	0.13
Beryllium	0.000012	0.00001	0.00001	0.00001	0.0001
Bismuth	0.000025	0.000025	0.000025	0.000025	0.0001
Boron	0.005	0.005	0.005	0.005	0.46
Cadmium	0.0000025	0.0000025	0.0000025	0.000003	0.00012
Calcium	1.6	1.8	2.3	1.9	73
Chloride	1.6	2.3	2.3	1.2	255
Chromium	0.00005	0.00018	0.00005	0.00005	0.0012
Cobalt	0.00005	0.00005	0.00005	0.00005	0.0018
Copper	0.00033	0.00069	0.0004	0.0006	0.0039
Fluoride	0.025	0.032	0.025	0.027	0.37
Iron	0.012	0.057	0.005	0.0096	0.05
Lead	0.000039	0.000064	0.000066	0.000041	0.001
Lithium	0.0005	0.00067	0.0005	0.0005	0.018
Magnesium	0.62	0.85	0.76	0.64	30
Manganese	0.002	0.0021	0.0014	0.00066	0.32
Mercury	0.0000025	0.0000025	0.0000036	0.0000025	0.000005
Molybdenum	0.000025	0.000034	0.000025	0.000029	0.027
Nickel	0.00043	0.00096	0.00065	0.0004	0.0058
Nitrate	0.0025	0.0063	0.0025	0.0063	0.13
Phosphorus	0.0016	0.0015	0.0017	0.0012	0.2
Potassium	0.35	0.42	0.49	0.48	6.4
Selenium	0.000025	0.000025	0.000025	0.000025	0.00075
Silver	0.000005	0.000005	0.000005	0.000005	0.000025
Sodium	0.5	0.67	0.52	0.65	56
Strontium	0.0097	0.011	0.012	0.0084	0.62
Sulphate	1.3	1.4	2.2	2.1	46
Thallium	0.000005	0.000005	0.000005	0.000005	0.00001
Tin	0.00005	0.00007	0.00005	0.00011	0.0001
Uranium	0.000034	0.000074	0.000021	0.000025	0.0078
Vanadium	0.00025	0.00025	0.00025	0.00025	0.00053
Zinc	0.0005	0.00083	0.0005	0.0007	0.012

ATTACHMENT B

Water Quality Model Results

June 2016
Report No. 1520817

Appendix B
Water Quality Model Predictions - On-site Facilities (no Treatment)
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)			**1400**	**1000**			**16**	**20**	**1**			**0.3**					**0.002**				**0.1**
CEQG aquatic life (long-term)[2] (mg/L)				**120**	**0.12**			**2.93**	**0.004 to 0.01**	**0.1**		***0.028***				**1.5**	**0.000012**		**0.001**		**0.002**
			TDS	**Cl**	**F**	**SO4**	**NH3 (as N)**	**NO3**	**P_total[3]**	**Al[4]**	**Sb**	**As[7]**	**Ba**	**Be**	**Bi**	**B**	**Cd[6]**	**Ca**	**Cr[5]**	**Co**	**Cu[6]**
LOCATION	**Time Period**	**Month**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg N/L**	**mg N/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Whale Tail WRSF Pond	***Operations Water Quality (maximum mine footprint)***	**October**	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		November	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		December	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		January	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		February	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		March	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		April	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		May	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	**2.5**	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011
		June	183	5.9	0.44	63	0.27	11	0.051	0.0003	0.018	**1.3**	0.023	0.000066	0.00003	0.083	0.000015	18	0.0037	0.0015	0.0059
		July	**2814**	93	7.2	1033	0.27	11	0.83	0.0003	0.29	**21**	0.38	0.0011	0.00046	1.4	0.00024	291	0.06	0.025	0.096
		August	**1869**	62	4.7	685	0.27	11	0.55	0.0003	0.19	**14**	0.25	0.00071	0.0003	0.9	0.00016	193	0.04	0.017	0.064
		September	390	13	0.97	139	0.27	11	0.11	0.0003	0.039	**2.9**	0.051	0.00014	0.000064	0.18	0.000032	39	0.0081	0.0034	0.013
		MAXIMUM	**2814**	93	7.2	1033	0.27	11	0.83	0.0003	0.29	**21**	0.38	0.0011	0.00046	1.4	0.00024	291	0.06	0.025	0.096
		AVERAGE	665	22	1.7	241	0.27	11	0.19	0.0003	0.067	**4.9**	0.088	0.00025	0.00011	0.32	0.000055	68	0.014	0.0058	0.022
	Long Term Water Quality, no Water Treatment (Years 10+)	MINIMUM	386	10	**0.61**	157	0.0091	0.019	**0.022**	0.0003	0.009	**0.046**	0.067	0.000021	0.000025	0.072	**0.000049**	53	0.00018	0.001	**0.0021**
		MAXIMUM	3161	83	**5.0**	1292	0.0091	0.019	**0.18**	0.0003	0.074	**0.38**	0.55	0.00017	0.00019	0.59	**0.0004**	438	**0.0014**	0.0082	**0.017**
		AVERAGE	1027	27	**1.6**	420	0.0091	0.019	**0.058**	0.0003	0.024	**0.12**	0.18	0.000055	0.000062	0.19	**0.00013**	142	0.00046	0.0027	**0.0055**
Pit Sump	***Operations Water Quality (maximum mine footprint)***	**October**	417	87	0.92	83	0.3	12	0.16	0.0002	0.028	**2.3**	0.077	0.00016	0.000089	0.29	0.000061	42	0.0077	0.0033	0.013
		November	401	121	0.62	59	0.3	12	0.14	0.0002	0.016	**1.2**	0.079	0.00012	0.000082	0.3	0.000068	45	0.0046	0.0023	0.0083
		December	392	140	0.45	46	0.3	12	0.14	0.0002	0.0088	**0.69**	0.08	0.000097	0.000078	0.3	0.000073	46	0.0029	0.0018	0.0058
		January	387	151	0.36	39	0.3	12	0.13	0.0002	0.0049	**0.38**	0.081	0.000084	0.000076	0.3	0.000075	46	0.0019	0.0015	0.0043
		February	384	157	0.31	35	0.3	12	0.13	0.0002	0.0028	0.21	0.081	0.000077	0.000075	0.3	0.000076	47	0.0014	0.0013	0.0036
		March	383	160	0.28	33	0.3	12	0.13	0.0002	0.0017	0.12	0.081	0.000073	0.000074	0.3	0.000077	47	0.0011	0.0013	0.0032
		April	382	162	0.27	32	0.3	12	0.13	0.0002	0.001	0.068	0.081	0.000071	0.000074	0.3	0.000077	47	0.00096	0.0012	0.0029
		May	382	163	0.26	31	0.3	12	0.13	0.0002	0.00065	0.038	0.081	0.00007	0.000073	0.3	0.000078	47	0.00087	0.0012	0.0028
		June	258	70	0.44	41	0.3	12	0.093	0.0002	0.012	**0.96**	0.049	0.000082	0.000052	0.18	0.000041	27	0.0034	0.0016	0.006
		July	593	74	1.7	146	0.3	12	0.24	0.0002	0.056	**4.5**	0.1	0.00028	0.00013	0.4	0.000074	56	0.015	0.0058	0.024
		August	962	110	2.8	244	0.3	12	0.4	0.0002	0.094	**7.5**	0.17	0.00047	0.00022	0.65	0.00012	90	0.025	0.0097	0.04
		September	635	80	1.8	156	0.3	12	0.26	0.0002	0.059	**4.7**	0.11	0.0003	0.00014	0.43	0.000079	60	0.016	0.0062	0.025
		MAXIMUM	962	163	2.8	244	0.3	12	0.4	0.0002	0.094	**7.5**	0.17	0.00047	0.00022	0.65	0.00012	90	0.025	0.0097	0.04
		AVERAGE	465	123	0.84	79	0.3	12	0.17	0.0002	0.024	**1.9**	0.089	0.00016	0.000097	0.34	0.000075	50	0.0067	0.0031	0.012
Flooded Pit	***Long Term Water Quality (Years 10+)***	MINIMUM	37	3.9	0.066	11	0.0029	0.11	**0.039**	0.0002	0.00068	0.016	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067
		MAXIMUM	37	3.9	0.066	11	0.0029	0.11	**0.039**	0.0002	0.00068	0.016	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067
		AVERAGE	37	3.9	0.066	11	0.0029	0.11	**0.039**	0.0002	0.00068	0.016	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067
Attenuation Pond	***Operations Water Quality (maximum mine footprint)***	**October**	387	36	0.78	110	0.14	5.6	0.36	0.0001	0.025	**1.7**	0.071	0.00012	0.000082	0.49	0.000063	39	0.0082	0.0046	0.012
		November	356	44	0.69	94	0.14	5.8	0.51	0.0001	0.021	**1.5**	0.066	0.00011	0.000076	0.42	0.000059	37	0.007	0.0039	0.011
		December	335	51	0.62	83	0.14	6.0	0.6	0.0001	0.018	**1.3**	0.063	0.0001	0.000071	0.38	0.000056	35	0.0061	0.0034	0.0095
		January	319	56	0.56	74	0.14	6.1	0.67	0.0001	0.016	**1.2**	0.061	0.000096	0.000068	0.35	0.000054	34	0.0054	0.0031	0.0085
		February	308	60	0.51	68	0.15	6.2	0.72	0.0001	0.014	**1.0**	0.059	0.00009	0.000066	0.33	0.000053	33	0.0048	0.0028	0.0077
		March	299	64	0.48	63	0.15	6.3	0.75	0.0001	0.013	**0.93**	0.058	0.000085	0.000064	0.31	0.000052	33	0.0044	0.0026	0.0071
		April	292	67	0.45	58	0.15	6.3	0.78	0.0001	0.012	**0.84**	0.057	0.000081	0.000062	0.3	0.000052	32	0.004	0.0024	0.0066
		May	286	69	0.42	55	0.15	6.4	0.81	0.0001	0.011	**0.77**	0.056	0.000078	0.000061	0.29	0.000051	32	0.0037	0.0022	0.0061
		June	238	47	0.37	51	0.14	5.8	0.5	0.0001	0.0095	**0.67**	0.052	0.000064	0.000051	0.29	0.000049	25	0.0036	0.0027	0.0061
		July	414	38	0.75	120	0.14	5.5	0.32	0.0001	0.023	**1.6**	0.074	0.00012	0.000086	0.58	0.000068	43	0.0085	0.0048	0.012
		August	751	57	1.4	228	0.14	5.7	0.44	0.0001	0.047	**3.2**	0.12	0.00022	0.00015	1.0	0.00011	78	0.016	0.0079	0.022
		September	622	47	1.2	187	0.14	5.6	0.36	0.0001	0.041	**2.8**	0.11	0.00019	0.00013	0.81	0.000092	64	0.014	0.007	0.019
		MAXIMUM	751	69	1.4	228	0.15	6.4	0.81	0.0001	0.047	**3.2**	0.12	0.00022	0.00015	1.0	0.00011	78	0.016	0.0079	0.022
		AVERAGE	384	53	0.69	99	0.14	5.9	0.57	0.0001	0.021	**1.5**	0.07	0.00011	0.000081	0.46	0.000063	40	0.0071	0.0039	0.011
Whale Tail Lake (North Basin)	***Long Term Water Quality (Years 10+)***	MINIMUM	11.78	1.762	0.0279	1.71	0.00003	0.0065	0.0031	0.0001	0.000078	0.00075	0.00379	0.00001168	0.00002552	0.00538	0.0000027	1.82	0.0000726	0.000055	0.00040
		MAXIMUM	12.1	1.785	0.0285	1.85	0.000042	0.0078	0.0036	0.0001	0.000086	0.00084	0.00387	0.00001179	0.00002575	0.0055	0.00000275	1.87	0.0000734	0.0000565	0.000405
		AVERAGE	12.0	1.78	0.0284	1.81	0.000039	0.0075	0.0034	0.0001	0.000084	0.00082	0.00385	0.00001177	0.00002569	0.00547	0.00000274	1.85	0.0000733	0.0000561	0.000404

Notes:

[1] Portage effluent limits (NWB, 2015). Maximum average. Operational phase only - exceedances shown as bold-underlined-highlighted cells

[2] CEQG (2002) freshwater guidelines. Post-closure exceedances to freshwater CEQG's shown in bold-underlined type

[3] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

[4] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5.

[5] CEQG Freshwater aquatic life criteria for chromium depends on the valence of chromium ion. In the above table, the Cr(VI) criterion of 0.001 mg/L is shown.

[6] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.

[7] The CEQG aquatic life criterion for Arsenic is replaced by the Site Specific Water Quality Objective of 0.028 mg/L developed for the Whale Tail Pit Project (Volume 6, Appendix 6-N)

Appendix B
Water Quality Model Predictions - On-site Facilities (no Treatment)
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)				**0.1**					**0.0004**		**0.2**									**0.4**
CEQG aquatic life (long-term)[2] (mg/L)			**0.3**	**0.001**					**0.000026**	**0.073**	**0.038**		**0.001**	**0.0001**			**0.0008**		**0.015**		**0.03**
			Fe	Pb[6]	Li	Mg	Mn	Hg	Mo	Ni[6]	K	Se	Ag	Na	Sr	Tl	Sn	U	V	Zn
LOCATION	**Time Period**	**Month**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Whale Tail WRSF Pond	***Operations Water Quality (maximum mine footprint)***	**October**	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		November	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		December	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		January	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		February	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		March	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		April	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		May	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		June	0.06	0.00097	0.0042	4.3	0.057	0.000026	0.0032	0.012	17	0.0012	0.000022	21	0.14	0.000024	0.00019	0.0028	0.018	0.0039
		July	0.06	0.016	0.067	70	0.94	**0.00041**	0.053	0.19	280	0.02	0.00036	344	2.2	0.00039	0.003	0.045	0.29	0.062
		August	0.06	0.01	0.045	46	0.62	0.00028	0.035	0.13	186	0.013	0.00024	228	1.5	0.00026	0.002	0.03	0.19	0.041
		September	0.06	0.0021	0.0091	9.5	0.13	0.000056	0.0071	0.026	38	0.0027	0.000049	46	0.3	0.000053	0.00041	0.0061	0.039	0.0084
		MAXIMUM	0.06	0.016	0.067	70	0.94	**0.00041**	0.053	0.19	280	0.02	0.00036	344	2.2	0.00039	0.003	0.045	0.29	0.062
		AVERAGE	0.06	0.0037	0.016	16	0.22	0.000097	0.012	0.045	65	0.0046	0.000084	80	0.52	0.000091	0.0007	0.011	0.068	0.015
	Long Term Water Quality, no Water Treatment (Years 10+)	MINIMUM	0.034	0.00066	0.014	15	0.066	**0.000031**	0.021	0.0064	49	**0.0035**	0.000016	11	0.31	0.000084	0.00064	**0.019**	0.0057	0.0058
		MAXIMUM	0.06	**0.0054**	0.11	126	0.54	**0.00025**	**0.17**	**0.052**	405	**0.028**	**0.00013**	89	2.6	0.00069	0.0052	**0.16**	0.047	**0.047**
		AVERAGE	0.058	**0.0018**	0.037	41	0.18	**0.000082**	0.056	0.017	132	**0.0092**	0.000042	29	0.84	0.00022	0.0017	**0.052**	0.015	0.015
Pit Sump	***Operations Water Quality (maximum mine footprint)***	**October**	0.7	0.0022	0.012	15	0.18	0.000052	0.012	0.02	23	0.0019	0.000048	52	0.4	0.000043	0.00033	0.0061	0.035	0.011
		November	0.7	0.0015	0.012	17	0.19	0.00003	0.014	0.013	15	0.0013	0.000034	45	0.4	0.000028	0.00022	0.0056	0.02	0.0096
		December	0.64	0.0011	0.012	18	0.2	0.000019	0.016	0.0089	10	0.00091	0.000027	41	0.4	0.000019	0.00016	0.0053	0.011	0.0088
		January	0.39	0.00093	0.011	19	0.2	0.000012	0.016	0.0066	7.4	0.00072	0.000023	39	0.4	0.000014	0.00012	0.0052	0.0062	0.0084
		February	0.23	0.00082	0.011	19	0.2	0.0000086	0.017	0.0054	6.0	0.00062	0.000021	37	0.4	0.000012	0.00011	0.0051	0.0037	0.0082
		March	0.15	0.00075	0.011	19	0.2	0.0000066	0.017	0.0047	5.2	0.00056	0.000019	37	0.4	0.00001	0.000095	0.0051	0.0023	0.008
		April	0.098	0.00072	0.011	19	0.21	0.0000055	0.017	0.0043	4.8	0.00053	0.000019	36	0.4	0.0000092	0.000089	0.005	0.0014	0.008
		May	0.07	0.0007	0.011	19	0.21	0.0000049	0.017	0.0041	4.5	0.00051	0.000018	36	0.4	0.0000088	0.000086	0.005	0.00099	0.0079
		June	0.63	0.0011	0.0073	10	0.12	0.000023	0.0087	0.0094	11	0.00089	0.000024	29	0.25	0.00002	0.00016	0.0036	0.015	0.0063
		July	0.7	0.004	0.017	17	0.23	0.000099	0.014	0.038	43	0.0034	0.000083	80	0.56	0.000081	0.0006	0.009	0.069	0.017
		August	0.7	0.0066	0.027	28	0.38	0.00017	0.023	0.064	73	0.0057	0.00014	133	0.91	0.00014	0.001	0.015	0.12	0.028
		September	0.7	0.0042	0.018	19	0.25	0.00011	0.016	0.04	46	0.0036	0.000089	86	0.6	0.000086	0.00064	0.0097	0.073	0.018
		MAXIMUM	0.7	0.0066	0.027	28	0.38	0.00017	0.023	0.064	73	0.0057	0.00014	133	0.91	0.00014	0.001	0.015	0.12	0.028
		AVERAGE	0.48	0.0021	0.013	18	0.21	0.000045	0.016	0.018	21	0.0017	0.000045	54	0.46	0.000039	0.0003	0.0066	0.029	0.012
Flooded Pit	***Long Term Water Quality (Years 10+)***	MINIMUM	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		MAXIMUM	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		AVERAGE	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
Attenuation Pond	***Operations Water Quality (maximum mine footprint)***	**October**	0.3	0.0027	0.01	11	0.62	0.000054	0.011	0.041	29	0.0029	0.000098	43	0.28	0.00015	0.00044	0.0052	0.026	0.011
		November	0.3	0.0023	0.0095	11	0.52	0.000046	0.01	0.034	25	0.0024	0.000082	40	0.27	0.00012	0.00038	0.0048	0.022	0.01
		December	0.3	0.002	0.009	11	0.45	0.000041	0.01	0.029	22	0.0021	0.000071	37	0.26	0.0001	0.00033	0.0045	0.02	0.0093
		January	0.3	0.0018	0.0087	11	0.4	0.000036	0.01	0.026	19	0.0019	0.000063	35	0.26	0.00009	0.0003	0.0043	0.017	0.0087
		February	0.3	0.0016	0.0085	11	0.37	0.000032	0.01	0.023	17	0.0017	0.000057	33	0.26	0.00008	0.00027	0.0042	0.015	0.0082
		March	0.3	0.0015	0.0083	11	0.34	0.000029	0.01	0.021	16	0.0015	0.000052	32	0.26	0.000073	0.00025	0.004	0.014	0.0079
		April	0.3	0.0014	0.0081	11	0.32	0.000027	0.01	0.019	15	0.0014	0.000048	31	0.25	0.000066	0.00023	0.0039	0.013	0.0076
		May	0.3	0.0013	0.008	11	0.3	0.000025	0.01	0.018	14	0.0013	0.000045	30	0.25	0.000061	0.00022	0.0038	0.012	0.0073
		June	0.3	0.0014	0.0065	8.3	0.48	0.000023	0.0077	0.025	12	0.0013	0.000047	26	0.19	0.000063	0.00021	0.0031	0.0098	0.0064
		July	0.3	0.0028	0.011	12	0.68	0.000056	0.012	0.044	32	0.0032	0.00012	43	0.28	0.00019	0.00048	0.0055	0.023	0.012
		August	0.3	0.0049	0.019	21	0.87	0.00011	0.022	0.069	62	0.0061	0.00022	78	0.51	0.00036	0.00088	0.01	0.046	0.022
		September	0.3	0.0042	0.016	17	0.84	0.000091	0.018	0.062	51	0.005	0.00017	67	0.43	0.00028	0.00073	0.0085	0.041	0.018
		MAXIMUM	0.3	0.0049	0.019	21	0.87	0.00011	0.022	0.069	62	0.0061	0.00022	78	0.51	0.00036	0.00088	0.01	0.046	0.022
		AVERAGE	0.3	0.0023	0.01	12	0.52	0.000047	0.012	0.034	26	0.0026	0.000089	41	0.29	0.00014	0.00039	0.0052	0.022	0.011
Whale Tail Lake (North Basin)	***Long Term Water Quality (Years 10+)***	MINIMUM	0.01953	0.0000456	0.000572	0.709	0.00261	2.6E-06	0.000078	0.000555	0.492	0.000034	0.00000514	0.57	0.01093	0.00000531	0.0000556	0.000086	0.00027	0.000577
		MAXIMUM	0.0197	0.0000465	0.000585	0.725	0.00281	0.00000266	0.000096	0.000567	0.53	0.000037	0.00000519	0.583	0.01122	0.0000054	0.0000564	0.000103	0.000275	0.000585
		AVERAGE	0.0197	0.0000463	0.000582	0.721	0.00275	0.00000266	0.000092	0.000564	0.52	0.0000362	0.00000518	0.579	0.01115	0.00000538	0.0000563	0.000099	0.000274	0.000583

Notes:

[1] Portage effluent limits (NWB, 2015). Maximum average. Operational phase only - exceedances shown as bold-underlined-highlighted cells

[2]CEQG (2002) freshwater guidelines. Post-closure exceedances to freshwater CEQG's shown in bold-underlined type

[3] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

[4] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5.

[5] CEQG Freshwater aquatic life criteria for chromium depends on the valence of chromium ion. In the above table, the Cr(VI) criterion of 0.001 mg/L is shown.

[6] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.

[7] The CEQG aquatic life criterion for Arsenic is replaced by the Site Specific Water Quality Objective of 0.028 mg/L developed for the Whale Tail Pit Project (Volume 6, Appendix 6-N)

Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

		CEQG aquatic life (long-term)[2] (mg/L)		120	0.12			2.93	0.004 to 0.01	0.1		0.028			
			TDS	Cl	F	SO4	NH3 (as N)	NO3	P_total[3]	Al[4]	Sb	As[7]	Ba	Be	Bi
LOCATION	Time Period	Statistic	mg/L	mg/L	mg/L	mg/L	mg N/L	mg N/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mammoth Lake Proper	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	59	7.1	0.11	15	0.016	0.66	**0.051**	0.0051	0.0028	0.018	0.012	0.000024	0.000033
		AVERAGE (Dissolved)	39	5.0	0.073	9.2	0.0085	0.35	**0.028**	0.0046	0.0015	0.0096	0.0089	0.000018	0.00003
Lake A15	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	54	6.7	0.1	13	0.015	0.61	**0.048**	0.005	0.0024	0.016	0.012	0.000023	0.000032
		AVERAGE (Dissolved)	36	4.5	0.069	8.5	0.0078	0.33	**0.026**	0.0046	0.0014	0.0088	0.0087	0.000017	0.00003
Lake A12	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	51	6.4	0.095	12	0.014	0.57	**0.045**	0.005	0.0022	0.015	0.011	0.000022	0.000032
		AVERAGE (Dissolved)	36	4.4	0.068	8.3	0.0075	0.32	**0.025**	0.0047	0.0013	0.0085	0.0089	0.000018	0.000031
Downstream Node 1	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	15	1.5	0.031	2.8	0.00078	0.038	0.0037	0.0039	0.00017	0.001	0.0059	0.000011	0.000026
		AVERAGE (Dissolved)	14	1.4	0.029	2.5	0.00042	0.024	0.0026	0.0038	0.00012	0.00063	0.0058	0.000011	0.000026
Downstream Node 2	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	28	3.2	0.054	6.1	0.005	0.21	**0.017**	0.0045	0.00087	0.0058	0.0079	0.000015	0.00003
		AVERAGE (Dissolved)	21	2.3	0.043	4.4	0.0025	0.11	0.0094	0.0044	0.00048	0.003	0.0071	0.000013	0.000029

				0.002				0.1		0.1				0.0004
		CEQG aquatic life (long-term)[2] (mg/L)	1.5	0.000012		0.001		0.002	0.3	0.001				0.000026
			B	Cd[6]	Ca	Cr[5]	Co	Cu[6]	Fe	Pb[6]	Li	Mg	Mn	Hg
LOCATION	Time Period	Statistic	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mammoth Lake Proper	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.067	0.00001	6.8	0.0010	0.00058	0.0017	0.043	0.00036	0.0017	2.1	0.076	0.000009
		AVERAGE (Dissolved)	0.039	0.0000068	4.8	0.00057	0.00034	0.0011	0.025	0.00023	0.0012	1.5	0.042	0.0000067
Lake A15	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.06	0.0000095	6.3	0.00088	0.00052	0.0016	0.041	0.00032	0.0016	1.9	0.069	0.0000082
		AVERAGE (Dissolved)	0.036	0.0000065	4.5	0.00052	0.00031	0.0011	0.025	0.00021	0.0011	1.4	0.038	0.0000062
Lake A12	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.055	0.000009	5.9	0.00081	0.00048	0.0015	0.038	0.0003	0.0015	1.8	0.063	0.0000078
		AVERAGE (Dissolved)	0.035	0.0000065	4.5	0.0005	0.0003	0.0011	0.025	0.0002	0.0011	1.4	0.036	0.0000061
Downstream Node 1	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.0079	0.0000034	2.2	0.000094	0.000075	0.00066	0.011	0.000057	0.00056	0.72	0.0042	0.0000029
		AVERAGE (Dissolved)	0.0067	0.0000033	2.1	0.000075	0.000065	0.00064	0.011	0.00005	0.00054	0.69	0.0026	0.0000027
Downstream Node 2	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.024	0.0000054	3.6	0.00034	0.00021	0.00097	0.021	0.00014	0.00091	1.1	0.024	0.0000047
		AVERAGE (Dissolved)	0.015	0.0000045	2.9	0.0002	0.00014	0.00084	0.016	0.000096	0.00075	0.94	0.013	0.0000039

				0.2										0.4
		CEQG aquatic life (long-term)[2] (mg/L)	0.073	0.038		0.001	0.0001			0.0008		0.015		0.03
			Mo	Ni[6]	K	Se	Ag	Na	Sr	Tl	Sn	U	V	Zn
LOCATION	Time Period	Statistic	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mammoth Lake Proper	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.0015	0.0053	3.9	0.00037	0.000017	5.7	0.045	0.000024	0.000098	0.00067	0.003	0.0018
		AVERAGE (Dissolved)	0.00081	0.0032	2.4	0.00022	0.000012	3.3	0.03	0.000015	0.000078	0.00037	0.0017	0.0012
Lake A15	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.0013	0.0048	3.5	0.00033	0.000015	5.1	0.041	0.000021	0.0001	0.0006	0.0026	0.0017
		AVERAGE (Dissolved)	0.00074	0.0029	2.2	0.0002	0.000011	3.1	0.028	0.000015	0.000089	0.00034	0.0016	0.0012
Lake A12	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.0012	0.0044	3.2	0.0003	0.000015	4.7	0.038	0.00002	0.00011	0.00055	0.0024	0.0016
		AVERAGE (Dissolved)	0.00071	0.0028	2.1	0.00019	0.000011	3.0	0.027	0.000014	0.000098	0.00033	0.0016	0.0012
Downstream Node 1	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.000097	0.00064	0.65	0.000041	0.0000056	0.88	0.01	0.0000059	0.00012	0.000055	0.00038	0.00076
		AVERAGE (Dissolved)	0.000067	0.00054	0.58	0.000035	0.0000054	0.79	0.0096	0.0000056	0.00011	0.000042	0.00033	0.00074
Downstream Node 2	Closure (January 2022 to May 2029, inclusive)	MAXIMUM (Dissolved)	0.00047	0.0019	1.5	0.00013	0.0000089	2.2	0.02	0.000011	0.00012	0.00022	0.0011	0.0011
		AVERAGE (Dissolved)	0.00026	0.0012	1.1	0.000082	0.0000074	1.5	0.015	0.0000085	0.00012	0.00013	0.0007	0.00095

Notes:

[1] Portage effluent limits (NWB, 2015). Maximum average. Operational phase only - exceedances shown as bold-underlined-highlighted cells

[2] CEQG (2002) freshwater guidelines. Post-closure exceedances to freshwater CEQG's shown in bold-underlined type

[3] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

[4] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5.

[5] CEQG Freshwater aquatic life criteria for chromium depends on the valence of chromium ion. In the above table, the Cr(VI) criterion of 0.001 mg/L is shown.

[6] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.

[7] The CEQG aquatic life criterion for Arsenic is replaced by the Site Specific Water Quality Objective of 0.028 mg/L developed for the Whale Tail Pit Project (Volume 6, Appendix 6-N)

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)			1400	1000			16	20	1			0.3					0.002				0.1		0.1				0.0004		0.2	
CEOG aquatic life (long-term)[2] (mg/L)				120	0.12			2.93	0.004 to 0.01	0.1		*0.028*				1.5	0.000012		0.001		0.002	0.3	0.001				0.000026	0.073	0.038	
			TDS	Cl	F	SO4	NH3 (as N)	NO3	P_total[3]	Al[4]	Sb	As[7]	Ba	Be	Bi	B	Cd[6]	Ca	Cr[5]	Co	Cu[5]	Fe	Pb[6]	Li	Mg	Mn	Hg	Mo	Ni[5]	K
LOCATION	Time Period	Month	mg/L	mg/L	mg/L	mg/L	mg N/L	mg N/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Whale Tail WRSF Pond	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	October	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		November	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		December	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		January	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		February	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		March	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		April	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		May	340	11	0.84	121	0.27	11	0.097	0.0003	0.034	2.5	0.045	0.00013	0.000056	0.16	0.000028	34	0.0071	0.0029	0.011	0.06	0.0018	0.0079	8.3	0.11	0.000049	0.0062	0.023	33
		June	183	5.9	0.44	63	0.27	11	0.051	0.0003	0.018	1.3	0.023	0.000066	0.00003	0.083	0.000015	18	0.0037	0.0015	0.0059	0.06	0.00097	0.0042	4.3	0.057	0.000026	0.0032	0.012	17
		July	2814	93	7.2	1033	0.27	11	0.83	0.0003	0.29	21	0.38	0.0011	0.00046	1.4	0.00024	291	0.06	0.025	0.096	0.06	0.016	0.067	70	0.94	0.00041	0.053	0.19	280
		August	1869	62	4.7	685	0.27	11	0.55	0.0003	0.19	14	0.25	0.00071	0.0003	0.9	0.00016	193	0.04	0.017	0.064	0.06	0.01	0.045	46	0.62	0.00028	0.035	0.13	186
		September	390	13	0.97	139	0.27	11	0.11	0.0003	0.039	2.9	0.051	0.00014	0.000064	0.18	0.000032	39	0.0081	0.0034	0.013	0.06	0.0021	0.0091	9.5	0.13	0.000056	0.0071	0.026	38
		MAXIMUM	2814	93	7.2	1033	0.27	11	0.83	0.0003	0.29	21	0.38	0.0011	0.00046	1.4	0.00024	291	0.06	0.025	0.096	0.06	0.016	0.067	70	0.94	0.00041	0.053	0.19	280
		AVERAGE	665	22	1.7	241	0.27	11	0.19	0.0003	0.067	4.9	0.088	0.00025	0.00011	0.32	0.000055	68	0.014	0.0058	0.022	0.06	0.0037	0.016	16	0.22	0.000097	0.012	0.045	65
	First Year, Post-Closure	MINIMUM	386	10	0.61	157	0.0091	0.019	0.022	0.0003	0.009	0.046	0.067	0.000021	0.000025	0.072	0.000049	53	0.00018	0.001	0.0021	0.034	0.00066	0.014	15	0.066	0.000031	0.021	0.0064	49
		MAXIMUM	3161	83	5.0	1292	0.0091	0.019	0.18	0.0003	0.074	0.15	0.55	0.00017	0.00019	0.59	0.0004	438	0.0014	0.0082	0.017	0.06	0.0054	0.11	126	0.54	0.00025	0.17	0.052	405
		AVERAGE	1027	27	1.6	420	0.0091	0.019	0.058	0.0003	0.024	0.095	0.18	0.000055	0.000062	0.19	0.00013	142	0.00046	0.0027	0.0055	0.058	0.0018	0.037	41	0.18	0.000082	0.056	0.017	132
		MAXIMUM (total)	3161	83	5.0	1292	0.0091	0.019	0.19	0.32	0.074	0.16	0.55	0.00018	0.00019	0.59	0.00041	438	0.01	0.0087	0.017	0.81	0.0055	0.11	126	0.56	0.00025	0.17	0.056	405
		AVERAGE (total)	1027	27	1.6	420	0.0091	0.019	0.068	0.32	0.024	0.1	0.18	0.000063	0.000064	0.19	0.00013	143	0.0094	0.0032	0.006	0.81	0.0019	0.037	41	0.19	0.000082	0.056	0.021	132
	Long Term Water Quality (Years 10+)	MINIMUM	386	10	0.61	157	0.0091	0.019	0.022	0.0003	0.009	0.046	0.067	0.000021	0.000025	0.072	0.000049	53	0.00018	0.001	0.0021	0.034	0.00066	0.014	15	0.066	0.000031	0.021	0.0064	49
		MAXIMUM	3161	83	5.0	1292	0.0091	0.019	0.18	0.0003	0.074	0.15	0.55	0.00017	0.00019	0.59	0.0004	438	0.0014	0.0082	0.017	0.06	0.0054	0.11	126	0.54	0.00025	0.17	0.052	405
		AVERAGE	1027	27	1.6	420	0.0091	0.019	0.058	0.0003	0.024	0.095	0.18	0.000055	0.000062	0.19	0.00013	142	0.00046	0.0027	0.0055	0.058	0.0018	0.037	41	0.18	0.000082	0.056	0.017	132
		MAXIMUM (total)	3161	83	5.0	1292	0.0091	0.019	0.19	0.32	0.074	0.16	0.55	0.00018	0.00019	0.59	0.00041	438	0.01	0.0087	0.017	0.81	0.0055	0.11	126	0.56	0.00025	0.17	0.056	405
		AVERAGE (total)	1027	27	1.6	420	0.0091	0.019	0.068	0.32	0.024	0.1	0.18	0.000063	0.000064	0.19	0.00013	143	0.0094	0.0032	0.006	0.81	0.0019	0.037	41	0.19	0.000082	0.056	0.021	132
Flooded Pit	*First Year Post-Closure*	MINIMUM	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
		MAXIMUM	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
		AVERAGE	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
	Long Term Water Quality (Years 10+)	MINIMUM	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
		MAXIMUM	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
		AVERAGE	37	3.9	0.066	11	0.0029	0.11	0.039	0.0002	0.00068	0.011	0.0093	0.000014	0.000026	0.02	0.0000076	5.1	0.00016	0.00026	0.00067	0.03	0.00013	0.0014	1.7	0.047	0.0000043	0.0013	0.0025	3.1
Attenuation Pond	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	October	387	36	0.78	110	0.14	5.6	0.36	0.0001	0.025	0.15	0.071	0.00012	0.000082	0.49	0.000063	39	0.0082	0.0046	0.012	0.3	0.0027	0.01	11	0.62	0.000054	0.011	0.041	29
		November	356	44	0.69	94	0.14	5.8	0.51	0.0001	0.021	0.15	0.066	0.00011	0.000076	0.42	0.000059	37	0.007	0.0039	0.011	0.3	0.0023	0.0095	11	0.52	0.000046	0.01	0.034	25
		December	335	51	0.62	83	0.14	6.0	0.6	0.0001	0.018	0.15	0.063	0.0001	0.000071	0.38	0.000056	35	0.0061	0.0034	0.0095	0.3	0.002	0.009	11	0.45	0.000041	0.01	0.029	22
		January	319	56	0.56	74	0.14	6.1	0.67	0.0001	0.016	0.15	0.061	0.000096	0.000068	0.35	0.000054	34	0.0054	0.0031	0.0085	0.3	0.0018	0.0087	11	0.4	0.000036	0.01	0.026	19
		February	308	60	0.51	68	0.15	6.2	0.72	0.0001	0.014	0.15	0.059	0.00009	0.000066	0.33	0.000053	33	0.0048	0.0028	0.0077	0.3	0.0016	0.0085	11	0.37	0.000032	0.01	0.023	17
		March	299	64	0.48	63	0.15	6.3	0.75	0.0001	0.013	0.15	0.058	0.000085	0.000064	0.31	0.000052	33	0.0044	0.0026	0.0071	0.3	0.0015	0.0083	11	0.34	0.000029	0.01	0.021	16
		April	292	67	0.45	58	0.15	6.3	0.78	0.0001	0.012	0.15	0.057	0.000081	0.000062	0.3	0.000052	32	0.004	0.0024	0.0066	0.3	0.0014	0.0081	11	0.32	0.000027	0.01	0.019	15
		May	286	69	0.42	55	0.15	6.4	0.81	0.0001	0.011	0.15	0.056	0.000078	0.000061	0.29	0.000051	32	0.0037	0.0022	0.0061	0.3	0.0013	0.008	11	0.3	0.000025	0.01	0.018	14
		June	238	47	0.37	51	0.14	5.8	0.5	0.0001	0.0095	0.15	0.052	0.000064	0.000051	0.29	0.000049	25	0.0036	0.0027	0.0061	0.3	0.0014	0.0065	8.3	0.48	0.000023	0.0077	0.025	12
		July	414	38	0.75	120	0.14	5.5	0.32	0.0001	0.023	0.15	0.074	0.00012	0.000086	0.58	0.000068	43	0.0085	0.0048	0.012	0.3	0.0028	0.011	12	0.68	0.000056	0.012	0.044	32
		August	751	57	1.4	228	0.14	5.7	0.44	0.0001	0.047	0.15	0.12	0.00022	0.00015	1.0	0.00011	78	0.016	0.0079	0.022	0.3	0.0049	0.019	21	0.87	0.00011	0.022	0.069	62
		September	622	47	1.2	187	0.14	5.6	0.36	0.0001	0.041	0.15	0.11	0.00019	0.00013	0.81	0.000092	64	0.014	0.007	0.019	0.3	0.0042	0.016	17	0.84	0.000091	0.018	0.062	51
		MAXIMUM	751	69	1.4	228	0.15	6.4	0.81	0.0001	0.047	0.15	0.12	0.00022	0.00015	1.0	0.00011	78	0.016	0.0079	0.022	0.3	0.0049	0.019	21	0.87	0.00011	0.022	0.069	62
		AVERAGE	384	53	0.69	99	0.14	5.9	0.57	0.0001	0.021	0.15	0.07	0.00011	0.000081	0.46	0.000063	40	0.0071	0.0039	0.011	0.3	0.0023	0.01	12	0.52	0.000047	0.012	0.034	26
		MAXIMUM (total)	751	69	1.4	228	0.15	6.4	0.82	0.32	0.047	0.16	0.12	0.00023	0.00015	1.0	0.00011	79	0.025	0.0084	0.023	1.1	0.0051	0.02	21	0.89	0.00011	0.022	0.074	63
		AVERAGE (total)	384	53	0.69	99	0.14	5.9	0.58	0.32	0.021	0.16	0.074	0.00012	0.000083	0.46	0.000064	41	0.016	0.0045	0.011	1.1	0.0024	0.011	13	0.53	0.000047	0.012	0.039	26
Whale Tail Lake (North Basin)	*First Year Post-Closure*	MINIMUM	49	3.3	0.086	16	0.0012	0.14	0.059	0.0001	0.00092	0.0059	0.011	0.000014	0.000027	0.016	0.0000081	6.9	0.00011	0.0002	0.00065	0.029	0.00012	0.0019	2.2	0.024	0.0000054	0.0021	0.0017	5.0
		MAXIMUM	65	4.0	0.11	23	0.0017	0.2	0.083	0.0001	0.0013	0.0081	0.014	0.000014	0.000028	0.02	0.00001	9.0	0.00013	0.00026	0.00076	0.034	0.00016	0.0025	2.8	0.034	0.0000066	0.0029	0.0022	7.0
		AVERAGE	60	3.7	0.1	21	0.0016	0.18	0.075	0.0001	0.0012	0.0073	0.013	0.000014	0.000027	0.019	0.0000096	8.3	0.00012	0.00024	0.00072	0.032	0.00015	0.0023	2.6	0.031	0.0000062	0.0026	0.0021	6.3
		MAXIMUM (total)	65	4.0	0.11	23	0.0017	0.2	0.093	0.32	0.0013	0.013	0.017	0.000022	0.00003	0.02	0.000012	9.3	0.0091	0.00079	0.0013	0.79	0.00027	0.0027	3.2	0.046	0.0000066	0.0029	0.0069	7.2
		AVERAGE (total)	60	3.7	0.11	21	0.0016	0.18	0.085	0.32	0.0012	0.012	0.016	0.000021	0.00003	0.019	0.000011	8.6	0.0091	0.00077	0.0012	0.79	0.00026	0.0025	3.0	0.043	0.0000062	0.0027	0.0067	6.5
	Long Term Water Quality (Years 10+)	MINIMUM	12	1.8	0.028	1.7	0.00003	0.0065	0.0031	0.0001	0.000078	0.00073	0.0038	0.000012	0.000026	0.0054	0.0000027	1.8	0.000073	0.000055	0.0004	0.02	0.000046	0.00057	0.71	0.0026	0.0000026	0.000078	0.00055	0.49
		MAXIMUM	12	1.8	0.029	1.8	0.000042	0.0078	0.0036	0.0001	0.000086	0.00081	0.0039	0.000012	0.000026	0.0055	0.0000028	1.9	0.000073	0.000056	0.0004	0.02	0.000047	0.00059	0.72	0.0028	0.0000027	0.000096	0.00057	0.53
		AVERAGE	12	1.8	0.028	1.8	0.000039	0.0075	0.0034	0.0001	0.000084	0.00079	0.0038	0.000012	0.000026	0.0055	0.0000027	1.9	0.000073	0.000056	0.0004	0.02	0.000046	0.00058	0.72	0.0028	0.0000027	0.000092	0.00056	0.52
		MAXIMUM (total)	12	1.8	0.031	1.8	0.000042	0.0078	0.014	0.32	0.0001	0.0059	0.007	0.000019	0.000028	0.0055	0.0000043	2.2	0.0091	0.00058	0.00093	0.77	0.00016	0.00087	1.1	0.015	0.0000027	0.00011	0.0052	0.7
		AVERAGE (total)	12	1.8	0.031	1.8	0.000039	0.0075	0.014	0.32	0.0001	0.0059	0.007	0.000019	0.000028	0.0055	0.0000043	2.1	0.0091	0.00058	0.00092	0.77	0.00016	0.00087	1.1	0.015	0.0000027	0.00011	0.0052	0.69

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)												**0.4**
CEOG aquatic life (long-term)[2] (mg/L)			**0.001**	**0.0001**			**0.0008**		**0.015**			**0.03**
			Se	**Ag**	**Na**	**Sr**	**Tl**	**Sn**	**U**	**V**	**Zn**
LOCATION	**Time Period**	**Month**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Whale Tail WRSF Pond	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		November	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		December	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		January	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		February	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		March	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		April	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		May	0.0023	0.000042	40	0.26	0.000046	0.00036	0.0053	0.034	0.0073
		June	0.0012	0.000022	21	0.14	0.000024	0.00019	0.0028	0.018	0.0039
		July	0.02	0.00036	344	2.2	0.00039	0.003	0.045	0.29	0.062
		August	0.013	0.00024	228	1.5	0.00026	0.002	0.03	0.19	0.041
		September	0.0027	0.000049	46	0.3	0.000053	0.00041	0.0061	0.039	0.0084
		MAXIMUM	0.02	0.00036	344	2.2	0.00039	0.003	0.045	0.29	0.062
		AVERAGE	0.0046	0.000084	80	0.52	0.000091	0.0007	0.011	0.068	0.015
	First Year, Post-Closure	MINIMUM	**0.0035**	0.000016	11	0.31	0.000084	0.00064	**0.019**	0.0057	0.0058
		MAXIMUM	**0.028**	**0.00013**	89	2.6	0.00069	0.0052	**0.16**	0.047	**0.047**
		AVERAGE	**0.0092**	0.000042	29	0.84	0.00022	0.0017	**0.052**	0.015	0.015
		MAXIMUM (total)	**0.028**	**0.00013**	89	2.6	0.00069	0.0052	**0.16**	0.048	**0.048**
		AVERAGE (total)	**0.0092**	0.000045	29	0.84	0.00023	0.0017	**0.052**	0.016	0.016
	Long Term Water Quality (Years 10+)	MINIMUM	**0.0035**	0.000016	11	0.31	0.000084	0.00064	**0.019**	0.0057	0.0058
		MAXIMUM	**0.028**	**0.00013**	89	2.6	0.00069	0.0052	**0.16**	0.047	**0.047**
		AVERAGE	**0.0092**	0.000042	29	0.84	0.00022	0.0017	**0.052**	0.015	0.015
		MAXIMUM (total)	**0.028**	**0.00013**	89	2.6	0.00069	0.0052	**0.16**	0.048	**0.048**
		AVERAGE (total)	**0.0092**	0.000045	29	0.84	0.00023	0.0017	**0.052**	0.016	0.016
Flooded Pit	***First Year Post-Closure***	MINIMUM	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		MAXIMUM	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		AVERAGE	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
	Long Term Water Quality (Years 10+)	MINIMUM	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		MAXIMUM	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
		AVERAGE	0.00023	0.0000069	2.0	0.031	0.0000099	0.000087	0.0011	0.00066	0.0010
Attenuation Pond	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0.0029	0.000098	43	0.28	0.00015	0.00044	0.0052	0.026	0.011
		November	0.0024	0.000082	40	0.27	0.00012	0.00038	0.0048	0.022	0.01
		December	0.0021	0.000071	37	0.26	0.0001	0.00033	0.0045	0.02	0.0093
		January	0.0019	0.000063	35	0.26	0.00009	0.0003	0.0043	0.017	0.0087
		February	0.0017	0.000057	33	0.26	0.00008	0.00027	0.0042	0.015	0.0082
		March	0.0015	0.000052	32	0.26	0.000073	0.00025	0.004	0.014	0.0079
		April	0.0014	0.000048	31	0.25	0.000066	0.00023	0.0039	0.013	0.0076
		May	0.0013	0.000045	30	0.25	0.000061	0.00022	0.0038	0.012	0.0073
		June	0.0013	0.000047	26	0.19	0.000063	0.00021	0.0031	0.0098	0.0064
		July	0.0032	0.00012	43	0.28	0.00019	0.00048	0.0055	0.023	0.012
		August	0.0061	0.00022	78	0.51	0.00036	0.00088	0.01	0.046	0.022
		September	0.005	0.00017	67	0.43	0.00028	0.00073	0.0085	0.041	0.018
		MAXIMUM	0.0061	0.00022	78	0.51	0.00036	0.00088	0.01	0.046	0.022
		AVERAGE	0.0026	0.000089	41	0.29	0.00014	0.00039	0.0052	0.022	0.011
		MAXIMUM (total)	0.0061	0.00022	78	0.51	0.00037	0.00089	0.01	0.047	0.022
		AVERAGE (total)	0.0026	0.000092	41	0.29	0.00014	0.0004	0.0052	0.022	0.011
Whale Tail Lake (North Basin)	***First Year Post-Closure***	MINIMUM	0.00036	0.0000067	1.9	0.041	0.000013	0.00011	0.0019	0.00079	0.0012
		MAXIMUM	0.0005	0.0000074	2.4	0.054	0.000016	0.00014	0.0027	0.001	0.0014
		AVERAGE	0.00045	0.0000072	2.2	0.05	0.000015	0.00013	0.0024	0.00094	0.0013
		MAXIMUM (total)	0.0005	0.000011	2.4	0.055	0.000021	0.00014	0.0027	0.0018	0.0021
		AVERAGE (total)	0.00046	0.00001	2.2	0.051	0.00002	0.00014	0.0024	0.0018	0.002
	Long Term Water Quality (Years 10+)	MINIMUM	0.000034	0.0000051	0.57	0.011	0.0000053	0.000056	0.000086	0.00027	0.00058
		MAXIMUM	0.000037	0.0000052	0.58	0.011	0.0000054	0.000056	0.0001	0.00028	0.00059
		AVERAGE	0.000036	0.0000052	0.58	0.011	0.0000054	0.000056	0.000099	0.00027	0.00058
		MAXIMUM (total)	0.000042	0.0000083	0.59	0.012	0.000011	0.000062	0.00012	0.0011	0.0012
		AVERAGE (total)	0.000041	0.0000083	0.58	0.012	0.000011	0.000062	0.00011	0.0011	0.0012

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)			1400	1000			16	20	1			0.3					0.002				0.1		0.1				0.0004		0.2	
CEOG aquatic life (long-term)[2] (mg/L)				120	0.12			2.93	0.004 to 0.01	0.1		*0.028*				1.5	0.000012		0.001		0.002	0.3	0.001				0.000026	0.073	0.038	
			TDS	Cl	F	SO4	NH3 (as N)	NO3	P_total[3]	Al[4]	Sb	As[7]	Ba	Be	Bi	B	Cd[6]	Ca	Cr[5]	Co	Cu[6]	Fe	Pb[6]	Li	Mg	Mn	Hg	Mo	Ni[6]	K
LOCATION	Time Period	Month	mg/L	mg/L	mg/L	mg/L	mg N/L	mg N/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mammoth Lake Proper	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	**October**	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		November	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		December	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		January	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		February	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		March	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		April	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		May	54	6.6	0.1	14	0.014	0.6	**0.046**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.00091	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000085	0.0013	0.0049	3.6
		June	54	6.7	0.1	13	0.015	0.61	**0.048**	0.005	0.0025	0.016	0.011	0.000023	0.000032	0.06	0.0000094	6.3	0.00089	0.00052	0.0016	0.04	0.00032	0.0016	1.9	0.068	0.0000083	0.0013	0.0048	3.5
		July	52	6.8	0.096	13	0.015	0.62	**0.05**	0.005	0.0023	0.017	0.011	0.000022	0.000031	0.057	0.0000093	6.0	0.00083	0.0005	0.0015	0.041	0.00031	0.0015	1.9	0.067	0.0000079	0.0013	0.0046	3.3
		August	53	7.0	0.099	13	0.016	0.65	**0.052**	0.005	0.0024	0.017	0.012	0.000022	0.000032	0.059	0.0000096	6.2	0.00086	0.00052	0.0016	0.042	0.00032	0.0016	1.9	0.07	0.0000081	0.0013	0.0048	3.4
		September	57	7.2	0.11	14	0.016	0.67	**0.052**	0.005	0.0026	0.018	0.012	0.000024	0.000033	0.064	0.00001	6.6	0.00094	0.00056	0.0017	0.043	0.00034	0.0017	2.0	0.074	0.0000087	0.0014	0.0051	3.7
		MAXIMUM	57	7.2	0.11	14	0.016	0.67	**0.052**	0.005	0.0026	0.018	0.012	0.000024	0.000033	0.064	0.00001	6.6	0.00094	0.00056	0.0017	0.043	0.00034	0.0017	2.0	0.074	0.0000087	0.0014	0.0051	3.7
		AVERAGE	54	6.7	0.1	14	0.015	0.61	**0.048**	0.005	0.0025	0.016	0.012	0.000023	0.000032	0.061	0.0000095	6.3	0.0009	0.00053	0.0016	0.04	0.00033	0.0016	1.9	0.069	0.0000084	0.0013	0.0049	3.5
	First Year Post-Closure	MINIMUM	27	3.7	0.05	5.8	0.0032	0.16	**0.014**	0.0032	0.0008	0.0048	0.0068	0.000014	0.000028	0.022	0.0000047	3.7	0.00026	0.0002	0.00079	0.015	0.00015	0.00086	1.2	0.021	0.0000054	0.00041	0.0019	1.5
		MAXIMUM	45	3.8	0.079	14	0.0041	0.18	**0.029**	0.0044	0.0011	0.006	0.010	0.000015	0.000029	0.023	0.0000072	6.2	0.00031	0.00023	0.00082	0.019	0.00016	0.0016	1.9	0.024	0.0000063	0.0015	0.0021	4.0
		AVERAGE	30	3.7	0.056	7.5	0.0039	0.17	**0.018**	0.0041	0.00087	0.0051	0.0075	0.000014	0.000029	0.022	0.0000052	4.2	0.0003	0.0002	0.0008	0.016	0.00015	0.001	1.3	0.022	0.0000056	0.00065	0.002	2.0
	Long Term Water Quality (Years 10+)	MINIMUM	33	2.5	0.06	10	0.00029	0.0085	0.005	0.0014	0.00056	0.0026	0.0076	0.000012	0.000026	0.0092	0.0000053	4.9	0.000075	0.00011	0.00051	0.016	0.000089	0.0013	1.6	0.0061	0.0000046	0.0012	0.00094	3.2
		MAXIMUM	39	2.7	0.069	13	0.00032	0.01	0.0059	0.0015	0.00069	0.003	0.0086	0.000013	0.000027	0.01	0.0000061	5.7	0.000078	0.00012	0.00055	0.016	0.000099	0.0015	1.8	0.0073	0.0000051	0.0015	0.001	3.9
		AVERAGE	38	2.6	0.068	12	0.00031	0.0099	0.0057	0.0014	0.00067	0.0029	0.0085	0.000013	0.000027	0.01	0.0000059	5.5	0.000078	0.00012	0.00054	0.016	0.000097	0.0015	1.7	0.0071	0.000005	0.0015	0.001	3.8
Lake A15	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	**October**	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		November	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		December	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		January	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		February	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		March	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		April	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		May	49	6.2	0.092	12	0.013	0.54	**0.043**	0.0049	0.0021	0.015	0.011	0.000021	0.000031	0.053	0.0000087	5.8	0.00078	0.00047	0.0014	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		June	50	6.2	0.094	12	0.013	0.55	**0.044**	0.0049	0.0022	0.015	0.011	0.000022	0.000031	0.055	0.0000089	5.9	0.00081	0.00048	0.0015	0.037	0.0003	0.0015	1.8	0.062	0.0000078	0.0012	0.0044	3.2
		July	50	6.3	0.093	12	0.013	0.56	**0.045**	0.0049	0.0022	0.015	0.011	0.000021	0.000031	0.054	0.0000088	5.8	0.0008	0.00047	0.0015	0.038	0.00029	0.0015	1.8	0.062	0.0000077	0.0012	0.0043	3.2
		August	50	6.3	0.093	12	0.013	0.56	**0.045**	0.0049	0.0022	0.015	0.011	0.000021	0.000032	0.054	0.0000089	5.9	0.00079	0.00047	0.0015	0.038	0.00029	0.0015	1.8	0.062	0.0000077	0.0012	0.0043	3.1
		September	52	6.6	0.097	13	0.014	0.59	**0.047**	0.005	0.0023	0.016	0.011	0.000022	0.000032	0.057	0.0000092	6.1	0.00083	0.0005	0.0015	0.039	0.00031	0.0015	1.9	0.065	0.000008	0.0013	0.0046	3.3
		MAXIMUM	52	6.6	0.097	13	0.014	0.59	**0.047**	0.005	0.0023	0.016	0.011	0.000022	0.000032	0.057	0.0000092	6.1	0.00083	0.0005	0.0015	0.039	0.00031	0.0015	1.9	0.065	0.000008	0.0013	0.0046	3.3
		AVERAGE	49	6.2	0.093	12	0.013	0.55	**0.044**	0.0049	0.0022	0.015	0.011	0.000021	0.000031	0.054	0.0000088	5.8	0.00079	0.00047	0.0015	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
	First Year Post-Closure	MINIMUM	25	3.3	0.048	5.5	0.0033	0.16	**0.013**	0.0035	0.00073	0.0044	0.0069	0.000014	0.000028	0.02	0.0000047	3.5	0.00026	0.00018	0.00079	0.015	0.00014	0.00083	1.1	0.019	0.000005	0.00038	0.0018	1.4
		MAXIMUM	37	3.6	0.067	11	0.0038	0.17	**0.024**	0.0044	0.00095	0.0053	0.0088	0.000014	0.000029	0.021	0.0000062	5.2	0.0003	0.00021	0.00081	0.018	0.00015	0.0013	1.6	0.022	0.0000058	0.0011	0.002	3.0
		AVERAGE	28	3.4	0.052	6.5	0.0037	0.16	**0.016**	0.0042	0.00078	0.0046	0.0073	0.000014	0.000029	0.021	0.000005	3.8	0.00028	0.00019	0.0008	0.016	0.00014	0.00093	1.2	0.02	0.0000052	0.00052	0.0018	1.7
	Long Term Water Quality (Years 10+)	MINIMUM	33	2.4	0.06	10	0.00028	0.0089	0.0049	0.0016	0.00055	0.0025	0.0077	0.000012	0.000027	0.0092	0.0000053	4.8	0.000074	0.00011	0.00053	0.015	0.000087	0.0013	1.5	0.006	0.0000046	0.0012	0.00092	3.1
		MAXIMUM	37	2.6	0.066	12	0.0003	0.011	0.0058	0.0017	0.00063	0.0028	0.0084	0.000012	0.000027	0.010	0.0000058	5.3	0.000077	0.00012	0.00055	0.016	0.000094	0.0014	1.7	0.0068	0.0000049	0.0014	0.0010	3.6
		AVERAGE	36	2.5	0.064	11	0.0003	0.01	0.0056	0.0016	0.00061	0.0027	0.0082	0.000012	0.000027	0.0098	0.0000057	5.2	0.000076	0.00012	0.00055	0.016	0.000093	0.0014	1.7	0.0066	0.0000048	0.0013	0.00098	3.5
Lake A12	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	**October**	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		November	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		December	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		January	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		February	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		March	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		April	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		May	45	5.8	0.085	11	0.012	0.49	**0.039**	0.0049	0.0019	0.013	0.01	0.00002	0.000031	0.048	0.0000081	5.4	0.0007	0.00042	0.0014	0.034	0.00026	0.0014	1.7	0.054	0.0000072	0.001	0.0039	2.8
		June	47	5.9	0.089	12	0.012	0.51	**0.041**	0.0048	0.0021	0.014	0.01	0.000021	0.000031	0.051	0.0000084	5.6	0.00075	0.00045	0.0014	0.035	0.00028	0.0014	1.7	0.057	0.0000074	0.0011	0.0041	3.0
		July	48	6.0	0.091	12	0.013	0.53	**0.042**	0.0049	0.0021	0.014	0.011	0.000021	0.000031	0.052	0.0000086	5.7	0.00077	0.00046	0.0014	0.036	0.00028	0.0014	1.8	0.059	0.0000075	0.0011	0.0042	3.1
		August	49	6.1	0.092	12	0.013	0.53	**0.042**	0.005	0.0021	0.014	0.011	0.000021	0.000032	0.052	0.0000087	5.8	0.00077	0.00046	0.0015	0.036	0.00029	0.0015	1.8	0.059	0.0000076	0.0011	0.0042	3.1
		September	49	6.2	0.093	12	0.013	0.55	**0.044**	0.005	0.0022	0.015	0.011	0.000022	0.000032	0.053	0.0000088	5.8	0.00078	0.00047	0.0015	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		MAXIMUM	49	6.2	0.093	12	0.013	0.55	**0.044**	0.005	0.0022	0.015	0.011	0.000022	0.000032	0.053	0.0000088	5.8	0.00078	0.00047	0.0015	0.037	0.00029	0.0015	1.8	0.061	0.0000077	0.0012	0.0043	3.1
		AVERAGE	46	5.9	0.087	11	0.012	0.5	**0.04**	0.0049	0.002	0.014	0.01	0.00002	0.000031	0.049	0.0000083	5.5	0.00072	0.00043	0.0014	0.035	0.00027	0.0014	1.7	0.056	0.0000073	0.0011	0.004	2.9
	First Year Post-Closure	MINIMUM	25	3.2	0.049	5.5	0.0034	0.15	**0.013**	0.0039	0.00071	0.0043	0.0071	0.000014	0.000029	0.02	0.0000048	3.5	0.00027	0.00018	0.0008	0.016	0.00013	0.00085	1.1	0.019	0.0000049	0.00037	0.0017	1.4
		MAXIMUM	33	3.5	0.061	8.7	0.0036	0.16	**0.021**	0.0045	0.00086	0.0049	0.0082	0.000015	0.00003	0.021	0.0000057	4.6	0.00028	0.0002	0.00084	0.017	0.00015	0.0011	1.4	0.021	0.0000055	0.00083	0.0019	2.4
		AVERAGE	27	3.3	0.051	6.1	0.0036	0.16	**0.015**	0.0044	0.00074	0.0044	0.0074	0.000014	0.000029	0.02	0.000005	3.7	0.00028	0.00019	0.00083	0.016	0.00014	0.0009	1.2	0.019	0.0000051	0.00046	0.0018	1.6
	Long Term Water Quality (Years 10+)	MINIMUM	33	2.4	0.06	10	0.00027	0.0093	0.0049	0.0017	0.00055	0.0025	0.0079	0.000012	0.000027	0.0093	0.0000054	4.9	0.000074	0.00011	0.00055	0.015	0.000088	0.0013	1.6	0.006	0.0000046	0.0012	0.00092	3.1
		MAXIMUM	35	2.5	0.063	11	0.00029	0.011	0.0057	0.0019	0.00059	0.0026	0.0082	0.000013	0.000028	0.0097	0.0000056	5.1	0.000076	0.00011	0.00057	0.016	0.000092	0.0014	1.6	0.0065	0.0000048	0.0013	0.00097	3.3
		AVERAGE	35	2.5	0.062	11	0.00029	0.011	0.0055	0.0018	0.00058	0.0026	0.0081	0.000012	0.000027	0.0096	0.0000056	5.1	0.000076	0.00011	0.00056	0.016	0.000091	0.0013	1.6	0.0063	0.0000048	0.0012	0.00096	3.3

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)											0.4
CEOG aquatic life (long-term)[2] (mg/L)			0.001	0.0001			0.0008		0.015		0.03
			Se	Ag	Na	Sr	Tl	Sn	U	V	Zn
LOCATION	Time Period	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mammoth Lake Proper	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	October	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		November	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		December	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		January	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		February	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		March	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		April	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		May	0.00034	0.000016	5.2	0.041	0.000022	0.000094	0.00061	0.0027	0.0017
		June	0.00033	0.000015	5.1	0.041	0.000022	0.000092	0.0006	0.0027	0.0017
		July	0.00031	0.000015	4.9	0.04	0.00002	0.000089	0.00057	0.0025	0.0016
		August	0.00032	0.000015	5.1	0.041	0.000021	0.000091	0.00059	0.0026	0.0017
		September	0.00035	0.000016	5.4	0.043	0.000023	0.000096	0.00064	0.0028	0.0018
		MAXIMUM	0.00035	0.000016	5.4	0.043	0.000023	0.000096	0.00064	0.0028	0.0018
		AVERAGE	0.00034	0.000016	5.1	0.041	0.000022	0.000093	0.00061	0.0027	0.0017
	First Year Post-Closure	MINIMUM	0.00012	0.0000083	1.9	0.022	0.00001	0.000066	0.0002	0.001	0.00089
		MAXIMUM	0.0003	0.0000087	2.2	0.037	0.000014	0.000099	0.0013	0.0011	0.0011
		AVERAGE	0.00016	0.0000085	2.0	0.025	0.000011	0.000073	0.00043	0.001	0.00094
	Long Term Water Quality (Years 10+)	MINIMUM	0.00022	0.0000059	1.1	0.028	0.0000097	0.000088	0.0011	0.00057	0.00086
		MAXIMUM	0.00027	0.0000062	1.3	0.033	0.000011	0.000097	0.0014	0.00066	0.00095
		AVERAGE	0.00026	0.0000062	1.3	0.032	0.000011	0.000096	0.0013	0.00064	0.00094
Lake A15	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	October	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		November	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		December	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		January	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		February	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		March	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		April	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		May	0.00029	0.000014	4.5	0.037	0.000019	0.000092	0.00053	0.0023	0.0015
		June	0.00031	0.000015	4.7	0.038	0.00002	0.000093	0.00055	0.0024	0.0016
		July	0.0003	0.000014	4.6	0.038	0.00002	0.000093	0.00054	0.0024	0.0016
		August	0.0003	0.000014	4.6	0.038	0.00002	0.000095	0.00054	0.0024	0.0016
		September	0.00031	0.000015	4.9	0.039	0.00002	0.000096	0.00057	0.0025	0.0016
		MAXIMUM	0.00031	0.000015	4.9	0.039	0.00002	0.000096	0.00057	0.0025	0.0016
		AVERAGE	0.0003	0.000014	4.6	0.038	0.00002	0.000093	0.00054	0.0024	0.0016
	First Year Post-Closure	MINIMUM	0.00011	0.0000083	1.8	0.02	0.00001	0.000078	0.00018	0.00095	0.0009
		MAXIMUM	0.00023	0.0000084	2.1	0.031	0.000012	0.000092	0.00087	0.001	0.001
		AVERAGE	0.00014	0.0000083	1.9	0.022	0.00001	0.000081	0.00032	0.00097	0.00093
	Long Term Water Quality (Years 10+)	MINIMUM	0.00022	0.0000059	1.1	0.028	0.0000097	0.000092	0.0011	0.00057	0.00087
		MAXIMUM	0.00025	0.0000061	1.3	0.031	0.00001	0.000098	0.0013	0.00062	0.00093
		AVERAGE	0.00024	0.0000061	1.2	0.03	0.00001	0.000097	0.0012	0.00061	0.00092
Lake A12	*Operations Water Quality - with Water Treatment (maximum mine footprint)*	October	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		November	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		December	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		January	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		February	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		March	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		April	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		May	0.00026	0.000013	4.1	0.035	0.000018	0.000093	0.00047	0.0021	0.0015
		June	0.00028	0.000014	4.4	0.036	0.000019	0.000094	0.00051	0.0023	0.0015
		July	0.00029	0.000014	4.5	0.037	0.000019	0.000096	0.00052	0.0023	0.0016
		August	0.00029	0.000014	4.5	0.037	0.000019	0.0001	0.00052	0.0023	0.0016
		September	0.00029	0.000014	4.6	0.038	0.00002	0.00010	0.00053	0.0024	0.0016
		MAXIMUM	0.00029	0.000014	4.6	0.038	0.00002	0.0001	0.00053	0.0024	0.0016
		AVERAGE	0.00027	0.000014	4.2	0.035	0.000018	0.000095	0.00049	0.0022	0.0015
	First Year Post-Closure	MINIMUM	0.00011	0.0000083	1.8	0.02	0.00001	0.000083	0.00018	0.00093	0.00093
		MAXIMUM	0.00018	0.0000084	2.0	0.027	0.000011	0.000091	0.00062	0.0010	0.001
		AVERAGE	0.00013	0.0000084	1.9	0.021	0.00001	0.000089	0.00027	0.00095	0.00095
	Long Term Water Quality (Years 10+)	MINIMUM	0.00022	0.000006	1.2	0.028	0.0000097	0.000097	0.0011	0.00057	0.00089
		MAXIMUM	0.00023	0.0000062	1.2	0.029	0.00001	0.0001	0.0012	0.0006	0.00092
		AVERAGE	0.00023	0.0000061	1.2	0.029	0.00001	0.00010	0.0012	0.00059	0.00092

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)			**1400**	**1000**			**16**	**20**	**1**			**0.3**					**0.002**				**0.1**		**0.1**				**0.0004**		**0.2**	
CEQG aquatic life (long-term)[2] (mg/L)				**120**	**0.12**			**2.93**	**0.004 to 0.01**	**0.1**		***0.028***				**1.5**	**0.000012**		**0.001**		**0.002**	**0.3**	**0.001**				**0.000026**	**0.073**	**0.038**	
			TDS	Cl	F	SO4	NH3 (as N)	NO3	P_total[3]	Al[4]	Sb	As[7]	Ba	Be	Bi	B	Cd[6]	Ca	Cr[5]	Co	Cu[6]	Fe	Pb[6]	Li	Mg	Mn	Hg	Mo	Ni[6]	K
LOCATION	**Time Period**	**Month**	mg/L	mg/L	mg/L	mg/L	mg N/L	mg N/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Downstream Node 1	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		June	15	1.5	0.03	2.7	0.00065	0.033	0.0033	0.0038	0.00015	0.00092	0.0058	0.000011	0.000026	0.0075	0.0000034	2.2	0.000086	0.000071	0.00065	0.011	0.000055	0.00056	0.71	0.0037	0.0000028	0.000085	0.0006	0.62
		July	15	1.4	0.03	2.6	0.00062	0.032	0.0032	0.0038	0.00015	0.00087	0.0058	0.000011	0.000026	0.0074	0.0000034	2.2	0.000085	0.00007	0.00065	0.011	0.000054	0.00055	0.71	0.0035	0.0000028	0.000083	0.00059	0.61
		August	15	1.4	0.03	2.6	0.00059	0.031	0.0031	0.0039	0.00014	0.00084	0.0059	0.000011	0.000026	0.0073	0.0000034	2.2	0.000084	0.00007	0.00065	0.011	0.000054	0.00056	0.71	0.0034	0.0000028	0.00008	0.00059	0.61
		September	16	1.6	0.032	2.9	0.0009	0.044	0.0042	0.0039	0.0002	0.0012	0.006	0.000011	0.000026	0.0085	0.0000035	2.3	0.0001	0.00008	0.00068	0.012	0.00006	0.00058	0.74	0.0049	0.000003	0.00011	0.00068	0.68
		MAXIMUM	16	1.6	0.032	2.9	0.0009	0.044	0.0042	0.0039	0.0002	0.0012	0.006	0.000011	0.000026	0.0085	0.0000035	2.3	0.0001	0.00008	0.00068	0.012	0.00006	0.00058	0.74	0.0049	0.000003	0.00011	0.00068	0.68
		AVERAGE	15	1.5	0.031	2.7	0.00069	0.035	0.0035	0.0039	0.00016	0.00096	0.0059	0.000011	0.000026	0.0077	0.0000034	2.2	0.000089	0.000073	0.00066	0.011	0.000056	0.00056	0.72	0.0039	0.0000029	0.000089	0.00062	0.63
	First Year Post-Closure	MINIMUM	14	1.3	0.029	2.5	0.00032	0.02	0.0023	0.0038	0.00011	0.00053	0.0057	0.000011	0.000026	0.0064	0.0000033	2.1	0.000071	0.000062	0.00064	0.01	0.000049	0.00054	0.69	0.0022	0.0000027	0.00006	0.00052	0.57
		MAXIMUM	15	1.4	0.03	2.6	0.00043	0.024	0.0027	0.0039	0.00013	0.00066	0.0059	0.000011	0.000026	0.007	0.0000034	2.2	0.000079	0.000067	0.00065	0.011	0.000053	0.00056	0.72	0.0028	0.0000028	0.000073	0.00056	0.61
		AVERAGE	14	1.4	0.029	2.5	0.00036	0.021	0.0024	0.0039	0.00011	0.00056	0.0058	0.000011	0.000026	0.0066	0.0000033	2.1	0.000073	0.000064	0.00064	0.011	0.00005	0.00055	0.7	0.0024	0.0000028	0.000064	0.00053	0.58
	Long Term Water Quality (Years 10+)	MINIMUM	15	1.3	0.03	2.9	0.000027	0.0071	0.0017	0.0036	0.000096	0.00037	0.0058	0.00001	0.000026	0.0055	0.0000033	2.2	0.000053	0.000056	0.00061	0.01	0.000046	0.00058	0.73	0.0012	0.0000027	0.00013	0.00045	0.73
		MAXIMUM	15	1.4	0.031	3.2	0.000035	0.0074	0.0019	0.0037	0.00011	0.00044	-	0.000011	0.000026	0.0057	0.0000034	2.3	0.000055	0.000059	0.00062	0.011	0.000048	0.00061	0.77	0.0014	0.0000028	0.00017	0.00047	0.81
		AVERAGE	15	1.3	0.031	3.0	0.000031	0.0073	0.0018	0.0036	0.0001	0.0004	0.0059	0.00001	0.000026	0.0056	0.0000034	2.3	0.000054	0.000057	0.00061	0.01	0.000047	0.00059	0.75	0.0013	0.0000028	0.00015	0.00046	0.77
Downstream Node 2	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		June	26	3.1	0.05	5.6	0.0045	0.19	**0.016**	0.0044	0.00077	0.0053	0.0075	0.000014	0.000029	0.022	0.0000051	3.4	0.0003	0.0002	0.00091	0.019	0.00013	0.00086	1.1	0.021	0.0000045	0.00042	0.0018	1.4
		July	21	2.3	0.042	4.3	0.0025	0.11	0.0095	0.0043	0.00046	0.003	0.007	0.000013	0.000029	0.015	0.0000044	2.9	0.0002	0.00014	0.00082	0.016	0.000094	0.00074	0.93	0.012	0.0000038	0.00025	0.0012	1.0
		August	24	2.8	0.048	5.2	0.0038	0.16	**0.014**	0.0044	0.00066	0.0045	0.0074	0.000014	0.000029	0.019	0.0000049	3.2	0.00027	0.00017	0.00089	0.018	0.00012	0.00082	1.0	0.018	0.0000043	0.00036	0.0016	1.3
		September	29	3.4	0.056	6.4	0.0055	0.23	**0.019**	0.0046	0.00093	0.0063	0.0081	0.000016	0.00003	0.026	0.0000057	3.7	0.00036	0.00023	0.001	0.022	0.00015	0.00095	1.2	0.026	0.000005	0.00051	0.0021	1.6
		MAXIMUM	29	3.4	0.056	6.4	0.0055	0.23	**0.019**	0.0046	0.00093	0.0063	0.0081	0.000016	0.00003	0.026	0.0000057	3.7	0.00036	0.00023	0.001	0.022	0.00015	0.00095	1.2	0.026	0.000005	0.00051	0.0021	1.6
		AVERAGE	25	2.9	0.049	5.4	0.0041	0.17	**0.014**	0.0044	0.0007	0.0048	0.0075	0.000014	0.000029	0.02	0.000005	3.3	0.00028	0.00018	0.00091	0.019	0.00012	0.00084	1.1	0.019	0.0000044	0.00038	0.0017	1.3
	First Year Post-Closure	MINIMUM	18	1.9	0.036	3.4	0.0012	0.055	0.0051	0.0043	0.00027	0.0015	0.0066	0.000012	0.000029	0.01	0.0000039	2.6	0.00013	0.000097	0.00074	0.013	0.000074	0.00066	0.85	0.0065	0.0000035	0.00014	0.00085	0.81
		MAXIMUM	21	2.3	0.041	4.1	0.0019	0.085	0.0076	0.0044	0.0004	0.0023	0.0069	0.000013	0.00003	0.013	0.0000043	2.9	0.00017	0.00012	0.00079	0.014	0.000092	0.00073	0.95	0.01	0.000004	0.00022	0.0011	1.0
		AVERAGE	20	2.1	0.039	3.8	0.0016	0.074	0.0067	0.0044	0.00035	0.002	0.0068	0.000013	0.000029	0.012	0.0000041	2.8	0.00016	0.00011	0.00077	0.014	0.000085	0.0007	0.9	0.0088	0.0000038	0.00019	0.001	0.93
	Long Term Water Quality (Years 10+)	MINIMUM	21	1.7	0.041	5.2	0.000098	0.0089	0.003	0.0029	0.00023	0.00097	0.0069	0.000012	0.000028	0.007	0.0000042	3.1	0.000063	0.000075	0.00062	0.012	0.000061	0.00082	1.0	0.0026	0.0000035	0.00043	0.00062	1.4
		MAXIMUM	25	2.0	0.048	6.9	0.00016	0.011	0.0041	0.0034	0.00034	0.0015	0.0074	0.000012	0.000028	0.0079	0.0000046	3.7	0.000068	0.000088	0.00065	0.014	0.000071	0.00099	1.2	0.0039	0.0000039	0.00068	0.00073	2.0
		AVERAGE	24	1.9	0.045	6.4	0.00014	0.0097	0.0036	0.0031	0.0003	0.0013	0.0072	0.000012	0.000028	0.0076	0.0000045	3.5	0.000066	0.000083	0.00063	0.013	0.000067	0.00093	1.1	0.0034	0.0000037	0.00059	0.00069	1.8

Notes:

[1] Portage effluent limits (NWB, 2015). Maximum average. Operational phase only - exceedances shown as bold-underlined-highlighted cells

[2] CEQG (2002) freshwater guidelines. Post-closure exceedances to freshwater CEQG's shown in bold-underlined type

[3] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

[4] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5.

[5] CEQG Freshwater aquatic life criteria for chromium depends on the valence of chromium ion. In the above table, the Cr(VI) criterion of 0.001 mg/L is shown.

[6] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.

[7] The CEQG aquatic life criterion for Arsenic is replaced by the Site Specific Water Quality Objective of 0.028 mg/L developed for the Whale Tail Pit Project (Volume 6, Appendix 6-N)

Appendix B
Water Quality Model Predictions - On-Site Facilities (with Treatment) and Off-site Monitoring Locations
Whale Tail Project, Meadowbank Division
Agnico-Eagle Mines Limited

Portage Effluent Limits maximum average[1] (mg/L)												**0.4**
CEQG aquatic life (long-term)[2] (mg/L)			**0.001**	**0.0001**			**0.0008**		**0.015**			**0.03**
			Se	**Ag**	**Na**	**Sr**	**Tl**	**Sn**	**U**	**V**	**Zn**
LOCATION	**Time Period**	**Month**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Downstream Node 1	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0	0	0	0	0	0	0	0	0
		November	0	0	0	0	0	0	0	0	0
		December	0	0	0	0	0	0	0	0	0
		January	0	0	0	0	0	0	0	0	0
		February	0	0	0	0	0	0	0	0	0
		March	0	0	0	0	0	0	0	0	0
		April	0	0	0	0	0	0	0	0	0
		May	0	0	0	0	0	0	0	0	0
		June	0.000039	0.0000055	0.84	0.01	0.0000058	0.00011	0.00005	0.00036	0.00075
		July	0.000038	0.0000055	0.84	0.01	0.0000058	0.00011	0.000049	0.00035	0.00075
		August	0.000038	0.0000056	0.83	0.01	0.0000058	0.00011	0.000048	0.00035	0.00076
		September	0.000044	0.0000058	0.93	0.011	0.0000062	0.00011	0.000061	0.0004	0.00078
		MAXIMUM	0.000044	0.0000058	0.93	0.011	0.0000062	0.00011	0.000061	0.0004	0.00078
		AVERAGE	0.00004	0.0000056	0.86	0.01	0.0000059	0.00011	0.000052	0.00036	0.00076
	First Year Post-Closure	MINIMUM	0.000033	0.0000054	0.76	0.0095	0.0000055	0.00011	0.000039	0.00031	0.00074
		MAXIMUM	0.000036	0.0000056	0.81	0.01	0.0000058	0.00012	0.000047	0.00034	0.00076
		AVERAGE	0.000034	0.0000055	0.78	0.0097	0.0000056	0.00011	0.000042	0.00032	0.00075
	Long Term Water Quality (Years 10+)	MINIMUM	0.000042	0.0000052	0.7	0.01	0.0000055	0.00011	0.00012	0.00028	0.00073
		MAXIMUM	0.000048	0.0000053	0.73	0.011	0.0000057	0.00012	0.00015	0.0003	0.00075
		AVERAGE	0.000045	0.0000052	0.72	0.011	0.0000056	0.00011	0.00013	0.00029	0.00074
Downstream Node 2	***Operations Water Quality - with Water Treatment (maximum mine footprint)***	**October**	0	0	0	0	0	0	0	0	0
		November	0	0	0	0	0	0	0	0	0
		December	0	0	0	0	0	0	0	0	0
		January	0	0	0	0	0	0	0	0	0
		February	0	0	0	0	0	0	0	0	0
		March	0	0	0	0	0	0	0	0	0
		April	0	0	0	0	0	0	0	0	0
		May	0	0	0	0	0	0	0	0	0
		June	0.00012	0.0000085	2.0	0.019	0.00001	0.00011	0.0002	0.00098	0.001
		July	0.00008	0.0000073	1.5	0.015	0.0000083	0.00012	0.00013	0.00068	0.00093
		August	0.0001	0.0000081	1.8	0.018	0.0000097	0.00011	0.00017	0.00088	0.001
		September	0.00014	0.0000093	2.3	0.022	0.000012	0.00011	0.00024	0.0011	0.0011
		MAXIMUM	0.00014	0.0000093	2.3	0.022	0.000012	0.00012	0.00024	0.0011	0.0011
		AVERAGE	0.00011	0.0000083	1.9	0.018	0.000010	0.00011	0.00018	0.00092	0.001
	First Year Post-Closure	MINIMUM	0.000055	0.0000066	1.1	0.013	0.0000071	0.00011	0.000079	0.00049	0.00085
		MAXIMUM	0.000074	0.0000072	1.3	0.015	0.0000081	0.00012	0.00012	0.00063	0.0009
		AVERAGE	0.000066	0.000007	1.2	0.014	0.0000077	0.00012	0.0001	0.00058	0.00088
	Long Term Water Quality (Years 10+)	MINIMUM	0.000093	0.0000058	0.89	0.016	0.0000071	0.00011	0.0004	0.00039	0.00084
		MAXIMUM	0.00013	0.000006	1.0	0.02	0.0000081	0.00012	0.00063	0.00045	0.00088
		AVERAGE	0.00012	0.0000059	0.96	0.019	0.0000077	0.00012	0.00055	0.00043	0.00086

Notes:

[1] Portage effluent limits (NWB, 2015). Maximum average. Operational phase only - exceedances shown as bold-underlined-highlighted cells

[2]CEQG (2002) freshwater guidelines. Post-closure exceedances to freshwater CEQG's shown in bold-underlined type

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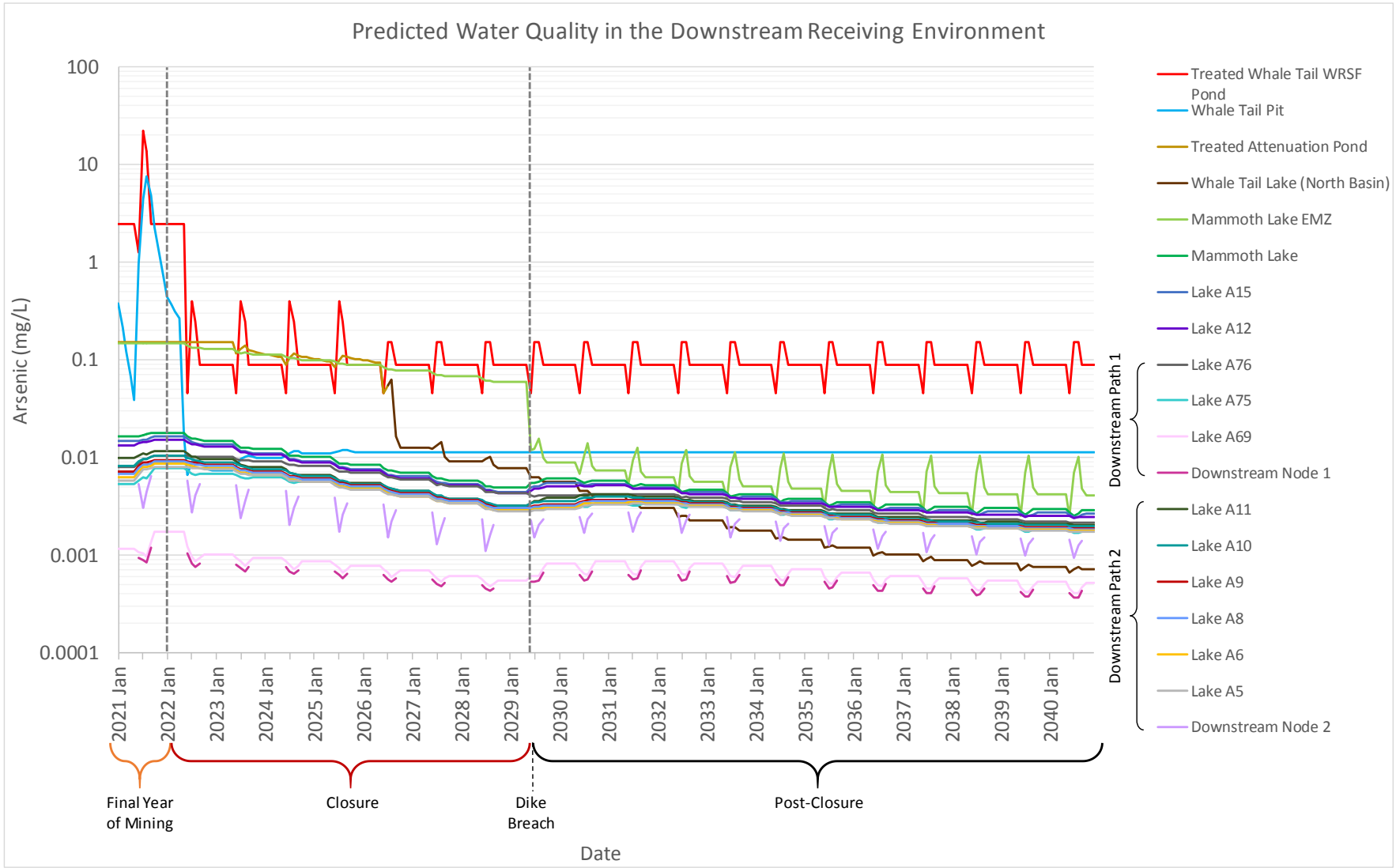
[6] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.

[7] The CEQG aquatic life criterion for Arsenic is replaced by the Site Specific Water Quality Objective of 0.028 mg/L developed for the Whale Tail Pit Project (Volume 6, Appendix 6-N)



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MEADOWBANK DIVISION

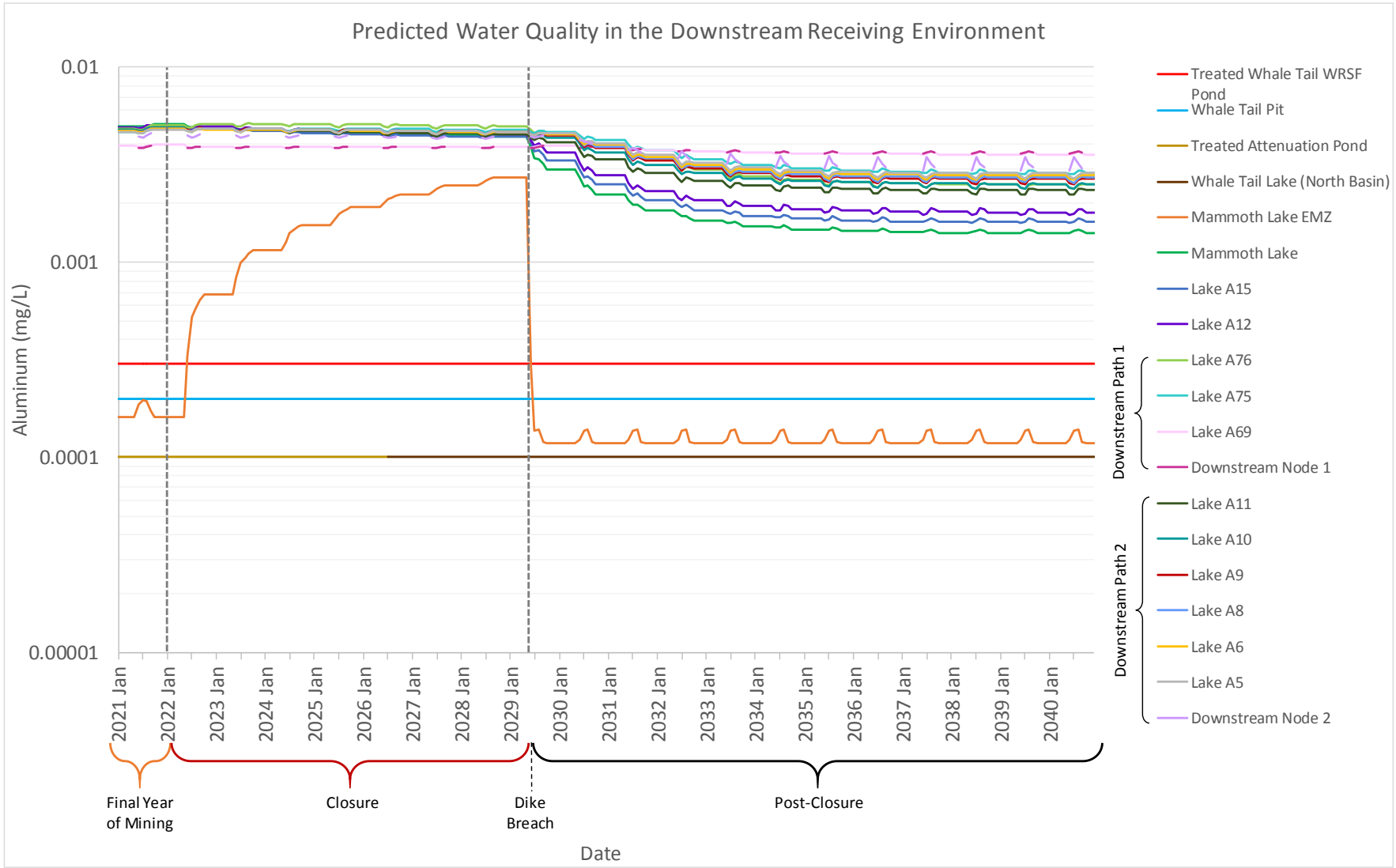
CONSULTANT
Golder Associates

PROJECT
MINE SITE WATER QUALITY PREDICTIONS
WHALE TAIL PROJECT

YYYY-MM-DD	2016-06-10
PREPARED	SG
DESIGNED	KS
REVIEWED	VJB
APPROVED	DW

TITLE
Predicted Water Quality in the Downstream Receiving Environment - Arsenic

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-1**



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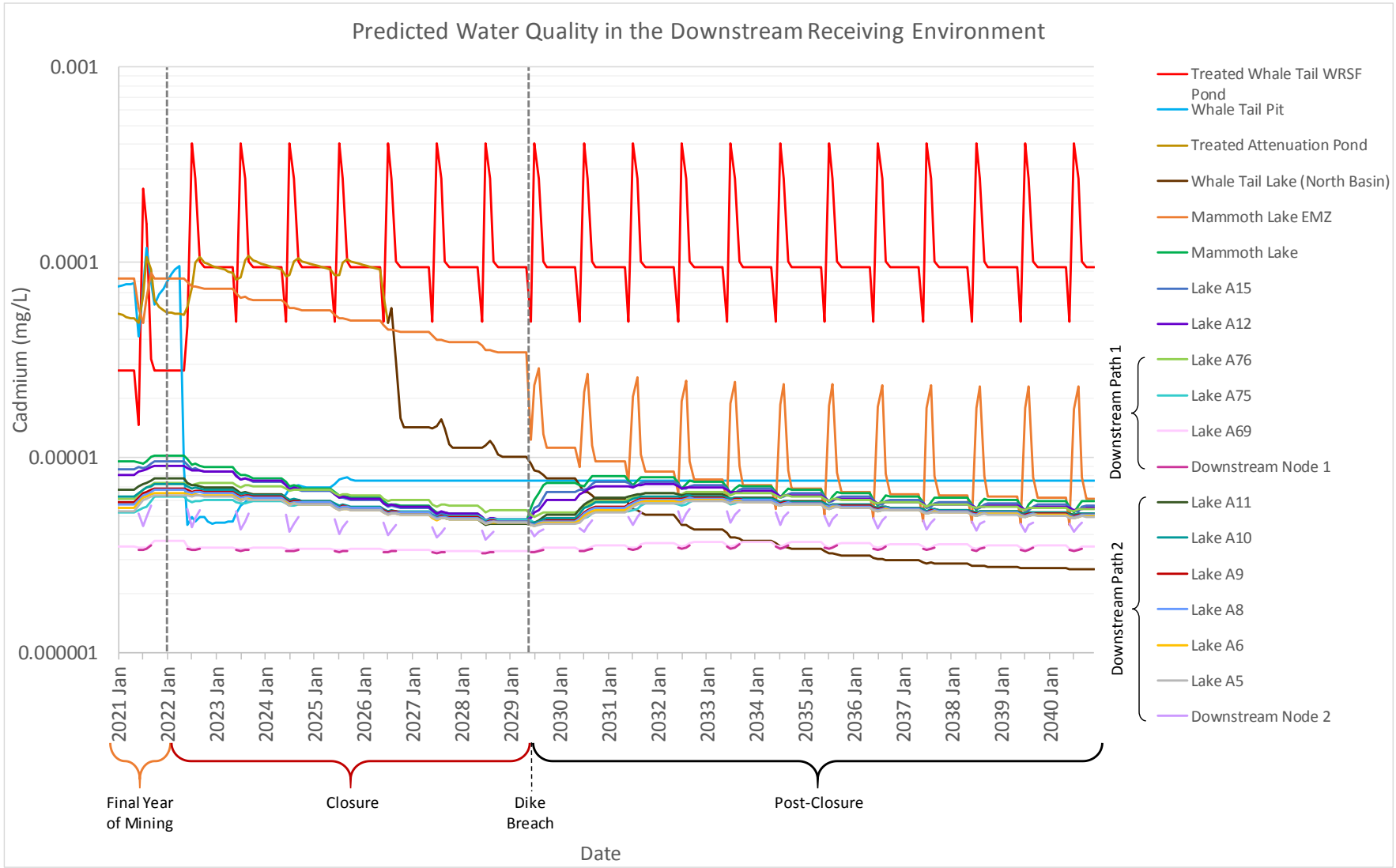
DESIGNED	KS
REVIEWED	VJB
APPROVED	DW

TITLE
Predicted Water Quality in the Downstream Receiving Environment - Aluminum

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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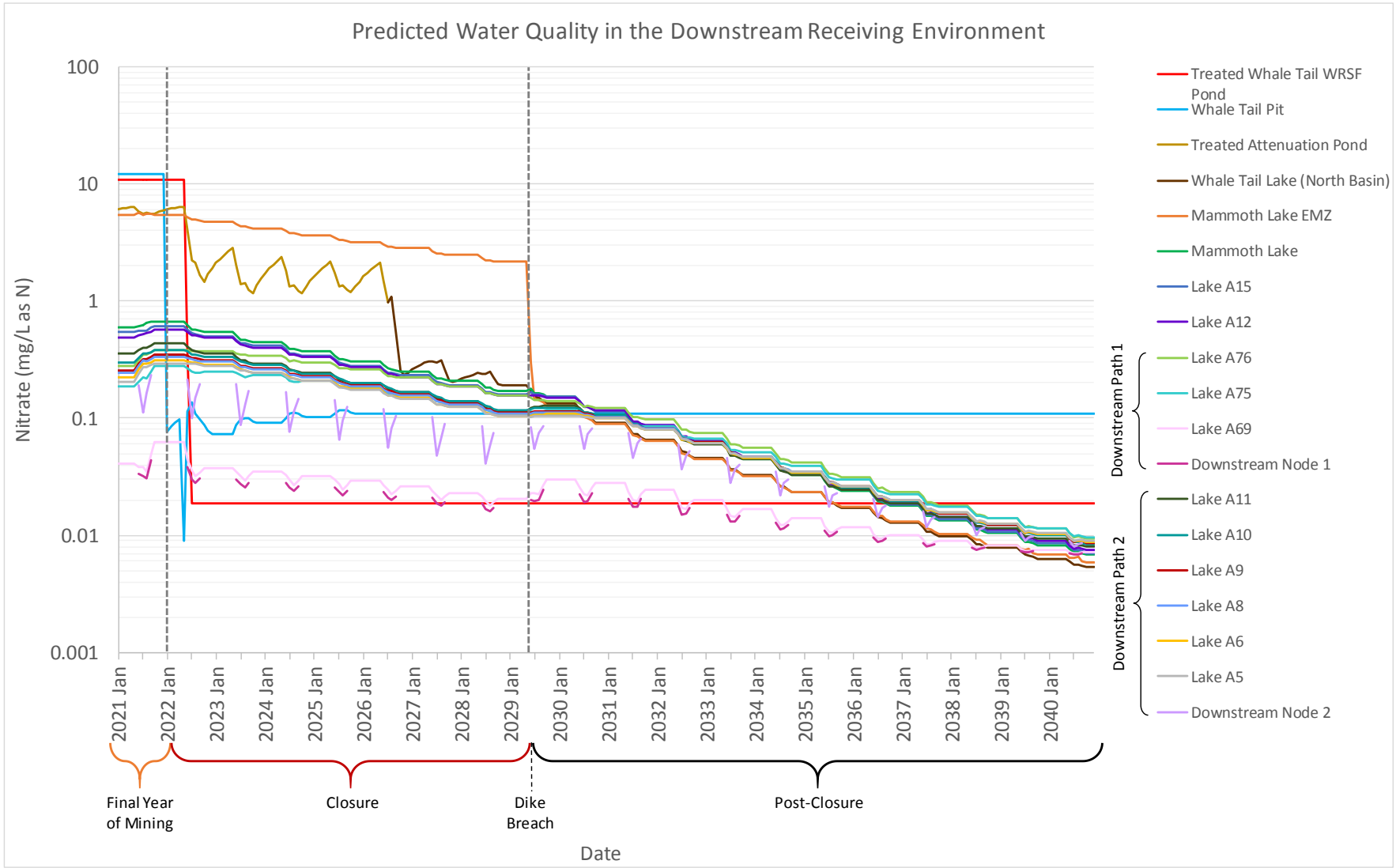
DESIGNED	KS
REVIEWED	VJB
APPROVED	DW

TITLE
Predicted Water Quality in the Downstream Receiving Environment - Cadmium

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-3**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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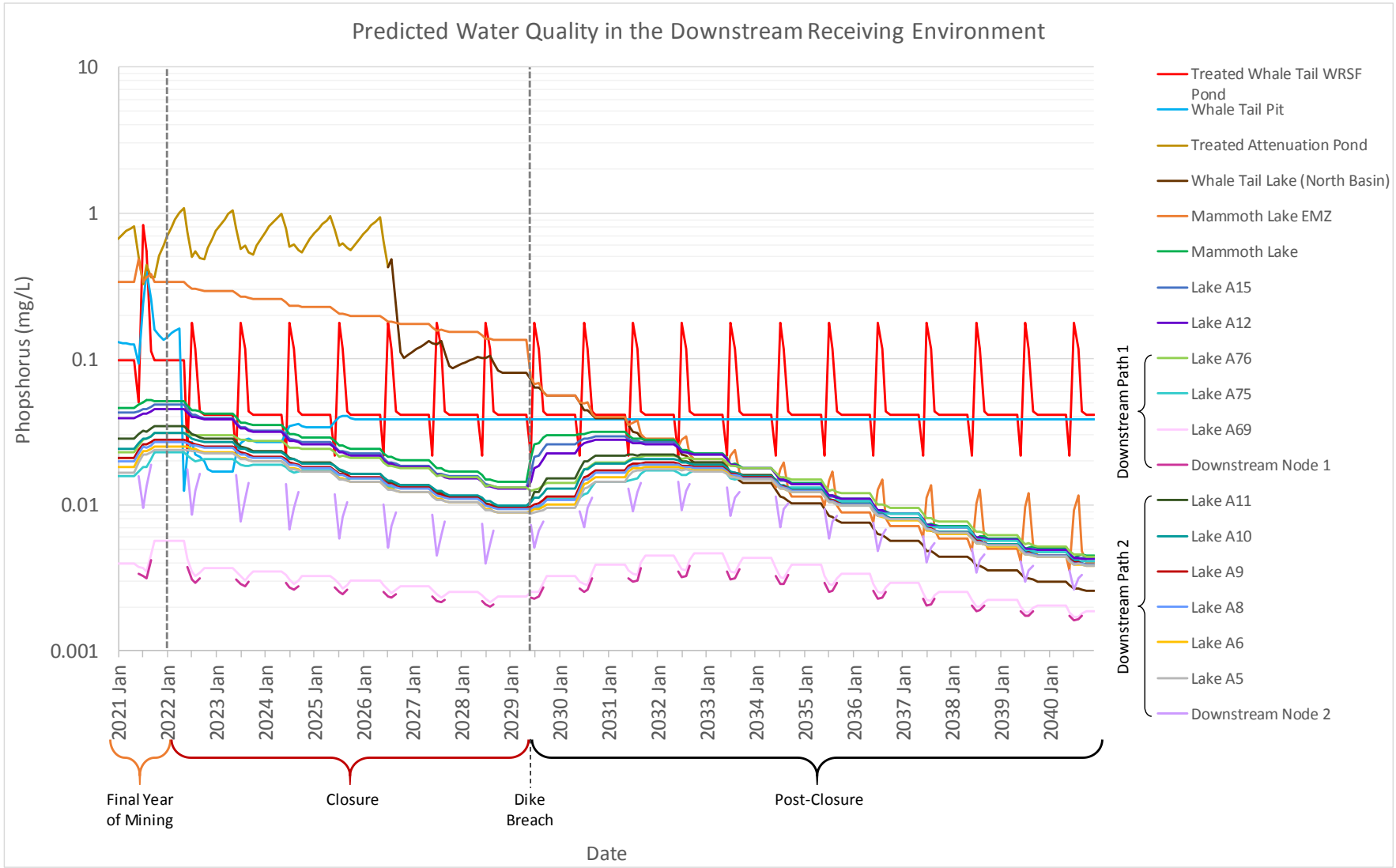
PROJECT
MINE SITE WATER QUALITY PREDICTIONS
WHALE TAIL PROJECT

TITLE
Predicted Water Quality in the Downstream Receiving Environment - Nitrate

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-4**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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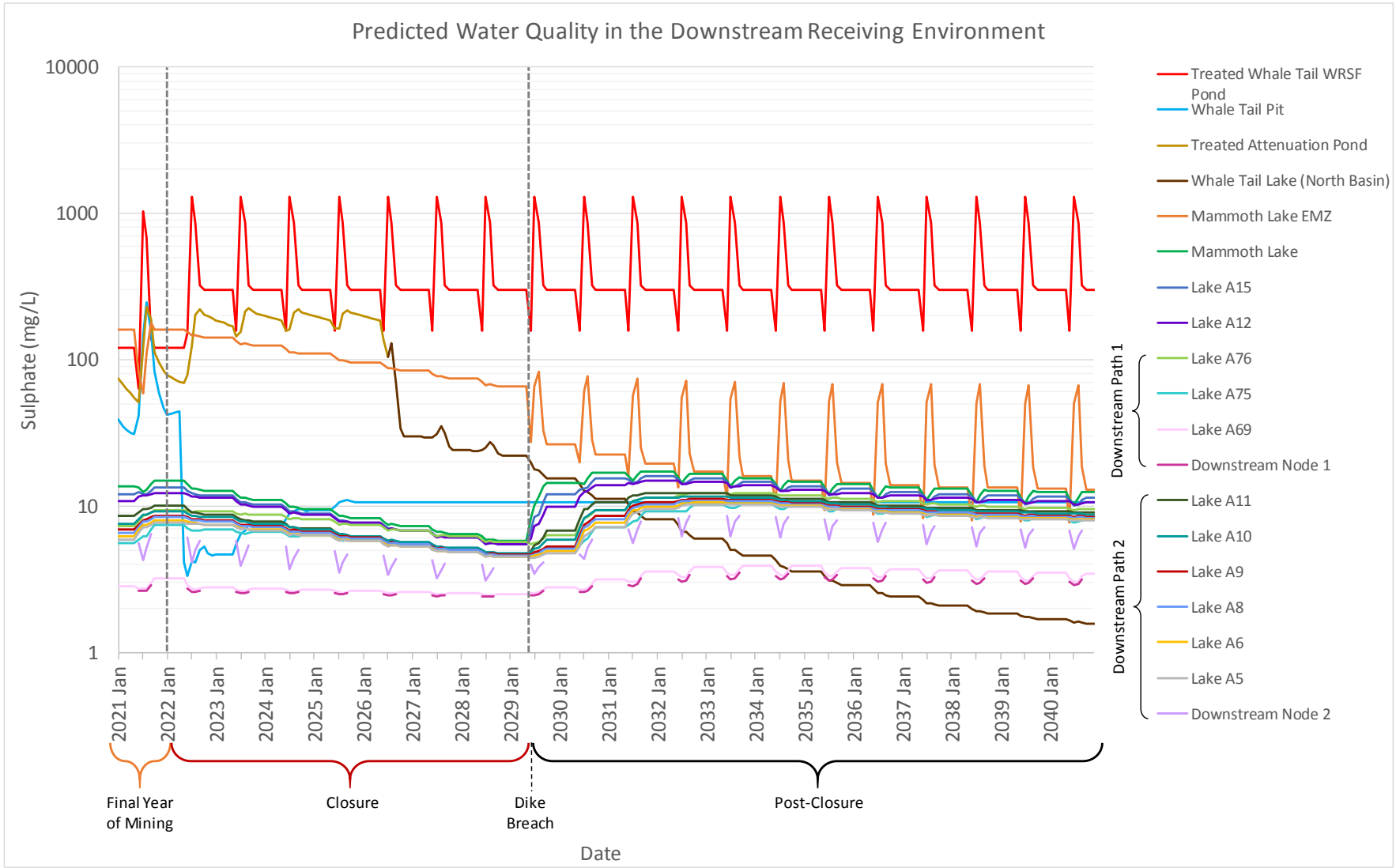
TITLE
Predicted Water Quality in the Downstream Receiving Environment - Phosphorus

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-5**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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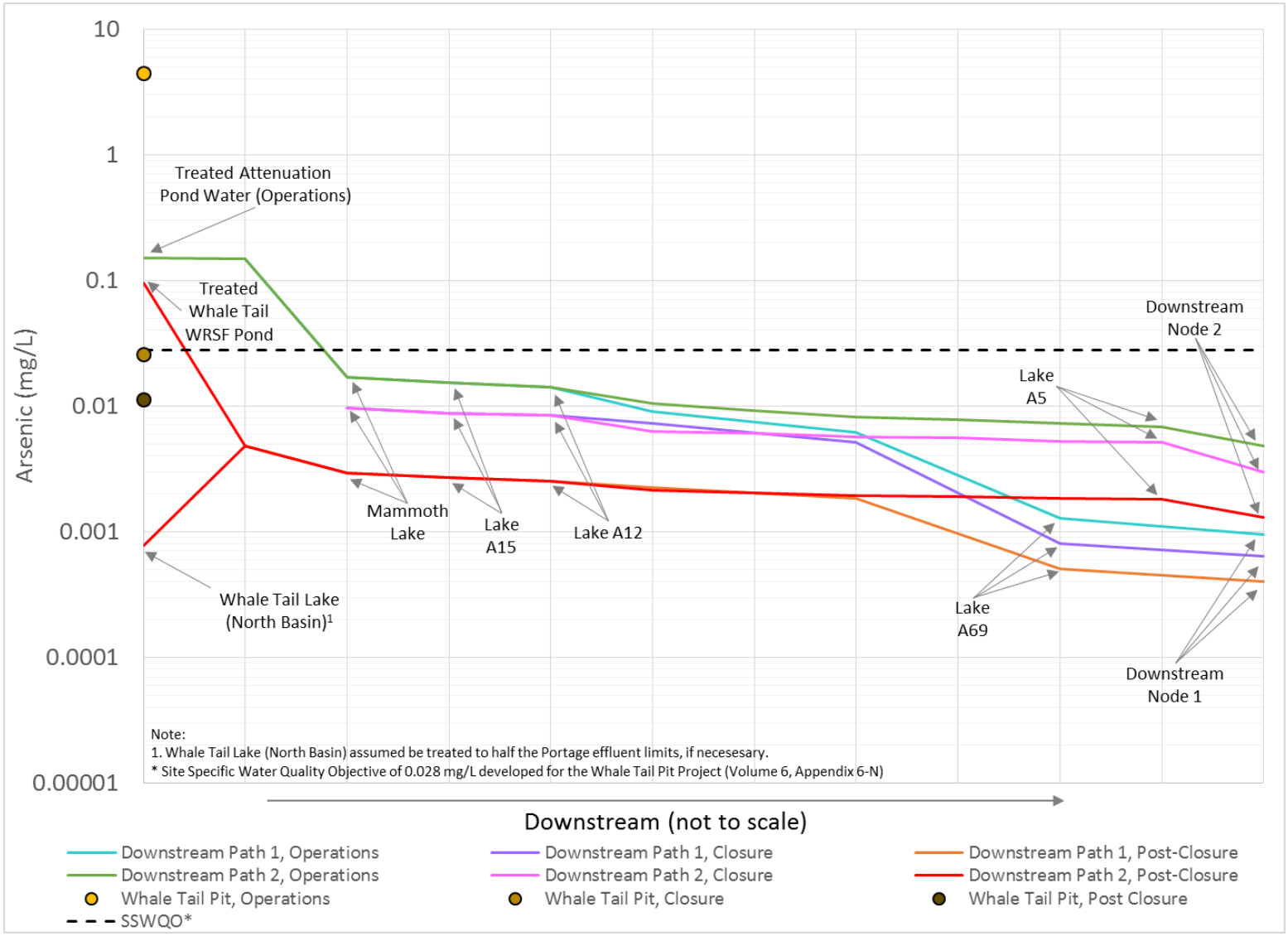
DESIGNED	KS
REVIEWED	VJB
APPROVED	DW

TITLE
Predicted Water Quality in the Downstream Receiving Environment - Sulphate

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-6**



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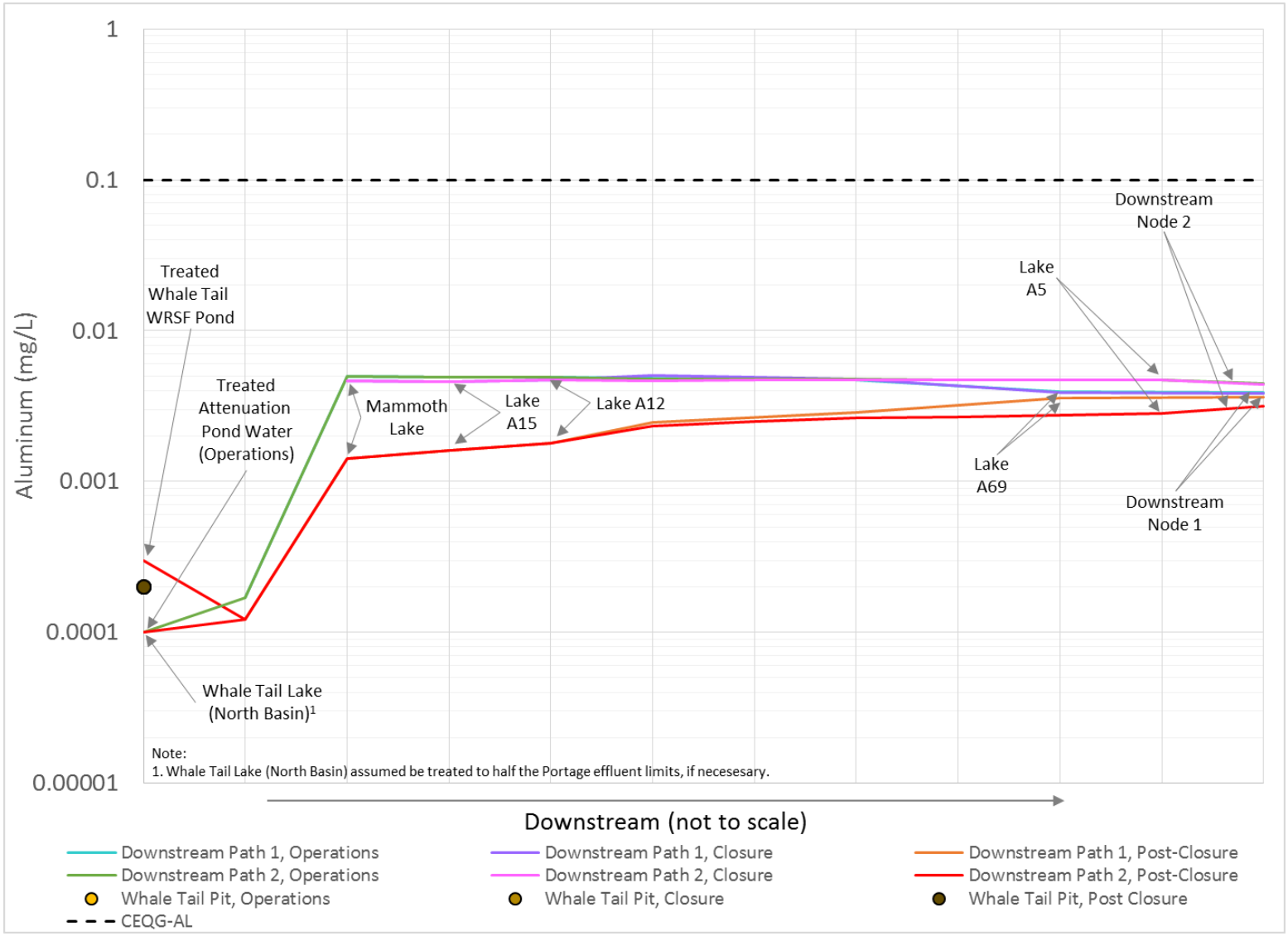
TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Arsenic

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-7**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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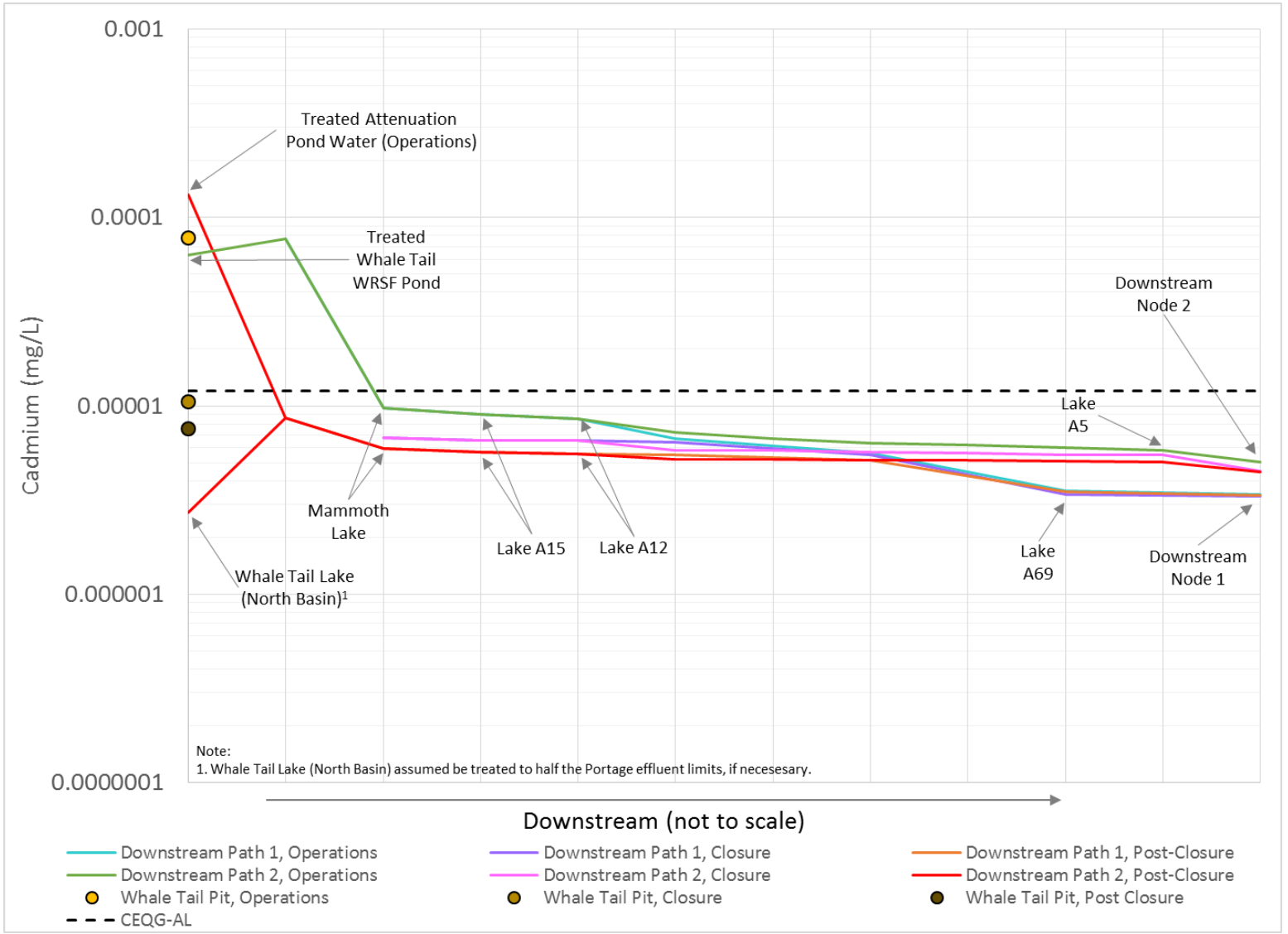
APPROVED	DW

PROJECT
MINE SITE WATER QUALITY PREDICTIONS
WHALE TAIL PROJECT

TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Aluminum

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-8**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
1 in
0



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TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Cadmium

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-9**

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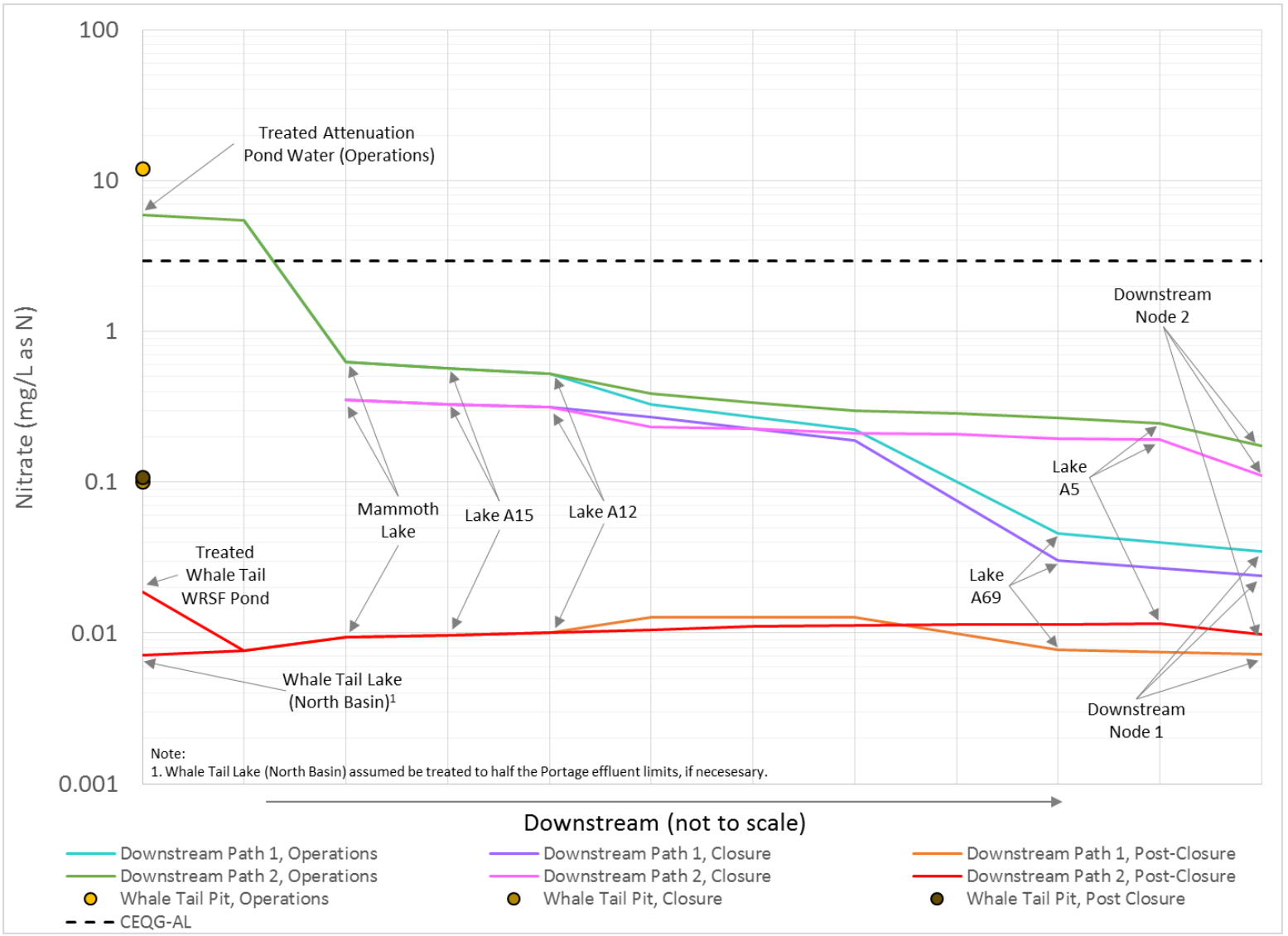

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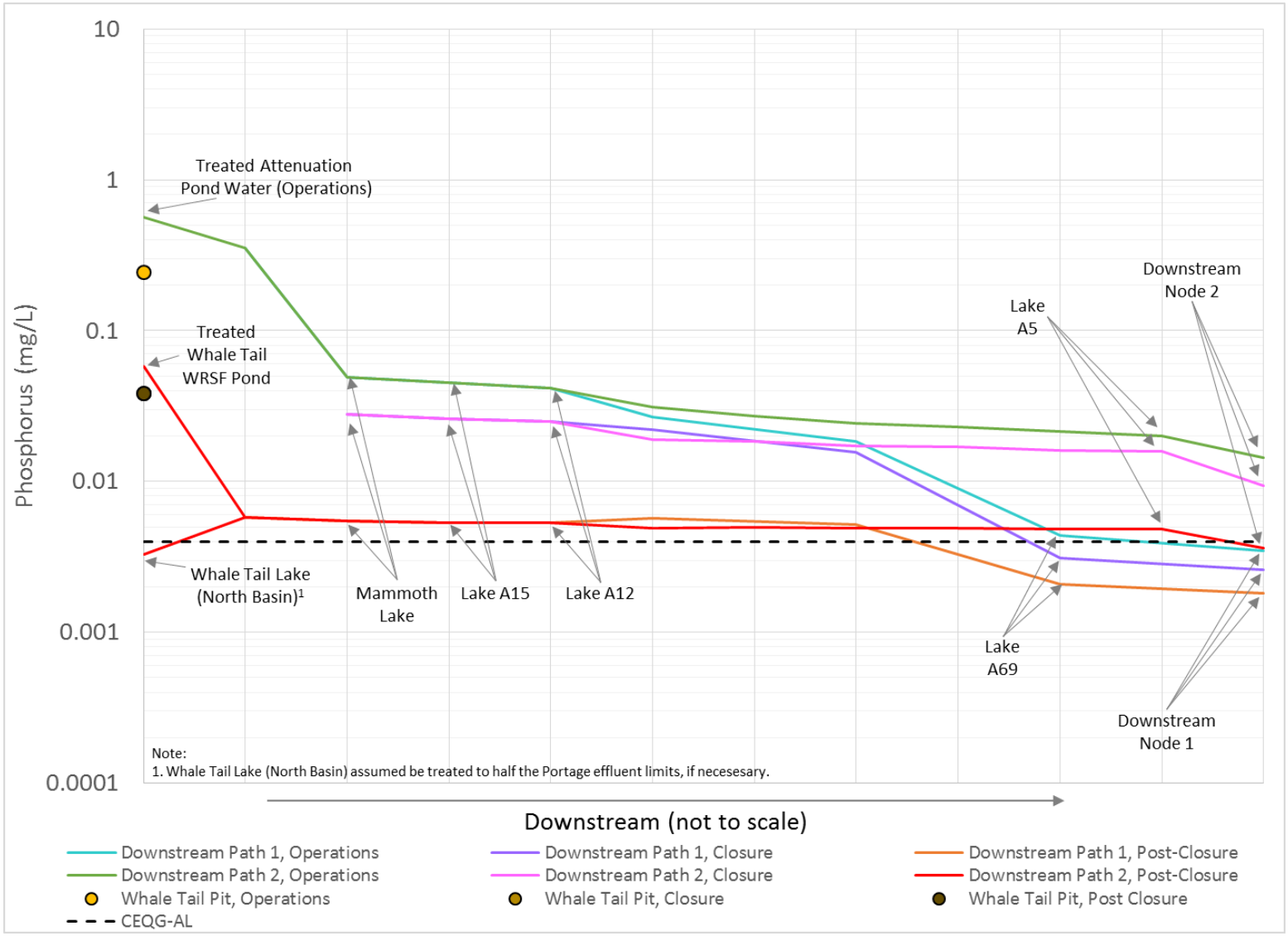
TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Nitrate

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-10**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A/B/I/A
1 in
0



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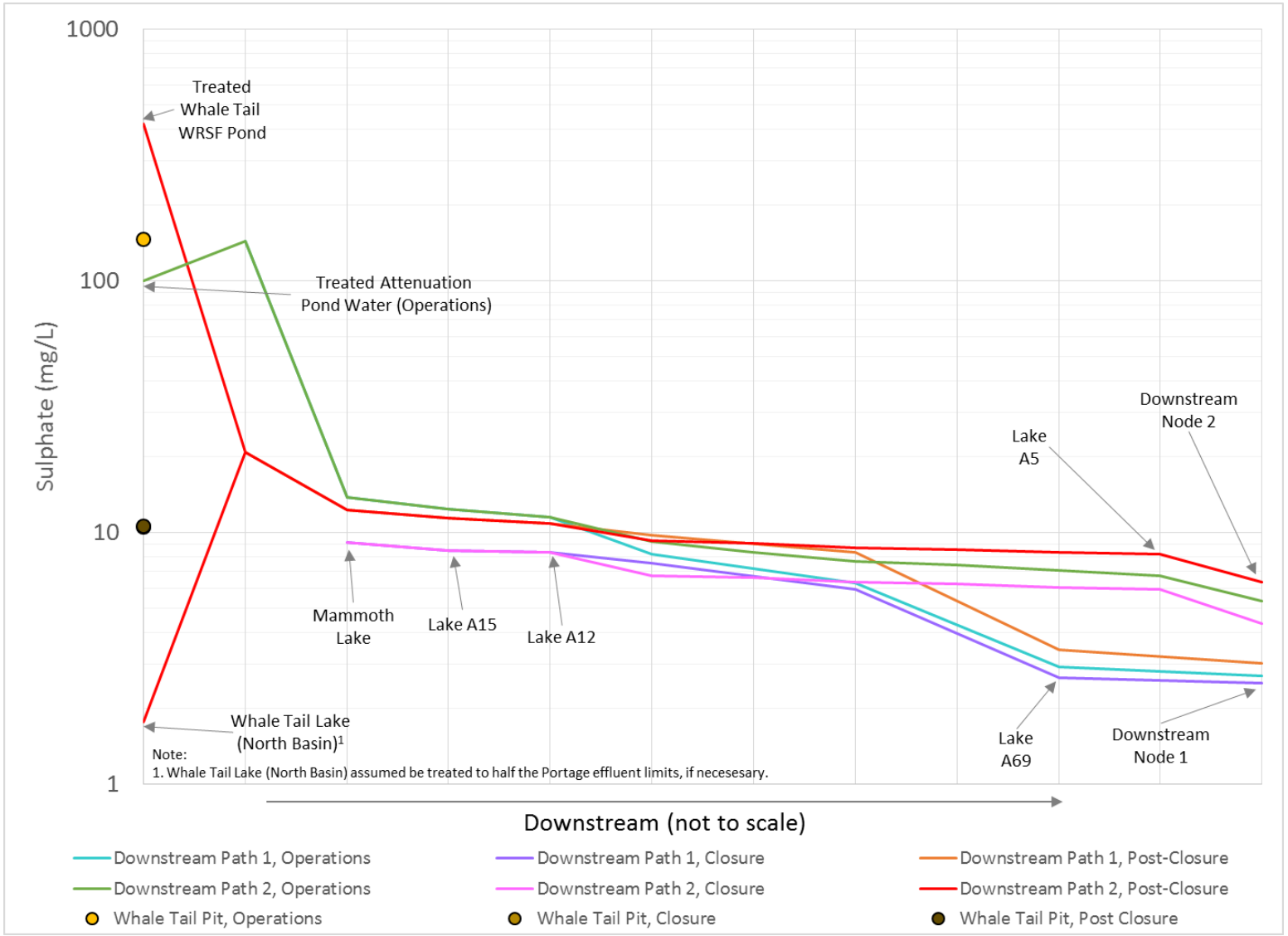
TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Phosphorus

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-11**



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PROJECT
MINE SITE WATER QUALITY PREDICTIONS
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TITLE
Predicted Water Quality of Downstream Receiving Environment Water Pathways - Sulphate

PROJECT NO.		REV.	FIGURE
1520817	5000	0	**B-12**

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